

Acknowledgements

Editorial Staff

Larry Bryant

Deputy Director

Carl Allen

Senior Program Analyst

Monica Cowan

Program Analyst

Peter Edelman

Program Analyst

Carol Haberman MS, MPA

Senior Program Analyst

Juanita Koziol MS, NP, CS, RN

Senior Public Health Analyst

Kathleen Manning MPH, RD

Program Analyst

Judith Sparrow

Program Analyst

Dena S. Puskin ScD

Director

Office for the Advancement of Telehealth (OAT)
Health Resources and Services Administration
U.S. Department of Health and Human Services

The editors would like to acknowledge the contributions of all OAT grantees, whose project descriptions serve as a valuable resource for others working in the field of telehealth.

Note: For the user of this directory, definitions of some of the more commonly used acronyms and terms found throughout this material are provided.

Table of Contents

Section	Page(s)
OAT Grantee Organizations	1 - 7
Types of Grants.....	8 - 17
Charts	
Components of Project	18 - 32
Major Services	33 - 51
Sources of Reimbursement.....	52 - 59
Transmission and Technology.....	60 - 76
Program Settings.....	77 - 100
Homeland Security	101 - 121
Project Descriptions by State	122 - 269
Acronyms and Glossary.....	270 - 282

OAT Grantee Organizations

The Office for the Advancement of Telehealth's (OAT) "Grantee Directory 2004-2005" provides information about Grantee Organizations whose grants are administered by the Office for the Advancement of Telehealth (OAT). Projects included are those in an active status and/or projects receiving funding during fiscal years (FY) 2004 and 2005. *

***FY 2004 is the period October 1, 2004 through September 30, 2005.**

***FY 2005 is the period October 1, 2005 through September 30, 2006.**

This section contains a list of 2004–2005 OAT Grantee Organizations and their project names (descriptions).

Grantee Organizations

(Where a grantee organization has multiple projects, they are listed)

State	Grantee	State	Grantee
AL	University of South Alabama	FL	BayCare Health Systems
	<ul style="list-style-type: none"> • <i>Emerging Health Technologies (OEHT) BioTrac</i> • <i>Emerging Health Technologies (OEHT) Teletrauma</i> • <i>Emerging Health Technologies (OEHT) Traditional Telemedicine</i> 		<ul style="list-style-type: none"> • <i>Electronic Medication and Clinical Services Ordering System</i>
AK	Alaska Native Tribal Health Consortium	FL	Florida Cancer Research Cooperative, University of South Florida
	<ul style="list-style-type: none"> • <i>Alaska Federal Health Care Access Network (AFHCAN)</i> • <i>The Summative Telemedicine Evaluation Project</i> • <i>Eastern Aleutian Tribes, Inc. Rural Telemedicine Project</i> 		<ul style="list-style-type: none"> • <i>Clinical Trial Patient/Physician Information and Education Program</i>
AR	University of Arkansas for Medical Sciences	FL	University of Florida
	<ul style="list-style-type: none"> • <i>South Arkansas Integrated Telehealth Oncology Program</i> 		<ul style="list-style-type: none"> • <i>University of Florida College of Dentistry (UFCD)</i>
AZ	Arizona Board of Regents, University of Arizona	GA	Morehouse School of Medicine
	<ul style="list-style-type: none"> • <i>Arizona Diabetes Virtual Center for Excellence (ADVICE)</i> 		<ul style="list-style-type: none"> • <i>Diabetes Screening Telehealth Project</i>
AZ	Banner Health System	GA	Ware County Health Department
	<ul style="list-style-type: none"> • <i>Banner Telehealth Program</i> 		<ul style="list-style-type: none"> • <i>Rural Health Telemedicine Grant Program</i>
AZ	Maricopa County	HI	Hawai'i Primary Care Association (HPCA)
	<ul style="list-style-type: none"> • <i>Correctional Health Services Telemedicine Initiative</i> 		<ul style="list-style-type: none"> • <i>Hawai'i Community Telehealth Network Program</i>
CA	Childrens Hospital of Los Angeles	HI	Molokai General Hospital
	<ul style="list-style-type: none"> • <i>VPICU Critical Care Telemedicine Program</i> 		<ul style="list-style-type: none"> • <i>Molokai Telehealth Network</i>
CA	Santa Rosa Memorial Hospital	IA	Iowa Chronic Care Consortium
	<ul style="list-style-type: none"> • <i>Northern California Telemedicine Network</i> 		<ul style="list-style-type: none"> • <i>Congestive Heart Failure and Diabetes Telemanagement</i>
CA	University of California - Davis	IA	Mercy Foundation
	<ul style="list-style-type: none"> • <i>UC Davis Northern California Telemedicine Project</i> 		<ul style="list-style-type: none"> • <i>Midwest Rural Telemedicine Consortium</i>
CO	University of Colorado Health Sciences Center	ID	Idaho State University, Institute of Rural Health
	<ul style="list-style-type: none"> • <i>Native Telehealth Outreach and Technical Assistance Program</i> 		<ul style="list-style-type: none"> • <i>Telehealth Idaho</i>
DC	Foundation For eHealth Initiative	ID	North Idaho Rural Health Consortium (NIRHC)
	<ul style="list-style-type: none"> • <i>Connecting Communities for Better Health</i> 		<ul style="list-style-type: none"> • <i>Expanding Telehealth to North Idaho Districts (EXTEND)</i>
		IL	Memorial Health System
			<ul style="list-style-type: none"> • <i>Automated Clinical Information System—Wireless Network Infrastructure</i>
		IL	Northern Illinois University
			<ul style="list-style-type: none"> • <i>Neutron Radiation for Cancer Treatment</i>
		IL	OSF Saint James – John W. Albrecht Medical Center
			<ul style="list-style-type: none"> • <i>OSF Saint James Telehealth Network</i>
		IL	Memorial Health System
			<ul style="list-style-type: none"> • <i>MHS Rural Teleradiology</i>

Grantee Organizations

(Where a grantee organization has multiple projects, they are listed)

State	Grantee	State	Grantee
IL	Southern Illinois University School of Medicine	MI	Marquette General Health System
	<ul style="list-style-type: none"> • <i>Downstate Illinois Regional Telehealth Project</i> 		<ul style="list-style-type: none"> • <i>Close to Home, Close to Health</i>
IN	James Whitcomb Riley Hospital for Children	MI	University of Michigan
	<ul style="list-style-type: none"> • <i>Telemedicine Applications for Riley Hospital for Children</i> 		<ul style="list-style-type: none"> • <i>Michigan Collaborative Project on Internet Based Clinical Telemedicine</i>
KS	University of Kansas Medical Center	MI	Western Michigan University
	<ul style="list-style-type: none"> • <i>Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network</i> 		<ul style="list-style-type: none"> • <i>The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan</i>
KY	University of Kentucky Research Foundation	MN	Fairview Health Services
	<ul style="list-style-type: none"> • <i>Improving Health Outcomes for Children in Rural Kentucky Schools</i> 		<ul style="list-style-type: none"> • <i>Ambulatory Electronic Medical Record System—Twin Cities Metropolitan Care Systems</i>
LA	Southwest Louisiana Health Care Systems	MN	Fairview Ridges Hospital
	<ul style="list-style-type: none"> • <i>Community Hospital Telehealth Consortium (VHTC)</i> 		<ul style="list-style-type: none"> • <i>Healthy Mothers and Babies Technology Demonstration Informatics/Health Information Service Grant: Auto. Med. Dispensing</i>
LA	Woman's Hospital	MN	University of Minnesota
	<ul style="list-style-type: none"> • <i>Expansion of Physician Internet Portal, Woman's POL</i> 		<ul style="list-style-type: none"> • <i>Fairview – University of Minnesota Telemedicine Network</i>
MA	Baystate Medical Center, Inc.	MO	Logan College of Chiropractic
	<ul style="list-style-type: none"> • <i>Hampden Hampshire Franklin County Telehealth Services</i> 		<ul style="list-style-type: none"> • <i>Distance Learning System</i>
MA	Massachusetts College of Pharmacy and Health Sciences	MO	The Curators of the University of Missouri
	<ul style="list-style-type: none"> • <i>Health Education Resource Center</i> 		<ul style="list-style-type: none"> • <i>Missouri Telehealth Network</i>
MA	UMass Memorial Medical Center, Inc.	MT	Benefis Healthcare Foundation
	<ul style="list-style-type: none"> • <i>Picture Archiving and Communication System (PACS)</i> 		<ul style="list-style-type: none"> • <i>NMHA & REACH Telehealth Network Development Project</i>
ME	Regional Medical Center – Lubec	MT	Deaconess Billings Clinic Foundation
	<ul style="list-style-type: none"> • <i>Maine Nursing Home Telehealth Network</i> • <i>Maine Telehealth Network</i> 		<ul style="list-style-type: none"> • <i>Eastern Montana Telemedicine Network</i> • <i>Center on Aging</i>
MI	Central Michigan University	MT	Rocky Mountain Technology Foundation
	<ul style="list-style-type: none"> • <i>Rural Tele-health and Community Education Network</i> 		<ul style="list-style-type: none"> • <i>Distance Learning/Telehealth</i> • <i>Pharmacy Support to Rural Clinics</i>
MI	Hillsdale Community Health Center	MT	St. Vincent Healthcare Foundation
	<ul style="list-style-type: none"> • <i>PACS System</i> 		<ul style="list-style-type: none"> • <i>Mansfield Health Education Center (MHEC)</i> • <i>Partners in Health Telemedicine Network (PHTN)</i>

Grantee Organizations

(Where a grantee organization has multiple projects, they are listed)

State	Grantee	State	Grantee
MT	The University of Montana – Missoula	NV	Nevada Rural Hospital Partners Foundation
	<ul style="list-style-type: none"> • <i>ImProving Health Among Rural Montanans (IPHARM)</i> 		<ul style="list-style-type: none"> • <i>Digital Imaging System for Rural Nevada (DISRN)</i>
NC	Duke University Medical Center	NV	University of Nevada Las Vegas
	<ul style="list-style-type: none"> • <i>Patient Inclusion in a Community-Based Telehealth Network</i> 		<ul style="list-style-type: none"> • <i>Nevada Telehealth Technology Initiative</i>
NC	East Carolina University	NV	University of Nevada, Reno
	<ul style="list-style-type: none"> • <i>REACH-TV (Rural Eastern Carolina Health Network)</i> 		<ul style="list-style-type: none"> • <i>Biomedical Electronic Imaging</i>
NC	Educational and Research Consortium of Western Carolinas	NY	Daemen College
	<ul style="list-style-type: none"> • <i>Western North Carolina Regional Data Link Project</i> 		<ul style="list-style-type: none"> • <i>Daemen College TeleHealth Education Network</i>
ND	Minot State University	NY	HealthReach NY, Inc.
	<ul style="list-style-type: none"> • <i>Rural Disabilities Wellness Project</i> 		<ul style="list-style-type: none"> • <i>Develop a Computerized Referral and Recording System</i>
ND	North Dakota State University	NY	Institute for Urban Family Health
	<ul style="list-style-type: none"> • <i>North Dakota Telepharmacy Project</i> 		<ul style="list-style-type: none"> • <i>Informatics Telehealth Project (EMR)</i>
ND	Northland Healthcare Alliance	NY	Montefiore Medical Center & The Children’s Hospital at Montefiore
	<ul style="list-style-type: none"> • <i>St. Alexius/Northland Telecare Network</i> 		<ul style="list-style-type: none"> • <i>Electronic Medical Records Expansion</i>
NE	Good Samaritan Hospital Foundation	NY	New York Presbyterian Hospital
	<ul style="list-style-type: none"> • <i>Mid-Nebraska Telemedicine Network (MNTN)</i> 		<ul style="list-style-type: none"> • <i>Electronic Linkage</i>
NE	University of Nebraska Medical Center	NY	Research Foundation, State University of New York (SUNY) at Buffalo
	<ul style="list-style-type: none"> • <i>Distance Education of Undergraduate Nursing Students</i> • <i>Rural Telemedicine Program</i> 		<ul style="list-style-type: none"> • <i>Telehealth New York</i>
NJ	Bergen Community College	OH	Case Western Reserve University, University of Cincinnati, The Ohio State University
	<ul style="list-style-type: none"> • <i>Ultrasound Education and Training: Vascular Technology Degree</i> 		<ul style="list-style-type: none"> • <i>NetWellness</i>
NM	Universities of New Mexico And Hawaii	OH	Northeast Ohio Health Outreach Network
	<ul style="list-style-type: none"> • <i>Project TOUCH (Telehealth Outreach for Unified Community Health)</i> 		<ul style="list-style-type: none"> • <i>NEOHON Telehealth Project</i> • <i>Patient Safety and Medication Error Reduction</i>
NM	University of New Mexico Health Sciences Center	OH	Northeastern Ohio Universities College of Medicine (NEOUCOM)
	<ul style="list-style-type: none"> • <i>Rural and Early Access for Children’s Healthcare (REACH)</i> 		<ul style="list-style-type: none"> • <i>Medical Education Network Teaching Ohio Region III (MENTOR)</i>
		OH	Ohio Board of Regents
			<ul style="list-style-type: none"> • <i>Medical Collaboration Network</i>

Grantee Organizations

(Where a grantee organization has multiple projects, they are listed)

State	Grantee	State	Grantee
OH	Ohio State University Research Foundation <ul style="list-style-type: none"> • <i>Computational Approaches to Research on Cancer in Children and Others</i> 	PA	Pennsylvania Homecare Association <ul style="list-style-type: none"> • <i>Researching Telehomecare Effects on Nursing Retention and Productivity</i>
OH	Southern Consortium for Children <ul style="list-style-type: none"> • <i>Southern Ohio Telepsychiatric Network</i> 	PA	Penn State University <ul style="list-style-type: none"> • <i>Digital Informatics and Communications System</i>
OK	INTEGRIS Health, Inc. <ul style="list-style-type: none"> • <i>INTEGRIS Rural Telemedicine Project</i> 	PA	Susquehanna Health System <ul style="list-style-type: none"> • <i>Regional Electronic Medical Record</i>
OK	Oklahoma Office of Rural Health <ul style="list-style-type: none"> • <i>Rural Health Telemedicine Program</i> 	PA	Thomas Jefferson University <ul style="list-style-type: none"> • <i>Integrative Medicine Informatics Feasibility Project</i>
OR	Asante Health System <ul style="list-style-type: none"> • <i>Asante Clinical Systems Initiative</i> 	PA	University of Pittsburgh Medical Center <ul style="list-style-type: none"> • <i>Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System</i>
OR	Oregon Community Health Information Network. <ul style="list-style-type: none"> • <i>Oregon Community Health Information Network</i> 	PA	University of Pittsburgh School of Nursing <ul style="list-style-type: none"> • <i>Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)</i>
OR	Tillamook Lightwave Intergovernmental Agency <ul style="list-style-type: none"> • <i>Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities</i> 	PA	Venango Economic Development Corporation <ul style="list-style-type: none"> • <i>The Venango Center for Healthcare Careers (VCHC)</i>
PA	Clarion University <ul style="list-style-type: none"> • <i>Primary Care Education for the Citizens of Rural Pennsylvania</i> 	RI	Family Resources Community Action <ul style="list-style-type: none"> • <i>HIV/AIDS Comprehensive Psychosocial Support Project</i>
PA	Community Nurses Home Health and Hospice, Inc. <ul style="list-style-type: none"> • <i>Home Telehealth</i> 	RI	Kent County Visiting Nurse Association <ul style="list-style-type: none"> • <i>Advancing Point-of-Care Technology at VNA of Care New England</i>
PA	Geisinger Clinic <ul style="list-style-type: none"> • <i>Developing a Stoke Care Educational Program for Rural Pennsylvania</i> 	SC	Advanced Technology Institute (ATI) <ul style="list-style-type: none"> • <i>Healthcare and Emergency Awareness Response for Telehealth (HEART)</i>
PA	Magee-Womens Hospital of University of Pittsburgh Medical Center (UPMC) <ul style="list-style-type: none"> • <i>Magee-Womens Hospital Telehealth Initiative</i> 	SC	Beaufort-Jaspert-Hampton Comprehensive Health Services <ul style="list-style-type: none"> • <i>South Carolina Prostate Cancer/Telehealth Project</i>
PA	Mercy Health Partners <ul style="list-style-type: none"> • <i>Using Information Technology to Enhance Patient Safety</i> 	SC	Greenville Hospital System <ul style="list-style-type: none"> • <i>ICU Telemedicine Project</i>
PA	Pennsylvania College of Optometry <ul style="list-style-type: none"> • <i>Urban Ophthalmic Telehealth</i> 		

Grantee Organizations

(Where a grantee organization has multiple projects, they are listed)

State	Grantee	State	Grantee
SD	Avera Health	VA	University of Virginia
	<ul style="list-style-type: none"> • <i>Avera Rural and Frontier Disease Management Telehealth Network</i> 		<ul style="list-style-type: none"> • <i>Southwest Virginia Alliance for Telemedicine</i>
SD	South Dakota State University Foundation	VT	The Community Health Center of Burlington
	<ul style="list-style-type: none"> • <i>Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices</i> 		<ul style="list-style-type: none"> • <i>Community Health Center Technology Upgrade</i>
SD	The University of South Dakota (USD) - Vermillion	VT	The University of Vermont (UVM)
	<ul style="list-style-type: none"> • <i>Growing Our Own: A Nursing Education/Provider Partnership</i> 		<ul style="list-style-type: none"> • <i>Pediatric Teletrauma Project</i> • <i>The Vermont Tele-Trauma Project</i>
TN	University of Tennessee (Knoxville)	WA	Children's Hospital and Regional Medical Center – Seattle
	<ul style="list-style-type: none"> • <i>Mid-Appalachia Telehealth Project</i> • <i>Telehealth for the Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities</i> 		<ul style="list-style-type: none"> • <i>Children's Health Access Regional Telemedicine (CHART) Program</i>
TN	University of Tennessee, College of Medicine (Memphis)	WA	Inland Northwest Health Services
	<ul style="list-style-type: none"> • <i>Mid-South Telehealth Consortium</i> 		<ul style="list-style-type: none"> • <i>Northwest Telehealth</i>
TX	Christus Visiting Nurses Association of Houston	WI	La Crosse Medical Health Science Consortium
	<ul style="list-style-type: none"> • <i>Home Monitoring: Demonstration Pilot of Cost Control</i> 		<ul style="list-style-type: none"> • <i>Virtual Population Health Centers in the Rural Midwest</i>
TX	Cook Children's Medical Center	WI	Marshfield Clinic Telehealth Network
	<ul style="list-style-type: none"> • <i>Rural Specialty Health Telemedicine Initiative</i> 		<ul style="list-style-type: none"> • <i>Marshfield Clinic Telehealth Network</i>
TX	University of Texas Health Science Center at San Antonio (UTHSCSA)	WI	Rural Wisconsin Health Cooperative
	<ul style="list-style-type: none"> • <i>Diabetes Risk Reduction via Community Based Telemedicine (DiRReCT)</i> 		<ul style="list-style-type: none"> • <i>RWHC/WPHCA Telehealth Initiative</i> • <i>(WPHCA – Wisconsin Primary Health Care Association)</i>
TX	University of Texas Medical Branch - Galveston	WI	St. Elizabeth Hospital Community Foundation
	<ul style="list-style-type: none"> • <i>Texas Telehealth Resource Center</i> 		<ul style="list-style-type: none"> • <i>Affinity/UW Telemedicine Project</i>
UT	Association for Utah Community Health	WV	Appalachian Pain Foundation
	<ul style="list-style-type: none"> • <i>Association for Utah Community Health Telehealth Program</i> 		<ul style="list-style-type: none"> • <i>Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs</i>
UT	University of Utah	WV	West Virginia Research Corporation
	<ul style="list-style-type: none"> • <i>Utah Telehealth Network Comprehensive Telehealth Services</i> 		<ul style="list-style-type: none"> • <i>West Virginia Community Mental Telehealth Project</i>
		WY	United Medical Center
			<ul style="list-style-type: none"> • <i>Distance Learning in Wyoming</i>
		WY	Wyoming Department of Health
			<ul style="list-style-type: none"> • <i>Wyoming Network for Telehealth (WyNETTE)</i>

Types Of Grants

This section contains a background of the types of grants administered through OAT. Grantee organizations and their projects are delineated by the Telehealth Network Grant Program (TNGP), the Rural Telemedicine Grant Program (RTGP), Congressionally Mandated Projects, and Special Projects. Funding years for current grantees are also provided.

Types of Grants

Background

The Office for the Advancement of Telehealth (OAT) promotes the use of telehealth technologies for health care delivery, education, and health information services. Telehealth is defined as the use of telecommunications and information technologies to share information, and to provide clinical care, education, public health, and administrative services at a distance. The office is part of the Health Resources and Services Administration (HRSA) at the U.S. Department of Health and Human Services. HRSA provides national leadership, program resources and services needed to improve access to culturally competent, quality health care.

Grants Overview

In 2004, OAT administered 138 telehealth/telemedicine projects. Of those, 54 were awarded funds totaling more than \$27.7 million, and 56 were projects in an extension period. Projects administered by OAT receive funds in one of four ways:

1. The Telehealth Network Grant Program (TNGP): OAT now awards competitive grants through the TNGP. This program replaces the Rural Telemedicine Grant Program (RTGP). The TNGP funds projects that demonstrate the use of telehealth networks to improve healthcare services for medically underserved populations in urban, rural, and frontier communities. More specifically, the networks can be used to: (a) expand access to, coordinate, and improve the quality of health care services; (b) improve and expand the training of health care providers; and/or (c) expand and improve the quality of health information available to health care providers, patients, and their families. The primary objective of the Telehealth Network Grant Program (TNGP) is to help communities build the human, technical, and financial capacity to develop sustainable telehealth programs and networks. In FY 2003, 15 projects were funded through the TNGP as part of a 3-year award.
2. Rural Telemedicine Grant Program (RTGP): This program was replaced by the Telehealth Network Grant Program (TNGP). OAT awarded competitive grants through 2002. The goal of the RTGP was to improve quality health services for rural residents and reduce the isolation of rural practitioners through the use of telemedicine technologies. In FY 03, OAT administered 19 projects that were funded in FY02 and two additional projects in extension periods.
3. Congressionally Mandated Projects (CMP): OAT also administers funds specially earmarked by Congress. The goals of these projects vary widely, but all include the use of telehealth technologies to improve access to health care. In FY 2003, OAT funded 39 CMP projects and administered 35 additional projects in extension periods.
4. Special Projects: These projects were funded through OAT grantees to: 1) promote activities in program evaluation; 2) document the diffusion of telehealth technologies among the Health Resources and Services Administration's (HRSAs) grantees (<http://www.telemed.med.ecu.edu/hrsa/>); 3) evaluate specific policy issues; and 4) develop concepts for telehealth resource centers. The projects focus on collaboration and using telehealth as a method of overcoming health care or educational access issues.

Types of Grants

Telehealth Network Grant Program (TNGP)

FY 2003-05 Grantees

State	Name	Previously Funded
AR	University of Arkansas for Medical Sciences	RTGP 97-99, RTGP 00-02
AZ	Arizona Board of Regents, University of Arizona	RTGP 97-99, TNGP 03-05
CA	University of California—Davis	RTGP 97-05
GA	Ware County Health Department	RTGP 00-02, TNGP 03-05
KS	University of Kansas Medical Center	RTGP 00-02, TNGP 03-05
KY	University of Kentucky Research Foundation	RTGP 94-96, RTGP 97-99
MA	Baystate Medical Center, Inc.	TNGP 03-05
ME	Regional Medical Center of Lubec, Inc.	RTGP 97-99, RTGP 00-02, TNGP 03-05
MI	Marquette General Health System	RTGP 00-04
MN	University of Minnesota	RTGP 94-96, RTGP 00-02, TNGP 03-05
MT	Benefis Healthcare Foundation	RTGP 03-04
MT	Deaconess Billings Clinic Foundation	RTGP 00-02
MT	St. Vincent Healthcare Foundation	RTGP 00-02
NC	Duke University Medical Center	TNGP 03-05
NC	East Carolina University	RTGP 94-04
ND	Northland Healthcare Alliance	RTGP 97-99, RTGP 00-02, TNGP 03-05
NM	University of New Mexico Health Sciences Center	RTGP 97-99, TNGP 03-05
OH	Southern Consortium for Children	TNGP 03-05
PA	Magee-Womens Hospital of University of Pittsburgh Medical Center (UPMC)	RTGP 01-03
SD	Avera Health	RTGP 94-96, RTGP 97-99, TNGP 03-05
TN	University of Tennessee - Knoxville	RTGP 97-99, RTGP 00-02, TNGP 03-05
TN	University of Tennessee, College of Medicine	RTGP 01-05
TX	University of Texas Health Science Center at San Antonio	TNGP 03-05
WI	Marshfield Clinic Telehealth Network	RTGP 97-99, RTGP 00-02

Rural Telemedicine Grant Program (RTGP)

FY 2000-02 Grantees

State	Name	Previously Funded
AK	Eastern Aleutians Tribe	RTGP 97-99
AR	University of Arkansas Medical System	RTGP 97-99
CA	University of California - Davis	RTGP 97-99
GA	Ware County Health Department	-
KS	University of Kansas Medical Center	-
ME	Regional Medical Center of Lubec, Inc.	RTGP 97-99
MI	Marquette General Health System	Rural Health Outreach 94-96
MN	University of Minnesota	RTGP 94-96
MO	The Curators of the University of Missouri	RTGP 97-99
MT	Deaconess Billing Clinic Foundation	RTGP 94-96
MT	St. Vincent Foundation (Telemedicine)	-
ND	Northland Healthcare Alliance	RTGP 97-99
NE	Good Samaritan Hospital Foundation	RTGP 94-96, 97-99

Types of Grants

State	Name	Previously Funded
OK	INTEGRIS Health	RTGP 97-99
TN	University of Tennessee, College of Medicine (Memphis)	
TN	University of Tennessee—Knoxville	RTGP 97-99
WI	Marshfield Clinic Telehealth Network	RTGP 97-99

Rural Telemedicine Grant Program (RTGP)

FY 1997-99 Grantees

Seventeen projects were funded in this cycle. Ten projects were re-funded in the FY 00-02 cycle. Seven projects were re-funded in the FY03 cycle. The following two projects have carryover dollars and have closed out in FY03 or are scheduled to close out in FY04.

State	Name	Previously Funded
NC	East Carolina University	RTGP 94-96

Rural Telemedicine Grant Program (RTGP)

FY 1994-96 Grantees

Eleven projects were funded in this cycle. Five projects have completed their activities and are not included in this directory. Six other projects were re-funded in later cycles.

Congressionally Mandated Grantee Organizations

The following projects either received awards in FY 04 or have carryover dollars from a previous award.

State	Name	Year Funded
AL	University of South Alabama (USA)	
	• <i>Emerging Health Technologies (OEHT) BioTrac</i>	FY 00, 01, 02, 03, 04, 05
	• <i>Emerging Health Technologies (OEHT) Teletrauma</i>	FY 02, 03, 04, 05
	• <i>Emerging Health Technologies (OEHT) Traditional Telemedicine</i>	FY 98, 99, 00, 03, 04
AK	Alaska Native Tribal Health Consortium	
	• <i>Alaska Federal Health Care Access Network (AFHCAN)</i>	FY 00, 01, 02, 03
	• <i>The Summative Telemedicine Evaluation Project</i>	FY 02, 03
AZ	Banner Health System	
	• <i>Banner Telehealth Program</i>	FY 03
AZ	Maricopa County	
	• <i>Correctional Health Services Telemedicine Initiative</i>	FY 02

Types of Grants

State	Name	Year Funded
CA	Childrens Hospital of Los Angeles	
	• <i>VPICU Critical Care Telemedicine Program</i>	FY 01, 02, 03
CA	Santa Rosa Memorial Hospital	
	• <i>Northern California Telemedicine Network</i>	FY 00, 01
CO	University of Colorado Health Sciences Center	
	• <i>Native Telehealth Outreach and Technical Assistance Program</i>	FY 03
DC	Foundation for eHealth Initiative	
	• <i>Connecting Communities for Better Health</i>	FY 03, 04
FL	BayCare Health Systems	
	• <i>Electronic Medication and Clinical Services Ordering System</i>	FY 02, 03, 04
FL	Florida Cancer Research Cooperative, University of South Florida	
	• <i>Clinical Trial Patient/Physician Information and Education Program</i>	FY 04
FL	University of Florida	
	• <i>University of Florida College of Dentistry (UFCD)</i>	FY 04
GA	Morehouse College School of Medicine	
	• <i>Diabetes Screening Telehealth Project</i>	FY 02
HI	Hawai'i Primary Care Association (HPCA)	
	• <i>Hawai'i Community Telehealth Network Program</i>	FY 02, 03, 04, 05
HI	Molokai General Hospital	
	• <i>Molokai Telehealth Network</i>	FY 01, 02, 04
IA	Iowa Chronic Care Consortium	
	• <i>Congestive Heart Failure and Diabetes Telemanagement</i>	FY 03, 04, 05
IA	Mercy Foundation	
	• <i>Midwest Rural Telemedicine Consortium</i>	FY 03, 04, 05, 06
ID	Idaho State University, Institute of Rural Health	
	• <i>Telehealth Idaho</i>	FY 01, 02, 03, 04
ID	North Idaho Rural Health Consortium (NIRHC)	
	• <i>Expanding Telehealth to North Idaho Districts (EXTEND)</i>	FY 02, 03, 04
IL	Memorial Health System	
	• <i>Automated Clinical Information System—Wireless Network Infrastructure</i>	FY 02, 03
IL	Northern Illinois University	
	• <i>Neutron Radiation for Cancer Treatment</i>	FY 04
IL	OSF Saint James – John W. Albrecht Medical Center	
	• <i>OSF Saint James Telehealth Network</i>	FY 04, 05
IL	Memorial Health System	
	• <i>MHS Rural Teleradiology</i>	FY 03
IL	Southern Illinois University School of Medicine	
	• <i>Downstate Illinois Regional Telehealth Project</i>	FY 01
IN	James Whitcomb Riley Hospital for Children	
	• <i>Telemedicine Applications for Riley Hospital for Children</i>	FY 03
KY	University of Kentucky Research Foundation	
	• <i>Improving Health Outcomes for Children in Rural KY Schools</i>	FY 04

Types of Grants

State	Name	Year Funded
LA	Southwest Louisiana Health Care Systems	
	• <i>Community Hospital Telehealth Consortium (CHTC)</i>	FY 00, 01, 03, 04, 05
LA	Woman's Hospital	
	• <i>Expansion of Physician Internet Portal, Womans POL</i>	FY 04, 05
MA	Massachusetts College of Pharmacy and Health Sciences	
	• <i>Health Education Resource Center</i>	FY 01, 03
MA	UMass Memorial Medical Center, Inc.	
	• <i>Picture Archiving & Communication System (PACS)</i>	FY 04
MI	Central Michigan University	
	• <i>Rural Tele-health and Community Education Network</i>	FY 01, 02
MI	Hillsdale Community Health Center	
	• <i>PACS System</i>	FY 04
MI	University of Michigan	
	• <i>Michigan Collaborative Project on Internet Based Clinical Telemedicine</i>	FY 01
MI	Western Michigan University	
	• <i>The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan</i>	FY 01, 04
MN	Fairview Health Services	
	• <i>Ambulatory Electronic Medical Record System Twin Cities Metropolitan Care Systems</i>	FY 02, 04
MN	Fairview Ridges Hospital	
	• <i>Healthy Mothers and Babies Technology Demonstration</i>	FY 01
	• <i>Informatics/Health Information Services Grant: Auto. Med. Dispensing</i>	FY 02, 03, 04
MO	Logan College of Chiropractic	
	• <i>Distance Learning System</i>	FY 02
MT	Deaconess Billings Clinic Foundation	
	• <i>Medication Errors and Disease Management</i>	FY 02, 03, 04
MT	Rocky Mountain Technology Foundation	
	• <i>Distance Learning/Telehealth</i>	FY 01, 02
	• <i>Pharmacy Support to Rural Clinics</i>	FY 03
MT	St. Vincent Healthcare Foundation	
	• <i>Mansfield Health Education Center (MHEC)</i>	FY 01, 02, 03
MT	The University of Montana - Missoula	
	• <i>ImProving Health Among Rural Montanans (IPHARM)</i>	FY 02
NC	Education and Research Consortium of Western Carolinas	
	• <i>Western North Carolina Regional Data Link Project</i>	FY 02
ND	Minot State University	
	• <i>Rural Disabilities Wellness Project</i>	FY 03, 04
ND	North Dakota State University	
	• <i>North Dakota Telepharmacy Project</i>	FY 02, 03, 04
NE	Good Samaritan Hospital Foundation	
	• <i>Mid-Nebraska Telemedicine Network (MNTN)</i>	FY 04
NE	University of Nebraska Medical Center	
	• <i>Distance Education of Undergraduate Nursing Students</i>	FY 03
	• <i>Rural Telemedicine Program</i>	FY 01
NJ	Bergen Community College	
	• <i>Ultrasound Education and Training: Vascular Technology Degree</i>	FY 02, 03

Types of Grants

State	Name	Year Funded
NM	Universities of New Mexico and Hawaii	
	• <i>Project TOUCH (Telehealth Outreach for Unified Community Health)</i>	FY 00, 01, 02, 03
NV	Nevada Rural Hospital Partners Foundation	
	• <i>Digital Imaging System for Rural Nevada (DISRN)</i>	FY 04
NV	University of Nevada Las Vegas	
	• <i>Nevada Telehealth Technology Initiative</i>	FY 01, 02
NV	University of Nevada, Reno	
	• <i>Biomedical Electronic Imaging</i>	FY 00, 01, 04, 05, 06
NY	Daemen College	
	• <i>Daemen College TeleHealth Education Network</i>	FY 00, 01, 02
NY	HealthReach NY, Inc.	
	• <i>Develop a Computerized Referral and Recording System</i>	FY 01, 03
NY	Institute for Urban Family Health	
	• <i>Informatics Telehealth Project (EMR)</i>	FY 02, 03
NY	Montifiore Medical Center & The Children's Hospital at Montifiore	
	• <i>Electronic Medical Records Expansion</i>	FY 03, 04
NY	New York Presbyterian Hospital	
	• <i>Electronic Linkage</i>	FY 03
	• <i>Patient Health Monitor (Vigilens)</i>	FY 01, 02
NY	Research Foundation, State University of New York (SUNY) at Buffalo	
	• <i>Telehealth New York</i>	FY 03
OH	Case Western Reserve University, University of Cincinnati, The Ohio State University	
	• <i>NetWellness</i>	FY 02, 03, 04
OH	Northeast Ohio Health Outreach Network (NEOHON)	
	• <i>NEOHON Telehealth Project</i>	FY 01, 02
	• <i>Patient Safety and Medication Error Reduction</i>	FY 02
OH	Northeastern Ohio Universities College of Medicine (NEOUCOM)	
	• <i>Medical Education Network Teaching Ohio Region III (MENTOR)</i>	FY 02
OH	Ohio Board of Regents	
	• <i>Medical Collaboration Network</i>	FY 04
OH	Ohio State University Research Foundation	
	• <i>Computational Approaches to Research on Cancer in Children and Others</i>	FY 04
OH	Greene Memorial Hospital	
	• <i>Automated Inpatient Medication Management System</i>	FY 02, 03
OK	INTEGRIS Health, Inc.	
	• <i>INTEGRIS Rural Telemedicine Project</i>	FY 04
OK	Oklahoma Office of Rural Health	
	• <i>Rural Health Telemedicine Program</i>	FY 02, 03, 04, 05
OR	Assante Health System	
	• <i>Assante Clinical Systems Initiative</i>	FY 04
OR	Oregon Community Health Information Network	
	• <i>Oregon Community Health Information Network</i>	FY 02, 03

Types of Grants

State	Name	Year Funded
OR	Tillamook Lightwave Intergovernmental Agency	
	• <i>Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities</i>	FY 04
PA	Clarion University of Pennsylvania	
	• <i>Primary Care Education for the Citizens of Rural Pennsylvania</i>	FY 02
PA	Community Nurses Home Health and Hospice, Inc.	
	• <i>Home Telehealth</i>	FY 04
PA	Geisinger Clinic	
	• <i>Developing a Stoke Care Educational Program for Rural Pennsylvania</i>	FY 03
PA	Mercy Health Partners	
	• <i>Using Information Technology to Enhance Patient Safety</i>	FY 04
PA	Pennsylvania College of Optometry	
	• <i>Urban Ophthalmic Telehealth</i>	FY 02, 04
PA	Pennsylvania Homecare Association	
	• <i>Researching Telehomecare Affects on Nursing Retention and Productivity</i>	FY 02, 03, 04
PA	Penn State University	
	• <i>Digital Informatics and Communications System</i>	FY 03
PA	Susquehanna Health Systems	
	• <i>Regional Electronic Medical Record</i>	FY 01, 02, 03, 04
PA	Thomas Jefferson University	
	• <i>Integrative Medicine Informatics Feasibility Project</i>	FY 04
PA	University of Pittsburgh Medical Center	
	• <i>Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System</i>	FY 01, 02
PA	University of Pittsburgh School of Nursing	
	• <i>Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)</i>	FY 02
PA	Venango Economic Development Corporation	
	• <i>The Venango Center for Healthcare Careers (VCHC)</i>	FY 04
RI	Family Resources Community Action	
	• <i>HIV/AIDS Comprehensive Psychosocial Support Project</i>	FY 04
RI	Kent County Visiting Nurse Association	
	• <i>Advanced Point of Care Technology at VNA of Care New England</i>	FY 04
SC	Advanced Technology Institute	
	• <i>Healthcare and Emergency Awareness Response for Telehealth (HEART)</i>	FY 04
SC	Beaufort-Jaspert-Hampton Comprehensive Health Services	
	• <i>South Carolina Prostate Cancer/Telehealth Project</i>	FY 00, 02, 03
SC	Greenville Hospital System	
	• <i>ICU Telemedicine Project</i>	FY 04
SD	South Dakota State University Foundation	
	• <i>Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices</i>	FY 02

Types of Grants

State	Name	Year Funded
SD	The University of South Dakota (USD) - Vermillion	
	• <i>Growing Our Own: A Nursing Education/Provider Partnership</i>	FY 02
TN	University of Tennessee (Knoxville)	
	• <i>Telehealth for Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities</i>	FY 04
TX	Christus Visiting Nurses Association of Houston	
	• <i>Home Monitoring: Demonstration Pilot of Cost Control</i>	FY 03
TX	Cook Children's Medical Center	
	• <i>Rural Specialty Health Telemedicine Initiative</i>	FY 03, 04
TX	University of Texas Medical Branch - Galveston	
	• <i>Texas Telehealth Resource Center</i>	FY 00, 01, 02, 03, 04
UT	Association for Utah Community Health	
	• <i>Association for Utah Community Health Telehealth Program</i>	FY 04
UT	University of Utah	
	• <i>Utah Telehealth Network Comprehensive Telehealth Services</i>	FY 04
VA	University of Virginia	
	• <i>Southwest Virginia Alliance for Telemedicine</i>	FY 02, 04
VT	The Community Health Center of Burlington	
	• <i>Community Health Center Technology Upgrade</i>	FY 03
VT	The University of Vermont (UVM)	
	• <i>Pediatric Teletrauma Project</i>	FY 02, 03, 04, 05, 06
	• <i>The Vermont Tele-Trauma Project</i>	FY 02, 04
WA	Children's Hospital and Regional Medical Center - Seattle	
	• <i>Children's Health Access Regional Telemedicine (CHART) Program</i>	FY 00, 01, 02, 03
WA	Inland Northwest Health Services	
	• <i>Northwest Telehealth</i>	FY 04
WI	La Crosse Medical Health Science Consortium	
	• <i>Virtual Population Health Centers in the Rural Midwest</i>	FY 01, 03, 04
WI	Rural Wisconsin Health Cooperative	
	• <i>RWHC/WPHCA Telehealth Initiative (WPHCA – Wisconsin Primary Health Care Association)</i>	FY 04
WI	St. Elizabeth Hospital Community Foundation	
	• <i>Affinity/UW Telemedicine Project</i>	FY 03
WV	Appalachian Pain Foundation	
	• <i>Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs</i>	FY 04
WV	West Virginia University Research Corporation	
	• <i>West Virginia Community Mental Telehealth Project</i>	FY 02
WY	United Medical Center	
	• <i>Distance Learning in Wyoming</i>	FY 04
WY	Wyoming Department of Health,	
	• <i>Wyoming Network for Telehealth (WyNETTE)</i>	FY 04

Types of Grants

Special Projects

Resource Center Development

University of California – Davis

- *The Northern California Telemedicine Network (NCTN)*

The Curators of the University of Missouri

- *Missouri Telehealth Network*

HRSA Telehealth Inventory

East Carolina University

- *HRSA Telehealth Inventory Project*

Evaluation

Good Samaritan Hospital Foundation/Abt Associates

- *Mid-Nebraska Telemedicine Network*

Licensure

Center for Telemedicine Law

Federation of State Medical Boards of the United States, Inc.

Components of the Project

All OAT grantees were asked whether their project(s) were involved in clinical telemedicine, distance learning, or electronic health records (or a combination of the three). Grantees' specific responses are indicated in this section.

N/A = Not Applicable/Not Available

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services	Distance Learning			Information Systems/Electronic Health Records (**See Category Definitions Below)						Other (please specify)	
			Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management		Scheduling Management
AK	Alaska Native Tribal Health Consortium <i>Alaska Federal Health Care Access Network (AFHCAN)</i>	•				•	•						
	<i>The Summative Telemedicine Evaluation Project</i>												N/A Evaluation of the Alaska Federal Health Care Access Network
AL	University of South Alabama <i>Emerging Health Technologies (OEHT) BioTrac</i>	•				•	•						
	<i>Emerging Health Technologies (OEHT) Teletrauma</i>	•											
	<i>Emerging Health Technologies (OEHT) Traditional Telemedicine</i>	•	•	•	•								
AR	University of Arkansas for Medical Sciences <i>South Arkansas Integrated Telehealth Oncology Program</i>	•	•	•			•	•	•	•	•	•	
	Arizona Board of Regents, University of Arizona <i>Arizona Diabetes Virtual Center for Excellence (ADVCE)</i>	•	•	•									
AZ	Banner Health System <i>Payson Regional Medical Center</i>	•	•	•									
	<i>Arizona Telemedicine Program</i>	•	•	•									
	Maricopa County <i>Correctional Health Services Telemedicine Initiative</i>	•	•	•									Evaluating Systems
	Children's Hospital – Los Angeles <i>VPICU Critical Care Telemedicine Program</i>	•	•			•					•		Teledentistry - still in pilot and implementation phase
CA	Santa Rosa Memorial Hospital <i>Northern California Telemedicine Network</i>	•	•	•									Patient Distant Education Programs
	University of California - Davis <i>UC Davis Northern California Telemedicine Project</i>	•	•	•									Health Education Distance Learning Programs for Patients

Components of Project (cont.)

ST	Grantee	Distance Learning				Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)	
		Clinical Telemedicine Services	Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management		Scheduling Management
CO	University of Colorado Health Sciences Center												
	<i>Native Telehealth Outreach & Technical Assistance Program</i>			•									
DC	Foundation For eHealth Initiative												
	<i>Connecting Communities for Better Health Taconic Health Information Network & Community</i>					•	•						
	<i>Wisconsin Health Information Exchange-CCBH</i>					•	(•)		•	•			*=future
	<i>Maryland/DC Collaborative for Healthcare Information Technology</i>					•	•		•	•		•	RHIO Planning and Establishment
	<i>Indiana Health Information Exchange</i>						•						
	<i>Colorado Health Information Exchange (COHIE)</i>								•	•			
	<i>SBCCDE, Inc.</i>					•	•						Other clinical data; i.e. xray, clinical notes, etc.
FL	Massachusetts Health Data Consortium						•		•				Medication history component of e-prescribing
	BayCare Health Systems												
	<i>Electronic Medication and Clinical Services Ordering System</i>					•	•	•	•				
	Florida Cancer Research Cooperative, University of South Florida												
FL	<i>Florida Cancer Clinical Trial Patient/Physician Information and Education Program</i>												Information and Matching Service
	University of Florida College of Dentistry (UFCD)												
GA	<i>Florida Network for Community Oral Health</i>		•	•					•				
	Morehouse School of Medicine												
	<i>Diabetes Screening Telehealth Project</i>	•	•			•							
GA	Ware County Health Department												
	<i>Rural Health Telemedicine Grant Program</i>	•				•						•	
HI	Hawaii Primary Care Association												
	<i>Hawai'i Community Telehealth Network Program</i>	•	•	•					•		•	•	
	Molokai General Hospital												
HI	<i>Molokai Telehealth Network</i>	•	•	•									

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services	Distance Learning			Information Systems/Electronic Health Records (**See Category Definitions Below)						Other (please specify)		
			Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record Reporting and Population Health Management	Scheduling Management			
IA	Iowa Chronic Care Consortium <i>Congestive Heart Failure and Diabetes Telemanagement</i>	•					•							
	Midwest Rural Telemedicine Consortium	•	•	•	•								Address limited English proficiency in patient populations; Improve visibility and accessibility of EMS training and Health Care career opportunities for HS students	
ID	Idaho State University <i>Telehealth Idaho</i>	•	•	•	•	•	•		•	•	•	•		
	North Idaho Rural Health Consortium (NIRHC) <i>Expanding Telehealth to North Idaho Districts (EXTEND)</i>	•	•	•	•	•	•	•	•		•	•		
	Fermi National Laboratory/Northern Illinois University <i>Neutron Radiation for Cancer Treatment</i>	•										•		
IL	Memorial Health System <i>Automated Clinical Information System – Wireless Network Infrastructure</i>								•					
	MHS Rural TeleRadiology	•				•	•	•	•					
	OSF Saint James-John W. Albrecht Medical Center <i>OSF Saint James Telehealth Network</i>	•	•	•										
	Southern Illinois University School of Medicine <i>Downstate Illinois Regional Telehealth Project</i>	•	•	•				(•)	(•)	(•)	(•)	(•)	(•)	Audio Backup, Nasoscope still & moving image store-forward, Satellite downlink, chromakey, doc camera () - Dermatology with the Veteran's Administration

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services				Distance Learning		Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)
		Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting		Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management	Scheduling Management		
IN	James Whitcomb Riley Hospital for Children													
	<i>Telemedicine Applications for Riley Hospital for Children</i>	•	•	•										
KS	University of Kansas Medical Center													
	<i>Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network</i>	•	•	•										
KY	University of Kentucky Research Foundation													
	<i>Improving Health Outcomes for Children in Rural Kentucky Schools</i>	•	•	•		•	•	•	•	•	•	•	•	Health assessments and education
LA	Lake Charles Memorial Hospital													
	<i>Community Hospital Telehealth Consortium (VHTC)</i>	•	•	•										
	Woman's Hospital <i>Expansion of Physician Internet Portal, Womans POL</i>					•	•	•		•				
MA	Baystate Medical Center, Inc. <i>Hampden Hampshire Franklin County Telehealth Services</i>	•	•	•		•	•	•				•	•	
	Massachusetts College of Pharmacy and Health Sciences													
	<i>Health Educational Resource Center</i>	•	•	•	•									
	UMass Memorial Medical Center, Inc. <i>Picture Archiving & Communication System (PACS)</i>													Teleradiology
ME	Regional Medical Center - Lubec													
	<i>Maine Nursing Home Telehealth Network</i>	•	•	•										
	<i>Maine Telehealth Network</i>	•	•	•	•									
MI	Central Michigan University													
	<i>Rural Tele-health and Community Education Network</i>	•	•	•	•									
	Hillsdale Community Health Center <i>PACS System</i>					•								

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services	Distance Learning			Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)	
			Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record Reporting and Population Health Management	Scheduling Management		
MI	Marquette General Health System												Administrative meetings, community health education, community rental, support group meetings, family visits/ bonding tech. support, scheduling, billing for the network
	<i>Close to Home, Close to Health</i>	•	•	•									
	University of Michigan												Distance Learning plus Advanced Simulation assisted pediatric advanced life support educational events
	<i>Michigan Collaborative Project on Internet Based Clinical Telemedicine</i>		•	•									
	Western Michigan University												
	<i>The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan</i>	•	•	•	•								
MN	Fairview Health Services												
	<i>Ambulatory Electronic Medical Record System – Twin Cities Metropolitan Care Systems</i>					•	•	•	•	•	•		
	Fairview Ridges Hospital												
	<i>Healthy Mothers Healthy Babies Technology Demonstration Project</i>	•				•	•	•	•	•		•	
	<i>Informatics/Health Information Services Grant: Auto. Med. Dispensing</i>	•				•			•			•	
	University of Minnesota												
	<i>Fairview – University of Minnesota Telemedicine Network</i>	•		•					•		•		
MO	Logan College of Chiropractic												
	<i>Telehealth Distance Learning Initiative</i>		•	•	•								
	The Curators of the University of Missouri												
	<i>Missouri Telehealth Network</i>	•		•									

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services	Distance Learning			Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)	
			Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management		Scheduling Management
MT	Benefis Healthcare Foundation												
	<i>NMHA & REACH Telehealth Network Development Project</i>	•	•	•									
	Deaconess Billings Clinic Foundation												
	<i>Eastern Montana Telemedicine Network</i>	•	•	•									
	<i>Center on Aging</i>	•				•		•	•		•		
	Rocky Mountain Technology Foundation												
	<i>Distance Learning/Telehealth</i>	•		•	•						•	•	
	<i>Pharmacy Support to Rural Clinics</i>	•				•		•	•	•			
	St. Vincent Healthcare Foundation												
	<i>Mansfield Health Education Center (MHEC)</i>		•	•	•								
<i>Partners in Health Telemedicine Network (PHTN)</i>	•	•											
University of Montana - Missoula													
<i>ImProving Health Among Rural Montanans (IPHARM)</i>	•											(Mobile Disease Screening)	
NC	Duke University Medical Center												
	<i>Patient Inclusion in a Community-Based Telehealth Network</i>					•			•	•	•		
	East Carolina University												
	<i>REACH-TV (Rural EAstern Carolina Health Network)</i>	•	•	•	•	•	•	•	•	•	•	•	
Educational and Research Consortium of Western Carolinas													
<i>Western North Carolina Regional Data Link Project</i>					•	•							
ND	Minot State University												
	<i>Rural Disabilities Wellness Project</i>					•				•			1) Software and distance protocol development; 2) psychological and fitness services
	North Dakota State University												
<i>North Dakota Telepharmacy Project</i>	•	•			•		•				•		

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services			Distance Learning		Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)
		Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management	Scheduling Management		
ND	Northland Healthcare Alliance												
	St. Alexis/Northland TeleCare Network	•	•	•	•								• Care Management, (Providers submit charge tickets for consult to billing staff who submit electronically) Community Education— Support Groups
NE	Good Samaritan Hospital Foundation												
	Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE	•	•	•	•	•	•	•	•				
	University of Nebraska Medical Center												
	Distance Education of Undergraduate Nursing Students				•								
	Rural Telemedicine Program	•			•								
NJ	Bergen Community College												
	Ultrasound Education and Training: Vascular Technology Degree	•	•	•									
NM	Universities of New Mexico/Hawaii Health Science Center												
	Project TOUCH (Telehealth Outreach for Unified Community Health)												Research
	University of New Mexico Health Sciences Center												
	Rural Health Telemedicine Program	•	•	•									Administrative meetings; clinical consultations
NV	Nevada Rural Hospital Partners Foundation												
	Digital Imaging System for Rural Nevada (DISRN)	•					•						
	University of Nevada Las Vegas												
	Nevada Telehealth Technology Initiative	•	•		•				•				
	University of Nevada Reno - School of Medicine												
	Biomedical Electronic Imaging												Biomedical research

Components of Project (cont.)

ST	Grantee	Distance Learning				Information Systems/Electronic Health Records (***See Category Definitions Below)							Other (please specify)	
		Clinical Telemedicine Services	Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management	Scheduling Management		
NY	Daemen College													
	<i>Daemen College TeleHealth Education Network</i>		*	*	*									*-PT, PA, Nursing
	HealthReach NY, Inc.													
	<i>Develop a Computerized Referral and Recording System</i>	•												
	Institute for Urban Family Health													
	<i>Informatics Telehealth Project (EMR)</i>	•				•	•	•	•	•	•	•		
	Montefiore Medical Center & The Children's Hospital at Montefiore													
	<i>Electronic Medical Records Expansion</i>					•	•	•	•	•	•	•		
	New York Presbyterian Hospital													
	<i>Electronic Linkage</i>													Equipment grant
<i>Patient Health Monitor (Vigilens)</i>	•				•	•	•	•	•	•	•		Event Monitoring	
Research Foundation of State University of New York (SUNY)														
<i>Telehealth New York</i>	•	•	•		•				•	•	•			
OH	Case Western Reserve University, University of Cincinnati, The Ohio State University													
	<i>NetWellness: Consumer Health Information Website</i>													NA-Consumer Health Information
	Greene Memorial Hospital													
	<i>Automated Inpatient Medication Management System</i>	•												
	Northeast Ohio Health Outreach Network (NEOHON)													
	<i>NEOHON Telehealth Project</i>	•	•	•										
	<i>Patient Safety and Medication Error Reduction</i>	•												
	Northeastern Ohio Universities College of Medicine (NEOUCOM)													
<i>Medical Education Network Teaching Ohio Region III (MENTOR)</i>		•	•	•									Public Health Education	
Ohio Board of Regents														
<i>Medical Collaboration Network</i>	•	•	•	•									Research support, administrative video conf., cost analysis, technology evaluation	

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services	Distance Learning			Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)	
			Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record Reporting and Population Health Management	Scheduling Management		
OH	Ohio State University Research Foundation (for Ohio SupercomputerCenter)												
	<i>Computational Approaches to Research on Cancer in Children and Others</i>												
	Southern Consortium for Children												
	<i>Southern Ohio Telepsychiatric Network</i>	•	•	•									
OK	INTEGRIS Health, Inc.												
	<i>INTEGRIS Rural Telemedicine Project</i>	•				•	•		•				
	Oklahoma Office of Rural Health												
	<i>Rural Health Telemedicine Program</i>			•	•								
OR	Assante Health System												
	<i>Assante Clinical Systems Initiative</i>	•	•	•		•	•	•	•	•	•		
	OCHIN, Inc.												
	<i>Oregon Community Health Information Network</i>					•	•	•		•	•	•	
	Tillamook Lightwave IGA												
	<i>Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities</i>	•	•	•	•	•	•	•	•				
PA	Clarion University												
	<i>Primary Care Education for the Citizens of Rural Pennsylvania</i>			•	•								42 Credits, MSN-FNP
	Community Nurses Home Health and Hospice, Inc.												
	<i>Home Telehealth</i>	•											
	Geisinger Clinic												
	<i>Developing a Stoke Care Educational Program for Rural Pennsylvania</i>	•		•					•				Consumer Education, Partner Website
	Magee-Womens Hospital of the University of Pittsburgh Medical Center (UPMC)												
	<i>Magee-Womens Hospital Telehealth Initiative</i>	•	•	•									Consumer Education; Consumer website; Neonatal Stentor equipment for Radiology transfer between hospitals

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services	Distance Learning			Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)	
			Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management		Scheduling Management
PA	Mercy Health Partners <i>Using Information Technology to Enhance Patient Safety</i>					•		•	•				
	Pennsylvania College of Optometry <i>Urban Ophthalmic Telehealth</i>	•											
	Pennsylvania Homecare Association <i>Researching Telehomecare Affects on Nursing Retention and Productivity</i>	•				•							
	Penn State Cancer Institute, Hershey Medical Center <i>Digital Informatics and Communications System</i>	•		•									
	Susquehanna Health System <i>Regional Electronic Medical Record</i>					•	•	•	•				
	Thomas Jefferson University (USA) Jefferson-Myrna Brind Center of Integrative Medicine <i>Integrative Medicine Informatics Feasibility Project</i>												Beta Test of Website
	University of Pittsburgh Medical Center <i>Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System</i>						•	•	•	•		•	
	University of Pittsburgh School of Nursing <i>Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)</i>		•	•	•								Nurse Anesthesia Distance Education Educational Offerings
	Venango Economic Development Corporation <i>The Venango Center for Healthcare Careers (VCHC)</i>		•										
	Family Resources Community Action <i>HIV/AIDS Comprehensive Psychosocial Support Project</i>												N/A
RI	Kent County Visiting Nurse Association d/b/a VNA of Care New England <i>Advancing Point-of-Care Technology at VNA of Care New England</i>	•				•			•	•	•		

Components of Project (cont.)

ST	Grantee	Clinical Telemedicine Services			Distance Learning	Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)
		Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record Reporting and Population Health Management	Scheduling Management		
SC	Advanced Technology Institute (ATI) <i>Healthcare and Emergency Awareness Response for Telehealth (HEART)</i>					•				•		
	Beaufort-Jaspert-Hampton Comprehensive Health Services											
	<i>South Carolina Prostate Cancer/Telehealth Project</i>				•				•	•	•	Translational Research Activities and Consumer Education
	Greenville Hospital System <i>ICU Telemedicine Project</i>	•										
SD	Avera Health											
	<i>Avera Rural and Frontier Disease Management Telehealth Network</i>	•	•	•								
	South Dakota State University Foundation											
	<i>Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices</i>	•				•	•		•	•		Patient Compliance, Cultural Sensitivity Data
University of South Dakota (USD) – Vermillion												
	<i>Growing Our Own: A Nursing Education/Provider Partnership</i>			•								
TN	University of Tennessee (Knoxville)											
	<i>Mid-Appalachia Telehealth Project</i>	•	•	•	•	•	•		•	•		
	<i>Telehealth for the Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities</i>	•	•	•	•	•	•		•	•		
	University of Tennessee, College of Medicine (Memphis)											
	<i>Mid-South Telehealth Consortium</i>	•	•	•								
TX	Christus Visiting Nurses Association of Houston											
	<i>Home Monitoring: Demonstration Pilot Of Cost Control</i>	•										Remote Patient Monitoring

Components of Project (cont.)

ST	Grantee	Distance Learning				Information Systems/Electronic Health Records (***See Category Definitions Below)							Other (please specify)	
		Clinical Telemedicine Services	Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record	Reporting and Population Health Management	Scheduling Management		
TX	Cook Children's Medical Center													
	Rural Specialty Health Telemedicine Initiative	•	•	•							•	•	All medical records are currently maintained in a standard (paper) chart. Transition to an electronic format is planned in the future (1 - 2 years.)	
	University of Texas Health Science Center at San Antonio (UTHSCSA)													
	Diabetes Risk Reduction via Community Based Telemedicine (DiRRReCT)	•	•	•										
UT	University of Texas Medical Branch – Galveston													
	Texas Telehealth Resource Center	•	•	•		•	•	•	•	•	•	•		
	Association for Utah Community Health Telehealth Program													
	AUCH Telehealth Program	•	•											
VA	University of Utah													
	Utah Telehealth Network Comprehensive Telehealth Services	•	•	•	•	•	•							
	University of Virginia													
VA	Southwest Virginia Alliance for Telemedicine	•	•	•									Patient Education (Cancer, Diabetes)	
	Community Health Center of Burlington													
	Community Health Center Technology Upgrade					•	•	•	•	•	•	•		
	University of Vermont (UVM)													
VT	The Vermont Tele-Trauma Project	•	•	•										
	Pediatric Teletrauma	•	•											
	Children's Hospital and Regional Medical Center – Seattle													
WA	Children's Health Access Regional Telemedicine (CHART) Program	•	•	•									Health education for families	
	Inland Northwest Health Services													
	Northwest Telehealth	•	•	•			•	•	•		•	•	Telepharmacy	

Components of Project (cont.)

ST	Grantee	Distance Learning			Information Systems/Electronic Health Records (***See Category Definitions Below)						Other (please specify)	
		Clinical Telemedicine Services	Professional Development – Non-Credit	Professional Development – Credit (e.g. CME)	Academic – Degree Granting	Record Contains Key Data	Results Reporting & Notification	Results Reporting & Notification	Computerized Provider Order Entry	Integrated Medical Record Reporting and Population Health Management		Scheduling Management
WI	La Crosse Medical Health Science Consortium											
	<i>Virtual Population Health Centers in the Rural Midwest</i>		•	•	•							
	Marshfield Clinic Telehealth Network											
	<i>Marshfield Clinic Telehealth Network</i>	•	•	•	•	•	•	•	•	•	•	1) Patient portal 2) Informational Website 3) Patient Education Website 4) Business Portal 5) VPN Access
	Rural Wisconsin Health Cooperative											
	<i>RWHC/WPHCA Telehealth Initiative</i>	•	•	•	•							
	St. Elizabeth Hospital Community Foundation											
<i>Affinity/UW Telemedicine Project</i>	•				•	•	•	•				
WV	Appalachian Pain Foundation											
	<i>Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs</i>	•		•								
	West Virginia Research Corporation											
<i>West Virginia Community Mental Telehealth Project</i>	•				•	•			•			
WY	United Medical Center											
	<i>Distance Learning in Wyoming</i>			•	•							
	Wyoming Department of Health											
<i>Wyoming Network for Telehealth (WyNETTE) (anticipated)</i>	•	•	•									

Electronic Health Records Definitions:

Key Data	Includes any of the following: Problem List, Procedures, Diagnoses, Medication List, Allergies, Demographics, Diagnostic Test Results, Radiology Results, Health Maintenance, Advance Directives, Disposition, and/or Level of Service.
Results Reporting & Notification	Includes Laboratory, Microbiology, Pathology, Radiology Reports, and Consults.
Computerized Provider Order Entry	Includes availability of Electronic Prescribing, Laboratory, Microbiology, Pathology, Radiology, Nursing, Supplies, Consults, and Ancillary.
Integrated Medical Record	Defined as the extent to which a single record integrates data from different settings, providers, and organizations (e.g. <i>primary care physician, specialist, hospital</i>). Can include Within-Setting, Cross-Setting, Inpatient – Outpatient, Other Cross-Setting.
Reporting and Population Health Management	Includes Patient Safety and Quality Reporting (<i>Routine reporting of key quality indicators to clinicians, External accountability reporting, and Ad hoc reporting</i>), Public Health Reporting (<i>Reportable diseases and Immunization</i>), De-Identifying Data, and Disease Registries.
Scheduling Management	Includes Appointments, Admissions, Surgery/procedure scheduling.
Electronic Billing	Using computerized systems for submission of paperless medical and related claims to insurers and other payers.

Major Services

OAT Grantees were asked to identify the major clinical services delivered at their project(s), if applicable. For the category “Rehabilitation”, grantees were instructed to use a key of abbreviations (provided at the end of this section) to indicate their specific service. This section covers only those projects providing clinical telemedicine services. For a complete listing of all services, see the individual project descriptions.

Major Services

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
AK	Alaska Native Tribal Health Consortium																									Primary Care, Family Medicine, Audiology, Dental, Podiatry, Wound Management	
	Alaska Federal Health Care Access Network (AFFCAN)																										
	The Summative Telemedicine Evaluation Project																										NA-Evaluation
AL	University of South Alabama																										
	Emerging Health Technologies (OEHT) BioTrac																										
	Emerging Health Technologies (OEHT) Teletrauma																										
	Emerging Health Technologies (OEHT) Traditional Telemedicine																										
AR	University of Arkansas for Medical Sciences																										
	South Arkansas Integrated Telehealth Oncology Program																										
	Arizona Board of Regents, University of Arizona																										
AZ	Arizona Diabetes Virtual Center for Excellence (ADVCE)																										

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)	
	Banner Health System																											
	Payson Regional Medical Center																										Gastrointestinal Neurology	
	Arizona Telemedicine Program																										Neurology	
	Northern Arizona																										Maternal Fetal Ultrasounds	
	Maricopa County																											
	Correctional Health Services Telemedicine Initiative																										Medical Assessment for Booking	
	Children's Hospital – Los Angeles																											
	VPICU Critical Care Telemedicine Program																											Hema- tology/dental/ craniofacial
	Santa Rosa Memorial Hospital																											
	Northern California Telemedicine Network																											
	University of California - Davis																											
	UC Davis Northern California Telemedicine Project																											Telehealth Home Care
	University of Colorado																											
	Health Sciences Center Native Telehealth Outreach & Technical Assistance Program																											NA-Education

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
	Foundation For eHealth Initiative Connecting Communities for Better Health																										
	Taconic Health Information Network & Community																				•						Lab Results, Inpatient Transcription & Delivery Electronic Signature
	Wisconsin Health Information Exchange—CCBH																										Asthma-registry Infectious Disease-reporting Trauma-tracking
DC	Maryland/DC Collaborative for Healthcare Information Technology																										RHIO will eventually provide connectivity to all services
	Indiana Health Information Exchange																										Do not specifically provide services in these areas, but the clinical messages delivered support nearly all these services.
	Massachusetts Health Data Consortium																										Medication history look-up

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
	BayCare Health Systems <i>Electronic Medication and Clinical Services Ordering System</i>																										
FL	Florida Cancer Research Cooperative, University of South Florida <i>Florida Cancer Clinical Trial Patient/Physician Information and Education Program</i>																										
	University of Florida College of Dentistry (UFCD) <i>Florida Network for Community Oral Health</i>																										Dental
GA	Morehouse School of Medicine <i>Diabetes Screening Telehealth Project</i>																										
	Ware County Health Department <i>Rural Health Telemedicine Grant Program</i>																										Genetics Hematology Perinatology
HI	Hawai'i Primary Care Association <i>Hawai'i Community Telehealth Network Program</i>																										
	Molokai General Hospital <i>Molokai Telehealth Network</i>																										
	Iowa Chronic Care Consortium <i>Congestive Heart Failure and Diabetes Telemanagement</i>																										CHF
IA	Mercy Foundation <i>Midwest Rural Telemedicine Consortium</i>																										Gastroenterology, Nephrology, Neurology, Pathology, Burn Management

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)			
ID	Idaho State University																													
	Telehealth Idaho																										1-Self-Determination 2-Community Integration			
	North Idaho Rural Health Consortium (NIRHC)																													
	Expanding Telehealth to North Idaho Districts (EXTEND)																										Pathology			
	Fermi National Laboratory/ Northern Illinois University																													
	Neutron Radiation for Cancer Treatment																													
	Memorial Health System																													
	Automated Clinical Information System – Wireless Network Infrastructure																													
	MHS Rural TeleRadiology																													NA-integrated Medical Record
	OSF Saint James-John W. Albrecht Medical Center																													Family Practice
OSF Saint James Telehealth Network																														
IL	Southern Illinois University School of Medicine																													
	Downstate Illinois Regional Telehealth Project																												Home Care	
	James Whitcomb Riley Hospital for Children																													
IN	Telemedicine Applications for Riley Hospital for Children																												Urology	

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
KS	University of Kansas Medical Center																									Gastroenterology, Weight Management, Geriatrics, Nephrology, Wound Care, Hematology	
KY	Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network																					SLP					
	University of Kentucky Research Foundation																										
LA	Improving Health Outcomes for Children in Rural Kentucky Schools																										
	Lake Charles Memorial Hospital																										
	Community Hospital Telehealth Consortium (VHTC)																										Family Practice Ocular Plastics
ME	Woman's Hospital																										
	Expansion of Physician Internet Portal, Womens POL																										
ME	Regional Medical Center - Lubec																										
	Maine Nursing Home Telehealth Network																										Wound care, Primary care, occupational health
MA	Maine Telehealth Network																										Wound Care, Psychiatry, Genetics, Pediatric Neurology, Video Relay Interpreting
	Baystate Medical Center, Inc. Hampden Hampshire Franklin County Telehealth Services																										Pathology

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)	
MA	Massachusetts College of Pharmacy and Health Sciences																											
	Health Educational Resource Center																											
	UMass Memorial Medical Center, Inc. Picture Archiving & Communication System (PACS)																											
	Central Michigan University																											
MI	Rural Tele-health and Community Education Network																					A OT PT SLP						
	Hillsdale Community Health Center PACS System																											
	Marquette General Health System																											
	Close to Home, Close to Health																											
MN	University of Michigan																											
	Michigan Collaborative Project on Internet Based Clinical Telemedicine																											
	Western Michigan University																											
	The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan																											
MN	Fairview Health Services																											
	Ambulatory Electronic Medical Record System – Twin Cities Metropolitan Care Systems																											
	Fairview Ridges Hospital																											
	Healthy Mothers and Babies Technology Demonstration Informatics/Health Information Services Grant: Auto. Med. Dispensing																											

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
MN	University of Minnesota																										Neurology, Gastroenterology, Geriatrics, Fetal and Maternal health, Transplant consults, Home Care and Wound Care NICU visits
	Fairview – University of Minnesota Telemedicine Network	•	•		•						•						•	•		•							
MO	Logan College of Chiropractic Telehealth Distance Learning Initiative																										Educational
	The Curators of the University of Missouri Missouri Telehealth Network			•	•	•	•				•						•		•								Pre Op, Neurology, Burn Care, Autism
MT	Benefis Healthcare Foundation										•										•						Genetics Counseling & Burn Consults.
	NMHA & REACH Telehealth Network Development Project																										
	Deaconess Billings Clinic Foundation																										CV surgery follow-up
	Eastern Montana Telemedicine Network																										
	Center on Aging																										
	Rocky Mountain Technology Foundation																										
	Distance Learning/Telehealth																										Distance Learning, Continuing Education
	Pharmacy Support to Rural Clinics																										

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
MT	St. Vincent Healthcare Foundation																										
	Partners in Health																										
	Telemedicine Network (PHTN)																										
	Mansfield Health Education Center (MHEC)																										NA-Building Grant
NC	University of Montana - Missoula																										Disease prevention/screening
	ImProving Health Among Rural Montanans (IPHARM)																										
	Duke University Medical Center																										
	Patient Inclusion in a Community-Based Telehealth Network																										
NC	East Carolina University																										
	REACH-TV (Rural Eastern Carolina Health Network)																										TBI
	Educational and Research Consortium of Western Carolinas																										
	Western North Carolina Regional Data Link Project																										NA-Electronic Patient Data
ND	Minot State University																										Physical education, fitness, and psychological services
	Rural Disabilities Wellness Project																										
	North Dakota State University																										
	North Dakota Telepharmacy Project																										
ND	Northland Healthcare Alliance																										
	St. Alexius/Northland Telecare Network																										Wound Care Plastic Surgery Neurology Nephrology

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
NE	Good Samaritan Hospital Foundation																										
	Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE																										Genetics counseling, Behavioral Health for genetic problems, family counseling
	University of Nebraska Medical Center																										NA-Distance Education
	Distance Education of Undergraduate Nursing Students																										Craniofacial Clinic; Genetic Counseling; Behavioral & Developmental Pediatrics
NIM	Rural Telemedicine Program																										NA-Research
	Universities of New Mexico/Hawaii Health Science Center																										
	Project TOUCH (Telehealth Outreach for Unified Community Health)																										
NV	University of New Mexico Health Sciences Center																										
	Rural Health Telemedicine Program																										
	Nevada Rural Hospital Partners Foundation																										
NV	Digital Imaging System for Rural Nevada (DISRN)																										
	University of Nevada Las Vegas Nevada Telehealth Technology Initiative																										

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)	
NV	University of Nevada Reno - School of Medicine																											
	Biomedical Electronic Imaging																										Basic and biomedical research	
NY	Daemen College																										NA-Education	
	Daemen College TeleHealth Education Network																											
	Institute for Urban Family Health																										Family Practice	
	Informatics Telehealth Project (EMR)																											
	Montefiore Medical Center & The Children's Hospital at Montefiore																											
	Electronic Medical Records Expansion																											
	New York Presbyterian Hospital																											
	Electronic Linkage																											Equipment grant
	Patient Health Monitor (Vigilens)																											NA-Data Development
	Research Foundation of State University of New York (SUNY)																											
OH	New York Telehealth																										Gastro-enterology	
	Case Western Reserve University, University of Cincinnati, The Ohio State University																											
	NetWellness: Consumer Health Information Website																											Consumer Health Information
	Northeastern Ohio Universities College of Medicine (NEOUCOM) Medical Education Network Teaching Ohio Region III (MENTOR)																											NA-Education

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
	Ohio Board of Regents																										
	Medical Collaboration Network																										
OH	Ohio State University Research (for Ohio Supercomputer Center)																										Informatics Research
	Computational Approaches to Research on Cancer in Children and Others																										
	Southern Consortium for Children																										
	Southern Ohio Telepsychiatric Network																										
	INTEGRIS Health, Inc.																										Neurology Psychology Psychiatry Wound Care
OK	INTEGRIS Rural Telemedicine Project																										
	Oklahoma Office of Rural Health																										
	Rural Health Telemedicine Program																										
	Assante Health System																										
	Assante Clinical Systems Initiative																										
	OCHIN, Inc.																										
	Oregon Community Health Information Network																										
OR	Tillamook Lightwave IGA																										High speed fiber connectivity
	Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities																										
	Clarion University																										
	Primary Care Education for the Citizens of Rural Pennsylvania																										Distance Education
PA	Community Nurses Home Health and Hospice, Inc.																										
	Home Telehealth																										

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)		
PA	Geisinger Clinic <i>Developing a Stroke Care Educational Program for Rural Pennsylvania</i>																									24 hour service line to Geisinger neurologist on call			
	Magee-Womens Hospital of the University of Pittsburgh Medical Center (UPMC) <i>Magee-Womens Hospital Telehealth Initiative</i>																												
	Mercy Health Partners <i>Using Information Technology to Enhance Patient Safety</i>																										All services provided by acute care hospitals in addition to Home Health and hospital based SNF's		
	Pennsylvania College of Optometry <i>Urban Ophthalmic Telehealth</i>																										Eye Care		
	Pennsylvania Homecare Association <i>Researching Telehomecare Affects on Nursing Retention and Productivity</i>																												
	Penn State Cancer Institute, Hershey Medical Center <i>Digital Informatics</i>																												
	Susquehanna Health System <i>Regional Electronic Medical Record</i>																											NA- Electronic Medical Record	
	Thomas Jefferson University Jefferson-Myrna Brind Center of Integrative Medicine <i>Integrative Medicine Informatics Feasibility Project</i>																											Integrative Medicine	

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivists/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)	
PA	University of Pittsburgh Medical Center																										NA-Research	
	Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System																											Distance Education
	University of Pittsburgh School of Nursing Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)																										Physical Exercise Training	
RI	Family Resources Community Action HIV/AIDS Comprehensive Psychosocial Support Project																											Home healthcare
	Kent County Visiting Nurse Association d/b/a VNA of Care New England Advancing Point-of-Care Technology at VNA of Care New England																											Ophthalmology
SC	Advanced Technology Institute (ATI) Healthcare and Emergency Awareness Response for Telehealth (HEART)																											
	Beaufort-Jaspert-Hampton Comprehensive Health Services																											NA-Cancer Research
	South Carolina Prostate Cancer/Telehealth Project																											
SD	Greenville Hospital System ICU Telemedicine Project																											
	Avera Health																											Neurology, Wound Care
	Avera Rural and Frontier Disease Management Telehealth Network																											
	South Dakota State University Foundation																											
	Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices																											

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
SD	University of South Dakota (USD) - Vermillion																										Academic
	Growing Our Own: A Nursing Education/Provider Partnership																										
TN	University of Tennessee (Knoxville)																										Pre-anesthesia evaluation
	Mid-Appalachia Telehealth Project																										Pre Anesthesia evaluation
	Telehealth for the Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities																										
	University of Tennessee, College of Medicine (Memphis)																										Neurology
	Mid-South Telehealth Consortium																										
	Christus Visiting Nurses Association of Houston																										
	Home Monitoring: Demonstration Pilot of Cost Control																										Chronic Disease Management
TX	Cook Children's Medical Center																										Genetics
	Rural Specialty Health Telemedicine Initiative																										
	University of Texas Health Science Center at San Antonio (UTHSCSA)																										
	Diabetes Risk Reduction via Community Based Telemedicine (DIRReCT)																										
	University of Texas Medical Branch - Galveston																										
	Texas Telehealth Resource Center																										
	Association for Utah Community Health Telehealth Program																										
UT	AUCH Telehealth Program																										Ophthalmology
	University of Utah																										
	Utah Telehealth Network Comprehensive Telehealth Services																										Neurology, Burn

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/Gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
VA	University of Virginia																									Fitness, GI, Genetics, Geriatrics, Hematology, Nephrology, Neurology, Ophthalmology, Ortho., Retinopathy, TCV, Transplant, Toxicology, Urology, Wound Care.	
VA	Southwest Virginia Alliance for Telemedicine																										
VT	Community Health Center of Burlington																										
VT	Community Health Center Technology Upgrade																										
VT	University of Vermont (UVM) The Vermont Tele-Trauma Project																										
VT	Pediatric Teletrauma																										
WA	Children's Hospital and Regional Medical Center - Seattle																										
WA	Children's Health Access Regional Telemedicine (CHART) Program																									Neurodevelopmental services	
WA	Inland Northwest Health Services Northwest Telehealth																									Telepharmacy	
WI	La Crosse Medical Health Science Consortium																										
WI	Virtual Population Health Centers in the Rural Midwest																									Continuing and programmatic education	

Major Services (cont.)

ST	Grantee	Allergy	Asthma Control	Cardiology	Diabetes Care and Management	Dermatology	Endocrinology (not diabetes)	ENT	Infectious Disease (including HIV)	Intensivist/Remote ICU Monitoring	Mental Health	Neonatology	Nutrition	Ob/gyn	Oncology	Orthopedics	Pain Management	Pediatrics	Pharmacy	Pulmonology	Radiology	Rehabilitation (see key at bottom of chart)	Remote Patient Monitoring	Rheumatology	Surgery (all types)	Trauma/Emergency Medicine	Other Services (please specify)
WA	Marshfield Clinic Telehealth Network																										
	Marshfield Clinic Telehealth Network																										Occupational Medicine, Dentistry, Long Term Care, Jail, Home Health, Research, Hospice
	Rural Wisconsin Health Cooperative																										
	RWHC/PHCA Telehealth Initiative																										
WV	St. Elizabeth Hospital																										
	Community Foundation																										
	Affinity/UW Telemedicine Project																										
	Appalachian Pain Foundation																										
WV	Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs																										
	West Virginia Research Corporation																										
WY	West Virginia Community Mental Telehealth Project																										
	Wyoming Department of Health																										
WY	Wyoming Network for Telehealth (WYNETTE) (anticipated)																										
																											Cancer

Rehabilitation:

Key to Abbreviations	
A	audiology
OT	occupational therapy/medicine
PT	physical therapy
SLP	speech language therapy/pathology
PM	physical medicine/physiatry
OTH	Other (Please Specify)

Sources of Reimbursement

OAT grantee organizations were asked to identify major sources of reimbursement for their projects available in their respective states. Their responses are indicated in this section.

Sources of Reimbursement

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
AK	Alaska Native Tribal Health Consortium	•	•	Blue Cross/Blue Shield		
AL	University of South Alabama		•		Contract with Alabama Department of Public Health for HIV Consults	Reimbursements for Videoconferencing
AR	University of Arkansas for Medical Sciences	•	•	Qualchoice, Blue Cross, United Health, Health Advantage		
AZ	Arizona Board of Regents, University of Arizona	•	•		Tobacco Tax Funding Indian Health Services	
	Banner Health System					Initial support from Banner Foundation; now funded from Banner facility
	Maricopa County					Maricopa County Detention Fund
CA	Children's Hospital – Los Angeles	•	•	Blue Cross	HMO individually negotiated	Philanthropy, Whittier Foundation
	Northern California Telemedicine Network	•	•	Blue Cross		
DC	Foundation For eHealth Initiative					
	Taconic Health Information Network & Community	N / A	N / A	MVP Health Care	N/A	N/A
	Wisconsin Health Information Exchange--CCBH			(future) insurance plans per member/per month fee	CDC and HRSA Bioterrorism Cooperative Agreements; DOJ Urban grant	In kind by members
	Colorado Health Information Exchange (COHIE)				AHRQ Contract; FeHI Contract (HRSA)	
	SBCUDE, Inc.			California Health Care Foundation (CHCF) [Public/foundation funding]	Foundation for eHealth Initiative (FEHI) via HRSA	
	Massachusetts Health Data Consortium	•	•	All Massachusetts-based health plans provide funding (BCBSMA, Harvard Pilgrim Health Care, Tufts Health Plan, Health New England, Fallon Community Health Plan, Neighborhood Health Plan).	CMS pays membership dues; Medicaid pays membership dues	Partners Healthcare System and MA Medical Society
FL	BayCare Health Systems	•	•	Aetna Blue Cross Humana Unicare Cigna		
	University of Florida College of Dentistry (UFCD)	•	•			Service Contracts
GA	Ware County Health Department	•	•	Blue Cross/Blue Shield of Georgia, Aetna Life, Children's Medical Services, State Merit, TriCare Southeast, CIGNA, Mail Handlers, Metral Health, The Principal Ins. Group, Mass Mutual, Champus, John Hancock Ins., State Health Plan		

Sources of Reimbursement (cont.)

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
HI	Hawaii Primary Care Association	•	•	Blue Cross-HMSA, AlohaCare, Quest		
	Molokai General Hospital	•	•	Hawaii Medical Service Association, MDX-Hawaii, Hawaii Management Alliance Association, University Healthcare		
IA	Iowa Chronic Care Consortium		•	Wellmark (Blue Cross/Blue Shield)	Iowa General Assembly	Mercy Health Network, Iowa Health System, Des Moines University
	Mercy Foundation	•	•	Handled by third party		
ID	Idaho State University		•			
	North Idaho Rural Health Consortium (NIRHC)		•		Schools	
IL	Fermi National Laboratory/ Northern Illinois University		•	Blue, IL; Humana; Signa; Aetna		HRSA
	Memorial Health System	N / A	N / A	N/A	N/A	Physician Association
	OSF Saint James-John W. Albrecht Medical Center	•	•	OSF Health Plans		
	Southern Illinois University School of Medicine	•	•	Multiple private insurers	Veteran's Hospital, Mental Health Hospital	Children's Miracle Network
IN	James Whitcomb Riley Hospital for Children Clarian Health Partners			Anthem		In kind initially with reimbursement.
KS	University of Kansas Medical Center	•	•	Blue Cross		
KY	University of Kentucky Research Foundation Kentucky TeleCare	•	•	Atena, Anthem Blue Cross Blue Shield, Beechstreet PPO, UKHMO, CHA Health, Bluegrass Health Network, C&O Employee's Hospital Association CCN PPO, CHAMPVA/Tricare, Cigna, Cooperative Care Bluegrass Care Alliance, Community Health Partnership, Cumberland Health Care, Inc., Direct Care America, Harrod Community Health Plan, Hospice of the Bluegrass, Humana, National Provider Network PPO, One Health Plan, PPO Next/Healthstar/PHN, United Healthcare	Federal Prison, State Public Health Dept. for TB Clinic Consultation	Medicare/Medicaid reimbursement only for certain CPT codes All private payor/commercial insurance companies are mandated by State of KY to reimburse for telehealth consultations in same manner as face-to-face consultations
	Kentucky TeleCare St. Claire Regional Medical Center	•	•	All private payor/ commercial insurance companies are mandated by State of KY to reimburse for telehealth consultations in same manner as face-to-face consultations.		Medicare/Medicaid reimbursement only for certain CPT codes
	Kentucky TeleCare Lewis County Primary Care Clinic	•	•	All private payor/ commercial insurance companies are mandated by State of KY to reimburse for telehealth consultations in same manner as face-to-face consultations.		Medicare/Medicaid reimbursement only for certain CPT codes

Sources of Reimbursement (cont.)

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
LA	Lake Charles Memorial Hospital		•			
	Woman's Hospital	•	•	Aetna, American Lifecare, Blue Cross/Blue Shield of Louisiana, ChoiceCare Network, CIGNA, Community Care Network, Coventry HealthCare, First Heath Network, Humana, Multiplan, PPO Plus, Private Healthcare Systems, United Healthcare of Louisiana		Tricare Prime, Tristan
MA	Baystate Medical Center, Inc.	•	•			
	UMass Memorial Medical Center, Inc.					
ME	Regional Medical Center – Lubec	•	•	Anthem (specific projects) Cigna, Guardian	Correctional Facilities	Office for the Advancement of Telemedicine Funding
MI	Hillsdale Community Health Center	•	•	Blue Cross		
	Marquette General Health System	•		Blue Cross, Upper Peninsula Health Plan	Behavioral Health Contract	
	Western Michigan University	•	•			Private Pay
MN	Fairview Health Services	•	•	Blue Cross, CIGNA, Health Partners, PreferredOne, MassHealth, MHP, Ucare United Healthcare, Wausau		
	Fairview Lakes Regional Medical Center	•	•	Blue Cross of Minnesota, Self Pay, Other Commercial Insurers (minor)	Chisago County Prison, State of MN Prison	
	Fairview Ridges Hospital	•	•	Blue Cross of Minnesota, Medicare, PreferredOne.		
	University of Minnesota	•	•	Blue Cross/Blue Shield of MN, Preferred One, Health Partners, Workers Compensation, Medica, Circle of Health, Ucare Minnesota		
MO	The Curators of the University of Missouri	•		Am. Family, Bankers Life, Blue Shield Alliance, Cigna, Gencare, General American, Health Data Svcs. Claim, Healthlink, Healthnet, John Deer Health Care, Missouri Care MC+, Metropolitan, Mercy Health Plan, Preferred Health Plan, Prudential, United Health Care, Ethix PPO, Time Insurance Co., Cooperative Benefit, First Health, Healthsmart Preferred, Humana, National Telephone, NRECA, Proamerica, Waldsworth Publishing	Fort Leonard Wood, Clark Mental Health Ctr.	
MT	Benefis Healthcare Foundation	•	•	Blue Cross/Blue Shield, MT		
	Deaconess Billings Clinic Foundation	•	•	Blue Cross/Blue Shield of Montana, EBMS, New West Health Services		
	Rocky Mountain Technology Foundation	•	•			
	St. Vincent Healthcare Foundation	•	•	Blue Cross/Blue Shield of Montana/EBMS/ Intermountain		
	University of Montana – Missoula			Blue Cross/Blue Shield of Montana		Patient pay, donations from drug companies & patients

Sources of Reimbursement (cont.)

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
NC	East Carolina University	•	•	Blue Cross/Blue Shield, HealthSouth, Cigna, etc.	State Agencies School for Deaf, Home for Med Retarded, Mental Hospital, Fed Prison	University Health Systems of Eastern North Carolina
ND	Minot State University				Enable, H.I.T., Hav-it, ECT	NDCPD
	North Dakota State University	•	•	Blue Cross, Blue Shield of North Dakota		
	Northland Healthcare Alliance	•	•	Blue Cross, Blue Shield of North Dakota. Also have been paid by other commercial payers on a case by case basis.		
NE	Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE	•	•	Blue Cross, Equitable Life, Three Rivers Benefit Corp, Physicians Mutual, Pioneer, Mutual Protective, Midlands Choice, Union Banders, AARP, TriCare, Cigna, Bankers Life, UniCare Life & Health, CBSA, Midwest Select, Mutual Protective, Thrivent Options		
	University of Nebraska Medical Center	N / A	N / A	N/A	N/A	Tuition paid by Students
	Rural Health Telemedicine Program	N / A	N / A	N/A	N/A	N/A
NV	Nevada Rural Hospital Partners Foundation					Member dues, fee for service, grants
	University of Nevada Reno - School of Medicine					Recharge from user grants
NY	Daemen College					Tuition
	Institute for Urban Family Health	•	•	More than 25 plans, including Oxford, United Health Care and Blue Cross.		2 federal grants
	Montefiore Medical Center & The Children's Hospital at Montefiore	•	•	HIP, AETNA, BLUE CROSS,		
	Research Foundation of State University of New York (SUNY)	•	•	Community Blue, Univera, Independent Health	NYS Dept. of Corrections	
OH	Case Western Reserve University, University of Cincinnati, The Ohio State University					NA-Health Information Network
	Northeastern Ohio Universities College of Medicine (NEOUCOM)	N / A	N / A	N/A	N/A	Philanthropy
	Ohio Board of Regents	N / A	N / A	N/A	N/A	Physician time to be donated for neonatology equipment test
	Southern Consortium for Children		•			
OK	INTEGRIS Rural Telemedicine Project	•	•	Blue Cross		

Sources of Reimbursement (cont.)

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
OR	Assante Health System	•	•	Blue Cross/Blue Shield		
	OCHIN, Inc.	•	•	CareOregon Cascade Comprehensive ODS Dental Tuality Health Alliance Managed Gental Dental Verity Medicaid O/P MediCal Alliance MediCal Fampact Healthy Families Health Kids BCEDP/CDP CHDP MediCal Homeless Persons Health Santa Barbara Health Santa Clara Family Health OMAP Palmetto Sterling Ins. Clear Choice Regence HMO Medicare		
	Tillamook Lightwave IGA					MSRC (Monthly Reoccurring Service Charge)
PA	Clarion University					Warren General Hospital tuition subsidy and book allowance
	Community Nurses Home Health and Hospice, Inc.	•	•	Blue Cross, UPMC, Workmen's Comp		Self Pay
	Mercy Health Partners	•	•	Blue Cross both Managed and Traditional	Managed Care	Commercial and Self Pay
	Magee-Womens Hospital of the University of Pittsburgh Medical Center (UPMC)					In Kind
	Pennsylvania College of Optometry	•	•	Blue Cross		Davis Vision
	Pennsylvania Homecare Association	•	•			
RI	Family Resources Community Action	N / A	N / A		Ryan White Title II	
	Kent County Visiting Nurse Association d/b/a VNA of Care New England	•	•	Blue Cross Blue Shield of RI, United Healthcare, Other commercial health insurers		

Sources of Reimbursement (cont.)

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
SC	Advanced Technology Institute (ATI)	•	•			
	Beaufort-Jaspert-Hampton Comprehensive Health Services	•	•			
	Greenville Hospital System	•	•	Aetna Health Management; America's Health Plan; Carolina Care Plan (PHP); CCN; Cigna Behavioral Health, Inc; Cigna Gatekeeper (POS); Cigna Healthsource HMO; Cigna PPO/PPN; Cigna/ Healthsource Indemnity; Companion; Corvel Workers Compensation; Ethix; Federal Blue Cross/Blue Shield; First Health Network; First Health Worker's Comp; Focus Workers Compensation GHS/Upstate PHO/Kanawha; H/F Palmetto Plan Medicaid HMO; Health Care Savings; HMO Blue; Kanawha Benefit Solutions Inc.; Magellan Health Svcs – Greenspring; Magellan Health Svcs – Merit; Medcost; Medicaid HMO – Select Health; One Health Plan; Partners National Health Plans; Physicians Care Network; Piedmont Health Alliance; PPC; Preferred Health Network of CA; Premier Health Systems; Proamerica Managed Care; State Health Plan; Tricare/Champus; United Healthcare; Valued Behavioral Health; Vision Service Plan; Wellpath		
SD	Avera Health	•	•	Uncertain, just starting		
	South Dakota State University Foundation					Patient
	University of South Dakota (USD) – Vermillion				Student Tuition	
TN	University of Tennessee (Knoxville)	•	•	Blue Cross, Trustmark, Cariten, and all others billed		
	University of Tennessee, College of Medicine (Memphis)	•	•	BC/BS TN		
TX	Christus – Visting Nurses Association of Houston	•	•		Ryan White CARE Act, Texas Department of Health	The Methodist Hospital
	Cook Children's Medical Center		•	CIGNA, Blue Cross		TDH Title V funding will be available for patients that qualify under those guidelines
	University of Texas Health Science Center at San Antonio (UTHSCSA)		•			Philanthropy: CIOS Foundation, Bayer Pharm., NIDDK (WIN), HEB Foundation, Eli Lilly
	University of Texas Medical Branch - Galveston	•	•		Counties, Raytheon, Zachry, ANICO, Cruise lines, TX Dept. of Criminal Justice, other correctional systems	

Sources of Reimbursement (cont.)

ST	Organization	Medicare	Medicaid	Private Payor (Please Specify)	Other Contract (Please Specify)	Other Source
UT	University of Utah	•	•	Utah payers in general	Department of Corrections	
VA	University of Virginia	•	•	AG Dillard; Church of the Brethren; Healthcare Resources Group; Klockner-Pentaplast; John Alden Financial; National Benefits Plan; Southeastern Container; Sunnyside Home; Sysco Corp.	Corrections	Anthem Blue Cross/Blue Shield
VT	Community Health Center of Burlington	•	•	Various commercial insurance companies	Federal and State Grants	
	University of VT/Fletcher Allen Health Care	•			NY State Dept. of Corrections and a private industry contract	
WA	Children's Hospital and Regional Medical Center – Seattle		•	Premera Blue Cross, Regence, BlueShield, Community Health Plan of WA, Molina Healthcare, Pacific Medical, Foundation Health Service-Tricare, DSHS-Medicaid Fee for Service	Lower Columbia Mental Health, Washington State Juvenile Rehabilitation Administration (Naselle), St. Joseph Hospital, Bellingham, Evergreen Hospital, Kirkland, Kennewick General Hospital, Kennewick	
	Inland Northwest Health Services	•	•	Asuris, Premera, L&I, Universal Medical Plan		N/A for Telepharmacy
WI	Marshfield Clinic Telehealth Network	•	•	SHP, Atrium Health Plan, Inc., Benefit Associates, Blue Cross/Shield of Wisconsin, Cigna/Connecticut General, Comprehensive Care Services, Golden Rule Ins., Group Health Coop-Eau Claire, Jeld-Wen Health/Shasta Admin, Medicare, Midwest Security Admin Inc., Professional Benefit Admin., Security Admin Svcs, Select Benefit Administrators, United Healthcare, WC-Sentry Ins., WEA Ins. Trust, WI Health Ins Risk Sharing Pln., WPS Insurtec, Weathershield/Sisco, Wisconsin Medicaid/Badgercare	None	None
	Rural Wisconsin Health Cooperative	•	•	Numerous		Federally funded (Section 330) Clinics
	St. Elizabeth Hospital Community Foundation			Network Health Plan Bill All Third-Party insurance companies for reimbursement.		
WV	West Virginia Research Corporation	•	•	West Virginia Blue Cross/Blue Shield, PEIA		
WY	United Medical Center					Grant Funding
	Wyoming Department of Health (anticipated)	•	•			

Technology and Transmission

All OAT grantees were asked if they used Store and Forward technology, Internet Protocols (IP), Internet/World Wide Web, Wireless Technology, and/or Broadband Transmission in delivery of their services. (Definitions are provided at the end of the table). Grantees were also asked to give a brief explanation of the purposes for the use of the transmission technology. Their responses are indicated in the following section.

Technology and Transmission

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
AK	Alaska Native Tribal Health Consortium					
	Alaska Federal Health Care Access Network (AFFC-AN)	Primary Care, Family Medicine, ENT, Audiology, Dermatology, Cardiology, Radiology	Access to S&F servers. Voice over IP telephony. Remote HIS access. Audio and Video and Text.		Primary Care, Family Medicine, ENT, Audiology, Dermatology, Cardiology	Videoconferencing
	The Summative Telemedicine Evaluation Project			Electronic mail and solicitation of survey responses for Evaluation Project.		
AL	University of South Alabama					
	Emerging Health Technologies (OEHT) BioTrac			Home Monitoring		
	Emerging Health Technologies (OEHT) Teletrauma	Radiology				
	Emerging Health Technologies (OEHT) Traditional Telemedicine	Children's Sexual Abuse				Videoconferencing
AR	University of Arkansas for Medical Sciences					
	South Arkansas Integrated Telehealth Oncology Program	Radiology Ultrasound for High-Risk OB	H.323 and H.320 Video for Interactive Telehealth	Professional and Public Education		Videoconferencing
	Arizona Board of Regents, University of Arizona					
AZ	Arizona Diabetes Virtual Center for Excellence (ADVICE)	Ophthalmology, Real Time Support	H.323 Video for Interactive Telehealth	Web Site		Clinical Real Time Services
	Banner Health System					
	Payson Regional Medical Center		Telehealth Consultations, Distance Learning, Grand Rounds			Video Conferencing
	Arizona Telemedicine Program		Telehealth Consultations, Distance Learning, Grand Rounds			Video Conferencing
	Navajo Nation	Maternal Fetal Medicine, Fetal Ultrasounds	Telehealth Consultations, Distance Learning, Grand Rounds		Microwave Component of Network	
	Maricopa County					
	Correctional Health Services Telemedicine Initiative			County WAN with FTP IP Protocol on a secured network		

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
CA	Children's Hospital – Los Angeles					
	VPICU Critical Care Telemedicine Program	Tele-dentistry		Defined secure network (Dentistry)		T1 network and ISDN (Critical Care)
	Santa Rosa Memorial Hospital					Yes
	Northern California Telemedicine Network					
	University of California - Davis					
CO	UC Davis Northern California Telemedicine Project	Wound Care	Distance Education			Distance Education
	University of Colorado Health Sciences Center					
	Native Telehealth Outreach & Technical Assistance Program			Distance Education for CME		CHA/CHP Communications, Project Dissemination
	Foundation For eHealth Initiative Connecting Communities for Better Health					
	Taconic Health Information Network & Community	Radiology, Laboratory, and Transcription	IP is used to facilitate secure "server to server" communication and data interchange/exchange between participation solution providers	The solution is delivered through a secure web-based application architecture, providing access to clinical information through a web browser	None	Transmission rates vary by facility using this application
DC	Wisconsin Health Information Exchange—CCBH	Repository of immunizations, medical record information	XML/HL7 messaging	SSL-secure websites		
	Colorado Health Information Exchange (COHIE)	Codified (standard) health data between distinct institutions (entities)	Codified (standard) health data between distinct institutions (entities)			
	SBCCDE, Inc.		Support HL7 inbound data	Primary user access method		Radiology images/audio
	Massachusetts Health Data Consortium		In order to gain access to MedsInfo, any users at the three hospitals, participating data sources, and MA-SHARE must have a recognized user name, password, and IP address.	The three emergency departments access for a secure, web-based application for medication history.		All three hospitals use broadband.

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
FL	BayCare Health Systems					
	<i>Electronic Medication and Clinical Services Ordering System</i>	Radiology	Clinical Results Clinical Documentation	Clinical Results Clinical Documentation	Clinical Results Emergency Department OB/GYN Case Management	
	Florida Cancer Research Cooperative, University of South Florida					
	<i>Florida Cancer Clinical Trial Patient/Physician Information and Education Program</i>	Store of patient profiles for later review and consultation	Extranet call center connectivity	Distribution of clinical trial information		
	University of Florida College of Dentistry (UFCD)					
	<i>Florida Network for Community Oral Health</i>	Distance Learning: Video conferencing & presentation with satellite offices/clinics-Teledentistry Consultation: For capturing, reviewing, manipulation and storing of biopsies.- Digital Radiography: For capturing, reviewing, manipulation and storing digital x-ray images.	Distance Learning: Used for eLearning, eTransaction & Video conferencing. - Teledentistry Consultation: Video conferencing for consultation.- Digital Radiography: For transmitting, retrieving, and storing digital x-ray images.	Distance Learning: eLearning & eTransaction presentation-Teledentistry Consultation: Interactive consultation via web. Real-time streaming of consultation practices.- Digital Radiography: For retrieving & reviewing digital x-ray via QR web front end system.	Distance Learning: For accessing eLearning & eTransaction modules within dental science main building.- Teledentistry Consultation: T1 used for teledentistry consultation from within dental science building.- Digital Radiography: Can be used to access digital radiographs stored via QR system.	Distance Learning: T1 (1.5mps) access to some clinics (St. Petersburg, Hiialeah, HCC, Apopka) and DS3/T3 to JAX from Gainesville.- Teledentistry Consultation: T1 (1.5mps) access to some clinics (St. Petersburg, Hiialeah, HCC, Apopka) and DS3/T3 to JAX from Gainesville.- Digital Radiography: Broadband access speed within dental science building is 10/100/1000 mps.
GA	Morehouse School of Medicine					
	<i>Diabetes Screening Telehealth Project</i>	Diabetes Screening	Diabetes Screening			Diabetes Screening
	Ware County Health Department					
	<i>Rural Health Telemedicine Grant Program</i>		H323 Video for interactive Telehealth and Distance Learning			

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
HI	Hawai'i Primary Care Association					
	Hawai'i Community Telehealth Network Program	Tele-dermatology, in future Rheumatology and others	Store-and-forward application is a Web-based application	Store-and-forward application is a Web-based application		Each CHC is on their own local area network connected with 256kpbs frame-relay, T1-IP, DSL, nine of eleven sites connected with 384kpbs ISDN. Used for VTC
	Molokai General Hospital					
	Molokai Telehealth Network	Dermatology, Radiology				OB/GYN Rheumatology Oncology Mental Health
IA	Iowa Chronic Care Consortium					
	Congestive Heart Failure and Diabetes Telemanagement			Monitor patient condition, monitor BP		
	Mercy Foundation					
ID	Midwest Rural Telemedicine Consortium	Radiology				ISDN - Clinical, Educational, Administrative
	Idaho State University					
	Telehealth Idaho	Wound care, dermatology	The majority of IP applications with partner sites are educational due to limits on bandwidth.	Telehealth Idaho Toolbox, Digital Medical Library	We are examining wireless LANs for use within facilities.	Educational telecommunications, mental health, EHR
	North Idaho Rural Health Consortium (NIRHC)					
IL	Expanding Telehealth to North Idaho Districts (EXTEND)	Radiology	Pharmacy, education, mental health	Pathology		Rehab services (OT/PT/SLP)
	Fermi National Laboratory/ Northern Illinois University					
	Neutron Radiation for Cancer Treatment	CT images will be stored	Exchange information between Fermi Lab and NIU	Posted information on neutron therapy and plan to update progress continuously (see http://www.neutrontherapy.niu.edu/neutrontherapy/)		

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
IL	Memorial Health System Automated Clinical Information System – Wireless Network Infrastructure				Installed campus-wide wireless infrastructure	
	MHS Rural TeleRadiology	Teleradiology		Tele-imaging		T1 line connecting two Hospitals
	OSF Saint James-John W. Albrecht Medical Center					
	OSF Saint James Telehealth Network	Radiology	Family Practice			Family Practice
Downstate Illinois Regional Telehealth Project	Southern Illinois University School of Medicine					
		Email, Radiology, Exam camera, Stethoscope sound clips, Videophone camera stills, Remote PC Control Document Delivery, Nasopharyngeal stills & clips	Videoconferencing, email, website document delivery	MCU monitoring, website document delivery	Wireless LAN, Satellite downlink	LAN, ISDN, IP, WAN
IN	James Whitcomb Riley Hospital for Children Telemedicine Applications for Riley Hospital for Children					T-1 connections between Riley and hospital sites
KS	University of Kansas Medical Center Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network					ISDN
KY	University of Kentucky Research Foundation Improving Health Outcomes for Children in Rural Kentucky Schools through Telehealth Network		Administrative Meetings, educational programs, clinics			Telemedicine clinics, educational programs, administrative meetings
LA	Lake Charles Memorial Hospital					
	Community Hospital Telehealth Consortium (VHTC)	Home Disease Management Program				ISDN/T1's Distance learning, clinical applications
	Woman's Hospital Expansion of Physician Internet Portal, Womens POL		Used to connect a web server to the host server	How physicians communicate to our web server		

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission	
MA	Baystate Medical Center, Inc. Hampden Hampshire Franklin County Telehealth Services		IP interactive video				
	Massachusetts College of Pharmacy and Health Sciences Health Educational Resource Center	Pharmacy distance learning program	Pharmacy distance learning program	Pharmacy distance learning program		Pharmacy distance learning program	
	UMass Memorial Medical Center, Inc. Picture Archiving & Communication System (PACS)	Radiology	Radiology	Radiology		Radiology	
	Regional Medical Center - Lubec Maine Nursing Home Telehealth Network Maine Telehealth Network	Teledermatology Teledermatology	Teledermatology Teledermatology	Teledermatology Teledermatology	Teledermatology Teledermatology		
	Central Michigan University Rural Tele-health and Community Education Network Hillsdale Community Health Center PACS System	Distance ED (email and discussion) Radiology	Distance ED & Homeland Security	Distance ED & Homeland Security	Distance ED & Homeland Security	Distance ED Distance ED	Distance ED & Homeland Security
MI	Marquette General Health System Close to Home, Close to Health	Teleradiology, tele-echocardiology telepathology	Meetings, education, telemedicine, support groups, bondings		Family visits, early discharge planning, telemedicine	Meetings, education, bondings, support groups, telemedicine	
	University of Michigan Michigan Collaborative Project on Internet Based Clinical Telemedicine Western Michigan University The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan		Clinical Pediatric Emergency Education Allied Health Consults				
	Fairview Health Services	EMC-Symmetrix platform, COMPAQ servers (NT4 and W2K) and interfacing with PC-based computer workstations	Physician Internet Portal	Physician Internet Portal		WAN with T1 and OS3 transmission systems	
	Ambulatory Electronic Medical Record System - Twin Cities Metropolitan Care Systems						

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
MN	Fairview Ridges Hospital Healthy Mothers and Babies Technology Demonstration	Fetal ultrasound	Electronic medical record			Specialty consultations, physiological monitoring
	Informatics/Health Information Services Grant: Auto. Med. Dispensing		Organization's Intranet provides drug and patient information transmission.			
	University of Minnesota					
	Fairview - University of Minnesota Telemedicine Network	Dermatology	Secure IP protocol with quality of service for clinical consults	Secure Web Site for Dermatology and Orthopedics	N/A	ISDN/2 sites
MO	Logan College of Chiropractic Telehealth Distance Learning Initiative	Educational Materials	In Process	In Process		In Process
	The Curators of the University of Missouri					
	Missouri Telehealth Network	Teleradiology	H323 Video for Interactive Telehealth	Access to databases (e.g., Medline)		Frame Relay T1 Connectivity
MT	Benefis Healthcare Foundation NMHA & REACH Telehealth Network Development Project	Radiology	Education, Patient Consults			Education, Patient Consults
	Deaconess Billings Clinic Foundation					
MT	Eastern Montana Telemedicine Network					T1 for videoconferencing
	Center on Aging				Physicians use laptops to manage patients	
	Rocky Mountain Technology Foundation					
	Distance Learning/Telehealth			Continuing Education Through RMC http://www.rocky.edu		VisionNet Software over T1 Line
	Pharmacy Support to Rural Clinics					PharmNet Software over T1 Line
St. Vincent Healthcare Foundation						
	Partners in Health Telemedicine Network (PHTN)	Teleradiology Imaging	Connection with Indian Health Services Network & Internal network	Connection for Marketing and Education Services	Connection with St. James Healthcare Network & Internet Technology	
	Mansfield Health Education Center (MHEC)			Connection for Marketing and Education Services		

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
MT	University of Montana - Missoula ImProving Health Among Rural Montanans (IPHARM)			Consumer Health Information	Mobile Disease Screening	
	Duke University Medical Center Patient Inclusion in a Community-Based Telehealth Network			All users interact via an Internet application.		
NC	East Carolina University					
	REACH-TV (Rural Eastern Carolina Health Network)	Ultrasound, Radiology, Cineangiogram	Interactive Clinics, Education, Med Rx	Clinical & Education program availability & scheduling.	Clinical, Education, & Med Rx	Videoconferencing, Training over secure T1 Line
	Educational and Research Consortium of Western Carolinas Western North Carolina Regional Data Link Project	Patient Medical Information	Patient Medical Information			Patient Medical Information
ND	North Dakota State University North Dakota Telepharmacy Project			Telepharmacy		
	Northland Healthcare Alliance					
NE	St. Alexius/Northland TeleCare Network	Teleradiology				Network is a WAN with T-1 lines to all sites. Also use high speed cable from the hospital to the radiologists' homes for teleradiology. Are in progress of migrating to an ATM network using video over IP.
	Good Samaritan Hospital Foundation					
NE	Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE	Teleradiology X-Rays	IP 323			
	University of Nebraska Medical Center					
	Distance Education of Undergraduate Nursing Students	Blackboard & video streaming of curriculum		Courses delivered via Blackboard using Internet		Satellite -Pharmacology; Broadband LAN Internet transmission & communication
	Rural Telemedicine Program		H323 Video for Interactive Telehealth	Consumer medical information; streaming media	Wireless point-to- point connection with Good Samaritan Telehealth network	T1 connections to remote locations

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission	
NM	Universities of New Mexico/Hawaii Health Science Center						
	Project TOUCH (Telehealth Outreach for Unified Community Health)			Internet2		Internet2	
	University of New Mexico Health Sciences Center						
	Rural Health Telemedicine Program		Training			Clinical Services Training	
NV	Nevada Rural Hospital Partners Foundation						
	Digital Imaging System for Rural Nevada (DISRN)	Transmission of diagnostic images and patient identifiers	TCP/IP – secured with site to site VPN			T1-Internet for transmission of diagnostic images and patient identifiers	
	University of Nevada Las Vegas						
NY	Nevada Telehealth Technology Initiative	Oncology, Pulmonology, Radiology, Ob/Gyn, Surgery	Remote ICU Monitoring, Emergency Medicine	Professional Development	Remote ICU Monitoring, Emergency Medicine		
	Daemen College						
	Daemen College TeleHealth Education Network			Web-based instruction using Blackboard	Cart-based instructional technology	DS3 video-conferencing	
	Institute for Urban Family Health Informatics Telehealth Project (EMR)						
	Montefiore Medical Center & The Children's Hospital at Montefiore						
	Electronic Medical Records Expansion						
	New York Presbyterian Hospital						
	Electronic Linkage						
	Patient Health Monitor (Vigilens)	Laboratories, radiology, pathology	Laboratories, radiology, pathology, alerts, reminders	Clinicals, Billing, Registration	Browse Health Related Sites	Within Facility	Connected Provider Network
	Research Foundation of State University of New York (SUNY)						
New York Telehealth	Developing w/HRSA Hospital Preparedness	IP Video conferencing & data transfer	Distance learning	Roll about telemedicine units	Streaming video distance learning		

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
OH	Case Western Reserve University, University of Cincinnati, The Ohio State University		Consumer Health Information	Consumer Health Information		
	NetWellness: Consumer Health Information Website		Consumer Health Information	Consumer Health Information		
	Northeastern Ohio Universities College of Medicine (NEOUCOM)					
	Medical Education Network Teaching Ohio Region III (MENTOR)		Videoconferencing	Content delivery distance education		Archived streaming video
	Ohio Board of Regents					
	Medical Collaboration Network		H.323 videoconferencing w/ H.264 Codec; real time video capture and streaming	Web conferencing		Gigabit Ethernet will link hospital and education sites to an OC-48 backbone.
	Ohio State University Research Foundation					
	Computational Approaches to Research on Cancer in Children and Others		Utilize secure transport portals for clinical data	De-identified information access		
	Southern Consortium for Children Southern Ohio Telepsychiatric Network					T1 Line Connectivity for Telepsychiatry
	INTEGRIS Health, Inc.					
OK	INTEGRIS Rural Telemedicine Project	Wound Care				
	Oklahoma State University, Center for Health Services					
	Rural Health Telemedicine Program	Radiology	Video consults		Networking, Video conferencing	T1
OR	Assante Health System					
	Assante Clinical Systems Initiative	Remote consultations; hospital images available to physicians in their offices.	LAN, WAN, and VPN	Clinical Repository accessible by web browser	Clinical Repository accessible through wireless LAN	Fiber Optic, LAN, and ISDN

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
OR	OCHIN, Inc.					
	Oregon Community Health Information Network		Practice Management	Practice Management		
	Tillamook Lightwave IGA					
	Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities					Transmission of records, reports, static images, and educational information.
	Clarion University					
PA	Primary Care Education for the Citizens of Rural Pennsylvania	Women's Health		Blackboard		
	Geisinger Clinic					
	Developing a Stroke Care Educational Program for Rural Pennsylvania		159.240.9.1	Website and email		
	 Magee-Womens Hospital of the University of Pittsburgh Medical Center (UPMC)					
	Magee-Womens Hospital Telehealth Initiative	Neonatal Radiology				Audio/Video Teleconferencing for Gender-Based Medicine Series and Cancer Conference
	Mercy Health Partners					
	Using Information Technology to Enhance Patient Safety	Patient Information	Patient Information	Patient Information	Patient Information	Patient Information
	Pennsylvania College of Optometry					
	Urban Ophthalmic Telehealth	Eye Care	Eye Care	Eye Care	Eye Care	DSL, eye care and education
	Pennsylvania Homecare Association					
Researching Telehomecare Affects on Nursing Retention and Productivity	NOTE: All 25 agencies are transmitting over POTS					
Penn State Cancer Institute, Hershey Medical Center						
Digital Informatics and Communications System	Lectures, CME	Videconferencing, medical consent, telemedicine	Clinical trials network, physician and patient education, intranet			T1/T3 links between sites

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
PA	Susquehanna Health System <i>Regional Electronic Medical Record</i>		Electronic medical record	Electronic medical record	Electronic medical record	Redundant ATM w/T1
	Thomas Jefferson University Jefferson-Myrna Brind Center Of Integrative Medicine			Beta test of website		Used by Jefferson Community to access both Internet and Intranet
	Integrative Medicine Informatics Feasibility Project					
	University of Pittsburgh Medical Center <i>Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System</i>			Access to Physician Portal for Affiliated Physicians		
PA	University of Pittsburgh School of Nursing					
	Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)		Also have IP protocol capability and will use these upon completion of funding.	Student specialty case records		We use Polycon transmission and Tandberg reception units via ISDN to 4 concurrent sites.
	Venango Economic Development Corporation					
SC	The Venango Center for Healthcare Careers (VCHC)			Distance Learning, Communication		Teleconference, Delivery of Education
	Advanced Technology Institute (ATI) <i>Healthcare and Emergency Awareness Response for Telehealth (HEART)</i>	Ophthalmology	Diabetes			
	Beaufort-Jasper-Hampton Comprehensive Health Services					
	South Carolina Prostate Cancer/Telehealth Project					Data Sharing Internally, T1 connection for videoconference

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
SC	Greenville Hospital System	Patient Management and clinical results sent to our Lifetime Clinical Record are interfaced via HL7 store and forward technologies.	GHS Network is totally TCP/IP for all applications, clinical and administrative.	All our clinical and key patient care systems are deployable via this technology.	All clinical and patient care systems can use this technology.	All clinical and patient care systems use this technology at our satellite facilities.
	ICU Telemedicine Project					
SD	Avera Health	Home health	In-network only at QOS			IP transmission on converged T1s and ISDN where necessary
	Avera Rural and Frontier Disease Management Telehealth Network					
	South Dakota State University Foundation					
	Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices			Website, communication		Website, communication
TN	University of South Dakota (USD) - Vermillion					
	"Growing Our Own: A Nursing Education/Provider Partnership			Delivery of education		LAN - Delivery of Education
	University of Tennessee (Knoxville)					
TX	Mid-Appalachia Telehealth Project	Patient monitoring	T1s to sites for education and clinical	For medical and patient education		
	Telehealth for the Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities	Patient Monitoring	T1s to sites for clinical and educational	For Medical and patient education		
	University of Tennessee, College of Medicine (Memphis)					
TX	Mid-South Telehealth Consortium		All clinical and educational services	Occasional educational services		
	Christus Visiting Nurses Association of Houston					
	Home Monitoring: Demonstration Pilot of Cost Control	Clinical data transmission	Central station monitoring	Clinical data transmission, communication with MDs	Clinical data transmission	

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
TX	Cook Children's Medical Center <i>Rural Specialty Health Telemedicine Initiative</i>	Educational programs available on demand via Internet	IP Based video encounters and distance learning.	Internet used to transmit/receive over T1/IP line for telemedicine activities. Distance learning available from www.cookchildrens.org .		WAN and LAN connections used for telemedicine; ISDN, IP and internet connections used for educational and videoconferencing activities.
	University of Texas Health Science Center at San Antonio (UTHSCSA)					
	Diabetes Risk Reduction via Community Based Telemedicine (DIRReCT)	Pedi grand rounds are a mix of Real Time video and Store and Forward Power Point slides		Distance learning-pedi grand rounds for CMEs via web site.		Clinical consultations and distance learning-pt care conference
	University of Texas Medical Branch - Galveston Texas Telehealth Resource Center	Radiology	Videoconf., email, FTP, secure server access	http://www.utmb.edu/telehealth/	Videoconf., remote telemedicine, 2-way satellite	Satellite TV
UT	Association for Utah Community Health Telehealth Program AUCH Telehealth Program	Tele-Ophthalmology for Diabetic retinopathy	IP Videoconferencing	Website/Distance Learning		T-1 line for Internet/video conferencing
	University of Utah Utah Telehealth Network Comprehensive Telehealth Services	Radiology, pharmacy	Videoconferencing, radiology, pharmacy			
	University of Virginia Southwest Virginia Alliance for Telemedicine	Radiology, Pediatric Cardiology Reads, Diabetic Retinopathy	Clinical Consults, Education	Clinical Consults, Education	Clinical Consults, Education	Clinical Consults, Education
VA	Community Health Center of Burlington					
	Community Health Center Technology Upgrade		LAN	Research Patient education Lab test results	Exam room data communication	WAN
VT	University of Vermont (UVM) VT Teletrauma Project					ISDN
	Pediatric Teletrauma					ISDN

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
WA	Children's Hospital and Regional Medical Center - Seattle					
	Children's Health Access Regional Telemedicine (CHART) Program					ISDN
	Inland Northwest Health Services					
	Northwest Telehealth		HIS, Telehealth & Telepharmacy	Education		Telepharmacy
WI	La Crosse Medical Health Science Consortium					
	Virtual Population Health Centers in the Rural Midwest	Used occasionally	Most courses and programs	Beginning 2005		
	Marshfield Clinic Telehealth Network					
	Marshfield Clinic Telehealth Network	Dermatology, Wound Management, Radiology, Remote Monitoring, TelePathology	Video, HIS, IS, EMR, PACS, TeleRadiology, TelePathology, 13 Phone System	Available at all PCs (6,000), patient portal	Tablet PCs for providers, prescription refill	Video, PACS, TeleRadiology, Home Care, TelePathology, Food Safety
	Rural Wisconsin Health Cooperative					
RWHC/MPHCA Telehealth Initiative	Teleradiology/PACS	Videoconferencing and distance education				
WV	St. Elizabeth Hospital Community Foundation					
	Affinity/UW Telemedicine Project					ISDN of 345 kbps for visits
	Appalachian Pain Foundation					
	Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs			Website- Paincentral.com		Teleconference via home base studio
West Virginia Research Corporation						
West Virginia Community Mental Telehealth Project		Mental telehealth				

Technology and Transmission (cont.)

ST	Organization	Store and Forward	Internet Protocols (IP)	Internet/World Wide Web	Wireless Technology	Broadband Transmission
	United Medical Center					
	Distance Learning in Wyoming		H.323 videoconferencing			Point to Point T-1 videoconferencing Transmission
WY	Wyoming Department of Health					
	Wyoming Network for Telehealth (WyNETTE) (anticipated)	Telemedicine	Consultation, patient monitoring, video-conferencing	Education, library access		

Definitions:

Store and Forward	Transmission of static images or audio-video clips to a remote data storage device, from which they can be retrieved by a medical practitioner for review and consultation at any time, obviating the need for the simultaneous availability of the consulting parties and reducing transmission costs due to low bandwidth requirements.
Internet Protocol	The messenger protocol of the TCP/IP (Transmission Control Protocol/Internet Protocol), describing software that tracks the internet address of nodes, routes outgoing messages, and recognizes incoming messages. It facilitates the identification of the internet Protocol Address (IP Address), of a computer or other device on the internet (normally printed in dotted decimal form such as 128.127.50.224). The TCP, or Transmission Control Protocol, is the connection-oriented protocol portion of the TCP/IP that first establishes a connection between two systems that exchange data. The TCP/IP facilitates communication through "packet switching" over the internet and is the protocol used for communication across interconnected networks, between computers, and diverse hardware architectures, including data communications equipment and Ethernet LANs, and various operating systems.
World Wide Web	The universe of accessible information, including graphics, sound, text and video accessible through the internet. The Web has a body of software, a set of protocols and defined conventions for accessing such information, including HTML (HyperText Markup Language), the Web's software language, and TCP/IP, a family of networking protocols providing communication across interconnected networks.
Broadband	For purposes of this questionnaire, a general term for a telecommunications medium of sufficient capacity to transmit high quality voice, data and video transmissions. Broadband has been defined in many ways; e.g., a Wide Area Network (WAN providing bandwidth greater than 45 Megbits/sec (T3); voice, data, and/or video communications at rates greater than 1.544 Megabits/sec (T-1), but has been Federally defined as data transmission each way, of 200 kilobits/second or more.
Broadband LAN	A Local Area Network (LAN) that is distributed via broadband coaxial cable normally utilizing CATV technology and broadband modems. Most commonly used with the Ethernet (CSMA/CD) and Token Bus.
Broadband ISDN	Refers to ISDN services offered at rates higher than the Primary access rate (23B+D) of 1.544MB/s or 2.048Mb/s. Proposed broadband ISDN service is defined by CCITT as switched services from 34Mb/s to 680Mb/s using cell relay technology. Channels are designated as "H" channels.

Program Settings

For their respective projects, OAT grantees were asked to identify the number of sites, the population of Health Professional Shortage Areas (HPSAs)/Medically Underserved Areas (MUAs) that those sites serve, and the number of sites their project has in the Program Settings categories given. Program Settings categories include Assisted Living Facility, Community Health Center (CHC), Correctional Institution, Homes or Units/Agencies, Hospital, Hospice, Nursing Home, Public Health Department, Physician Office, Schools, Non-health Institution (housing complex, workspace, community center) , and Other. Grantee responses are indicated in the following section.

N/A = Not Applicable

Program Settings

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)		
AK	Alaska Native Tribal Health Consortium																193-Tribal Health Clinics 26-Public Health Nursing Clinics 20-Other Federal Outpatient Clinics (VA, USCG & DOD) Evaluation of the AFHCAN Project
	Alaska Federal Health Care Access Network (AFHCAN)	248	208/126/257,341							9							
	The Summative Telemedicine Evaluation Project	NA															
AL	University of South Alabama																
	Emerging Health Technologies (OEHT) BoTrac	21	2/39,238						20								
	Emerging Health Technologies (OEHT) Teletrauma	2	1/24,343							2							
	Emerging Health Technologies (OEHT) Traditional Telemedicine	10	5/248,435										1				
AR	University of Arkansas for Medical Sciences																
	South Arkansas Integrated Telehealth Oncology Program	47 and 13 Specific oncology	1 full HPSA, 10 Partial HPSA, 11 MUAs, 2 dental HPSAs							4					14	1	5

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)		
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)	
AZ	Arizona Board of Regents, University of Arizona	11	5/53,385		2	2	3	3				2	1	1	1-Mobile	
	Arizona Diabetes Virtual Center for Excellence (ADVICE)															
	Banner Health System															
	Payson Regional	1	2/50,000				1									Statewide Telemedicine Network (120)
	Arizona Telemedicine Program	120	6,000,000 (state of Arizona)													
	Navajo Nation	12			4		8									
	Maricopa County															
	Correctional Health Services Telemedicine Initiative	4	NA			4										Prisons
	Children's Hospital – Los Angeles															
	VPICU Critical Care Telemedicine Program	6	6+/1,600,000					6								
	Santa Rosa Memorial Hospital															
	Northern California Telemedicine Network	12	11/730,000		10			1				1				(1 hub & 11 spoke sites)
University of California - Davis																
UC Davis Northern California Telemedicine Project	10	8HPSA/3MUA	0	10	0	0/0	1	0	0	0	1	0	0	0		

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)		
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health institution (housing complex, workplace, community center)			
CO	University of Colorado Health Sciences Center	1	Not Applicable														1-University
	Native Telehealth Outreach & Technical Assistance Program																
DC	Foundation For eHealth Initiative																
	Connecting Communities for Better Health																
	Wisconsin Health Information Exchange--CCBH	>50	11MUAs/about 800,000														
	Indiana Health Information Exchange	1,500	1 HPSA, 7 MUAs/1,500,000														
	Colorado Health Information Exchange (COHIE)	4															
FL	Massachusetts Health Data Consortium	3															
	University of Florida College of Dentistry (UFCD)																
FL	Florida Network for Community Oral Health	6	80/4,000,000				/										1 - Dental school 2 - Related dental clinics
	Morehouse School of Medicine																
GA	Diabetes Screening Telehealth Project	2	Not applicable														
	Ware County Health Department Rural Health Telemedicine Grant Program	10	16/319,128														3
																	5

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)		
HI	Hawai'i Primary Care Association	11	2 MUA, 8 MUP/ 172,000														(HPCA)
	Hawai'i Community Telehealth Network Program			11													
	Molokai General Hospital																
IA	Molokai Telehealth Network	3	177,500					1									Off-campus outpatient office-1 Community-based dept. of hospital-1
	Iowa Chronic Care Consortium																
	Congestive Heart Failure and Diabetes Telemangement	984	56/3,057,530				966	11									
ID	Mercy Foundation																
	Midwest Rural Telemedicine Consortium	32	71/6/17,563					22		1			6				3-Administrative/Educational
	Idaho State University																
	Telehealth Idaho	24	36 HPSAs - 330,424 30 DPSAs - 342,114 44 MPSAs - 1,341,131 28 MUAs - 258,795				2	17				2					1 -Dental Practice 4-State Associations 1-Area Agency on Aging 2/3rds of public schools statewide

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/IUAs / Approximate Population	Program Settings											Other Settings (Please Specify)				
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)					
ID	North Idaho Rural Health Consortium (NIRHC)																		1-North Idaho Behavioral Health 1-Incyte Pathology Inc.
	Expanding Telehealth to North Idaho Districts (EXTEND)	19	5/175,000						5						10	3			
IL	Memorial Health System																		
	Automated Clinical Information System - Wireless Network Infrastructure	1	38/1.6 million						1										
	MHS Rural TeleRadiology	2	1/65,000						2										
	OSF Saint James-John W. Albrecht Medical Center																		
IL	OSF Saint James Telehealth Network	5	4/55,000						1										4
	Southern Illinois University School of Medicine																		
	Downstate Illinois Regional Telehealth Project	13	13/538,067						1	10					1				
IN	James Whitcomb Riley Hospital for Children																		
	Telemedicine Applications for Riley Hospital for Children	3	1/317,452						3										

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)				
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)			
KS	University of Kansas Medical Center Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network	10	5 HPSA/pHPSA 8 MHPASAs 3 dental HPSA /119,000		1			7			1							1-AHEC
KY	University of Kentucky Research Foundation Improving Health Outcomes for Children in Rural Kentucky Schools through Telehealth Networks	11	6 HPSA; 2 partial HPSA; 7 MUA; 13 Mental Health HPSAs; 6 Dental HPSAs; 1 FQHC; 2 licensed Rural Health Clinics within public schools/ 50,058					X						X				Pharmacy Dental Clinic Mobile MRI
LA	Lake Charles Memorial Hospital Community Hospital Telehealth Consortium (VHTC) Woman's Hospital Expansion of Physician Internet Portal, Womens POL	26	28/1,465,379				1	9						1	5	2-Devel- opmental Centers		8-Public Libraries
		51	HPSA: 7/697,104 MUA: 8/712,339					1										50

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)		
MA	Baystate Medical Center, Inc.	4	26 MUA,s/1pop HPSA					3						1			
	Hampden Hampshire Franklin County Telehealth Services																
	Massachusetts College of Pharmacy and Health Sciences																
	Health Educational Resource Center	1	None														1-College
UMass Memorial Medical Center, Inc.																	
	Picture Archiving & Communication System (PACS)	137						5					130				2 Out-Patient Facilities Future Affiliate Hospitals within the UMMHC System
ME	Regional Medical Center - Lubec																
	Maine Nursing Home Telehealth Network	18	5/75,000					1	2		5						1-Partners Telemedicine (Boston) 1- Bureau of Health (state agency)
	Maine Telehealth Network	216	90/575,500					17	32		5		23	40	13		24- Mental Health 1- Educational Facility 1- Bureau of Health 1-Boat

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)					
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)						
MI	Central Michigan University	1	Not Applicable														1- University	Distance Learning, Consumer Health Information		
	Rural Tele-health and Community Education Network																			
	Hillsdale Community Health Center	1																		
	PACS System																			
	Marquette General Health System																			
	Close to Home, Close to Health	65	15 HPSAs 10 MUAs /317,616				2	32	14									11	6-Outreach clinics	
	University of Michigan																			
	Michigan Collaborative Project on Internet Based Clinical Telemedicine	6	6/Not Known																	** No Clinical pt care, clinical distance educational interventions only
	Western Michigan University																			
	The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan	3	3/275000																	
Fairview Health Services																				
Ambulatory Electronic Medical Record System – Twin Cities Metropolitan Care Systems	19	11 HPSAs/MUAs/ 26 million residents																16		

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)				
MN	Fairview Ridges Hospital	1	0/0					1										
	Healthy Mothers and Babies Technology Demonstration																	
	Informatics/Health Information Services Grant: Auto. Med. Dispensing	1	1/170,000					1										
MN	University of Minnesota																	
	Fairview - University of Minnesota Telemedicine Network	13	21/575,000					11						1				1-Indian Reservation Clinic
	Logan College of Chiropractic																	
MO	Telehealth Distance Learning Initiative	NA																Equipment Grant
	The Curators of the University of Missouri																	
	Missouri Telehealth Network	38	13/441,523					X							X			12-Mental health Clinics 1-Military-Hospital 2 Academic Medical Centers

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)		
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)			
MT	Benefis Healthcare Foundation	12	12/64,126				11		12								
	<i>NMHA & REACH Telehealth Network Development Project</i>																
	Deaconess Billings Clinic Foundation	22	8/58416		1		15			1							
	<i>Eastern Montana Telemedicine Network</i>																
	<i>Center on Aging</i>	4	17 HPSAs/520,000				1						3				
	Rocky Mountain Technology Foundation	8	5/16,000		1		5						2				Education Institutions
	<i>Distance Learning/Telehealth Pharmacy Support to Rural Clinics</i>	3	3/11,000				3										
	St. Vincent Healthcare Foundation	20	18/150,00		1		6						5				7-Rural Clinics 1-MT. Hospital Assoc. Building Grant
	<i>Partners in Health Telemedicine Network (PHTN)</i>	NA															
	<i>Mansfield Health Education Center (MHEC)</i>																
	University of Montana - Missoula	29	13/125,000		8							1					4-Hutterite Colonies 10-Health Fairs
	<i>ImProving Health Among Rural Montanans (IPHARM)</i>																

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)		
NC	Duke University Medical Center	16	9 / 2 / 16,797		1		2										Department of Social Services-1 Clinics-6 Urgent Care-3
	Patient Inclusion in a Community-Based Telehealth Network																
	East Carolina University	55	101/1,197,009											1	1		
	REACH-TV (Rural Eastern Carolina Health Network)																
	Educational and Research Consortium of Western Carolinas																
ND	Western North Carolina Regional Data Link Project	16	16 MUAs/ 700,000							16							
	Minot State University																
	Rural Disabilities Wellness Project	4	14/22,959												2		Group homes and community facilities providing services for persons with mental retardation
	North Dakota State University																
ND	North Dakota Telepharmacy Project	28	28/25,000														25-Community Pharmacy 3-Hospital Pharmacy
	Northland Healthcare Alliance																
	St. Alexius/Northland TeleCare Network	21	10 MUAs/10 HPSAs/97,779		1					14					2		3-Rural Health Clinics 1-Rural Group Practice Clinic

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)		
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)			
NE	University of Nebraska Medical Center	1	Not Applicable														1-Medical Center (Distance Education)
	Distance Education of Undergraduate Nursing Students																
	Good Samaritan Hospital Foundation																
	Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE	13	13/				10/	13	10								
Rural Telemedicine Program	4	4/ 82,584					2					1				1-State Mental Health facility	
NM	Universities of New Mexico/Hawaii Health Science Center																Research
	Project TOUCH (Telehealth Outreach for Unified Community Health)		/				/										
	University of New Mexico Health Sciences Center																
	Rural Health Telemedicine Program	7	(9 counties) HPSA 6 county/163,653 pHPSA 3 county/251,756 DHPSA 8 county/251,756 Mental Health 9 county/433,921														5-Early Intervention Agencies

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)				
NV	Nevada Rural Hospital Partners Foundation	11	10/305,000							11								
	Digital Imaging System for Rural Nevada (DISRN)																	
NY	University of Nevada Las Vegas	19	0/0		12			3		2								
	Nevada Telehealth Technology Initiative																	
	Daemen College																	
	Daemen College TeleHealth Education Network	5	Not applicable					2		1								
	Institute for Urban Family Health																	
	Informatics Telehealth Project (EMR)	6	131/600,000		6													
	Montefiore Medical Center & The Children's Hospital at Montefiore																	
	Electronic Medical Records Expansion	1	2/ 120,000		1													
	New York Presbyterian Hospital																	
	Electronic Linkage Patient Health Monitor (Vigilens)	1	Not Applicable						1									
Research Foundation of State University of New York (SUNY)	1	"?"/6,000,000						1										
Telehealth New York	55	16 Full HPSA 6 MUA /267,029			52			3										Correctional facilities cover 32 HPSA's)

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)		
OH	Case Western Reserve University, University of Cincinnati, The Ohio State University NetWellness: Consumer Health Information Website	2	NA														2-Universities
	Northeastern Ohio Universities College of Medicine (NEUCOM) Medical Education Network Teaching Ohio Region III (MENTOR)	8	Not Applicable					8									3-Video Conferencing 8-Distance Education
	Ohio Board of Regents																Colleges and Universities across Ohio, as well as their associated medical schools and hospitals
	Medical Collaboration Network	6	N/A					6									
	Ohio State University Research Foundation (for Ohio Super-Computer Center)																
	Computational Approaches to Research on Cancer in Children	3						1									1-Medical school with hospital 1-Computer center
	Southern Consortium for Children																
	Southern Ohio Telepsychiatric Network	11*	3 HPSA / 9 MUA / 425,000 approx.														*7 - New, 4 - Upgrade Community Mental Health Centers

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)				
OK	INTEGRIS Health, Inc.	5	376,376			2/						3						
	INTEGRIS Rural Telemedicine Project																	
	Oklahoma Office of Rural Health																	2 other sites are located in the Shriners' clinics in Tulsa and Oklahoma City. These provide video consultations to the Children's Hospital in Shreveport, LA.
OR	Rural Health Telemedicine Program	26	2 HPSAs/8 MUAs/800,000-1,000,000					23					1					
	Asante Health System																	
	Assante Clinical Systems Initiative	369	/					1	1	7	1	1	275	2				81 MEDICAL CLINICS
	OCHIN, Inc.																	
OR	Oregon Community Health Information Network		Not Applicable															
	Tillamook Lightwave IGA																	
	Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities	4						2		1								1

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)				
	Clarion University	4	Not Applicable															24 students using multiple clinical sites
	Primary Care Education for the Citizens of Rural Pennsylvania																	
	Community Nurses Home Health and Hospice, Inc.																	
	Home Telehealth	6	1/5,000			6												
	Geisinger Clinic																	
	Developing a Stroke Care Educational Program for Rural Pennsylvania																	
	Magee-Womens Hospital of the University of Pittsburgh Medical Center (UPMC)	12	0/523933						5			6						1-Mobile Screening Unit
	Magee-Womens Hospital Telehealth Initiative																	
	Magee-Womens Hospital Telehealth Initiative	25	4/515,000						10									
	Mercy Health Partners																	
	Using Information Technology to Enhance Patient Safety	3							3									
	Pennsylvania College of Optometry																	
	Urban Ophthalmic Telehealth	3	0															1-Academic Health Center
	Pennsylvania Homecare Association																	
	Researching Telehomecare Affects on Nursing Retention and Productivity	25	59/1,200,00															25-Home Health agencies

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)					
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)				
PA	Penn State Cancer Institute, Hershey Medical Center	3	NA					3											
	Digital Informatics and Communications System																		
	Susquehanna Health System																		
	Regional Electronic Medical Record	66	NA		1			4		1			60						
	University of Pittsburgh Medical Center																		
	Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System	NA	/															Research	
	University of Pittsburgh School of Nursing																		
	Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)	4	N/A											3				School of Nursing	
	Venango Economic Development Corporation																		
	The Venango Center for Healthcare Careers (VCHC)	4	5/217,000																DuBois Business College-1 Technical School-1 University of Pittsburgh, Bradford-1 University of Pittsburgh, Titusville-1

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health institution (housing complex, workplace, community center)		
RI	Family Resources Community Action HIV/AIDS Comprehensive Psychosocial Support Project	2															1-Dental Screenings 1- Physical Examinations
	Kent County Visiting Nurse Association d/b/a VNA of Care New England	1	UNKNOWN/ 1,000,000		/				1								Home health agency (hospice)
	Advanced Technology Institute (ATI) Healthcare and Emergency Awareness Response for Telehealth (HEART)	3	13/160,000											1			
SC	Beaufort-Jasper-Hampton Comprehensive Health Services	14	3/163,000														(School Based Health Centers)
	South Carolina Prostate Cancer/Telehealth Project																
	Greenville Hospital System ICU Telemedicine Project	4	14/150,000													4	

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)		
SD	Avera Health	28	21/280,000 (31 for Mental Health)		(8)	15							5				()-Planned
	Avera Rural and Frontier Disease Management Telehealth Network												2				Population includes Yankton and Wahpeton Reservations
	South Dakota State University Foundation	85	2/16,717		2	1	80										
TN	University of South Dakota (USD) – Vermillion		/														Not Applicable
	Growing Our Own: A Nursing Education/Provider Partnership																
	University of Tennessee (Knoxville)	131	3/80,000		4		115/2	3				2	1	6			
	Mid-Appalachia Telehealth Project	24	2/60,000		1		15/1	1				2					
	Telehealth for the Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities																
	University of Tennessee, College of Medicine (Memphis)																
	Mid-South Telehealth Consortium	5				2											3 Rural Clinics

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)				
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)					
TX	Christus Visiting Nurses Association of Houston	71	5/637,840																
	Home Monitoring: Demonstration Pilot of Cost Control																		
	Cook Children's Medical Center																		
	Rural Specialty Health Telemedicine Initiative	3	3/126,555					1											
University of Texas Health Science Center at San Antonio (UTHSCSA)				[Redacted]															
Diabetes Risk Reduction via Community Based Telemedicine (DiRReCT)	2		*All of Starr Co. is a HPSA for primary medical, dental, & mental health and MUA /53,597 pop																(*1 MD/7,657 residents 1 nurse/ 851 residents 1 dentists/ 10,719 residents)
University of Texas Medical Branch - Galveston				[Redacted]															
Texas Telehealth Resource Center	265		Braxoria & Liberty Counties only: HPSA 70,154 MUA 127,638	3	35	10		21		3		25	36					1-Indian Reservation	Cruise ships-3 Corporate headquarters-4 Construction sites-1 Community mental health centers-1 Misc-24—includes portable & demo equipment, space centers-2

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)			
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health institution (housing complex, workplace, community center)				
UT	Association for Utah Community Health Telehealth Program	19	12/9/1,600,000		19													
	AUCH Telehealth Program																	
	University of Utah																	
VA	Utah Telehealth Network Comprehensive Telehealth Services	10	8/196,490		1			6		2								1-Rural Clinic
	University of Virginia																	
	Southwest Virginia Alliance for Telemedicine	3	None 258,000					3										
VT	Community Health Center of Burlington																	
	Community Health Center Technology Upgrade	4	1/12,000		3										1			Dental
	University of Vermont (UVM)																	
	VT Teletrauma Project	4	34/138,645															4
	Pediatric Teletrauma	2	25/46,694															2

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings										Other Settings (Please Specify)		
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools		Non-health Institution (housing complex, workplace, community center)	
WA	Children's Hospital and Regional Medical Center - Seattle	12	12/707,384		1	8						1				2-Outpatient Clinics
	Children's Health Access Regional Telemedicine (CHART) Program															
	Inland Northwest Health Services															
	Northwest Telehealth	51	4/34,855/		2	36						3				Air Ambulance-1 Crisis Community Center-1 Radiology Center-1 EMS Agency-1 Neuroscience Center-1 Mental Health-4 Dept. of Health-1
WI	La Crosse Medical Health Science Consortium															
	Virtual Population Health Centers in the Rural Midwest	8	NA			6						2				
	Marshfield Clinic Telehealth Network															
	Marshfield Clinic Telehealth Network	28	56/650,000		1	2	1	1	1	2		12	1			4-Dental Clinics 4-Lab
	Rural Wisconsin Health Cooperative															
RWHPHCA Telehealth Initiative	12	18/625,000		3		9										
St. Elizabeth Hospital Community Foundation																
Affinity/UW Telemedicine Project	2	0/0				1						1				

Program Settings (Cont.)

ST	Grantee	Number of Sites	# of HPSAs/MUAs / Approximate Population	Program Settings											Other Settings (Please Specify)				
				Assisted Living Facility	Community Health Center (CHC)	Correctional Institution	Homes or Units/Agencies	Hospital	Hospice	Nursing Home	Public Health Department	Physician Office	Schools	Non-health Institution (housing complex, workplace, community center)					
WV	Appalachian Pain Foundation <i>Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs</i>	N/A																	
	West Virginia Research Corporation <i>West Virginia Community Mental Telehealth Project</i>	41	Not Known																
WY	United Medical Center <i>Distance Learning in Wyoming</i>	2																	
	Wyoming Department of Health <i>Wyoming Network for Telehealth (WYNETTE) (anticipated)</i>	10																	

Homeland Security

OAT Grantees were asked to describe activities related to homeland security (e. g. ,surveillance, public health information, distance learning activities, etc.). Information requested included contact information, number of sites involved, role, brief description of activities (exercises, training, mass casualty, surge capacity efforts and/or any other relevant activity), and other entities associated with this activity. Grantee responses are indicated in this section.

N/A = Not Applicable

Homeland Security

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
AK	Alaska Native Tribal Health Consortium	Michael J. Bradley Bioterrorism Coordinator 4141 Ambassador Dr. Anchorage, AK 99508 Ph. 907 729 3653 Fax 907 729-3652	Assist Alaska tribal health organizations in developing disaster preparedness plans, programs and capacities to deal with disasters and public health emergencies.	12+	Collaborate with emergency response plan development and procedures defined in the Alaska Native Medical Center Disaster Plan.	N/A
AL	University of South Alabama	David Wallace 307 N. University Blvd., HSB 2200 Mobile, AL 36619 Ph: 251-461-1805 Fax 251 461-1806 http://www.usouthal.edu/emergingtech	Planning and Training, and Software Development	100	Conduct training and design of software for hospitals and EMA personnel throughout the state of Alabama	Alabama Department of Public Health (ADPH), Mobile County EMA/MMRS
AR	University of Arkansas for Medical Sciences	Ann Bynum 1123 South University ST 400 Little Rock, AR 72204 Ph. 501-686-2595 Fax 501-686-2585 HTTP://RPWEB.UAMS.EDU/BTPOR TAL/	Continuing education for healthcare professionals in bioterrorism; Training exercises	Statewide -- 12 Regions	The state is divided into 12 regions, with a bioterrorism continuing education manager in each region, administered by AHECs, CHC, and Health Department Clinics. The education and training provides a coordinated and comprehensive approach to CE for health care providers, equipping them to work effectively with other local, regional, and State personnel in case of a bioterroristic event.	Arkansas Department of Health, Arkansas Department of Emergency Management, Community Health Centers of Arkansas, Arkansas Children's Hospital, Veterans Administration, Arkansas Hospital Association
AZ	Arizona Board of Regents, University of Arizona	Richard McNeely PO Box 245032 Tucson, AZ 85724-5032 Ph. 520-626-7343 Fax 520-626-1027 http://www.telemedicine.arizona.edu	Administrative and Educational teleconferences	14	Co-Director of Arizona Telemedicine Program	Colleges of Nursing & Pharmacy, Arizona Department of Health Services, Arizona Poison Center, Tucson Metro Medical Response System, Pima County Health Department

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
AZ	Banner Health System	Marshall Smith Administration, WT-2 Telemedicine Banner Good Samaritan Medical Center 1111 East McDowell Rd Phoenix, AZ, 85028 Ph. 602-448-8349 Fax 602-239-2359 http://www.bannerhealth.com	Connectivity between seven major (Banner) hospitals in State, backup for disaster communication, statewide network for bioterrorism education and communication via Arizona Telemedicine Network	7	Telemedicine Director serves on state preparedness communication committee, designing communication routes and protocols for disaster/bioterrorism events	Member of Arizona Telemedicine Network which will be utilized as backup for communication route in case of event.
	Maricopa County	Dr. Todd Wilcox 111 W. Monroe-Suite 900 Phoenix, AZ 85003 Ph. 602-506-2353 Fax 602-506-2577 http://www.maricopa.gov/corr_health	CHS is participating in Maricopa County Dept. of Public Health Division of BioDefense Preparedness and Response. Our clinics will be connected to the State Health Alert Network.	5	We are a secondary responder. We will provide medical personnel, facilities and equipment as needed in an emergency. We monitor health concerns that come into the jails for trends.	Maricopa County Dept. of Public Health Division of BioDefense and Preparedness
CO	University of Colorado Health Sciences Center	David Rivera 4200 E. 9th Ave. Denver, CO.80262 Ph. 303-315-7369 Fax 303-315-4419	Police and Security Department for the 9th Ave and Fitzsimons Campus's. Patrol Campus, respond to calls for service, take crime reports, investigate crime, monitor electronic security	2	Denver Police and Fire Department Aurora Police and Fire Department Adams County Sheriff's Office State Emergency Preparedness State Homeland Security UASI	Internal of UCHSC Various Dept.
DC	Foundation for eHealth Initiative Wisconsin Health Information Exchange--CCBH Maryland/DC Collaborative for Healthcare Information Technology	Seth Foldy 1251 Glen Oaks Lane Mequon, WI 53092-3378 Ph. 414-906-0036 Dr. Victor Plavner 10420 Little Pluxent Parkway Suite 440 Columbia, MD 21044 Ph. 410-992-5780 www.collaborativeforhit.org James Rieser St. Anthony's Hospital 1200 7th Avenue North St. Petersburg, FL 33704 Ph: 727-825-1099 E-mail: sahsecurity@baycare.org	Link health networks and exchange health information. Regional health record connectivity to support public health and surveillance activities in Maryland and Washington, D.C.	>50 TBD	Real-time situational awareness of emergency medicine and public health status/surveillance. TBD	Local and state health departments, preparedness consortia. TBD
FL	BayCare Health System		Training Monthly 24 hour class to include: Hazardous Materials, Terrorism, Weapons of Mass Destruction, Hospital Patient Decontamination	1	HRSA Contract Participant Member MMRS and Pinellas Emergency Mgt. Hospital Liason Committee Patient Decon	Hillsborough, Pasco, and Pinellas Counties

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
	Morehouse School of Medicine	Eric Jackson 720 Westview Drive Atlanta, GA 30310 Ph. 404-752-1786 Fax 404-752-1971 http://www.msm.edu	Emergency and first respondent training for Health Professionals	2	We provide content experts for outbreak disease management and treatment for biological attack	CDC/ GA Health Dept/ Grady Hospital
GA	Ware County Health Department	Trina Von Waldner Southeast Health Unit 1115 Church Street Waycross, GA 31501 Ph. 912-285-6020	SEHU is involved in surveillance, public health information and training for All Hazard Preparedness in the areas of biological, chemical, natural, nuclear and/or radiological. We closely partner with local communities' EMA, EMS, Hospitals, Mental Health and Civic Organizations to prepare for these efforts.	16 counties	Work to establish a District Health Emergency Assistance Resource Team (DHEART) and a County Health Emergency Assistance Resource Team (CHEART). Participate in the development of a regional response plan with GEMA Advisory Councils. Establish a Public Health Assessment and Surveillance Team capable of district-wide coverage.	Work cooperatively with other Health Districts and State Bioterrorism staff.
HI	Hawai'i Primary Care Association	Toby Clairmont, RN, CEM 932 Ward Avenue Suite 430 Honolulu, Hawai'i 96814 Ph. 808 864-7723 Fax 808 625-3683 http://www.hah.org	Statewide Bioterrorism Taskforce	11	On planning committee, coordinating between HPCA and CHCs	Department of Health, State hospitals, private/non-profit hospitals
IA	Mercy Foundation	Fred Eastman 1111 - 6th Avenue Des Moines, IA 50314 Ph. 515-643-5225 Fax 515-643-8928 http://www.mrtc-iaowa.org	Public Health Information/Distance Learning Activities	30+	Assist in dissemination of educational/public health information related to public safety/terrorism as requested.	Iowa Department of Public Health; Iowa Center for Public Health Preparedness; Centers for Disease Control
ID	Idaho State University	Dr. B. Hudnall Stamm, Ph.D. Campus Box 8174 Pocatello, ID 83209 Ph. 208 282-4436 Fax 208 282-4074 http://www.isu.edu/irh http://telida.isu.edu	Representation on the State Bioterrorism Preparedness & Response Advisory Committee; provision of digital medical library to 10 hospital sites with bioterrorism response health information; edited and published articles in IEEE Engineering in Medicine and Biology Magazine, Sept/Oct 2002, Dec 2003, Several papers on terrorism and cultural trauma Ongoing worldwide consultation on supporting aid workers in crisis areas (war, disaster)	11	Representation on the State Bioterrorism Preparedness & Response Advisory Committee	State of Idaho, International Society for Traumatic Stress Studies, South African Institute of Rural Health, Taylor Institute, various other countries and agencies

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
ID	North Idaho Rural Health Consortium (NIRHC)	Sue Fox Bonner General Hospital PO Box 1448 Sandpoint, ID 83864 Ph. 208-265-3390 Fax 208-265-6276	Emergency management plans & training, bioterrorism detection & recognition, decontamination & personal protective equipment, bioterrorism treatment and pharmacy, surge capacity, and public relations	5	A comprehensive assessment was conducted in Nov 2002 by each hospital. Six primary focus areas were evaluated. Regional results were presented and revised as each of the six regional meeting and formulated into Regional Plans.	The Northern Regional Hospital Plan was developed in a cooperative effort with hospitals, local health district, county emergency managers, and fire/ EMS agencies. State Hospitals (psychiatric facilities), Veterans Affairs Medical Center, Indian Health Services, and 101st Civil Support Team were included in the regional planning and assessment efforts.
IL	Memorial Health System	Charles D. Callahan, Ph.D. Memorial Medical Center 701 North First Street, Springfield, IL 62781 Ph. 217-788-3156 Fax 217-788-6459 http://www.memorialmedical.com	TOPOFF2 Exercise Participation -- May 03 Incident Command System (ICS) Tabletop Exercise, Internet based -- Nov 03 Regional Bioterrorism Response Plan development and implementation -- Ongoing CY 03/04 Assessment of facility capabilities relative to bioterrorism response, surge capacity, isolation and support services -- Ongoing CY 03/04	1	MMC serves as POD Hospital supporting state emergency disaster plan. Participates in statewide disaster planning activities for 18 county Region 3. Coordinates response actions with city and county emergency management agencies. Interacts with regional healthcare facilities to facilitate bioterrorism planning, training and exercise capabilities.	Illinois Department of Public Health, Saint John's Hospital, Springfield Department of Public Health, Sangamon County Public Health, Sangamon County ESDA, Sangamon County Local Emergency Planning Committee, Region 3 Emergency Planning Committee, Health Care Response Network.
	OSF Saint James-John W. Albrecht Medical Center	Steve Baron OSF Saint James - John W. Albrecht Medical Center 2500 W. Reynolds Pontiac, IL 61764 Steve.baron@osfhealthcare.org	Bioterrorism Network	Hospital	Assistance w/POD hospital & other hospitals in the network to develop a Bioterrorism Network	County & Local EMS Services

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
IL	Southern Illinois University School of Medicine	Deborah E. Seale P.O. Box 19682 Springfield, Illinois 62794-9682 Ph. 217-545-7830 Fax 312-217-545-7839 http://www.siumed.edu/telehealth	Collaborated in training of 188 rural nurses and pharmacists	18	Address new roles healthcare professionals need to assume during a bio-disaster event and how these new roles interact with other non-health care professionals. Provide information on the clinical management of the A bioterrorism agents, how to conduct bio-event surveillance within practice settings and the legal ramifications of volunteering during a bio-disaster. Emphasis on importance of communities working together in times of crisis.	University of Illinois at Chicago Colleges of Pharmacy and Nursing, Illinois Health Education Consortium, Metropolitan Chicago Healthcare Council. (Funded by a training grant from US Dept of Health and Human Services).
IN	Clarian Health Partners (Methodist, IU and Riley Hospitals; 4 Beltway Surgery Centers	Linda Harshbarger EM Coordinator IU Hospital 550 N. University Blvd. #UH1205, Indianapolis, IN 46202 312-274-7677 For Surveillance Information, contact Dr. Douglas Webb Co-Medical Director, Infection Control, 317-962-2157	The 3 hospitals conduct 2 drills per year JCAHO/ISDH standards; 1 drill per year has influx of patients. Each Beltway Service Center conducts 2 drills per year; 1 drill has influx of patients. Monthly meetings of emergency Management Subcommittee. Emergency Department Disaster Response Team meets monthly. Other meetings as necessary. Classes given biannually.	Methodist Hospital of Indianapolis Indiana University Hospital of Indianapolis Riley Children's Hospital Beltway Sites: MMP East MMP North MMP South MMP Eagle Highlands	EM Coordinator participates in monthly LEPC meetings. Clarian participates in Federal, State and/or Local disaster drills and planning, as available. Last drill conducted Aug. 31, 2004; 22 agencies participated in terrorism bombing of the RCA Dome. EM Coordinator receives daily updates from DHS and other like-related agencies.	District 5 Hospital Emergency Preparedness Task Force-EM Coor. Attends monthly meetings. EMTC Disaster Team participates with Local Search and Rescue and other local entities.
KS	University of Kansas Medical Center	David Cook, Ph.D University of Kansas Medical Center Mail Stop 1048 3901 Rainbow Blvd. Kansas City, KS 66160	Several 2-hour bioterrorism and disaster preparedness training sessions throughout the state.	More than 40 may participate, including the 10 OAT-funded sites.	KUCTT will facilitate the delivery of disaster preparedness training sessions through videoconferencing systems located throughout the state. KUCTT will help schedule and monitor the events.	KUMC Health and Technology Outreach Department

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
KY	<p>Kentucky TeleCare/ Telehealth Network</p>	<p>Rob Sprang K287 KY Clinic, 740 S. Limestone Lexington, KY 40536 Ph. 859-257-6404 Fax 859-257-2881 Emergency: cell phone: 859-396-3588 rsprang@email.uky.edu</p>	<p>PROACT NETWORK Bioterrorism Training for Behavioral Health Professionals, Veterinarians (bioterrorism certification), Pharmacists (bioterrorism certification), Cooperative Extension Agents, Physicians, Nurses, Dentists.</p> <p>KY Department of Public Health Training Bioterrorism Programs</p> <p>Mock Training Exercises with KY TeleCare PROACT sites, KY Dept of Public Health, and Missouri Dept of Public Health</p>	20	<p>PROACT Network consist of interactive videoconference telehealth facilities across KY that have committed to participate in disaster preparedness and response efforts. In the event of a disaster, the KY Dept of Public health will contact the KY TeleCare Office and the TeleCare Office will contact the other members of the network and will engage the network. Healthcare professionals and patients are able to go to their local PROACT site to connect with other PROACT sites, KY Dept. of Public Health, CDC, Dept. of Homeland Security, and other critical stakeholders involved in the disaster response effort. PROACT network has signed letters of agreement with each site and can be active within 6 hours of first call from KY Health Dept.</p>	<p>State Department of Public Health, CDC, Department of Homeland Security</p>
LA	<p>Lake Charles Memorial Hospital</p>	<p>Kevin Haymon, BSN, RN Lake Charles Memorial Hosp. 1525 Oak Park Blvd., Ste. A Lake Charles, LA 70601 Ph: 337-494-2861 Fax 337-494-6742</p>	<p>Distance Learning, Public Health Information</p>	26	<p>Institutional involvement in local, regional, and State planning.</p>	<p>Louisiana Office of Emergency Preparedness.</p>

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
LA	Woman's Hospital	Stan Shelton Vice President—Support Services Woman's Hospital 9050 Airline Highway Baton Rouge, LA 70815 Ph. 225-924-8645 www.womans.com hrlsfs@womans.com	Hospital emergency preparedness drills, HEICS	2	Woman's Hospital coordinates disaster-related medical readiness at the Federal, State, and local area through active participation with the Louisiana Office of Emergency Preparedness, the Metropolitan Medical Response System (Louisiana Region 2 Hospital Emergency Event Group), the East Baton Rouge Parish Office of Emergency Management and the Baton Rouge Health Care Forum Emergency Management Group	None
MA	Baystate Medical Center, Inc.	Barbara Farrell 759 Chestnut Street Springfield, MA 01199 Ph. 413-794-8349 Fax 413-794-8426 http://www.baystatehealth.com	Statewide training site for the region.	1	Level 1 Trauma Center	
	UMass Memorial Medical Center, Inc.					
ME	Regional Medical Center - Lubec	Ron Emerson RN BSN 43 S. Lubec Rd Lubec, ME 04652 Ph. 207-287-4060 Fax 207-287-3020 http://www.rmcl.org	Use Network to provide bio-terrorism education from Harvard school of public health and Maine's Division of Disease Control	Approx: 100	Provide bio-terrorism preparedness education from Harvard School of Public Health to hospitals, etc. Practice session planned to use in case of BT Emergency	Maine Emergency Medical Service
MI	Central Michigan University	Timothy Pletcher 2214 HPB Mt Pleasant MI 48859 Ph. 989 774-1850 Fax 989 774- 1853 http://www.chp.crmich.edu/rcten	Distance and Mass First Responder Training	2	Participant & facilitator, technical demonstration projects, plus we have hosted distance education using Human Patient Simulators	Worked with the Air Force Alpena Combat Medical Readiness units to prove proof of concepts on just in time medical training. Plus local response, also work the mid Michigan community health
	Hillsdale Community Health Center	Valerie Fetters 168 S. Howell Hillsdale, MI 49242 517-437-5216	Participation with District 1 Regional Medical Response Coalition	1		

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
	<p>Marquette General Health System</p>	<p>Alyson Sundberg Marquette Cnty. Med. Control Authority 580 W. College Marquette, MI 49855 Ph. 906-225-7410 Fax 906-225-3038</p>	<p>Development and training</p>	<p>10</p>	<p>MGHS Telehealth provides the medium for video conferenced meetings</p>	<p>Regional hospitals, Medical Control Authority</p>
	<p>Fairview Health Services</p>	<p>Tom Ormand, Director AEMR Fairview Information Services, 323 Stinson Blvd. Minneapolis, MN, 55473 612-672-6822 tommand1@Fairview.org</p>	<p>The AEMR serves as an analytical repository for bio-surveillance and provides aggregate analysis. It also provides automated tracking of immunization and used for monitoring disease patterns and patient volumes in physician and clinic offices to identify atypical disease clusters and automatically report them to Fairview Health System for electronic transfer to the Minnesota Department of Health and Centers for Disease Control, as appropriate. The ambulatory electronic medical record system will be fully integrated with Fairview's acute care electronic medical record so that Emergency Department physicians and caregivers will have immediate access to patients' recent ambulatory records thus expediting diagnosis and treatment in the event of a bio-terrorist attack.</p>	<p>Fairview University Medical Center – Riverside and University Campuses Fairview Southdale and Ridges Hospitals Fairview Women's Clinics (3 sites), Fairview clinics including Northeast, Staub, Highland Park, Eagen, Ridges, Cedar Ridge, Lakeville Bloomington Oxboro, Eden Center, Jonathan, and Cross Town</p>		
	<p>Fairview Lakes Regional Medical Center</p>	<p>Mary Jo Chippendale 313 North Main Street, Rm 240 Center City, MN 55012 Ph. 651-213-0466 Fax 651-213-0317</p> <p>Bill Becker St. Cloud Hospital 1406 N 6th Ave. St. Cloud, MN 56303 Ph. 320-255-5682</p>	<p>Plans for county response to emergencies in realm of disaster, public health and terrorism.</p> <p>Plans for mutual cooperation among 20 regional hospitals in the MDS Central region. Administers grant funds from HRSA/CDC/MDH.</p>	<p>3</p> <p>20</p>	<p>Health care resource, integrate community plans with health care provider opportunities.</p> <p>Develops inter-agency communication and stock sharing strategies, integrate region-wide plans into local/facility emergency response plans, makes decisions on similar personal protective gear and hospital equipment to be used throughout the central region.</p>	<p>Chisago County Sheriffs Office, Chisago County Emergency Management, ISD #2144, Chisago County Public Health, Local EMS sources, Lakes Area Police, Fairview Lakes Regional Health Care</p> <p>20 member hospitals, East Central Regional Emergency Management Services, Minnesota Department of Health, Stearns County Emergency Management Services.</p>

MN

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
MN	Fairview Ridges Hospital	Brian Milavitz Fairview Ridges Hospital 201 Nicollet Boulevard Burnsville, MN 55337 http://www.fairview.org Ph: 612-672-2253 Fax: 612-672-7050	Implemented the Health Emergency Incident Command System (HEICS) model, added decontamination facilities and equipment and implemented security measures consistent with the Homeland Security color coded security alert system.		Part of Metro Facilitated Disaster Response Committee Compact. The compact has distributed federal funds to Fairview and its other member for disaster readiness planning, staff training, and equipment purchases	
	University of Minnesota	Greg Hestness Assistant Vice President Public Safety 310 TSB, 511 Washington Avenue SE Minneapolis, MN 55455 Ph. 612-626-4734 Office 612-625-3454 Fax 612-624-8899 hestness@umn.edu http://www1.umn.edu/prepared/	N/A	N/A	N/A	N/A
MO	The Curators of the University of Missouri	Joe Tracy, Executive Director Missouri Telehealth Network 2401 Lemone Industrial Bldg Columbia, MO 65203 Ph. 573 884-7958 Fax 573 882-5666 www.telehealth.muhealth.org	Contracts with the Missouri Dept. of Health and Senior Services (24 sites) and the Missouri Primary Care Association (15 sites) are in the execution process provide connectivity to DHSS, the Missouri Hospital Association FQHC, and 22 Hospitals for the purpose of bio-attack prepared and response.	39	The Missouri Telehealth Network will simply be a conduit/tool used for planning activities as well as response.	Funding will come from the Missouri Dept. of Health and Senior Services and MPCA with Govt. funding from HRSA
MT	Benefits Healthcare Foundation	Karyn Sowa REACH Network Benefits Healthcare 1101 26th St So. Great Falls, MT 59405 Ph. 406-455-5588 Fax 406-455-4796	Bioterrorism Telehealth Drill	4	Statewide Bioterrorism Drill for Pneumonic Plague using telehealth networks	St. Vincent Healthcare Foundation, St. Vincent Healthcare, Bioterrorism Grant, Doris Barta
	Deaconess Billings Clinic Foundation	Thelma McClosky Armstrong 2800 Tenth Ave North Billings, Montana 59101 Ph. 406 657 4057 Fax 406 657 4875 http://www.emtn.org	Planning and Training	1	Developing process for activating networks across state	Montana Healthcare Telecommunications Alliance

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
	Deaconess Billings Clinic Foundation Northwest Area	Joe Marcotte 2800 10 th Avenue North Billings, MT 59101 Ph. 406-657-4824 jmarcotte@billingsclinic.org	Involved in variety of initiatives—i.e., Surge Capacity Planning funded by HRSA and HAZMAT and Incident Planning funded by Office of Domestic Preparedness	17	Yellowstone County Emergency Planning Committee Mr. Marcotte—Chair plus other State and National Committees	76 community members including EMS, Law Enforcement, and other Healthcare Facilities
	St. Vincent Healthcare Foundation Mansfield Health Education Center (MHEC)	Victoria Cech, Director MHEC St. Vincent Healthcare PO Box 35200 Billings, MT 59107 PH: 406-237-8610 FAX: 406-237-8656	HRSA funded Bioterrorism Grant	State of Montana.	Involvement in two statewide disaster drills using televideo-communications.	Department of Public Health & Human Services Yellowstone County Local Emergency Planning Council
MT	University of Montana - Missoula	Doug Allington School of Pharmacy Skaggs Building, SB 332 Missoula, MT 59812-1522 Ph. 406-243-2498 Fax: 406-243-4353 douglas_allington@umontana.edu	We are in the beginning phases of coordinating efforts at a State level to help facilitate the offering of bioterrorism preparedness training for health professionals and first responders throughout our State. Our advisory board members include individuals from our States medical, nursing, pharmacy, and physician-assistant organizations. In addition we are working with other State agencies to identify opportunities for collaboration in our training efforts.	5+	In addition to the collaborative partners previously mentioned, we have also been in contact with individuals representing the Yellowstone County Emergency Preparedness Committee, Montana Family Practice Residency Program, Billings Area Indian Health Services and the Montana Health Care Telecommunications Alliance.	Collaborative partners include St. Vincent's Healthcare Mansfield Education Center in Billings Montana, University of Montana School of Pharmacy and Allied Health Sciences in Missoula, MT; the Critical Illness and Trauma Foundation of Bozeman, Montana; Montana State University-Billings College of Allied Health; South Dakota State University School of Medicine Continuing Medical Education program; Benefits Healthcare in Great Falls; and the State of Montana
NC	Duke University Hospital	Jim Chang, Emergency Management Coordinator; Duke University Hospital; Box 3521; Durham, NC 27710; 919-681-2933; james.chang@duke.edu	Comprehensive all-hazards emergency planning to address DUH's response to a mass casualty event. Planning activities include: vulnerability assessments, security enhancements, surge capacity planning, training and drills.	1	Participate in Durham County Emergency Management and Health Department planning activities. Participate in North Carolina Division of Public Health and Emergency Management planning and exercise activities.	North Carolina Hospital Association

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
NC	East Carolina University	Scott Simmons Brody School of Medicine at East Carolina University 600 Moye Blvd. Greenville, NC 27834 Ph. 252-744-3852 Fax 252-744-1872 simmons@mail.ecu.edu http://www.telemed.ecu.edu	Regional Disaster Plan development (29-county region) through the Eastern Regional Advisory Committee (ERAC) Disaster Subcommittee	20	Telemedicine Center representative chairs the subcommittee of the ERAC Disaster Committee	NC Office of Emergency Medical Services; NC Office of Emergency Management, NC Division of Public Health, County Emergency Managers, County EMS systems
	Minot State University	Wesley Matthews 500 University Ave. West Minot, ND 58707 Ph. 701-858-3352 Fax 701-858-3352 http://minotstateu.edu	Risk management planning	4	Risk management planning	
	North Dakota State University	Charles D. Peterson College of Pharmacy 123 Sudro Hall Fargo, ND 58105 Ph: 701-231-7609 Ph: 701-231-7609 Charles.Peterson@ndsu.nddak.edu	Assist in the coordination and distribution of the National Pharmaceutical stockpile for the State of North Dakota	1	Assist in the coordination of the National pharmaceutical stockpile for the State of North Dakota	Southeast Regional Emergency Preparedness Organization, and Emergency Medical Personnel
ND	Northland Healthcare Alliance	Nancy R. Willis St. Alexius Medical Center 900 E Broadway Bismarck, ND 58501 Ph. 701-530-7050 Fax 701-530-7099 e-mail: nwillis@primecare.org http://www.st.alexius.org	Using Federal funds, the State contracted with the North Dakota Healthcare Association (state hospital association) and established a Bio-Terrorism Wide Area Network using an ATM network, video over IP that is connected to all 42 hospitals in the state. We aided in the establishment of the network and are a participant. We have a connection in our Telemedicine Conference Room for administrative meetings as well.	42	We are considered the most prepared hospital in the State. We are one of only two full hospital based decontamination sites in the state. Our hospital safety officer who is a paramedic serves on both the statewide preparedness task force. The director of the TeleCare Network is the VP of Marketing who serves as our hospital's PIO in event of a disaster.	ND State Department of Health City of Bismarck/Burleigh County Emergency Preparedness Task Force ND Highway Patrol ND State Radio City of Bismarck, Burleigh County and other County and City Law Enforcement Agencies in our service area City of Bismarck, Burleigh County and other County and City Fire and Rescue Departments in our service area State EMS Association Metro Ambulance and other county and city ambulance squads in our service area State Trauma Committee State Bio-Terrorism Task Force

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
NE	Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE	David Lawton Health Alert Network Coord. NE HHS	Developing a connected network of Hospitals, Public Health dept. Labs & HHS.	18 in our network	Participating in the Emergency preparedness program establishing the state wide communications network to be utilized in any emergency. Another avenue of education and administrative connectedness.	NHA, NHHS, Various Nebraska health departments, UNMC, Nebraska bioterrorism labs, Nebraska information technologies.
NE	University of Nebraska Medical Center	Phyllis A. Muellenberg UMA 3578 983135 Nebraska Medical Center Omaha, Ne 68198-3135 Ph. 402-559-7628 pmuellen@unmc.edu Steven H. Hinrichs, M.D.; Director, NPHL, 986495 Nebraska Medical Center Omaha, NE 68198-6495 Ph. 402-559-4116 http://nphl.org Also: http://www.unmc.edu/bioterrorism	UNMC Bioterrorism/Public Health Curricular Enhancement;(Design, develop and deliver 8 course modules via web for health professions students including a mass casualty drill component) Nebraska Public Health Laboratory is a cooperative partnership with Nebraska Department of Health and Human Services System. Available are: a surveillance system designed for early detection of a bioterrorism outbreak, a mobile lab able to test as many as 1,000 suspected bioterrorism victims per hour, a Health Professions Tracking Center database and alert system, and a variety of available training and education opportunities.	4 campuses of UNMC (Omaha, Lincoln, Kearney, Scottsbluff, Nebraska)	UNMC personnel direct the Bioterrorism Center of Excellence established by the U. of NE and collaborate in all statewide efforts	NE DHHS; Omaha Metro Medical Response; NE Center for Bioterrorism Education; Nebraska AHECs
NM	Center for Development & Disability	Anthony Cahill PhD Ph. 505 272-2290 acahill@salud.unm.edu L.D. Brown, MD, MPH NV State Hlth. Lab. 1660 N. Virginia St. Reno, NV 89503 775.688.1335 (V) 775.688.1460 (f) lbrown@med.unr.edu	Training and technical assistance to first responders on emergency procedures for people with disabilities.	Statewide	Coordination with FEMA, CDC, other Federal and State agencies	
NV	University of Nevada Reno - School of Medicine	Joseph Lombardo 4505 South Maryland Parkway Las Vegas, NV 89154-4028 Ph. 702-895-4153 Fax 702-895-4156 http://www.nscce.edu/niat	Public Hlth. Laboratory System, part of the Laboratory Response Network (LRN) Medical Records	2	Advisory role in laboratory preparedness issues/grant preparation and logistics of the emergency laboratory response	Integrates planning with State & District (i.e. Metropolitan) Health and Emergency Response entities
	University of Nevada Las Vegas			4	Member of multiple State and local planning committees	National Nuclear Security Administration (NNSA)

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
	New York Presbyterian Hospital	Yves A. Lussier 622 W 168 St. VC5 New York, NY, 10032 Ph. 212-305-0939 Fax 212-343-0669 http://www.dbmi.columbia.edu/lussier	Modeling Syndromic Surveillance	1	Informatics and Emerging Infectious Disease Modeling	N/A
NY	Research Foundation of State University of New York (SUNY)	William Dice, MD ECMC, 462 Grider St. Buffalo, NY 14215 Ph. 716-858-8701 Fax 716-858-8701 http://www.smb.s.buffalo.edu/emed/emed/SMART.html	Specialized Medical Assistance and Response Team (SMART) ; Mobile deployable wireless Disaster LAN; Store-and-Forward Emergency Network; Emergency Department Triage Surveillance; Simulation; Joint exercises; DVD video training	28	Dr. Dice is invited speaker for national WMD / Disaster conferences; State EP Committees, Erie County Commissioner of Health is also Regional EMS Director; SMART Telehealth Division (DEllis)	Regional Air National Guard Unit; Coast Guard
	Northeastern Ohio Universities College of Medicine	Carolyn Schmidt 42909 St Rt 44 Rootstown, OH 44272 330-325-6103 csimon@neoucom.edu	N/A		N/A	N/A
OH	Ohio Board of Regents	David Barber, 36th Fl., 30 E. Broad St. Columbus, OH 43215 Phone: 614-752-9530 Fax: 614-466-5866 www.regents.state.oh.us	Joint development of training and conduct of simulation between sites offering specialized homeland security training	2	Both sites offer training programs for local government and emergency services personnel	N/A
OK	Oklahoma Office of Rural Health	John Shepherd 111 West 17th Tulsa, OK 74107 Ph. 918-584-4361 Fax 918-584-4396 http://www.ahcc.okstate.edu	Bioterrorism Training for Medical Professionals	22	Not applicable. This is done on the county level.	Not applicable
OR	OCHIN, Inc.	Michael Leahy 522 SW 5th Suite 400 Portland, OR 97024 Ph. 503-416-1418 Fax 503-416-1437 http://www.ochin.org	Delivery of Practice Management and EMR solutions to Community Health Centers	70	We participate in State discussions on syndromic surveillance and bioterrorism monitoring activities	Health Services Office of the State Department of Human Services
	Tillamook Lightwave IGA	Tillamook County	Emergency Preparedness	2	County Emergency Management	Tillamook County Sheriff

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
PA	Community Nurses Home Health and Hospice, Inc.	757 Johnsonburg Rd., Suite 200 St. Marys, PA. 15857 (P) 814-781-1415 (F) 814-781-6987	N/A	N/A	N/A	N/A
	Geisinger Clinic	Scott Bitting 100 North Academy Avenue Danville, PA 17822-1540 Ph. 570-271-5631	Surveillance, Distance Learning, Public Health Information	1	Participation with regional counter terrorism task force. Regional activity to coordinate health and medical response.	Montour County Emergency Management Agency, Pennsylvania Department of Health and PEMA.
	Mercy Health Partners	Donald Caines	Emergency Preparedness	3	Cooperation and involvement with mentioned agencies	
	Pennsylvania Homecare Association	Tammy Sanner 20 Erford Road, Suite 115 Lemoyne, PA 17043 Ph. 1-800-382-1211, ext 22 Fax 717-975-9456 www.pahomecare.org	Conducted an assessment of bioterrorism preparedness among Pennsylvania Homecare agencies in 2004. Conducted 6 regional bioterrorism training sessions in Pennsylvania in 2004.	PHA services more than 250 homecare agencies throughout Pennsylvania	PHA executive director sits on the State Bioterrorism Advisory Committee	N/A
Thomas Jefferson University	Edward Jasper, MD Center for Bioterrorism and Disaster Preparedness 8330 Gibbon Building 111 South 11 th St. Philadelphia, PA 19107 PH: 215-955-1777 http://www.jeffersonhospital.org/bioterrorism/ Eric Williams (Admin. Contact) 2210C Gibbon Building Hospital Administration Thomas Jefferson Un. Hospital 111 South 11 th St Philadelphia, PA 19107 PH: 215-955-9345 Fax: 215-955-2197	Coordinated multi-hospital citywide Drill with over 300 fully moulaged Victims. Provide education and training sessions to emergency medicine physicians, EMS personnel, etc. utilizing simulation manikins. Working with the Penn. Dept. of Health to provide educational content related to terrorism preparedness on the Learning Management System (web-based distance learning tool)	On-site at TJUH Local Fire Dept., conference etc.	Participate in Penn. Dept. of Health advisory committees related to statewide preparedness. Chair Philadelphia Center City Emergency Healthcare Support Zone		

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
PA	<p>University of Pittsburgh Medical Center</p>	<p>Kathleen Criss, CBCP 300 Halket Street Pittsburgh, PA 15213 Ph. 412-641-4860 Fax 412-641-1357</p> <p>Tara O'Toole, MD, MPH Director/CEO Center for Biosecurity Ph. 443-573-3304</p> <p>Kim Hester 200 Lothrop Street Pittsburgh, PA 15213 Ph. 412-647-4863</p>	<p>Liaison between the University of Pittsburgh Medical Center with state and local public agencies on emergency management activities.</p>	<p>Various - public agencies and private orgs.</p>	<p>1) Chair of PA Region 13 Technology Integration Subcommittee - development of technology for emergency preparedness, public/private communications and medical credentialing; 2) Leadership Committee for PA Region 13/Metropolitan Medical Response System - developed of regional healthcare plans for bioterrorism and 'all hazards' response; 3) Member local LEPC to ensure hazard mitigation, planning and preparedness/response for hazardous materials incidents in Allegheny County; 4) Certified trainer of FEMA's Disaster Resistant Jobs Training; 5) Alternate for Michael Allswede, DO, to develop a PA Strategic Medical Assistance Resource Team.</p>	<p>Member of the UPMC Bioterrorism Preparedness Executive Committee; Three Rivers Contingency Planning Association, Pittsburgh, PA; Allegheny County Emergency Management Agency; Pittsburgh Chapter of InfraGard; Building Owners and Managers' Association.</p>
	<p>University of Pittsburgh School of Nursing</p>	<p>Paul J. Kapsar, Jr RN, MSN, CRNP Univ. of Pittsburgh 415 Victoria Bldg Pittsburgh, PA 15261 Ph: 412-624-4098 Fax 412-383-7293 pkapsar@pitt.edu</p>	<p>In charge of hazards, security, & bioterrorism preparedness at Univ. of Pgh. -UPMC/ Univ. of Pittsburgh disaster plan and drill Oct 03. Presents disaster planning and Bioterrorism and Family to school nurses, masters students and professional nurse organizations.</p>	<p>13 Counties in SW PA & city of Pittsburgh-includes 64 hospitals</p>	<p>2 National Publications, 11 Presentations to a total of 400 health care workers since April 2002 on Disaster Nursing, Bioterrorism, Fundamentals of Disaster Planning</p>	<p>UPMCHS Smallpox Adm. Task Force Region 13 WMD Planning Task Force. Center for National Preparedness/ Presented at CDC Atlanta, GAUPMC</p>
	<p>Venango Economic Development Corporation</p>	<p>Cynthia Linnon 206 Center Street PO Box 128 Oil City, Pa. 16301 814/677-3152 ext. 19 clinnon@venangoedc.org</p>			<p>N/A</p>	

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
	Advanced Technology Institute (ATI)	Joseph E. Jones 5300 International Blvd. N. Charleston, SC 29418 Ph. 843-760-3649 Fax 843-207-5458 http://www.atticorp.org	Develop Plan	3	Develop plan for using technology to link emergency planning & health care	
SC	Greenville Hospital System	Greg Reed, EMC Chair 701 Grove Road Greenville, SC 29605 Ph. 864-455-5179 Fax 864-455-6725 greed@ghs.org GHSnet	GHS features: HEICS command model Liaison to local emergency management /ESF 8 / public health Participates with local and state public health conducting disease surveillance Hazmat decontamination capabilities A NDMS receiver site. Participation in grants -HRSA, DOJ & state Homeland Defense regional Ongoing CBRNE training continues "Tandburg" distance learning system for external training opportunities SCHA /DHEC/WMD/Biological/ HEICS/NIMS/local medical annex exercises/LEPC, etc. Ongoing drilling and exercises - Walk-in hazmat /site impact. Region-wide covert biological event SNS delivery & distribution system. Tabletops - HEICS command & AOC training. Regional mutual aid with 28 other Health care entities.	4 acute care campuses 2 ambulatory surgery centers, multiple business settings including clinical practices	GHS membership on regional Disaster Planning with public health/DHEC, epidemiological membership to state level task force, Academy of Public Health Emergency Preparedness participant 2004-2005, HEICS consultation to sister organizations. Mutual Aid Agreement program design & maintenance in collaboration with sister organizations	Interact with: Greenville County Office of Emergency Preparedness Appalachian II District Public Health SCDHEC SC Hospital Association Local/ regional emergency : Fire, Hazmat, COBRA, Military / NDMS CDC /Epidemiological programming Other HC organizations throughout region
SD	Avera Health	David Erickson 3900 W. Avera Drive Sioux Falls, SD 57108 Phone: 605-322-4550 Fax: 605-322-4522 http://www.avera.org	While Dr. Erickson serves as the contact for Avera Health, each regional facility also has their own contact for emergency preparedness. The regional facilities are involved at varying levels within their community and region. For example: at Avera McKennan, various distance learning opportunities have occurred and there is on-going cooperation with the state bioterrorism contact and activities, as well as regular coordination activities with the local community activities.	varies	While there is system-wide representation at the state level, each regional facility has a different role in their local planning activities.	

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
TN	University of Tennessee, Graduate School of Medicine (Knoxville)	Sam Burgess, PhD 1924 Alcoa Highway Knoxville, TN 37920 Ph. 865-544-8059 Fax 865-544-8975 http://www.UJtelehealth.net	Statewide network for distribution of bioterrorism training and homeland security alert. Providing lectures from UT Graduate School of Medicine, UT College of Vet Medicine, TN Dept. of Agriculture, TN Dept. of Health, Radiation Emergency Assistance Center/Training Site (REACTS), and Emergency Management Agencies. Distributing lectures in region.	34	UT Telehealth Network coordinates videoconferencing education for preparedness training for Middle and East Tennessee; collaborates with surrounding telehealth networks in Tennessee and surrounding states; and participates in the Knoxville homeland defense planning.	UT College of Veterinary Medicine, UT Medical Center at Knoxville, UT Health Science Center, UT Martin, Oak Ridge National Laboratory, Tennessee Emergency Management Agency, Knoxville Emergency Management Agency, Tennessee Department of Health, and University of Kentucky,
	Mid South Telehealth Consortium	Sydney Gray 877 Madison Ave., 7th Fl. Memphis, TN 38163 Phone: 901.448.2611 Fax: 901.448.1520 http://www.utmem.edu/titan	Continuing education/ distance learning on response and recognition to and of a terrorist threat	5	N/A	Tennessee Health Department Memphis/Shelby Co. Health Department
TX	Cook Children's Medical Center	Contact: Robert Strong, Safety Officer Address: 801 Seventh Avenue Fort Worth, Texas 76104 Phone #: 682-885-1346 Fax #: 682-885-3995 Program Web Site: www.cookchildrens.org	Cook Children's participates in a community-wide disaster exercise annually and conducts at least one internal readiness exercise for our hospital annually. Our last community-wide disaster exercise involved many of the hospitals in the Dallas/Fort Worth metroplex. During the last two external exercises Cook Children's has conducted decontamination of patients in a cooperative effort with Harris Methodist Hospital of Ft. Worth. Additionally, we also participate in the annual NDM/S drills for this area.		Cook Children's has several hospital employees involved in local committees including the Local Emergency Planning committee, DFW Hospital Council, MMRS with the City of Ft Worth, and Departments of Health, both city and statewide. Cook Children's is also contacted by NDMS when a disaster occurs. Our employees who sit on these committees participate in writing and implementing local policies and procedures for our area. They train for tasks such as supporting health authorities administer mass inoculations, establishing alternate non-hospital treatment sites, staffing Call Centers to answer health questions from the public, and assisting with other unforeseen homeland security activities related to protecting and restoring public health.	Cook Children's is an active member in the DFW Hospital Council.
	University of Texas Health Science Center at San Antonio (UTHSCSA)	Peggy M. Visio, MS, RD, LD Div. of Pedi Endocrinology, UTHSCSA San Antonio, TX 78229-3900 Ph. 210-567-5283 Fax 210-567-0492 http://www.pediatrics.uthscsa.edu/pe-diendo	A UT-based medical reserve corps unit trains and is prepared to assist public health authorities in the event that a major natural disaster or man-induced disruption threatens public health anywhere in South Texas.	4	Unit detachments established in border areas where the UT Health Science Center has campuses, such as Harlingen, Laredo and Edinburg.	

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
TX	University of Texas Medical Branch - Galveston	Jeanette C. Hartshorn, RN, PhD, FAAN UTMB Telehealth Center 301 University Blvd. Galveston, TX 77555-1042 Ph. 409-747-6290 Fax 409-747-6249; http://www.utmb.edu/telehealth/	Defense of Texas		Dr. Hartshorn is on the Advisory Board of the Defense of Texas.	
UT	University of Utah	Deb LaMarche 585 Komar Drive, Suite 204 Salt Lake City, UT 84108 Ph. 801-587-6190 Fax 801-585-7083 http://www.utahtelehealth.net	Connect local health departments (LHDs) for training & meetings. LHDs fund their membership in UTN with Health Alert Network & BT funding.	12	LHDs are part of the state & Federal Bioterrorism Preparedness grant program	
VA	University of Virginia	Steve Dabmeier 1222 Jefferson Park Ave. Charlottesville, VA 22901 Ph. 434-924-0347 Fax 434-971-8657 http://www.healthsystem.virginia.edu/medtox	CDC Anthrax Training Classes, Smallpox Training, Blue Ridge Poison Control Center maintains a 24/7 operation at UVA and it connected to the UVA Telemedicine network.	OAT and other sites within the UVA network.		
VT	CHCB University of VT/Fletcher Allen Health Care	Joanne Davis Clinical Operations Director 617 Riverside Avenue Burlington, VT 05401 Ph. 802-864-6309 ext 195 E-mail: jdavis@chcb.org Michael Caputo Univ. of VT Coll. of Medicine, Burlington, VT 0540 802-656-9658	On State Bioterrorism Task Force Working on wireless real time video in moving ambulance	N/A	Liason to CHCB to convey information to our providers regarding preparation for bioterrorism attack	VT Dept of Health's Emergency Preparedness Section, Red Cross, Statewide Hospitals, EMT Units, VT Homeland Security.
WA	Inland Northwest Health Services	Denny Lordan 157 S. Howard, Suite 500 Spokane, WA 99201 Ph. 509-232-8121 Fax 509-232-8357 www.inwtelehealth.org	Regional Bioterrorism Tabletop Exercise	12	Hospital and Regional EMS Agency Coordination	*N/A to telepharmacy, but organization provides educational programs through general Northwest TeleHealth programs

Homeland Security (cont.)

ST	Organization	Contact Information	Description of Activity	Sites	Role in Federal, State or Local Emergency Planning	Other entities associated with in Emergency Planning
WI	LaCrosse Medical Health Science Consortium		In planning and development			
	Marshfield Clinic Telehealth Network	Nina M. Antonioti RN, MBA, Ph.D. 1000 N. Oak Avenue Marshfield, WI 54449 Ph. 715-389-3694 Fax 715-387-5240 www.marshfieldclinic.org/telehealth	County-wide drills; Planning for medical response; Organizational preparedness; Food Safety	All	Collaboration	
	St. Elizabeth Hospital Community Foundation	Greg Gibbons Director of Safety and Security for Affinity Health Systems 500 So Oakwood Rd Oshkosh, WI 54904 Ph. 920-223-1186	State of WI Bioterrorism Planning Committee.	3	Greg is the chair person for our region for the state of WI Bioterrorism Planning Committee. Working with other hospitals in our area to develop a regional plan. Participates in multi-jurisdictional emergency drills.	EMS, Police, Fire
WV	Appalachian Pain Foundation	Joanna Reed 304.342.6970	Planning for bio-terrorism preparedness	In Process of Planning	In Process of Planning	In Process of Planning
WY	Wyoming Department of Health	To be determined				

Demographics of Population Served

All OAT grantees were asked whether their projects served the following populations: African-American, Hispanic/Latino, American Indian/Alaska Native, and Asian American or Pacific Islander. The grantees' responses are indicated below.

N/A = Not Applicable/Not Available

Demographics of Population Served

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
AK	Alaska Native Tribal Health Consortium				
	<i>Alaska Federal Health Care Access Network (AFHCAN)</i>	•	•	•	•
	<i>The Summative Telemedicine Evaluation Project</i>	N/A	N/A	N/A	N/A
AL	University of South Alabama				
	<i>Emerging Health Technologies (OEHT) BloTrac</i>	•			
	<i>Emerging Health Technologies (OEHT) Teletrauma</i>	•			
	<i>Emerging Health Technologies (OEHT) Traditional Telemedicine</i>	•			
AR	University of Arkansas for Medical Sciences				
	<i>South Arkansas Integrated Telehealth Oncology Program</i>	•	•	•	•
AZ	Arizona Board of Regents, University of Arizona				
	<i>Arizona Diabetes Virtual Center for Excellence (ADVICE)</i>		•	•	
	Banner Health System Telehealth				
	<i>Payson Regional Medical Center</i>			•	
	<i>Arizona Telemedicine Program</i>			•	
	<i>Navajo Nation</i>			•	
	Maricopa County				
<i>Correctional Health Services Telemedicine Initiative</i>	•	•	•	•	
CA	Children's Hospital – Los Angeles				
	<i>VPICU Critical Care Telemedicine Program</i>	N/A	N/A	N/A	N/A
	Santa Rosa Memorial Hospital				
	<i>Northern California Telemedicine Network</i>	•	•	•	•
	University of California - Davis				
<i>UC Davis Northern California Telemedicine Project</i>	•	•	•	•	
DC	Foundation For eHealth Initiative				
	<i>Connecting Communities for Better Health</i>				
	<i>Taconic Health Information Network & Community</i>	•	•	•	•
	<i>Wisconsin Health Information Exchange-CCBH</i>	•	•	•	•
	<i>Maryland/DC Collaborative for Healthcare Information Technology</i>	•	•	•	•
	<i>Indiana Health Information Exchange</i>	•	•	•	•
	<i>SBCDE, Inc.</i>	•	•	•	•
<i>Massachusetts Health Data Consortium</i>	•	•	•	•	
FL	BayCare Health Systems				
	<i>Electronic Medication and Clinical Services Ordering System</i>	•	•	•	•

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
FL	Florida Cancer Research Cooperative, University of South Florida				
	<i>Florida Cancer Clinical Trial Patient/Physician Information and Education Program</i>	.	.	.	.
	University of Florida College of Dentistry (UFCD)				
	<i>Florida Network for Community Oral Health</i>	.	.	.	.
GA	Morehouse School of Medicine				
	<i>Diabetes Screening Telehealth Project</i>	.			
	Ware County Health Department				
	<i>Rural Health Telemedicine Grant Program</i>	.	.		
HI	Hawai'i Primary Care Association				
	<i>Hawai'i Community Telehealth Network Program</i>				.
	Molokai General Hospital				
	<i>Molokai Telehealth Network</i>				.
IA	Iowa Chronic Care Consortium				
	<i>Congestive Heart Failure and Diabetes Telemanagement</i>	.	.		.
	Mercy Foundation				
	<i>Midwest Rural Telemedicine Consortium</i>	.	.	.	.
ID	Idaho State University				
	<i>Telehealth Idaho</i>	.	.	.	.
IL	Fermi National Laboratory/Northern Illinois University				
	<i>Neutron Radiation for Cancer Treatment</i>	.	.	.	.
	Memorial Health System				
	<i>Automated Clinical Information System – Wireless Network Infrastructure</i>	.	.	.	.
	<i>MHS Rural TeleRadiology</i>	.	.	.	.
	OSF Saint James-John W. Albrecht Medical Center				
	<i>OSF Saint James Telehealth Network</i>	.	.		.
	Southern Illinois University School of Medicine				
<i>Downstate Illinois Regional Telehealth Project</i>	.				
KS	University of Kansas Medical Center				
	<i>Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network</i>	N/A	N/A	N/A	N/A
KY	University of Kentucky Research Foundation				
	<i>Improving Health Outcomes for Children in Rural Kentucky Schools</i>	.	.		

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
LA	Lake Charles Memorial Hospital				
	<i>Community Hospital Telehealth Consortium (CHTC)</i>	•			
	Woman's Hospital				
	<i>Expansion of Physician Internet Portal, Womans POL</i>	•	•	•	•
MA	Baystate Medical Center, Inc.				
	<i>Hampden Hampshire Franklin County Telehealth Services</i>	N/A	N/A	N/A	N/A
	Massachusetts College of Pharmacy and Health Sciences				
	<i>Health Educational Resource Center</i>	•	•	•	•
	UMass Memorial Medical Center, Inc.				
	<i>Picture Archiving & Communication System (PACS)</i>	N/A	N/A	N/A	N/A
MI	Central Michigan University				
	<i>Rural Tele-health and Community Education Network</i>	•	•	•	
	Hillsdale Community Health Center				
	<i>PACS System</i>	•	•		
	Marquette General Health System				
	<i>Close to Home, Close to Health</i>	N/A	N/A	N/A	N/A
	University of Michigan				
<i>Michigan Collaborative Project on Internet Based Clinical Telemedicine</i>	N/A	N/A	N/A	N/A	
	Western Michigan University				
	<i>The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan</i>	•	•	•	•
	Fairview Health Services				
MN	<i>Ambulatory Electronic Medical Record System – Twin Cities Metropolitan Care Systems</i>	•	•	•	•
	Fairview Ridges Hospital				
	<i>Healthy Mothers and Babies Technology Demonstration</i>	•	•	•	•
	<i>Informatics/Health Information Services Grant: Auto. Med. Dispensing</i>	N/A	N/A	N/A	N/A
	University of Minnesota				
<i>Fairview – University of Minnesota Telemedicine Network</i>	•	•	•	•	
MO	Logan College of Chiropractic				
	<i>Telehealth Distance Learning Initiative</i>	•	•	•	•
	The Curators of the University of Missouri				
<i>Missouri Telehealth Network</i>	•	•		•	
MT	Benefis Healthcare Foundation				
<i>NMHA & REACH Telehealth Network Development Project</i>			•		

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
MT	Deaconess Billings Clinic Foundation				
	<i>Eastern Montana Telemedicine Network</i>	N/A	N/A	N/A	N/A
	<i>Center on Aging</i>	•	•	•	•
	Rocky Mountain Technology Foundation				
	<i>Distance Learning/Telehealth</i>			•	
	<i>Pharmacy Support to Rural Clinics</i>			•	
	St. Vincent Healthcare Foundation				
	<i>Partners in Health Telemedicine Network (PHTN)</i>	•	•	•	•
	<i>Mansfield Health Education Center (MHEC)</i>	•	•	•	•
	University of Montana - Missoula				
<i>ImProving Health Among Rural Montanans (IPHARM)</i>	N/A	N/A	N/A	N/A	
NC	Duke University Medical Center				
	<i>-Patient Inclusion in a Community-Based Telehealth Network</i>	•	•	•	•
	East Carolina University				
	<i>REACH-TV (Rural EAstern Carolina Health Network)</i>	N/A	N/A	N/A	N/A
ND	Educational and Research Consortium of Western Carolinas				
	<i>Western North Carolina Regional Data Link Project</i>	•	•	•	•
	Minot State University				
NE	<i>Rural Disabilities Wellness Project</i>			•	
	North Dakota State University				
	<i>North Dakota Telepharmacy Project</i>	•	•	•	•
	Northland Healthcare Alliance				
NM	<i>St. Alexius/Northland Telecare Network</i>			•	
	Good Samaritan Hospital Foundation				
	<i>Mid-Nebraska Telemedicine Network, Good Samaritan Hospital Kearney NE</i>		•		
	University of Nebraska Medical Center				
	<i>Distance Education of Undergraduate Nursing Students</i>	N/A	N/A	N/A	N/A
NV	<i>Rural Telemedicine Program</i>	N/A	N/A	N/A	N/A
	University of New Mexico Health Sciences Center				
	<i>Rural Health Telemedicine Program</i>	NA/	N/A	N/A	N/A
NV	University of New Mexico Health Sciences Center				
	<i>Rural Health Telemedicine Program</i>		•	•	
NV	Nevada Rural Hospital Partners Foundation				
	<i>Digital Imaging System for Rural Nevada (DISRN)</i>	•	•	•	•

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
NV	University of Nevada Las Vegas				
	<i>Nevada Telehealth Technology Initiative</i>	N/A	N/A	N/A	N/A
	<i>University of Nevada Reno - School of Medicine</i>				
	<i>Biomedical Electronic Imaging</i> * These population groups are served as recipients of our clinical service and medical education programs, but not as recipients related to the instrumentation purchased from this congressionally-mandated grant award.	NA*	NA*	NA*	NA*
NY	Daemen College				
	<i>Daemen College TeleHealth Education Network</i>	N/A	N/A	N/A	N/A
	Institute for Urban Family Health				
	<i>Informatics Telehealth Project (EMR)</i>	N/A	N/A	N/A	N/A
	Montefiore Medical Center & The Children's Hospital at Montefiore				
	<i>Electronic Medical Records Expansion</i>	•	•	•	•
	New York Presbyterian Hospital				
	<i>Electronic Linkage</i>	•	•		•
	<i>Patient Health Monitor (Vigilens)</i>	•	•		•
Research Foundation of State University of New York (SUNY)					
<i>Telehealth New York</i>	•	•	•		
OH	Case Western Reserve University, University of Cincinnati, The Ohio State University				
	<i>NetWellness: Consumer Health Information Website</i>	•	•	•	•
	Ohio Board of Regents				
<i>Medical Collaboration Network</i>	•	•	•	•	
OK	INTEGRIS Health, Inc.				
	<i>INTEGRIS Rural Telemedicine Project</i>			•	
	Oklahoma Office of Rural Health				
<i>Rural Health Telemedicine Program</i>	•	•	•		
OR	OCHIN, Inc.				
	<i>Oregon Community Health Information Network</i>	•	•	•	•
	Tillamook Lightwave IGA				
<i>Tillamook Lightwave Telehealth Technologies for Tillamook County Rural Communities</i>	•	•	•	•	
PA	Clarion University				
	<i>Primary Care Education for the Citizens of Rural Pennsylvania</i>	N/A	N/A	N/A	N/A
	Community Nurses Home Health and Hospice, Inc.				
	<i>Home Telehealth</i>	•	•		•
Magee-Womens Hospital of the University of Pittsburgh Medical Center (UPMC)					
<i>Magee-Womens Hospital Telehealth Initiative</i>	N/A	N/A	N/A	N/A	

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
PA	Mercy Health Partners <i>Using Information Technology to Enhance Patient Safety</i>	.	.	.	.
	Pennsylvania College of Optometry <i>Ophthalmic Telehealth Program</i>	.	.		
	Pennsylvania Homecare Association <i>Researching Telehomecare Affects on Nursing Retention and Productivity</i>	N/A	N/A	N/A	N/A
	Penn State Cancer Institute, Hershey Medical Center <i>Digital Informatics and Communications System</i>	.	.		.
	Thomas Jefferson University <i>Integrative Medicine Informatics Feasibility Project</i>	.	.		.
	University of Pittsburgh Medical Center <i>Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System</i>	N/A	N/A	N/A	N/A
	University of Pittsburgh School of Nursing <i>Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)</i>	.			.
	Venango Economic Development Corporation <i>The Venango Center for Healthcare Careers (VCHC)</i>	.			
	Family Resources Community Action <i>HIV/AIDS Comprehensive Psychosocial Support Project</i>	.	.	.	
	Kent County Visiting Nurse Association d/b/a VNA of Care New England <i>Advancing Point-of-Care Technology at VNA of Care New England</i>	.	.	.	.
	Advanced Technology Institute (ATI) <i>Healthcare and Emergency Awareness Response for Telehealth (HEART)</i>	.	.	.	
	Beaufort-Jaspert-Hampton Comprehensive Health Services <i>South Carolina Prostate Cancer/Telehealth Project</i>	N/A	N/A	N/A	N/A
	Greenville Hospital System <i>ICU Telemedicine Project</i>	.	.	.	.
SD Avera Health <i>Avera Rural and Frontier Disease Management Telehealth Network</i>		.	.		

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
SD	South Dakota State University Foundation				
	<i>Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices</i>			.	
	University of South Dakota (USD) – Vermillion				
	<i>Growing Our Own: A Nursing Education/Provider Partnership</i>	.			
TN	University of Tennessee (Knoxville)				
	<i>Mid-Appalachia Telehealth Project</i>	.	.		
	University of Tennessee, College of Medicine (Memphis)				
	<i>Mid-South Telehealth Consortium</i>	.	.		
TX	Christus Visiting Nurse Association of Houston				
	<i>Home Monitoring: Demonstration Pilot of Cost Control</i>	.	.		.
	Cook Children's Medical Center				
	<i>Rural Specialty Health Telemedicine Initiative</i>	.	.		
	University of Texas Health Science Center at San Antonio (UTHSCSA)				
	<i>Diabetes Risk Reduction via Community Based Telemedicine (DiRRReCT)</i>		.		
	University of Texas Medical Branch - Galveston				
<i>Texas Telehealth Resource Center</i>	.	.	.		
UT	Association for Utah Community Health Telehealth Program				
	<i>AUCH Telehealth Program</i>	.	.	.	.
	University of Utah				
	<i>Utah Telehealth Network Comprehensive Telehealth Services</i>			.	
VA	University of Virginia				
	<i>Southwest Virginia Alliance for Telemedicine</i>	.	.		.
VT	Community Health Center of Burlington				
	<i>Community Health Center Technology Upgrade</i>	.	.	.	.
	University of Vermont (UVM)				
	<i>University of VT/Fletcher Allen Health Care</i>	N/A	N/A	N/A	N/A
WA	Children's Hospital and Regional Medical Center – Seattle				
	<i>Children's Health Access Regional Telemedicine (CHART) Program</i>	.	.	.	.
	Inland Northwest Health Services				
<i>Northwest Telehealth</i>	.	.	.	.

Demographics of Population Served (cont.)

ST	Organization	African American	Hispanic /Latino	American Indian /Alaska Native	Asian American or Pacific Islander
WI	La Crosse Medical Health Science Consortium				
	<i>Virtual Population Health Centers in the Rural Midwest</i>			.	
	Marshfield Clinic Telehealth Network				
	<i>Marshfield Clinic Telehealth Network</i>		.	.	.
	Rural Wisconsin Health Cooperative				
	<i>RWHC/WPHCA Telehealth Initiative</i>	.	.	.	.
	St. Elizabeth Hospital Community Foundation				
	<i>Affinity/UW Telemedicine Project</i>	.	.	.	.
WV	Appalachian Pain Foundation				
	<i>Physician Education, Community Outreach Program to Prevent Diversion of Prescription Drugs</i>	.	.		
	West Virginia Research Corporation				
	<i>West Virginia Community Mental Telehealth Project</i>	N/A	N/A	N/A	N/A
WY	United Medical Center				
	<i>Distance Learning in Wyoming</i>	.	.	.	.
	Wyoming Department of Health				
	<i>Wyoming Network for Telehealth (WyNETTE) (anticipated)</i>	.	.	.	

Definitions:

Store and Forward	Transmission of static images or audio-video clips to a remote data storage device, from which they can be retrieved by a medical practitioner for review and consultation at any time, obviating the need for the simultaneous availability of the consulting parties and reducing transmission costs due to low bandwidth requirements.
Internet Protocol	The messenger protocol of the TCP/IP (Transmission Control Protocol/Internet Protocol), describing software that tracks the Internet address of nodes, routes outgoing messages, and recognizes incoming messages. It facilitates the identification of the Internet Protocol Address (IP Address), of a computer or other device on the Internet (normally printed in dotted decimal form such as 128.127.50.224). The TCP, or Transmission Control Protocol, is the connection-oriented protocol portion of the TCP/IP that first establishes a connection between two systems that exchange data. The TCP/IP facilitates communication through "packet switching" over the Internet and is the protocol used for communication across interconnected networks, between computers, and diverse hardware architectures, including data communications equipment and Ethernet LANs, and various operating systems.
World Wide Web	The universe of accessible information, including graphics, sound, text and video accessible through the Internet. The Web has a body of software, a set of protocols and defined conventions for accessing such information, including HTML (HyperText Markup Language), the Web's software language, and TCP/IP, a family of networking protocols providing communication across interconnected networks.
Broadband	For purposes of this questionnaire, a general term for a telecommunications medium of sufficient capacity to transmit high quality voice, data and video transmissions. Broadband has been defined in many ways; e.g., a Wide Area Network (WAN) providing bandwidth greater than 45 Megabits/sec (T3); voice, data, and/or video communications at rates greater than 1.544 Megabits/sec (T-1), but has been Federally defined as data transmission <u>each way</u> , of 200 kilobits/second or more.
Broadband LAN	A Local Area Network (LAN) that is distributed via broadband coaxial cable normally utilizing CATV technology and broadband modems. Most commonly used with the Ethernet (CSMA/CD) and Token Bus.
Broadband ISDN	Refers to ISDN services offered at rates higher than the Primary access rate (23B+D) of 1.544Mb/s or 2.048Mb/s. Proposed broadband ISDN service is defined by CCITT as switched services from 34Mb/s to 680Mb/s using cell relay technology. Channels are designated as "H" channels.

Project Descriptions by State

In this section, OAT Grantees were asked to provide a brief description of their projects by providing information about Network Partners, Project Purpose, Outcomes Expected, Service Area, Services Provided, Equipment, and Transmission.

University of South Alabama (USA)
307 N. University Blvd., HSB 2200
Mobile, AL 36688
<http://www.usouthal.edu/emergingtech>

Carl W. Taylor
Ph: 251-461-1810
Fax: 251-461-1809
Email: cwtaylor@usouthal.edu

Network Partners:

University of South Alabama Health System
Alabama Department of Public Health
Grace Busse Health Center, Pine Apple, Alabama
Alabama State Medicaid Agency
Public Education Employees Health Insurance Plan (PEEHIP)

Project Purpose:

The BioTrac program is directed to providing services to rural patients suffering from chronic illnesses. Using a home telephone and monitoring tools, the patient is able to provide their physician with vital medical data. Through the Internet, the physician is able to assess the patient's data, alerting the provider of any abnormal data which may result in an emergency room visit or hospitalization. Through this project we are able to think "outside of the traditional telemedicine box" and to seek to identify new tools that expand our "telereach" whether it is the hospital, physician's office, or the home.

Outcomes Expected:

Outcome measurements have become a major focus of the OEHT telemedicine program. For the Home Monitoring project, patients and providers use an evaluation tool to measure their perceived outcomes of the study. Such outcomes include the patient's hospital/ER admission status, self reported data and a provider's input of the study. This data is input into a statistical software program and measurements showing comparisons of before/after data are provided. It is anticipated that fewer hospitalizations and emergency room visits will be experienced when compared to previous admissions of the enrolled patients, thereby reducing overall costs of healthcare.

Service Area:

Primary service area includes rural Alabama; however, using a home telephone and the Internet, patients and providers can be located in most any location.

Services Provided:

Services provided include home health monitoring of patients suffering with chronic diseases such as diabetes, chronic heart failure and asthma.

Equipment:

BioTrac program uses CyberNet Medical with A and D peripherals with a database housed at USA.

Transmission:

Home based program uses Plain Old Telephone System (POTS) with Internet access on the provider side.

University of South Alabama (USA)
307 N. University Blvd., HSB 2200
Mobile, AL 36688
<http://www.usouthal.edu/emergingtech>

Carl W. Taylor
Ph: 251-461-1810
Fax: 251-461-1809
Email: cwtaylor@usouthal.edu

Network Partners:

University of South Alabama Health System
Monroe County Hospital, Monroeville, Alabama
J Paul Jones Hospital, Camden, Alabama

Project Purpose:

The project purpose for TeleTrauma is for our urban Level I trauma facility and our trauma surgeons to provide guidance and oversight to rural emergency room physicians during a trauma event in which a victim is transported to the rural facility. The trauma surgeon or other members of a support team guides and directs the remote physician in decision making and procedures needed during the time sensitive event. The University physician will act as a mentor and teacher in guiding the rural providers in the appropriate triage and/or treatment needed to stabilize the victim.

Outcomes Expected:

With the TeleTrauma project, Trauma surgeons and other sub-specialties will be able to address the common problem of professional emergency room staffing shortage in rural areas. With triage assistance provided as well, it is anticipated that an overall improvement in rural emergency room treatment will occur for trauma events. Hospital admissions, length of stay, as well as overall patient improvement and satisfaction will be key factors in determining outcomes of this project.

Service Area:

Service areas include two rural hospitals located in Southwest Alabama (approximately 75 miles Northeast of Mobile), one located in Central South Alabama (approximately 110 miles Northeast of Mobile) and the University of South Alabama Medical Center in Mobile, Alabama. Additionally, two trauma surgeon's homes are equipped to allow them access to cases.

Services Provided:

Services provided include oversight of rural trauma cases between acting facilities.

Equipment:

Traditional telemedicine equipment includes a Tandberg 2500 series in rural hospital setting and a Tandberg 6000 in the urban emergency room. Two trauma surgeon homes are equipped with Tandberg 550 series.

Transmission:

ISDN transmission with PRI.

**Emerging Health Technologies (OEHT) Traditional Telemedicine
University of South Alabama**

University of South Alabama
307 N. University Blvd., HSB 2200
Mobile, AL 36688
<http://www.usouthal.edu/emergingtech>

Carl W. Taylor
Ph: 251-461-1810
Fax: 251-461-1809
Email: cwtaylor@usouthal.edu

Network Partners:

University of South Alabama Health System
Alabama's Children's Rehabilitative Services
Alabama Department of Public Health
Southwest Alabama Abuse Network (SWAN)
Six Rural Hospitals

Project Purpose:

The core heart and mission of our program is extending medical education to rural care delivery sites and to provide a network to support the medical and educational activities of our partners. Each of the projects we review has a common theme in improving healthcare and through telemedicine we are able to achieve this goal. Using traditional means of transmitting telemedicine images has afforded remote locations with services which otherwise would not be available. Through traditional telemedicine venues, we are able support and provide additional tools and services to the most remote locations in Alabama.

Outcomes Expected:

Outcome measurement is a major focus of the OEHT telemedicine program. Being able to provide sound data of achieved outcomes is paramount in improving future programs. Participants are pleased with results seen.

Service Area:

Primary service areas include six (6) rural hospitals located in rural Alabama, two (2) urban clinics, one (1) Public Health Clinic, one (1) state Public Health Department, and five (5) urban hospital sites.

Services Provided:

Services provided include, but are not limited to, traditional telemedicine services for Children's Rehabilitative Services of Alabama, Children's Sexual Abuse examinations, Peer Review through the SWANN network, HIV patient examinations, occasional neonatology consults, Homeland Security/Disaster Training (under other CDC HRSA funding), and videoconferencing services.

Equipment:

Includes traditional telemedicine equipment using legacy apparatus such as Health Station 2000, RX Rovers, Polycom Bridge, and patient exam units utilizing AMD peripherals. OEHT conducted one of the first national "In Touch Robot Companion" demonstrations.

Transmission:

IP and ISDN transmission with PRI access to statewide video. Desktop platform utilizing DSL platform or better.

ALASKA

CMP FY 00, 01, 02, 03

Alaska Federal Health Care Access Network (AFHCAN)

Alaska Native Tribal Health Consortium

Alaska Federal Health Care Access Network
4000 Ambassador Drive
Anchorage, AK 99508
<http://www.afhcan.org>

Stewart Ferguson, Ph.D.
Ph: 907-729-2260
Fax: 907-729-2269
Email: sferguson@afhcan.org

Network Partners:

Alaska Native Tribal Health organizations; Department of Health and Human Services, Indian Health Service (IHS); Department of Defense (DOD), Army and Air Force; Department of Veterans Affairs, Veterans Health Administration (VA); Department of Homeland Security, United States Coast Guard (USCG); and the State of Alaska Department of Health and Social Services, Public Health, Section of Public Health Nursing (PHN).

Project Purpose:

AFHCAN's mission is to improve access to health care for Federal beneficiaries in Alaska through sustainable telehealth systems. This project was an initiative of the Alaska Federal Health Care Partnership (AFHCP) which was founded to create efficiencies in health care among Federal agencies in Alaska. It is currently administered under the Alaska Native Tribal Healthcare Consortium (ANTHC).

Outcomes Expected:

Sites Deployed, Sites with Connectivity – Verification
Provider Satisfaction, Patient Satisfaction, Workflow, Quality of Care, Training, Technical Support, Travel Avoidance - Software Incorporated Survey (Likert Scale)
Comparison of Ear Images and In-Person Examination, Community Health Aide Acquired Images and Exam - Blinded Concordance Study
ENT Specialty Clinic Access, Provider Time Efficiency – Documentation
Utilization (Real Cases/Training Cases) - Database Query

Service Area:

248 sites from 43 member organizations distributed throughout the State of Alaska.

Services Provided:

Store-and-Forward telemedicine including: Audiology, Cardiology, Dental, Dermatology, Family Medicine, Gynecology, Otolaryngology, Pediatrics, Pharmacy, Podiatry, Primary Care, Radiology and Wound Management. Videoconferencing telemedicine including: Primary Care, Emergency Medicine, Mental Health and Physical Therapy.

Equipment:

AFHCAN Telemedicine Software, Digital Cameras, Electrocardiograms, Scanners, Spirometer, Tympanometer, Video Oscope, Vital Signs Monitor, Teleradiology Equipment, and Polycom videoconferencing units.

Transmission:

Dedicated telephone line connectivity within the Federal sector of Alaska. Bandwidth varies from 128 k to T1 depending on organization. The AFHCAN Network utilizes a co-location facility to link the major telephone carriers in Alaska.

ALASKA
The Summative Telemedicine Evaluation Project
Alaska Native Tribal Health Consortium

CMP FY 02, 03

Alaska Telemedicine Advisory Council
4141 Ambassador Drive
Anchorage, AK 99508
<http://www.anthc.org>

Tom Nighswander, MD
Ph: 907-729-3682
Fax: 907-729-1901
Email: tnighswander@anthc.org

Network Partners:

The Alaska Telemedicine Advisory Council (ATAC) has partnered with the University of Alaska – Fairbanks to conduct this project.

Project Purpose:

The Summative Telemedicine Evaluation Project (STEP) comprehensively evaluates the Alaska Federal Health Care Access Network (AFHCAN), a 4-year project (1998-2002) funded through OAT. STEP incorporates four perspectives in evaluation: First, a rural provider perspective; second, a technological perspective; third, a policy and sustainability perspective; and fourth, providing an international forum for rural health providers to share lessons learned with telemedicine. An OAT supplement supports the International Symposium on Telehealth, and development of policy recommendations and future plans.

Outcomes Expected:

STEP outcomes include assessment of provider attitudes, and shifts in attitudes and skills; changes in acceptance of telemedicine initiatives; and analysis of changes in rural Alaska telecommunications infrastructure and services. Policy recommendations will target difficult and multi jurisdictional issues. The International Symposium will springboard discussions about evaluation of telemedicine initiatives and showcase telehealth evaluations from around the world.

Service Area:

State of Alaska.

Services Provided:

The project conducts a comprehensive evaluation of the effectiveness of, and gaps in, telemedicine in Alaska. The findings will form the basis for recommendations for the future of telemedicine in Alaska.

Equipment:

N/A

Transmission:

N/A

**Banner Telehealth Program – Banner Health
Banner Good Samaritan Medical Center**

Banner Good Samaritan Medical Center
1111 East McDowell St.
Phoenix, AZ 85006
<http://www.bannerhealth.com>

Marshall L. Smith, MD, Ph.D.
Ph: 602-239-6507
Fax: 602-239-2359
Email: mark.smith@bannerhealth.com

Network Partners:

Payson Regional Medical Center; Payson, Arizona; Page Hospital; Page, Arizona; Arizona Telemedicine Program; Navajo Nation.

Project Purpose:

Develop neurology subspecialty support for Page Hospital and Arizona; provide telehealth clinics reducing need to travel to Phoenix; develop interactive Grand Rounds for Arizona, supplementing programs of the Arizona Telemedicine Network over the state; develop telehealth programs of current and special interest for healthcare providers of Arizona (e.g., special statewide lectures on diabetes, infectious diseases, etc); develop gastrointestinal disease clinic to support Payson Medical Center, OB care for Navajo Nation.

Outcomes Expected:

Increased ability of rural providers to provide care in their facility; are tracking numbers of clinical encounters and visits; tracing acceptance and satisfaction of patients and referring physicians; numbers of visits are increasing and are expected to continue to climb; satisfaction surveys of patients and referring providers are very positive. CME intake forms at rural areas (required for ACGME accreditation), and monitor satisfaction and relativity responses.

Service Area:

Payson Regional Medical Center - Multispecialty 66 bed facility, serving all of Northern Gila County (pop. 49,051) with extensive rural areas that are HPSAs and MUAs. Page Hospital - Rural 25 bed hospital, serving the Navajo reservation, rural communities, and thousands of tourists from Lake Powell and Grand Canyon that are HPSAs and MUAs.

Services Provided:

Presently provide consultations on movement disorder to Payson and soon to entire state. Presently fly a cardiologist to Page Hospital twice monthly for a cardiac clinic. Banner Good Samaritan Medical Center joined the Arizona Telemedicine Network in late 2002 and began a movement disorder clinic in 2003. Plan to begin other neurology support (e.g., Amyotrophic Lateral Sclerosis [ALS], neurosurgery) and cardiac support for both hospitals as well as a State network in 2004 to these facilities. Other clinical subspecialty support planned (2005) include infectious diseases, pediatrics, ObGyn, gastrointestinal, and maternal fetal ultrasound.

Equipment:

Banner Good Samaritan Medical Center - Tandberg 6000 videoconferencing unit (one in place, two more to be purchased this year), AMD - 3550 Smart Stethoscope (2). Payson Regional Medical Center - Tandberg Intern II Mobile Tele-HealthCare Unit, AMD - 3550 Smart Stethoscope. Page Hospital - Tandberg Intern II Mobile Tele-HealthCare Unit, AMD - 3550 Smart Stethoscope; Arizona Telemedicine Program – Polycom FX.

Transmission:

Full and fractional T1 lines.

ARIZONA
Correctional Health Services Telemedicine Initiative
Maricopa County

CMP FY 02

Maricopa County Correctional Health Services
111 W. Monroe, Suite 900
Phoenix, AZ 85003
http://www.maricopa.gov/corr_health

Marjorie Reiter-Levine, MPH, FACHE
Ph: 602-506-5583
Fax: 602-506-2577
Email: mlevine@mail.maricopa.gov

Network Partners:

Adult and juvenile correctional health facilities.
Arizona Telemedicine Program Participants.

Project Purpose:

The network will tie County jail facilities together, making it possible for remote sites to consult with medical staff in other facilities. The network will significantly reduce the need to transport inmates out of the facility for specialty clinics and will reduce runs to the emergency room. The network will expand inmate access to a broader range of specialists and types of specialty care not previously available.

Outcomes Expected:

Increase the number of bookings at remote booking stations with telemedicine screening.
Reduce inmate transfers out of the facility for primary care and specialty appointments.
Reduce transfers to the emergency room.
Reduce false medical claims by inmates.
Improve the continuity of care and access to care.
Data will be acquired from the daily report system already in place in the jails.

Service Area:

Maricopa County, Arizona.

Services Provided:

Medical assessment for screening purposes prior to booking at the two remote booking stations in Maricopa County at Mesa and Avondale. Counseling services for juveniles at the Mesa Juvenile facility. 24/7 medical provider support for clinics from the intake facility.

Equipment:

Tandberg SL-880 System ISDN – Inc NPP, external audio/video input/output panel and internal medical isolation transformer, Welch Allyn vital signs monitors, AMD exam cameras, Tandberg Intern II Mobile Tele-HealthCare Units, Tandberg Director videoconferencing unit, Tandberg 1000 videoconferencing units.

Transmission:

Full T1 on a secured county network.

ARIZONA

RTGP 97-99, TNGP 03-05

Arizona Diabetes Virtual Center of Excellence (ADVICE)

Arizona Board of Regents, University of Arizona

Arizona Telemedicine Program
1501 N. Campbell Avenue, PO Box 245105
Tucson, AZ 85724-5105
<http://www.telemedicine.arizona.edu>
<http://www.telemedicine.arizona.edu/advice>

Sandy Beinar
Ph: 520-626-2493
Fax: 520-626-1027
Email: beinars@u.arizona.edu

Network Partners:

Arizona Foundation for the Eye, Phoenix: Children's Clinics for Rehabilitative Services, Tucson: St. Elizabeth's of Hungary Clinic, Tucson: Mariposa Community Health Center, Nogales: Tuba City Regional Healthcare Corp, Tuba City: schools in Tuba City and Nogales, homes and community center in Amado.

Project Purpose:

Create the Arizona Diabetes Virtual Center of Excellence (ADVICE) network to establish a comprehensive telemedicine program for prevention, assessment and management; create and evaluate innovative distance learning programs on diabetes for patients, families, children, community-based allied health professionals and physicians in rural areas, thereby creating a community-based infrastructure for diabetes health education; and provide access to specialty health care for people with diabetes and pre-diabetes in rural areas.

Outcomes Expected:

Science fair educational value and fact conveyance (measure) – survey (tool)
Student Health Professional telemedicine knowledge (measure) – survey (tool)
Promotora telemedicine training (measure) – time-motion studies and survey (tool)
Educational impact (measure) – satisfaction and knowledge survey (tool)
Clinical services impact (measure) – patient record evaluation and OAT forms (tool)
Outcomes studies will demonstrate participation, knowledge gained, and satisfaction with education and clinical activities with school children, community, patients, caregivers, health professionals and providers.

Service Area:

Pima, Santa Cruz, Navajo and Coconino Counties serving three MUAs, three HPSAs, one Primary Care Association (PCA), one border community and one Native American site.

Services Provided:

The Arizona Telemedicine Program has been in existence since July of 1996 and has provided clinical consultations in over 55 specialties. Under this grant, services will be provided for diabetes care and management, ophthalmology, podiatry, wound management and nutrition.

Equipment:

Tandberg 6000 videoconference unit, Canon CR6-45NM Non-Mydriatic Retinal Camera System, Digital Stethoscope Receive Unit, Tandberg HCS III, PCs with Telemed Software, Tele-Home Health Central Station and Remote Units (various).

Transmission:

Full T1, Internet, POTS, Video teleconference (VTC) Bridge.

ARKANSAS
South Arkansas Integrated Telehealth Oncology Program
University of Arkansas for Medical Sciences

RTGP FY 97-99, 00-02

Rural Hospital Program
1123 S. University, Suite 400
Little Rock, AR 72204
<http://rhp.uams.edu>

Ann Bynum, Ed.D.
Ph: 501-686-2595
Fax: 501-686-2585
Email: bynumcarola@uams.edu

Network Partners:

Fifty-one sites including 34 rural hospitals, one tertiary care center, seven Area Health Education Centers, five community health centers, three certified rural health clinics, one county health department, and one high school.

Project Purpose:

Expand existing Telehealth network to include Tele-oncology using the Wagner model for chronic disease. The project links locally based rural providers, the health care infrastructure and targeted populations with evidence-based prevention, screening, treatment and palliative care guidelines for oncology.

Outcomes Expected:

Improved access to treatment and follow up for chronic cancer conditions, strengthened referral Patterns; improved health care outcomes due to regular and timely consultations with oncologist, better informed provider and patient population; and increased rural and minority patient participation in clinical trials. Implementation and progress evaluation will be conducted using OAT GPRA Performance Measures along with a 244 item data form that is scanned into a Microsoft SQL server database. The scanner reads handwriting.

Service Area:

Statewide service area of 50 counties with specific target area of 13 counties for this project of which there is one full HPSA, 10 partial HPSA, 11 mental health HPSA, 11 MUAs, two dental HPSAs.

Services Provided:

Dermatology, diabetes care and management, high risk obstetrics and genetics, cardiology, neurology, endocrinology, mental health, pediatrics, pharmacy, oncology, continuing education, case conferences, and public education, professional and public education in cancer prevention, detection, and treatment. The network has been operational since 1995.

Equipment:

Polycom View Stations, V-Tel 127 TCD, Tanberg, ELMO-400 document cameras, otoscope, illuminator, colon fiberscope, ophthalmoscope, stethoscope, dermascope, videophones, exam camera, ultrasound, PAC system.

Transmission:

Transmission method is fractional T1, ISDN, IP, H.323 and H.320.

CALIFORNIA
VPICU Critical Care Telemedicine Program
Childrens Hospital Los Angeles

CMP FY 01, 02, 03

Childrens Hospital Los Angeles, VPICU
4650 Sunset Blvd. M.S. #12
Los Angeles, CA 90027
<http://www.vpicu.org>

Chris Baker
Ph: 323-669-5408
Fax: 323-671-3877
Email: cbaker@chla.usc.edu

Network Partners:

Five community based hospitals are connected to Childrens Hospital – Antelope Valley Hospital Medical Center; Huntington Hospital Medical Center; Pomona Valley Hospital Medical Center; Northridge Hospital Medical Center; and Ventura County Medical Center.

Project Purpose:

The VPICU Critical Care Telemedicine Program uses telehealth technology to provide clinical consultation to five community hospitals, which currently send their pediatric patients to Childrens Hospital Los Angeles (CHLA) for quaternary care services. These consultations provide in depth telemedicine clinical assessments, triage and transfer service. At each site in the network, sophisticated telemedicine units are in place and provide virtual examination capabilities and instantaneous high quality audio, video and data communication to facilitate care.

Outcomes Expected:

Provide life saving medical consultation when most needed for children in current underserved areas – OAT GPRA Performance Measures tool. Enable children who do not require sophisticated medical care at quaternary care centers to remain in their communities – Patient/Provider Satisfaction survey. Decrease expense and reduce load on health care resources such as the transport system and tertiary care facilities – review of tracking database and transport costs. Assure accurate triage decisions and assure more rapid response for children who truly need transport – regularly scheduled peer review and QI partner network meeting.

Service Area:

Sites located in Los Angeles and Ventura Counties in Southern California that service underserved counties north – Inyo, Kern, and multiple underserved locations within Los Angeles County.

Services Provided:

Core service – real time clinical consultation for critically ill children. Expansion services include teleconference educational offerings for clinicians, families and businesses associated with the program.

Equipment:

Multiple base videoconferencing stations strategically placed at CHLA connecting to custom remote site carts engineered by Stryker Communications Corp., designed to move easily through patient treatment areas with extensive medical peripherals for pediatric care and assessment.

Transmission:

T1 lines routed through gatekeeper allowing multipoint conferencing.

CALIFORNIA
Northern California Telemedicine Network
Santa Rosa Memorial Hospital

CMP FY 00, 01

Santa Rosa Memorial Hospital
1287 Fulton Road
Santa Rosa, CA 95401-4923

Sharon McComb
Ph: 707-543-2006
Fax: 707-543-2429
E-mail: smccomb@srm.stjoe.org

Network Partners:

Spoke Sites: Mendocino Coast Clinics, Ft. Bragg; Redwood Coast Medical Services, Gualala; Anderson Valley Health Center, Boonville; Southern Trinity Health Services, Mad River; Redwoods Rural Health Center, Redway; Eureka Community Health Center, Eureka; Copper Towers Family Medical Center, Cloverdale; Potter Valley Health Center, Potter Valley; Round Valley Indian Health Center, Covelo; K'ima:w Indian Health Center, Hoopa. Hub Sites: MedStream TeleCommunications, Inc, Santa Rosa; UCSF Intensive Care Nursery at Santa Rosa Memorial Hospital, Santa Rosa.

Project Purpose:

Improve and expand access to (a) specialty medical services for patients, (b) provider and patient distance education programs, and (c) utilization of videoconferencing system for non-clinical applications (i.e., administrative meetings, community business meetings, etc).

Outcomes Expected:

Patients have greater access to specialty medical care/NCTN Telemedicine Specialty Clinic Log. Fewer long distance trips for patients seeking specialty care/Telemedicine Specialty Clinic Log. Providers have improved access to CME distance ed. programs/Non-Clinical Use of System Log. Patients have improved access to educational programs/NCTN Non-Clinical Use of System Log. Increased use of videoconferencing system for non-clinical applications/NCTN Non-Clinical Use of System Log.

Service Area:

Five counties in Northern California (Del Norte, Sonoma, Mendocino, Trinity and Humboldt).

Services Provided:

Specialty Medical Clinics: Behavioral Health (Evaluation, Counseling and Mental Health Medication Management); Dermatology; Endocrinology; Rheumatology, and Pediatric Cardiology. CME and CEU distance education programs for providers. Health Education distance learning programs for patients. Network Start Date: September 2000.

Equipment:

Seven PolyCom FX videoconferencing systems; one PolyCom Viewstation video-conferencing system; one Tandberg 880 videoconferencing unit; two Zydacron PC-based telemedicine systems.

Transmission:

T1 and ISDN line transmission.

CALIFORNIA
UC Davis Northern California Telemedicine Project
University of California - Davis

RTGP FY 97-05

UC Davis Health System
Center for Health and Technology, UC Davis
2300 Stockton Blvd
Sacramento, CA 95817
<http://cht.ucdmc.ucdavis.edu>

Jana Katz
Ph: 916-734-5675
Fax: 916-734-1366
Email: jana.katz@ucdmc.ucdavis.edu

Network Partners:

All spoke sites are hospital based home health/hospice programs. Colusa Regional Medical Center, Mayers Memorial Hospital, Lassen Community Hospital, Eastern Plumas District Hospital.

Project Purpose:

To establish rural sites as hubs with spokes of their own that extend to community providers to improve health care access and communication for chronically ill, homebound, and geriatric patients and those living in rural institutional settings through the provision of telehealth home care.

Outcomes Expected:

The outcome of this project is to establish telehealth home care in rural communities, which will improve access to home health care for homebound patients, extend the boundaries to which home health care is provided in rural areas, and improve patient monitoring through home health care.

Service Area:

Northern California.

Services Provided:

Telehealth Home Care
Store and Forward Wound Care
Distance Education

Equipment:

Telehealth Home Care-American Telecare Home Health Units
Store and Forward-Second Opinion Software and Digital Camera
Distance Education-Polycom and Tandberg videoconferencing units

Transmission:

DSL, POTS (home health/hospice)
ISDN/IP (Distance Education)

Native Telehealth Outreach and Technical Assistance Program
University of Colorado Health Sciences Center

University of Colorado Health Sciences Center
PO Box 6508, Campus Box F800
Aurora, CO 80045-0508
<http://www.uchsc.edu/ai> - <http://www.uchsc.edu/ai/cnatt>

Rhonda Wiegman Dick
Ph: 303-724-1448
Fax: 303-724-1474
Email: Rhonda.Dick@uchsc.edu

Network Partners:

Oglala Lakota College, Pine Ridge, SD
Si Tanka Community College, Eagle Butte, SD
Seattle Indian Health Board, Seattle, WA
Sinte Gleska University, Rosebud, SD

Project Purpose:

To apply state-of-the-art telecommunications technologies to high priority American Indian health-disparities via education and community dissemination. Activities include: 1) developing and updating health-related coursework to be disseminated by tribal colleges and universities via both self-directed Internet-based and real-time interactive videoconferencing; and 2) providing a venue for community champions both at the lay and health-professional levels, to develop prevention and intervention projects that focus on high priority local health concerns.

Outcomes Expected:

Participants will complete a survey of closed- and open-ended questions that assess all goal-relevant activities (e.g., dates of task initiation/completion, participant identities, training dates, number, background of trainees, attendance records, frequency of web-based accession, rates of training completion, task survey responses, etc), and outcomes (e.g., performance scores on job-skill competency tests).

Service Area:

Mission, South Dakota – Todd County – HPSA, MUA
Pine Ridge, South Dakota – Shannon County – HPSA, MUA
Eagle Butte, South Dakota – Dewey County – HPSA, MUA
Seattle, Washington – King County - MSA

Services Provided:

Distance education opportunities (CME-accredited) for local community health professionals; providing a programmatic and technical training for community health advocates and professionals to develop and disseminate prevention and intervention projects that focus on high priority local health concerns.

Equipment:

Polycom videoconferencing unit, Epson Scanner, Marantz CD/Cassette Combo Deck, iMac G4 800Mhz computer, JVC MiniDV/SVHS Dub/VCR, Final Cut Pro3, JVC S-VHS Recorder, Canon XL1 MiniDV Camcorder, Sony Mavica Digital Camera, Macromedia MX Suite, WebCT, Panasonic DVD Recorder.

Transmission:

Full T1, Internet, ISDN.

Foundation for eHealth Initiative
1500 K Street, NW, Suite 900
Washington, DC 20005
ccbh.ehealthinitiative.org/communities/funded.msp

Meryl Bloomrosen, MBA, RHIA
Ph: 202-624-3268
Fax: 202-624-3266
Email: Meryl.bloomrosen@ehealthinitiative.org

Network Partners:

Under the Foundation for eHealth Initiative, the Connecting Communities for Better Health (CCBH) Program evaluates, selects, and provides seed funding and support to multi-stakeholder collaboratives within communities.

Project Purpose:

The primary purpose of CCBH is to advance the NHII through a set of community demonstration projects and related evaluation and dissemination activities to improve the quality, safety and efficiency of healthcare. A “Community Learning Network” is being created to provide resources and tools for all communities and stakeholders interested in health information exchange.

Outcomes Expected:

Demonstration projects will show how electronic health information exchange, using common health data standards, can help patients receive necessary and timely medical treatment and guard against medical errors. Public health officials will be able to quickly identify and respond to threats from naturally occurring diseases, such as SARS, and potential bioterror attacks. Information will be evaluated and disseminated broadly with the goal of spurring movement toward an interconnected, electronic national health information network. Findings will be disseminated as “how to” guidance for interested communities across the country through the Connecting Communities for Better Health Program’s Learning Network and Online Resource Center as well as its face-to-face Learning Forums.

Service Area:

Nine CCBH awardees were selected through a rigorous competitive process from among 134 community multi-stakeholder applicants in 42 states and the District of Columbia. Applicants were required to include the involvement of at least three stakeholder groups, a clinical focus, the use of standards, and matching funds. CCBH project participants are in both rural and urban areas. They include: Maryland/D.C. Collaborative for Healthcare Information Technology, MD; Taconic Educational Research Fund, NY; Tri-Cities TN-VA Care Data Exchange, TN; St. Joseph Hospital Foundation—Whatcom HIE, WA; National Institute for Medical Informatics Midwest (NIMI), WI; Colorado Health Information Exchange (COHIE), CO; Santa Barbara County Data Exchange (SBCCDE), CA; Massachusetts Health Data Consortium (MA Share)—MedsInfo E-Prescription Project, MA; and Indiana Health Information Exchange (IHIE)—Regenstrief Institute, Inc., IN.

Services Provided:

The projects will provide health information exchange and other health care IT services to clinicians and the public domain. Projects involve evaluating and testing strategies addressing challenges related to use of HIT; mobilizing information to support the prescribing process; testing and evaluating financial incentives to support use of HIT; and exploring methods to share data across states and jurisdictions.

Equipment: N/A

Transmission: N/A

FLORIDA
Electronic Medication and Clinical Services Ordering System
BayCare Health System

CMP FY 02, 03, 04

BayCare Health System
18331 Bay Vista Drive
Clearwater, FL 33760

Dyana Young
Regional Manager
Ph: 727-825-1776
Fax: 727-825-1204
Email: Dyana.Young@baycare.org

Network Partners:

St. Anthony's Health Care – St. Anthony's Hospital (Pinellas County)
Morton Plant Mease Health Care – Morton Plant Hospital, Mease Dunedin Hospital,
Mease Countryside Hospital, North Bay Hospital (Pinellas, Pasco, and Hernando Counties)
St. Joseph's-Baptist Health Care – St. Joseph's Hospital, St. Joseph's Women's Hospital,
Tampa Children's Hospital, South Florida Baptist Hospital (Tampa Bay Area)

Project Purpose:

BayCare Health System's overall IT strategic plan is to create an Electronic Medical Record (EMR) to enable the transformation of care delivery and business practices throughout BayCare and the community we serve. A subsystem of the EMR is the implementation of a Computerized Physician Order Entry (CPOE) system. The CPOE system will use rules and clinical knowledge based information to improve clinical processes and reduce errors. This will help reduce medication errors and subsequent adverse drug events by decreasing transcription, dispensing and drug administration errors, and providing physicians with warnings about drug interactions.

Outcomes Expected:

Medication errors will be reduced by flagging unusual doses, universally noting patient allergies, and displaying key lab values influencing medication dosing. Number and type of errors (measure). Duplicate orders will be reduced by increased online availability of previous encounter information. Number of duplicate orders (measure). Utilization of the clinical system rules engine and corresponding patient alerts will enable prospective management of critical findings and automate routine protocols. Number of adverse drug events (measure). Rules engine (tool). Time available for direct patient care will increase with online documentation systems for clinicians. Increase Patient Satisfaction, Quality Data Management scores (tool).

Service Area:

Tampa Bay area of Florida including the Pinellas, Pasco, Hernando, and Hillsborough counties.

Services Provided:

Cardiology, dermatology, diabetes care and management, mental health, oncology, orthopedics, radiology, surgery and rehabilitation services.

Equipment:

IBM RS6000 CPU, servers, workstations, database software, application software, desktop software, integration engine, handheld devices and Citrix services.

Transmission:

Data Center to facilities via a 20-megabit ATM. Facilities to the desktop via 100 megabit Ethernet.

Clinical Trial Patient/Physician Information & Education Program
Florida Cancer Research Cooperative, University of South Florida

University of South Florida
3500 E. Fletcher Ave., Suite 225
Tampa, FL 33613
www.FloridaCancerTrials.com

Karen Moffitt, Ph.D.
Ph: 813-975-6958
Fax: 813-975-6596
Contact Person kmoffitt@tempest.coedu.usf.edu

Network Partners:

American Cancer Society/Florida Division, AARP of Florida, Shands Cancer Center University of Florida, Mayo Clinic Jacksonville, Florida Atlantic University, H. Lee Moffitt Cancer Center and Research Institute, FLASCO, Sylvester Cancer Center University of Miami, M.D. Anderson Orlando, NAACP Florida Conference EmergingMed.

Project Purpose:

The project has launched an interactive Web-based *Clinical Trials Information and Matching Service* that provides cancer patients and other users with information about the active cancer clinical trials available in Florida. Users have the ability to search a comprehensive database to identify trials for more than 20 different kinds of cancers in which they might be eligible. The Web site provides access to pertinent information about cancer clinical trials that patients can print and discuss with their physicians. Florida residents who do not have Internet access or who prefer one-on-one assistance can obtain the same information by calling a toll-free number.

Outcomes Expected:

Both the Web and telephone-based systems are focused on increasing patient and physician participation and access to information about cancer clinical trials in Florida. Extensive data is being collected regarding participation numbers, including an increase in number of clinical trials offered in Florida.

Service Area:

Entire State of Florida.

Services Provided:

Cancer clinical trials information and matching service.
Patient and physician education on importance of clinical trials.

Equipment:

Four Dell Poweredge Servers, Altigen IP PBX phone system, Checkpoint Firewall, Siemens phone switch, Genesys, etalk.

Transmission:

Three dedicated full T-1 lines, POTS lines

University of Florida College of Dentistry
PO Box 100405
Gainesville, FL 32610-0405
www.dental.ufl.edu

Jean Sweitzer, MS
Ph: 352-846-2450
Fax: 352-392-3070
Email: jsweitzer@dental.ufl.edu

Network Partners:

N/A

Project Purpose:

The University of Florida College of Dentistry (UFCD) is seeking to enhance its Statewide Network for Community Oral Health to include expanded capabilities in the areas of distance learning and teledentistry.

Outcomes Expected:

By enhancing its videoconferencing, educational video production and web technology, UFCD seeks to dramatically improve the clinical and educational experiences of dental students, residents and practitioners at our community-based clinics and better serve the needs of people with poor access to oral health care. Instruments will be developed to measure participants' expectations, knowledge gained and overall experience with teledentistry.

Service Area:

University of Florida Gainesville campus to health facilities located throughout the state, specifically, Jacksonville, St. Petersburg, and Hialeah. Counties where clinics are located include Hillsborough, Pinellas, Alachua, Duval, and Dade. Web-based technology will give us a presence in all counties of the State of Florida.

Services Provided:

Dental services provided will include teledentistry consultations and digital radiography. In addition, Distance Learning technology will be upgraded and expanded to include area practitioners across the State of Florida. The existing network has been operational approximately 10 years.

Equipment:

Video Conferencing Equipment: Polycom VSX 8000, Sony Cameras, Polycom Practitioner Cart, Polycom Gateway; Dell PowerEdge, Medicor; EMC Centera; Dell Optiplex GX270 PCs, Cisco Routers and switches, etc.

Transmission:

TCP/IP over Full T3, T1s and ISDN telecommunication circuits.

Morehouse School of Medicine
720 Westview Drive
Atlanta, GA 30310
<http://www.msm.edu>

Eric L. Jackson
Ph: 404-752-1786
Fax 404-752-1971
Email: elj@msm.edu

Network Partners:

Oakhurst Medical Center, Dr. Carmen Wilson: Ophthalmologist, National Center for Primary Care (NCPC), SERCN Community Health Center Sites, Division of Information Technology Services (DITS), Southeastern Universities Research Association, Inc. (SURA) .

Project Purpose:

- 1.) To establish the technical infrastructure necessary to allow for communication of public health information, continuing medical education, and distance learning to the broadest audience possible.
- 2.) To design a training program for health care professionals aimed at achieving optimal health outcomes through evidence based care, use of common communications technology, and health system change to promote effective delivery of patient centered care.
- 3.) To train nurses to obtain and electronically transmit digital retinal images and photographs to an ophthalmologist.

Outcomes Expected:

- 1.) Ability to deliver Web-based video programs to every CHC organization, beginning with the Southeast Cluster (eight states of Region IV).
- 2.) Broadcast the entire program of large conferences held at the National Center for Primary Care at Morehouse School of Medicine, including the Annual Morehouse Primary Care and Prevention Conference.
- 3.) Broadcast HRSA-sponsored conferences such as the Annual Primary Care Consortium meetings and the East Coast Migrant Stream Forum.
- 4.) Improved access to eye screening using a digital retinal camera will lead to the early detection of ocular complications in diabetic patients.

Service Area:

The CME/Training content delivery network will first serve the southeastern United States. The Diabetes pilot will take place at Oakhurst Medical Center, Morehouse Medical Associates, and the Morehouse School of Medicine.

Services Provided:

Digital retinal images will be obtained and transmitted in real time for interpretation. Dr. Wilson interprets the images and provides an assessment and treatment plan to the primary care provider. Any severe abnormalities, such as retinal detachments requiring acute treatment, will be referred.

Equipment:

Sonic Foundry Mediasite Streaming server, Cisco IP/TV, Tandberg Health Care System III, Cisco MCU, Cisco ISDN/IP Gateway, Movaz CWDM Optical Switch.
One Nidek Digital Fundus Camera, NAVIS Screener Patient Database Imaging Software, eye lane equipment.

Transmission:

ISDN Lines and Metropolitan Ethernet.

GEORGIA
Rural Health Telemedicine Grant Program
Ware County Health Department

RTGP 00-02, TNGP 03-05

Ware County Health Department
Southeast Health Unit
1720 Reynolds Street
Waycross, GA 31501
<http://it.sehu.org>

Paula Guy
Telehealth Director
Ph: 912-338-5929
Fax: 912-338-5914
Email: pbguy@gdph.state.ga.us

Network Partners:

Ware County Health Department, Medical College of GA's Center for Telehealth and Children's Medical Center, Savannah Perinatology Associates, Wayne, Toombs, Bulloch, and Coffee Wellness Centers, Coffee Regional Medical Center, Grady Health System, Satilla and Pineland Community Services Boards, and Children's Initiative.

Project Purpose:

To directly impact health care access and outcomes using OAT funding to build upon existing network by (1) expanding clinical telemedicine sites, services and utilization levels; (2) developing distance learning services beyond current limited applications; and (3) developing a regional medical informatics initiative.

Outcomes Expected:

Impact or outcome measures evaluated include such measures as evidence of improved perinatal outcomes, reduction in travel for specialized services outside the region, improvements in provider knowledge for key diagnosis based on pre- and post testing associated with distance learning activities. Tools used to collect data include patient, provider, and presenter satisfaction surveys, attendance; results; and OAT GPRA Performance Measures tool.

Service Area:

The Ware County Health Department and its parent, the Southeast Health Unit, includes a 16 county service area. Fourteen of 16 counties are Primary Medical Care HPSAs, 16 of 16 counties are Mental Health HPSAs, nine of 16 counties are Dental HPSAs, and 15 of 16 counties are Medically Underserved Areas (MUAs).

Services Provided:

The network has been operational since 1994. Services include Asthma, Allergy, Genetics, Perinatal Level II Ultrasound clinics, Dermatology, Child Psychiatry, and Sickle Cell, HIV/Infectious Disease, and distance learning services.

Equipment:

Polycom iPower 9400's at five new sites. The 970 and Polycom 680 videoconferencing units are located at the four original sites; specialized patient examination cameras, Extron 6 input-2 output S-video switch and Cisco routers.

Transmission:

All Wide Area Network (WAN) connections are T1 dedicated private line data circuits.

HAWAII
Hawai'i Community Telehealth Network Program
Hawai'i Primary Care Association (HPCA)

CMP FY 01, 02, 04

Hawai'i Primary Care Association (HPCA)
345 Queen Street, Suite 601
Honolulu, HI 96813
<http://www.hawaiipca.net>

Christine Ma'i'i Sakuda
Telehealth Director
Ph: 808-536-8442
Fax: 808-524-0347
Email: csakuda@hawaiipca.net

Network Partners:

Federally Qualified Community Health Centers (FQHCs), Native Hawaiian Health Care Systems (NHHCS), Queen Emma Clinics, Pacific Telehealth and Technology Hui, (a Department of Defense/Veteran Affairs joint venture), University of Hawai'i, Hawai'i Area Health Education Center (AHEC), Dr. Doug Johnson (dermatologist).

Project Purpose:

Help the FQHCs prepare for the effective, practical, and seamless use of telehealth in clinical, administrative, and educational settings, by creating a positive experience of telehealth among Community Health Center (CHC) providers, administrators, and patients. Three primary objectives are (1) increase remote access to health care using telecommunications; (2) encourage consultations among CHCs that have or need shareable clinical capacity; (3) use telehealth to meet important non-clinical needs: administration, education, and outreach.

Outcomes Expected:

(1) Assess the efficacy of store-and-forward capability between Primary Care Physicians (PCPs) and specialists, starting with dermatology; (2) establish videoteleconferencing capability in all FQHCs; (3) sustainable, on-going VTC programs-CMEs, grand rounds, community health education, community outreach; (4) increase the number of telehealth consults in FQHCs, (5) decrease patient and Provider travel costs; and (5) increase cost-efficient telecommunication capacity within FQHCs.

Service Area:

There are 12 FQHCs with 39 locations across the State of Hawai'i serving roughly 72 percent of Hawai'i's population. 80 percent of these represent Medically Underserved Populations (MUPs), 20 percent represent Medically Underserved Areas (MUAs) comprised largely of Native Hawaiians, Immigrants, Migrants from the Freely Associated States of the Marshall Islands, Micronesia, and Palau, homeless people, and uninsured people.

Services Provided:

Teledermatology, behavioral health, distance education, administrative support. In the future, we hope to service such specialties as rheumatology, chronic disease management, and home healthcare.

Equipment:

Tandberg MCU bridge, PictureTel SwiftSite 760, PictureTel medical carts, Polycom ViewStations, Polycom 512 multi-point units, Tandberg 500, Nikon CoolPix, general exam cameras, document reader, dermoscopes, otoscopes, ophthalmoscopes.

Transmission:

A mix of PRI, IP T-1 lines, frame-relay, DSL, and ISDN. MCU is mostly supported by a PRI and cable 300meg down/1meg up line. Most spoke sites have 384 kbs ISDN connectivity, but some are migrating to IP.

HAWAII
Molokai Telehealth Network
Molokai General Hospital

CMP FY 01, 02

Lamalama Ka`Ili Community Health Services
PO Box 408
Kaunakakai, HI 96748

Barbara Satterfield, MPH
Ph: 808-553-8327
Fax: 808-553-3775
Email: bacsatterfield@verizon.net

Network Partners:

Hawaii Pacific Health (3) – Honolulu, Oahu
University of Hawaii (3) – Honolulu, Oahu
Hawaii Federal Health Care Partnership (4) – statewide
Queen’s Medical Center

Project Purpose:

To develop telemedicine linkages in order to expand and increase access to urban medical specialists.
This will reduce travel costs and improve disease management.

Outcomes Expected:

Patient satisfaction – 7-point Likert Scale
Provider satisfaction – 7-point Likert Scale
Patient Usage – OAT GPRA Data Collection tool

Service Area:

The entire island of Molokai, with a resident population of just over 7,000. It is designated as both a primary care HPSA and as a mental health HPSA.

Services Provided:

Diabetes Care Management, Professional Development, Child and Adolescent Psychiatry, Fetal Ultrasound/Genetic Counseling, Gestational Diabetes, Behavioral Medicine/Counseling (Tobacco Cessation), Dermatology (1/2004), Oncology Case Management (1/2004), VA psychiatry (TBD), Early intervention/Headstart (TBD), Teleradiology.

Equipment:

Tandberg Health Care System (HCS) III (2), Tandberg 880 videoconferencing unit (2), Tandberg 800 videoconferencing unit (1), digital camera, Sony video camera, ultrasound machine.

Transmission:

Fetal ultrasound: ISDN @ 768 Kbps
Dermatology: Store and Forward (1/2004)
All other services: ISDN @ 384 Kbps

Telehealth Idaho
ISU Campus Box 8174
Pocatello, ID 83209-8174
<http://www.isu.edu/irh>
<http://www.telida.isu.edu>

B. Hudnall Stamm, Ph.D.
Ph: 208-282-4436
Fax: 208-282-4074
Email: telida@isu.edu

Network Partners:

Community: 12 hospitals, two clinics, one dental practice, one hospital network (five hospitals), and four state associations. University: The College of Pharmacy, Idaho Health Sciences Library, Dental Sciences, Clinical Psychology, Dept. of Family Medicine, and Hispanic Health Research and Education Center. Corporate: Healthwise, Inc. and Well Diagnostics.

Project Purpose:

Improve access in rural and frontier Idaho and support a statewide telehealth resource center designed to improve access across the spectrum of health care, including oral, physical, and mental/behavioral health. The program takes a three-pronged approach to improving access by (a) increasing the number of providers through new and upgraded education; (b) extending the reach of existing providers by using telehealth-based supervision, consultation, home health; and (c) preserving the existing workforce through professional support and increasing their professional quality of life and retention.

Outcomes Expected:

The program has a variety of expected outcomes and methods of measuring them. Below is a generalized summary of the evaluation of the project. 1) *Increased Professional Quality of Life* – outcome measures: Life Status Review and ProQOL (<http://www.isu.edu/~bhstamm/tests.htm>), increased recruitment and retention, increased access to professional supports, increased use of educational and consultative activity, perceived increase in ability to do job, increased perception of changing practice habits based on additional knowledge and resources. 2) *Patient/provider/student satisfaction* – outcome measures: 1 to 10-item self-report. 3) *Increased use of telehealth tools* (education, consultation, and informatics) – outcome measures: OAT GPRA Performance measures, automated web utilization data, quarterly self-report of utilization data, key informants, focus groups, and public health data.

Service Area:

Entire state of Idaho. The 44 counties include 36 HPSAs, 30 DPSAs, 44 MPSAs, and 28 MUAs.

Services Provided:

Technical support, health informatics, clinical services, new and continuing health professions education, and the Tel Ida Toolbox, a free health informatics website. Specializations include professional quality of life, geriatrics, traumatic brain injury, community integration, mental health, health services, health economics, traumatic stress, and cultural competency.

Equipment:

Wide range of equipment and bandwidth, as requested by partners. Emphasis is on interoperability, data security, and HIPAA compliance.

Transmission:

Hybrid, utilizing what is available (i.e., POTS, ISDN, ADSL, frame relay, cable, and wireless).

Expanding Telehealth to North Idaho Districts (EXTEND)
North Idaho Rural Health Consortium (NIRHC)

North Idaho Rural Health Consortium
Bonner General Hospital
P.O. Box 1448
Sandpoint, ID 83864
<http://www.nirhc.org>

Sue Fox, MPH
Ph: 208-265-3390
Fax: 208-265-6276
Email: suefox@sandpoint.net

Network Partners:

Five northern Idaho county hospitals in St. Maries, Sandpoint, Bonners Ferry, Coeur d' Alene, and Kellogg; three school districts in Wallace, Kootenai, and Priest River; and North Idaho Behavioral Health.

Project Purpose:

1. Extend existing service providers, by further developing and expanding telehealth treatment applications, to better serve the rural population of northern Idaho.
2. Increase access to quality healthcare and improve patient safety through the use of telecommunications and digital technologies specifically in the areas of mental health, hospital and school based rehabilitative therapies, pathology, pharmacy, and electronic medical records.

Outcomes Expected:

EXTEND will evaluate the feasibility, quality of care, cost-effectiveness, satisfaction, and outcomes data related to delivering healthcare using telehealth techniques. Quantitative and qualitative measurements are integrated into each telehealth application.

Service Area:

Five counties in northern Idaho.

Services Provided:

Electronic Medical Records (2005), telepharmacy (2004), telepathology (2004), hospital and school-based telerehabilitative therapies (2003), telemental health (2002), professional continuing medical education (1996), distance learning (1996), and administrative meetings (1996).

Equipment:

Tandberg 880 videoconferencing unit, Polycom FX viewstation, and Vtel TC2000 videoconferencing unit.

Transmission:

IP Wide Area Network (WAN) between hospitals with Primary Rate ISDN gateway access to the school district networks.

Automated Clinical Information System – Wireless Network Infrastructure
Memorial Health System

Memorial Medical Center
701 N. First Street
Springfield, IL 62781-0001
<http://Memorialmedical.com>

Mitchell L. Johnson
Ph: 217-788-3529
Fax: 217-788-5520
Email: johnson.mitch@mhsil.com

Network Partners: N/A

Project Purpose:

To support the development of a fully redundant wireless infrastructure to support an Automated Clinical Information System that improves patient safety and reduces medical errors.

Outcomes Expected:

- Create an infrastructure to support wireless network on all nursing units.
- Assure system design eliminating service disruptions and downtime.
- Assure that wireless devices will operate correctly with wireless network.
- Assure privacy of patient information.
- Expand access to wireless network from any location within the enterprise.

Service Area:

Memorial Medical Center is located in Springfield, Illinois; serves as a referral for a 40-county service area with 1,600,000 population in central and southern Illinois, serving 38 MHPSA's.

Services Provided:

Infrastructure to support wireless network communication between all clinical care providers with Memorial Medical Center was implemented August, 2003.

Equipment:

- 2 - Reef Edge Connect Servers
- 6 - Reef Edge Controllers
- 7 - Planar TK7 Wireless AC with carts

Transmission:

Wireless 11MB.

Neutron Radiation for Cancer Treatment
Fermi National Laboratory/Northern Illinois University

Division of Research and Graduate Studies
Northern Illinois University
DeKalb, IL 60115
<http://www.neutrontherapy.niu.edu/neutrontherapy/>

Rathindra N. Bose
Ph: 815-753-1883
Fax: 815-753-1631
Email: rbose@niu.edu

Network Partners:

Fermi National Accelerator Laboratory

Project Purpose:

To disseminate the usage of neutron radiation for cancer treatment; select and treat advanced cancer patients; and establish new CPT code specific for neutron radiation for widespread application of neutron therapy across the nation.

Outcomes Expected:

(1) Create an interactive website to document and publicize the effectiveness of neutron therapy and advise patients over the Web; (2) submit an application and secure a new CPT code so that neutron therapy finds widespread application for societal benefit; (3) treat selected advanced cancer patients to demonstrate the efficacy of the method; and (4) present seminars and workshops to the public and to the medical community.

Service Area:

For cancer treatment, preference will be given to patients from rural and urban areas of Illinois. However, resources and time permitting, we also plan to service patients outside Illinois and the United States.

Services Provided:

Seminars to the public; oncology services will be provided to patients effective January 2005.

Equipment:

Proton linear accelerator, vertical CT-scanner, windows server 2000 with NET platform and ASP scripting, as well as SQL server access.

Transmission:

Through a full T3 line with a maximum overhead of 69 meg ingoing/outgoing traffic through Illinois Century Network.

OSF Saint James Telehealth Network

OSF Saint James – John W. Albrecht Medical Center

OSF Saint James-John W. Albrecht Medical Center
2500 W. Reynolds
Pontiac, IL 61764
<http://sjh.intranet.osfnet.org/>

Kent Robson
Ph: 815-842-4983
Fax: 815-842-4912
Email: kent.robson@osfhealthcare.org

Network Partners:

Three Rural Family Practice Clinics (Dwight, Chenoa and Fairbury)
OSF Saint James-John W. Albrecht Medical Center (Pontiac)
OSF Saint Francis Medical Center (Peoria)
Livingston County Mental Health Board

Project Purpose:

To enhance efficiency and effectiveness of health delivery through the use of telemedicine by developing a Telehealth Network. This Network is a collaborative effort that focuses on developing interconnected healthcare units that include Clinic/Hospital Support and Specialist Support. The specific focus will be to connect three rural Family Practice Clinics with OSF Saint James and to determine protocols and procedures that are most effective. The secondary focus will be to connect with two specialty groups, including Cardiology and Mental Health.

Outcomes Expected:

Cost savings from reduced drive times; Press Ganey Patient Satisfaction scores of 85 percent+ for telemedicine visits.

Service Area:

The Telehealth Network covers five counties, including all of Livingston and portions of McLean, Ford, Iroquois, and Woodford. Two are full HPSA's and two are partial HPSA's. Approximately 25 percent of the area is at poverty level. Livingston County is rural and ranks 4th in the state in geographic land size. The total service area has a population of 55,000.

Services Provided:

The OSF Saint James Telehealth is currently not operational. It is anticipated that start-up will begin in April, 2005. Core services will include optional care, specialty consults, education, grand rounds and meetings using video teleconferencing.

Equipment:

Polycom Medlink Mobile Workstations with peripherals, including AMD-2500 General Exam camera, AMD-ENT set, AMD-3550 Electronic Stethoscope, and possibly AMD-3875 ECG and AMD-5500 Laptop-based Ultrasound (research being currently done).

Transmission:

T1 circuits with ISDN or IP, IP backbone, ISDN backbone, and ISDN dialup services.

Memorial Health Systems
701 North First
Springfield, IL 62781-0001
<http://www.memorialmedical.com>

Karen Mitchell
Ph: 217-788-4074
Fax: 217-788-5468
Email: mitchell.karen@mhsil.com

Network Partners:

Regional teaching hospitals, two rural hospitals, rural clinics, physician practices.

Project Purpose:

To provide radiology consultations and film interpretations through full fidelity images transmitted via teleradiology systems. The hub site, Memorial Medical Center, will connect with its two affiliated hospitals located in rural communities through T1 lines. The three hospitals serve a rural population, many of whom receive Medicare and/or Medicaid.

Outcomes Expected:

Reduction in the delay interpretation of radiology studies due to the decrease in lost films. Rural physicians are using the Web distribution system to view x-rays and results of their patients in their office or at home reducing turn around time for patient care.

Service Area:

Five counties in central Illinois.

Services Provided:

Teleradiology support of emergency medicine, orthopedics, radiology, nephrology/dialysis, cardiology, gastroenterology, pediatrics, oncology, neurology, burn care, surgery, gynecology, and obstetrics.

Equipment:

Distributed Medical Images servers and Enhanced Viewer, AutoRad Diagnostic Independence D1540ii, Disk Array, DICOM servers, Digitizers and PC's, Cisco router, remote access server, Cisco modular router, network switches.

Transmission:

T1's at 1500K and fractional T1's at 384k.

SIU Telehealth Networks & Programs
P.O. Box 19682, 913 N. Rutledge St., Ste. 1253
Springfield, IL 62794-9682
<http://www.siumed.edu/telehealth>

Deborah E. Seale
Ph: 217-545-7830
Fax: 217-545-7839
Email: dseale@siumed.edu

Network Partners:

Participating sites include: two Area Health Education Centers, three family practice clinics, five universities, 11 Critical Access Hospitals, three small rural hospitals, one rural mental health hospital, two large urban hospitals, one Veteran Affairs Hospital, one home health agency. Content providers include: three universities, two state agencies, three hospitals, and three associations/consortiums.

Project Purpose:

Develop community-institutional partnerships to strengthen local health care capacity through the use of advanced technologies. Provide medical education and training to 52 rural hospitals – including 31 critical access hospitals – using videoconferencing, satellite broadcasts and web streaming. Provide health information to patients and information support to practitioners through online resources. Provide direct patient care and medical consultation using store-and-forward and videoconference technologies. Ensure the delivery of appropriate, affordable services through program evaluation and outcomes research.

Outcomes Expected:

Appropriate, seamless, affordable service as measured by participant (patient, learner, educator, practitioner) and support staff (technical and coordinator) data collection instruments. Improve technical quality through monitoring and support, user training, use of technical protocols and trouble reports. Improved access as measured by number of sites, participants, programs, services delivered as well as duration. Evaluate project development timeline.

Service Area:

Ninety-six counties in downstate Illinois including four frontier counties, 70 rural non-metropolitan counties; 16 partial rural metropolitan counties; 93 Primary Care HPSAs; 52 Mental HPSAs with 11 designations pending; 83 Dental HPSAs; 24 whole county MUA/MUPs and 53 partial county MUA/MUPs.

Services Provided:

In 2003, 117.5 hours of education provided to 798 participants involving 31 sites. Programs included Internal Medicine Grand Rounds, Burdick Multidisciplinary Fellowship, patient safety, terrorism preparedness and response, and grant writing training. During the same period, 105 clinical encounters were completed involving 29 patients and four services.

Equipment:

ISDN PRI and IP videoconferencing, medical and distance education peripherals, multipoint control bridge, satellite, online chat, multi-media streaming and push technologies.

Transmission:

T1 circuits with ISDN or IP, state IP backbone, state ISDN backbone, and ISDN dialup services connecting at 128 to 384 as appropriate for need.

Telemedicine Applications for Riley Hospital for Children
James Whitcomb Riley Hospital For Children

Clarian Health Partners
I-65 at 21st Street
Indianapolis, IN 46202
<http://clarian.org>

Gary Miller
Ph: 317-962-9633
Fax: 317-962-6297
E-mail: Lyman H. Wolfla - lwolfla@clarian.org

Network Partners:

Union Hospital & Health System – Terre Haute, IN; Bedford Regional Hospital–Bedford, IN;
Deaconess Hospital – Evansville, IN.

Project Purpose:

The purpose of Riley Connections is to: 1) Enable and enhance the provision of specialty healthcare to children throughout Indiana; and 2) provide an infrastructure to promote continuing medical education among providers across Indiana. Our program will help Riley physicians, currently conducting outreach clinics, to enhance their practice so that they may be able to leverage existing clinical time.

Outcomes Expected:

From physicians using our program as a way to triage patients, it is expected that new patients will be able to be seen by a specialist sooner than would have been previously possible. By tracking specific disease markers, we will attempt to show that specific patient subsets (such as Cystic Fibrosis related Diabetes) treated via telemedicine will achieve similar health outcomes compared to those patients treated in person. Decreased travel costs for patients and providers is also being documented.

Service Area:

Lawrence County, IN (HPSA); greater Evansville, IN service area; greater Terre Haute, IN service area.

Services Provided:

Interactive video consultations are being provided to patients by specialists in Adolescent Psychiatry, Pediatric Urology, Pediatric Endocrinology, and Diabetes Education. Program also facilitates transfer of pediatric EEGs and sleep studies via our telecommunications infrastructure. Weekly pediatric grand rounds and neonatal-perinatal conferences are broadcast to partner sites. Remote clinical personnel are able to earn continuing medical education credits from attending these interactive conferences.

Equipment:

Three each of: General Exam Camera's (AMD2550), Stethoscope (AMD3550) Notebook Computer.
Five each of: Tandberg 2500 video codec, HP ScanJet, HP Deskjet, Backup UPS, Telemedicine carts,
17 in. Sony Monitors, Linksys 10/100 switch.

Transmission:

T-1 Lines between Clarian Health Partners and Deaconess Hospital, Bedford Regional Hospital, and Union Hospital.

**Congestive Heart Failure and Diabetes Telemanagement Protocols
Iowa Chronic Care Consortium**

Iowa Chronic Care Consortium
3200 Grand Avenue
Des Moines, IA 50312
<http://www.iowacce.com>

William Appelgate, Ph.D.
Ph: 515-271-1467/515-271-1516
Fax: 515-271-1578
Email : william.appelgate@dmu.edu

Network Partners:

Iowa Health Systems, Mercy Health Network, Des Moines University

Project Purpose:

Test the success of telephonic methods for case management of CHF and diabetes patients in the home.

Outcomes Expected:

Patient Functionality: Will monitor activities of daily living using home telehealth technologies.

Clinical Improvement: Increase the percentage of patients receiving critical elements of self management education while using the telehealth monitors; critical elements include daily weights, activity level, low sodium diet, medication management, follow-up appointments, and deteriorating symptoms.

Patient Satisfaction: Patient surveys will be used with all patients in the programs.

Cost-effectiveness: Cost avoidance and savings related to medical utilization (visits per episode of care, delay onset of readmission to a hospital) pre- and post-monitor usage.

Service Area:

Current rural and urban sites served by the providers of Mercy Health Network and Iowa Health Systems.

Services Provided:

Intervention: Telehealth monitoring of CHF and Diabetes patient through IVR System. Placement of monitors in the home of selected CHF patients that have been identified as high risk.

Equipment:

Patient monitoring using interactive voice response (IVR) and weight scales, BP cuffs, and monitors done through verbal reporting and use of the Internet.

Transmission:

Plain Old Telephone Service (POTS).

Midwest Rural Telemedicine Consortium
1111 6th Avenue
Des Moines, IA 50314-2611
<http://www.mrtc-iowa.org>

Fred Eastman
Ph: 515-643-5225
Fax: 515-643-8928
Email: feastman@mercydesmoines.org

Network Partners:

Mercy Medical Center – Des Moines, Mercy Medical Center – North Iowa, and 21 affiliate facilities in Albia, Algona, Ames, Audubon, Belmond, Bloomfield, Britt, Centerville, Charles City, Corydon, Cresco, Emmetsburg, Greenfield, Hampton, Iowa Falls, Manning, Marshalltown, Mount Ayr, Nevada, New Hampton, and Osage, Iowa.

Project Purpose:

To enhance the quality and accessibility of health care services through updated equipment deployment at 16 sites, targeted EMS training, health care career promotion, develop a support mechanism for limited English proficient (LEP) patients, and increase access for delivery of clinical services.

Outcomes Expected:

Outcomes expected include a 10-percent increase in current network utilization (clinical, educational and administrative); additional staff resources for affiliated entities; improved ability for facilities to address the language needs for LEP patient populations; improved availability of EMS training in rural communities; increased awareness of healthcare career needs and options for high school students (including EMS); and an increased awareness of telemedicine capabilities and opportunities for rural physicians and urban specialists. Monitor outcomes using the OAT GPRA Performance Measures.

Service Area:

The service area consists of 23 communities in North-Central, Central and South-Central Iowa, including Adair, Audubon, Wright, Polk, Floyd, Davis, Hardin, Franklin, Hancock, Kossuth, Carroll, Marshall, Story, Cerro Gordo, Appanoose, Chickasaw, Mitchell, Monroe, Palo Alto, Howard, Ringgold, and Wayne counties.

Services Provided:

Since 1995 - Clinical (Echocardiography, Dermatology, Burn Management, Nephrology); Educational (CEU/CME, health care management, community support groups, public health); Administrative. New (2003-2004) – Tele-Interpretation for LEP patients; targeted EMS training in communities and high schools; Students Into Health Careers education.

Equipment:

Four CLI 8775 VTC units, four CLI 8750 VTC units, 21 Dr. SMITH CLI based units, one CLI Eclipse VTC unit, and nine PictureTel VTC units.

Transmission:

Dialable ISDN-PRI over statewide network. Point-to-point and multi-point conferences via dial-up service and state owned VTC bridge. ISDN-BRI used in Des Moines local area.

**Sustainability and Cost Benefit Evaluation of the Kansas Telehealth Network
University of Kansas Medical Center**

KU Center for Telemedicine and Telehealth (KUCTT)
3901 Rainbow Blvd.
Kansas City, KS 66160
<http://www.kumc.edu>; <http://www2.kumc.edu/telemedicine/>

Gary Doolittle, MD
Ph: 913-588-2226
Fax: 913-588-2227
Email: gdoolitt@kumc.edu

Network Partners:

Northeast Kansas Center for Health & Wellness, Sedan City Hospital, Cedar Vale Hospital, Moline Rural Health Clinic, Windsor Place Nursing Home, Atchison Community Hospital, Smoky Hills Family Practice Residency Program, Hays Area Health Education Center, Hays Medical Center, Potawatomi Nation Health Clinic.

Project Purpose:

Project will expand the Kansas Telehealth Network, linking the University of Kansas Medical Center to 10 partner sites in rural Kansas to improve access to clinical specialties and sub-specialties through telemedicine connections. A comprehensive cost-benefit evaluation of clinical telemedicine across multiple partner sites and medical specialties will be conducted.

Outcomes Expected:

Standard cost-accounting methods will be utilized to compare the cost of providing a telemedicine consult to the cost of providing both traditional and outreach consults. Cost data will be paired with quality-of-life instrument data.

Service Area:

8 counties in Southeast, South Central, Northwest and Northeast Kansas, five of which are HPSAs or partial HPSAs, eight of which are mental health HPSAs, and three that are dental HPSAs.

Services Provided:

The Kansas Telehealth Network has been operational since 2000 for clinical and educational videoconferencing. Specialties include cardiology, adult psychiatry, child psychiatry, diet and nutrition, endocrinology, neurology, oncology, pediatric cardiology, psychology, and rheumatology. Patient education and continuing education are also provided.

Equipment:

All sites are equipped with PolyCom F/X Viewstations and ATI TelePhonic Stethoscopes.

Transmission:

Dedicated ISDN T1 lines with consults conducted at 384 kbps or higher.

KENTUCKY

RTGP 94-96, RTGP 97-99, CMP FY 04

Improving Health Outcomes for Children in Rural KY Schools

University of Kentucky Research Foundation – Kentucky TeleCare

University of Kentucky Chandler Medical Center
Dept. of Telemedicine Svc/Kentucky TeleCare
K128 KY Clinic, 740 S. Limestone
Lexington, KY 40536-0284
<http://kytelecare@uky.edu>

Rob Sprang
Ph: 859-257-6404
Fax: 859-257-2881
Email: rsprang@email.uky.edu

Network Partners:

St. Claire Regional Medical Center, Morehead, KY (Morehead Elementary School; Clearfield Elementary School; Rodburn Elementary School; Tilden Hogge Elementary School; Rowan County Middle School; Rowan County Junior and Senior High School; Botts Elementary School; Bath County Middle School); **Lewis County Primary Care (LCPC), Vanceburg, KY** (Laurel Rural Health Clinic in Laurel Elementary School; Tollesboro Elementary School; Garrison Rural Health Clinic in Garrison Elementary School; Lewis County High School Clinic; Fleming County Hospital, Flemingsburg, KY; Tollesboro Family Health Center, Tollesboro, KY).

Project Purpose:

Primary purpose targets school children in public school clinics, providing clinical and educational support for chronic problems (asthma, juvenile diabetes, obesity, hypertension, smoking, mental/behavioral health and oral health). Telehealth technology improves access to preventative health information, chronic disease support, and improves access to primary care and medical specialists as needed. The project also implements a healthy heart education program (Lewis County Schools), pilots a Pharmacy Consultation program, electronic medical record development, increased Emergency Health Care Access, and increased health professional education in LCPC network.

Outcomes Expected:

Reduce smoking positive opinions, number of smokers by 10 percent (Survey); Identify unmet oral health needs (30 percent more identified by screenings); provide consultation for 70 percent identified in screenings as needing mental health services (PHQ9 and Comprehend Self-Assessment on Substance Abuse); 10 percent greater understanding of asthma self-management; 5 percent greater improvement of peak flow measures (pre/post tests, peak flow measurement); 10 percent greater understanding of diabetes self-management (pre/post tests); 10 percent greater understanding of hypertension self-management (pre/post tests); improved student understanding about Healthy Hearts by 10 percent (pre/post tests).

Service Area:

Three counties, Lewis, Fleming and Rowan (1,116 sq.mi/pop.50,058). Other than UKMC, all are rural sites; six HPSAs; two partial HPSA's seven in MUAs; 13 in Mental Health HPSAs; six in Dental HPSAs; one is a FQHC; two are licensed Rural Health Clinics within public schools.

Services Provided:

Patient consultations (dermatology, pediatric cardiology, child psychiatry), Oral screenings, Health Assessment and education.

Equipment:

Polycom H.323 codecs, Welch Allyn CompacVideo otoscope, American TeleCare analog Caretone II stethoscope, Radvision IP video bridge/8 port, Accord video bridge, expanded Newbridge 3645.

Transmission:

T-1, IP

LOUISIANA/MISSISSIPPI
Community Hospital Telehealth Consortium (CHTC)
Southwest Louisiana Health Care Systems

CMP FY 00, 01, 03, 04, 05

Lake Charles Memorial Hospital
1525 Oak Park Blvd., Ste. A
Lake Charles, LA 70601
<http://www.lcmh.com/telemedicine.htm>

Kevin Haymon, BSN, RN
Ph: 337-494-2861
Fax: 337-494-6742
Email: khaymon@lcmh.com

Network Partners:

Lake Charles Memorial Hospital, Lake Charles, LA (11 spoke sites)
Our Lady of Lourdes Regional Medical Center, Lafayette, LA (5 spoke sites)
Our Lady of the Lake Regional Medical Center, Baton Rouge, LA (2 spoke sites)
Slidell Memorial Hospital, Slidell, LA (1 spoke site)
North Mississippi Health Services, Tupelo, MS (3 spoke sites)

Project Purpose:

Develop a telemedicine network to improve quality of, and access to, healthcare. Provide access to quality health information and distance-learning opportunities to hub and spoke sites by the means of videoconferencing technology.

Outcomes Expected:

- Provide home health care, including wound care, with real time assessments and the use of store and forward technologies.
- Provide telemedicine clinics in the rural school setting and in the correctional setting.
- Various specialty telemedicine clinics (Cardiology, Psychiatry, Ocular Plastics, Family Practice).
- Distance learning opportunities will be provided to health care providers, lowering travel-associated costs.
- Provide community health information to the public. (CHTC Evaluation Forms for all data collection).

Service Area:

Eleven parishes in southern Louisiana, 20 HPSAs/MUAs.
Four counties in northern Mississippi, eight HPSAs/MUAs

Services Provided:

Network initiated in 1999, with Lake Charles Memorial Hospital (Telemedicine project started 1994) as the lead agency. Providing Cardiology, diabetes education and management, ophthalmology, psychiatry, ocular plastics, home health, family practice, continuing and community education.

Equipment:

V-Tel TC2000 videoconferencing unit, Polycom and Tandberg set top units, Tandberg Interns, Tandberg Educators, Ezenia MCU, American TeleCare home health equipment, ophthalmoscopes, stethoscopes, ECG's, general exam cameras, document cameras, ENT scopes.

Transmission:

POTS, T1, ISDN.

**Expansion of Physician Internet Portal, Woman's POL
Woman's Hospital**

Woman's Hospital
9050 Airline Highway
Baton Rouge, LA 70815
<http://www.womans.com>

Jamie L. Haeuser
Ph: 225-924-8101
Fax: 225-924-8777
Email: amn-jlh@womans.com

Network Partners:

None

Project Purpose:

The expansion of Woman's Hospital's Physician Internet Portal expands physician access to time-critical patient information from any Internet-connected computer; provides a secure physician-to-physician messaging environment; allows physicians to enter orders online; and allows physicians to view images from the hospital's PACS systems. The expansion will particularly enhance patient care between OB/GYN physicians and specialties including maternal/fetal medicine and neonatology.

Outcomes Expected:

The outcomes include expansion of the number of active users of the system; linking patient information to physician messaging, and increasing physician efficiency, measured by the number of physician users of the messaging system; reducing medical errors by providing for online physician order entry through single-system physician access, measured by the number of physician users; and enhancing physician information available for diagnosis through direct access to imaging studies, measured through the number of physicians accessing the AGFA PACs system.

Service Area:

The hospital serves an eight-parish (county) area, including East Baton Rouge, Livingston and Ascension parishes (primary) and West Baton Rouge, Pointe Coupee, East Feliciana and West Feliciana parishes (secondary). The hospital provides maternal/fetal medicine services in Monroe, Lake Charles, and Hammond.

Services Provided:

Specialty services for women and infants, including obstetrics, gynecology, general surgery, neonatology, oncology, outpatient diagnostic services, and home health.

Equipment:

For this project, Woman's Hospital uses two Dell 2524 1-gigabyte dual-processor servers (one live and one as the test and backup server), with AGFA software residing on one Dell 2600 server and one Dell 2650 server.

Transmission:

Two Internet gateways: one from Cox Communications, 10 Mb ½ duplex, and the other from NTG Communications, a 100 Mb full duplex link between Woman's and NTG. Of that connection, Woman's Hospital uses 10 Mb full duplex burstable for Internet services.

MAINE

RTGP 97-99, RTGP 00-02, TNGP FY 03-05

**Maine Nursing Home Telehealth Network
Regional Medical Center at Lubec**

Regional Medical Center at Lubec
43 S. Lubec Rd.
Lubec, ME 04652
<http://www.rmcl.org>

Ron Emerson
Ph: 207-287-4060
Fax: 207-287-3020
Email: remerson@rmcl.org

Network Partners:

Nursing homes, physicians' offices, pain management specialist, wound care specialist, allergist, gerontologist, pulmonologist, dermatologist, primary care providers, occupational specialist, immunology, hospitals, State bureau of health, and psychiatry.

Project Purpose:

To develop an open architecture telemedicine network that increases accessibility to services in six nursing homes in rural Maine. This project will increase connectivity between nursing homes and their primary care providers and bring specialty services previously not available to this population. It will also increase communication between family members and patients by use of POTS-based videophones.

Outcomes Expected:

This project will work to develop a telemedicine system that develops the following outcomes: approximates the care received through in-person visits; results in a substantially greater number of rural patients getting appropriate diagnosis and treatment; contributes to successful treatment in a timely and cost effective manner; and provides more effective teamwork between primary care providers, specialist, and patients.

Service Area:

Nursing homes and providers are geographically spread from the Southern town of Biddeford, Maine, to the Northern-most town in Maine, Frenchville. Partners Telemedicine is located in Boston, Massachusetts.

Services Provided:

Planned services include Primary Care, wound care, pain management, psychiatry, allergy, dermatology, occupational health, gerontology, pulmonology, and immunology.

Equipment:

PolyCom (H.323) and MP Viewstations with AMD 2500 hand held cameras. Nikon CoolPix 775 Digital Camera. Motion Media 125 MM Video Phone.

Transmission:

ISDN at 128 K to 384 K over leased lines for video. POTS lines for videophones. Internet connectivity over 56K up to DSL transmission for store and forward technology.

MAINE
Maine Telehealth Network
Regional Medical Center at Lubec

RTGP FY 97-99, RTGP FY 00-02, TNGP 03-05

Regional Medical Center at Lubec
43 S. Lubec Rd.
Lubec, ME 04652
<http://www.rmcl.org>

Ron Emerson
Ph: 207-287-4060
Fax: 207-287-3020
Email: remerson@rmcl.org

Network Partners:

Hospitals, Federally Qualified Health Centers, Mental Health Agencies, State Correctional Facilities, Jails, State Mental Health Facilities, Rural Health Clinics, Physicians Offices, Rural Health Centers, Social Service Agencies, Emergency Medical Services, Department of Human Resources, Public Health Agencies, Missionaries.

Project Purpose:

To provide an open architecture network with a multi-faceted approach of providing specialty services, primary care, social services, and education to rural and underserved areas of Maine.

Outcomes Expected:

This project will work to develop a telemedicine system that develops the following outcomes: approximates the care received through in-person visits; results in a substantially greater number of rural patients getting appropriate diagnosis and treatment; contributes to successful treatment in a timely and cost effective manner; and provides more effective teamwork between primary care providers, specialist and patients.

Service Area:

With over 200 sites, the Maine Telemedicine Network is geographically spread throughout the State. This includes four permanent sites on coastal islands and a mobile "telemedicine" boat that provides services to four additional islands. Sites are located from Biddeford in Southern Maine, to Frenchville, the Northern-most city in Maine. Western Maine also has many sites.

Services Provided:

Operational since January 1998. Services include Primary Care, wound care, pain management, endocrinology, psychiatry, genetics, pediatric neurology, substance abuse, emergency medicine, video relay interpreting, counseling, and home telehealth.

Equipment:

PolyCom (H.323) and MP Viewstations with AMD 2500 hand held cameras. AMD analog stethoscopes and AMD otoscopes. AMD Printers.

Transmission:

ISDN at 128 K to 384 K over leased lines for video. POTS lines for Home Units. Microwave Broad Band.

MASSACHUSETTS
Hampden Hampshire Franklin County Telehealth Services
Baystate Medical Center, Inc.

TNGP FY 03-05

Baystate Medical Center, Inc.
759 Chestnut Street
Springfield, MA 01199
<http://www.baystatehealth.com>

Barbara Farrell
Ph: 413-794-8349
Fax: 413-794-8426
Email: Barbara.Farrell@bhs.org

Network Partners:

Franklin Medical Center, Inc.
Community Health Center of Franklin County
Mohawk Trail Regional High School
Mary Lane Hospital, Inc.

Project Purpose:

To develop a telemedicine link between three hospitals and the regional high school to provide access to rural providers for grand rounds, administrative meetings, educational opportunities and, when appropriate, patient care consultations. To provide rural physician offices with access to medical informatics and email connection with the health system. To connect training programs to sites in the rural area. To continue to develop consultation services for the emergency rooms in Franklin and Hampshire Counties. To provide home health visits in Franklin County.

Outcomes Expected:

Annual Provider satisfaction survey.
Regularly scheduled grand rounds calendar.
Annual report of telemedicine activity.

Service Area:

Franklin County in Massachusetts in the Northwestern part of the state and covers 855 square miles with a population of just over 71,000. The county has 26 towns, 10 of those are designated as MUA's. The county has a disproportionate elderly population and a significant number of uninsured or underinsured.

Services Provided:

Since 1999
Education/Grand Rounds
Telepathology since 2002
Medical Informatics
Telepsychiatry since 2001

Equipment:

PicturTel Concorde videoconferencing units, PicturTel LiveLan Desktop videoconferencing, Polycom videoconferencing units, Trestle Telepathology units, American Telecare units, and Healthcare Vision Units.

Transmission:

T3 with Vlan, ISDN three bundled, POTS.

Office of College Relations
179 Longwood Avenue
Boston, MA 02115
<http://www.mcphs.edu> or www.massmedline.com

George Humphrey, PhD
Ph: 617-732-2909
Fax: 617-732-2193
Email: george.humphrey@mcphs.edu

Network Partners: N/A

Project Purpose:

The project provides prescription-related education services to uninsured and underinsured citizens of Massachusetts, primarily through MassMedLine, a toll-free prescription hotline. A website is under development. Monthly outreach programs are conducted on healthcare access, preventive medicine, improved coverage for prescription drugs, access to prescription drug programs and drug awareness education. The project also links the College's Worcester, MA and Manchester, NH campuses via 2-way interactive video in order to provide academic courses for Doctor of Pharmacy students and professional development programs for faculty and practitioners.

Outcomes Expected:

Quantitative data gathered from end-user telephone contacts and website visits are compiled to measure usage of the medication counseling and prescription information services. Likert-scale surveys are utilized to measure patient, provider, faculty and student satisfaction with the academic, professional development and information services provided. Multiple assessment tools - including examinations, portfolios and case presentations - are used to measure student learning outcomes for the academic program.

Service Area:

All counties in Massachusetts.

Services Provided:

We provide medication counseling and prescription plan access services, primarily via telephone. The website will provide detailed information on prescription plans, including the new Medicare plan, available to Massachusetts residents. We also provide academic degree and professional development courses via two-way video. Service began in May 2001.

Equipment:

- (2) Tandberg 6000; (3) Xserve 1.33 GHZ with RAID servers;
- (4) Apple G3/G5 processors; (3) Sony digital cameras; (3) Toshiba projection systems; and
- (1) Cestron video package.

Transmission:

TCP/IP, with three ISDN lines as back-up.

MASSACHUSETTS
Picture Archiving & Communication System (PACS)
UMass Memorial Medical Center, Inc.

CMP FY 04

UMass Memorial Medical Center
Department of Radiology
55 Lake Avenue North
Worcester, MA 01605-2397
www.umassmemorial.org

Catherine Bozarth
Ph: 508-334-7817
Fax: 508-856-4669
Email: bozarthc@ummhc.org

Network Partners:

UMass Memorial Medical Center, an academic medical center is Worcester, Massachusetts, consisting of three campus locations—University, Memorial, and Hahnemann; two satellite clinics of the hospital in Shrewsbury and Westborough; and two community hospitals in the region—Marlborough Hospital and Clinton Hospital.

Project Purpose:

The current Radiology workflow throughout the Medical Center and affiliated community hospitals can best be described as a manual system. By converting to an electronic system, we can transmit images and results to expedite and improve the delivery of information to the ordering clinician who will render care, and to enable timely electronic consultations between community physicians and subspecialty radiologists at the main UMass Memorial Campuses. Funding received through this grant will allow UMass Memorial to acquire components of a Picture Archival and Communication System (PACS) for the digital transmission, display and archiving of radiology images.

Outcomes Expected:

Radiology has a team of employees charged with developing the baseline operating costs and metrics of the current manual system. As we complete each phase of the PACS installation, we will measure changes in operating costs, turn-around-time for result distribution, posted charges, and radiologist efficiency. Also measured will be physician and patient satisfaction, length-of-stay, etc. to determine overarching gains associated with improving the availability of results and images.

Service Area:

The service area is largely in Worcester County in Central Massachusetts, and includes several HPSAs for primary care, mental health, and dental and several MUAs.

Services Provided:

Begun in 2004, the PACS project encompasses all key radiology modalities: MRI, CT, Ultrasound, Nuclear Medicine, Mammography, Diagnostic Radiology, Fluoroscopy, Interventional Radiology, as well as services to operating rooms and emergency departments, and consultations between community and academic medical center physicians.

Equipment:

Information systems, computer hardware to include servers and workstations, a speech recognition system and several new acquisition devices—CR and digitizers.

Transmission:

The PACS vendor supports Single Socket Layer technology and uses 128-bit encryption to secure exchange of EPHI over the communications network. All remote access will be granted via a Nortel Virtual Private Network, and users will be authenticated with unique user IDs and an electronic password token.

Herbert H. & Grace A. Dow College of Health Professions
2214 Health Professions Building
Mt. Pleasant, MI 48859
<http://www.chp.cmich.edu/rctcen>

Tim Pletcher
Ph: 989-774-1622
Fax: 989-774-2624
Email: pletc1ta@cmich.edu

Network Partners:

Major network partners are the 26- member Isabella County Health & Human Services Collaborative Council, six additional health care systems, the Michigan Health Council, Michigan Center for Rural Health, the Clare & Gratiot County Collaborative Councils.

Project Purpose:

Providing rural health educational access, service and outreach across the State, the Nation and globally to support education, learning and the advancement of knowledge in communities and among citizens, many of whom would not otherwise have access to higher and health education opportunities.

Outcomes Expected:

Reduction in medical errors through better training of medical and health professions personnel (numerous assessment methods and on-line tools). Increased access to quality health information through online wellness and printed health and wellness materials leading to greater citizen self efficacy. (web utilization and book delivery). Detailed multi-county health survey and follow on year survey to compare progress.

Service Area:

Our primary service area the communities located in Mid Michigan, however, we positioned to service the State, National, and even international locations.

Services Provided:

Primary activities focus on wellness and preventative education. Clinical services are limited to audiology and speech pathology consultations. We currently have two dedicated Telemedicine facilities and are exploring their use as regional telemedicine facilities that tertiary care facilities might rent. We are also now able to provide conversion services from video conferences to Web casts.

Equipment:

We currently have one Polycom i680 set up in an administrative and small group distance education facility. A Polycom Med Link cart is permanently located in a dedicated telemedicine clinic, this equipment has a number of AMD scopes and devices attached. We have seven classrooms, plus 64 clinical and research areas equipped to transmit varying types of medical content routed to a large shared Tandberg unit. We are in the process of acquiring a human patient simulator.

Transmission:

We currently have quad ISDN (4 BRI) service coming into the facilities. We also have high speed Internet (100Mb/s) for quality IP-based video conferencing for distance education.

**MICHIGAN
PACS System
Hillsdale Community Health Center**

CMP FY 04

PACS System
168 S. Howell Street
Hillsdale, MI 49242
www.HCHC.com

Valerie Fetters
Ph:517-437-5216
Fax: 517-437-0246
Email: vfetters@hchc.com

Network Partners:

N/A

Project Purpose:

Develop a PACS System to allow for adequate Radiology Services for Hillsdale County. It will allow radiology films to be read at a remote facility if our Radiologist is unavailable.

Outcomes Expected:

Allow transmission of films to physician's office, and keep residents at Hillsdale Community Health Center if Radiologist is not available. It will also allow for digital storage of films, thus reducing the film expense.

Service Area:

Hillsdale County, Michigan, population 46,527.

Services Provided:

Digital Radiology to be implemented by June, 2005.

Equipment:

Picture Archiving and Communication System (PACS).

Transmission:

Marquette General Health System
580 W. College Avenue
Marquette, MI 49855
<http://www.mgh.org/telehealth/index.html>

Susan Makela
Ph: 906-225-3218
Fax: 906-225-7696
Email: smakela@mgh.org

Network Partners:

Six Critical Access Hospitals (CAHs) involved in this project are: Helen Newberry Joy Hospital, Schoolcraft Memorial Hospital, Mackinac Straits Hospital/Island, Ontonagon Memorial Hospital Baraga County Memorial Hospital and Munising Memorial Hospital. Seven other organizations started providing telemedicine services that were not originally part of the grant sites.

Project Purpose:

1. Demonstrate the viability of remote neurological consultation presenting at the CAH's (Expansion grew to the entire Upper Peninsula Telemedicine Network [UPTN]). 2. Provide in-community maternal child health care in two critical access hospital communities. (Expansion grew to the entire UPTN). 3. Establish telemedicine services at Mackinac Island Medical Center related to profound isolation and limited access to comprehensive health care services.

Outcomes Expected:

Patient/Provider satisfaction with telemedicine services in the UPTN is 4.71 (scale of 1-5 Likert style questions with 5 being satisfied and 1 being not satisfied). Patient encounters grew 761 percent from 2000 thru 2003, with 24 specialty offices and 56 specialist providing telemedicine services to patients in our network. Patient and specialty usage is monitored through the UPTN access database, UPTN excel growth carts and are reported in the OAT GPRA reports.

Service Area:

The Upper Peninsula encompasses 16,446 square land miles with a population of 317,616 (19.31 people per square mile) serving 15 counties. Of the 15 counties, 14 have full HPSA status with one partial, seven of these counties are full MUA, three partial and three listed as N/A. Isolation in the Upper Peninsula is further heightened by an unreliable and changing economy, high unemployment, and lower than average household incomes.

Services Provided:

The UPTN was operational in 1995. Clinical telemedicine encounters occurred on a very limited scale (18 encounters in 1995 versus 1,068 in 2003). Services currently provided over telemedicine include: Allergy, Cardiology, Diabetes Care and Management, Endocrinology, Infectious Disease, Mental Health, Neonatology, Nutrition, OB/GYN, Oncology, Orthopedic, Pediatrics, Radiology, Rehabilitation, Surgery, Emergency and Nephrology.

Equipment:

UPTN uses 20 Polycom systems, nine Via Video desktop systems, six Zydacron desktop systems, four Tandberg Interns and two Picture Tel videoconferencing units.

Transmission:

The majority of clinical telemedicine are now occurring over existing data network lines, which allowed the expansion to desktop system point-to-point IP connections (T1 lines). Sites that utilize ISDN technology merge with IP through an accord bridge.

**Michigan Collaborative Project on Internet Based Clinical Telemedicine
University of Michigan**

University of Michigan Health System
Dept. of EM/Pediatric Emergency Services
1500 East Medical Center Drive
TC B1380, Box 0305
Ann Arbor, MI 48109-0305

M. Nypaver, MD
Ph: 734-763-9849
Fax: 734-763-9298
Email: michelen@umich.edu

Network Partners:

University of Michigan Hospital/Dept of Emergency Medicine/Children's Emergency Services and Marquette Hospital/Upper Peninsula Telemedicine Network.

Project Purpose:

The purpose of this project is to facilitate formation/support working groups of health providers to develop model/templates for various clinical telemedicine applications with a focus on acute/emergency applications. Second we integrated telemedicine principles/technology with advanced simulation technologies to develop a model of advanced distance emergency education for various health providers. Third we created a private Internet connection to test commercially available products/methods to rate priority of service reliability and acceptability from clinical/health providers.

Outcomes Expected:

The project will: a) develop a number of clinical/technical protocols for clinical applications. This will include a standard format for information (clinical guide, equipment and technical specifications, operations, options, etc), b) develop model for using adjunctive distance learning technologies to augment clinical, medical, and educational skills training, and c) improve access of first responders to access Advanced Life Support (ALS) educational opportunities. Project has focused on pediatric emergency medical skills training, including mock arrest scenarios (medical and trauma).

Service Area:

No specific clinical care was performed. Service area for development and educational outreach was within the State of Michigan with special emphasis on rural populations/health providers.

Services Provided:

Pediatric advanced life support and emergency education events.

Equipment:

Polycom view stations, AMD Handheld exam cameras, digital camera (Nikon), Document Cameras, Pediasim™ (METI) human patient simulator with accessories/software, Laptop PC, Cisco routers.

Transmission:

All activities were Internet-based transmissions.

**The Application of Tele-Allied Health in Rural Counties in Southwest Lower Michigan
Western Michigan University**

Western Michigan University
1903 West Michigan Ave.
Kalamazoo, MI 49008
<http://www.wmich.edu/hhs>

James A. Leja, Ph.D.
Ph: 269-387-2645
Fax: 269-387-2683
Email: james.leja@wmich.edu

Network Partners:

Borgess Health Alliance and members of the Southwest Michigan Telehealth Network, which includes rural hospitals, public health departments, and health clinics.

Project Purpose:

The purpose of the Western Michigan University Telehealth Project is to add the resources and expertise of a research university to the Southwest Michigan Telehealth Network, expand available services to rural residents and practitioners, and promote the development of a regional telehealth research agenda. This project is new with a primary focus in the area of allied health.

Outcomes Expected:

To provide specialized geriatric assessment to the rural population, develop CME/CEU telehealth opportunities to allied health professionals, and to promote regional research in telehealth through collaborative projects with members of the Southwest Michigan Telehealth Network.

Service Area:

Thirteen rural counties in Southwest Lower Michigan.

Services Provided:

This is a new initiative with network construction underway. Once completed, services will include continuing education for allied health professionals, geriatric assessment to rural patients and healthcare providers, and the facilitation of a regional telehealth research agenda.

Equipment:

Tandberg Intern II, Tandberg 6000 Dual XGA Monitors, AMD 3100 Ausculette II Electronic Stethoscope, AMD 9940 Video Phone (2), AMD 2500 General Exam Camera NTSC, AMD ENT scope.

Transmission:

IP, VTC Bridge, Internet, T1.

Ambulatory Electronic Medical Record System – Twin Cities Metropolitan Care Systems
Fairview Health Services

Fairview Health Services
2450 Riverside Avenue
Minneapolis, MN 55455
www.fairview.org

Judy Beck/William Showalter
Ph: 612-672-6500
Fax: 612-672-2404
Email: jbeck1@fairview.org / wshowal1@fairview.org

Network Partners:

Fairview Health Services including Fairview University Medical Center – Riverside and University Campuses, Fairview Southdale and Ridges Hospitals, Fairview Women’s Clinics (3 sites), Fairview clinics including Northeast, Staub, Highland Park, Eagen, Ridges, Cedar Ridge, Lakeville Bloomington Oxboro, Eden Center, Jonathan, and Cross Town.

Project Purpose:

The purpose of this project is to acquire and install an ambulatory electronic medical record in Fairview’s Twin Cities metropolitan care sites, both clinics and hospitals. This project will: re-design and automate the core care delivery processes in the clinic environment, provide physicians with decision support tools at the point in the care in the clinic setting, provide physicians with the clinic record at the time of ER and hospital care, provide a critical component of the capabilities required to communicate patient information across the care continuum throughout Fairview’s regional care systems, availability of the medical record for same day “on demand” appointments.

Outcomes Expected:

- 100 percent physician order entry by year 3 (track AEMR use on-line).
- 100 percent results available on-line order entry by year 3 (track AEMR use on-line).
- Improved availability of information for clinical care decision making
- Satisfaction, physicians, and employees (tracked by Likert surveys).
- 100 percent integration with patient account system by end of year one and lost changes reduced by 70 percent by end of year 3 (AEMR and patient accounting system on-line tracking and reporting).
- Full HIPAA compliance

Service Area:

The service area includes Hennepin and Ramsey Counties in Minnesota including 11 HPSAs/MUAs and serving 2.7 million residents along with 35-42 million visitors per year at the Mall of America. In addition, 26 million people live within a one-day drive of the service area.

Services Provided:

The service area includes the metropolitan Twin Cites areas in Minnesota and includes an ambulatory electronic medical record (AEMR) system in 19 sites (both inpatient and outpatient settings). The AEMR supports a complete range of services, from prevention of illness and injury to care for the most complex medical conditions.

Equipment:

The AEMR system is a server-based application running on an EMC-Symmetrix platform with COMPAQ NT4 and W2K servers and interfacing with PC-based computer workstations located in patient care sites throughout the Twin Cities metropolitan area. The core database is Intersystems cache. The application software is Epic – multiple modules.

Transmission:

Fairview uses T1 and OS3 transmission systems via a wide area network. In addition, physicians have access to the system through a secure Internet portal.

**Healthy Mothers and Babies Technology Demonstration
Fairview Ridges Hospital**

Fairview Ridges Hospital
201 Nicollet Boulevard
Burnsville, MN 55337
<http://www.fairview.org>

Brian Milavitz
Ph: 612-672-2253
Fax: 612-672-7050
Email: bmilavi1@fairview.org

Network Partners:

Fairview-University Medical Center (F-UMC) (hub), Fairview Southdale Hospital (spoke),
Fairview Lakes Medical Center (spoke).

Project Purpose:

To reduce maternal and neonatal morbidity and mortality in Minnesota using technology and communication methodologies in a way that leverages skilled professionals and builds on community based systems. To show that using technology and telemedicine techniques, hospitals will be better able to provide accessible specialty care to mothers and their babies in the communities where they live.

Outcomes Expected:

Local availability of services will increase access and quality of care and provider and patient satisfaction. *Measures:*

- Number of and reason for maternal and neonatal referrals.
- Number of and reason for neonatal referrals (inpatient and outpatient).
- Volume of obstetric patients receiving prenatal care and delivering at Ridges.
- Morbidity and mortality statistics for obstetric and neonatal population.
- Patient and physician satisfaction.

Service Area:

Portions of Dakota and Scott counties in Southeastern Minnesota. Total population of the area in 2000 was 286,000 with a 1.5-percent annual growth rate.

Services Provided:

High-level ultrasounds with ability for neonatologists to provide near real time remote interpretation via high speed store and forward link to F-UMC. Remote specialty consultations with physicians at F-UMC. Physiological monitoring and support equipment to facilitate level II care on-site at Ridges.

Equipment:

Electronic maternal and fetal monitoring equipment, high level ultrasound, remote linkage software, life support equipment, EMR upgrades, videoconferencing equipment.

Transmission:

Very high bandwidth optical ring, ISDN.

Informatics/Health Information Services Grant: Auto. Med. Dispensing
Fairview Lakes Regional Medical Center

Fairview Lakes Regional Medical Center
5200 Fairview Blvd.
Wyoming, MN 55092
<http://www.Fairview.org>

Mark Nelson
Ph: 651-982-7237
Fax: 651-982-7236
Email: mnelson1@fairview.org

Network Partners:

Fairview Pharmacy Services WORx Support, 711 Kasota Ave., St. Paul, MN,
Cardinal Health, Pyxis Corporation, 3750 Torrey View Court, San Diego, CA.

Project Purpose:

Develop an automated medication dispensing system in our rural hospital to improve service delivery and patient safety in medication dispensing and administration, decrease costs related to staff rework and medication waste, and enhance the volume of electronic data exchanges involved in service delivery.

Outcomes Expected:

Decrease turnaround time between medication order and administration (time study);
Reduce medication errors (medication error reporting);
Reduce number of medication/pharmacy credits (data analysis);
Improve employee satisfaction (staff surveys);
Increase the data elements able to exchange via electronic methods (flow analysis); and
Establish interfaces with other information management programs (system analysis).

Service Area:

Used throughout the hospital which services all or portions of 5 counties north of the Twin Cities metro area.

Services Provided:

Inpatient and outpatient hospital pharmacy services have been provided to patients at this location since February 1998. The automation of this process utilizing this grant began in April 2003 and the project was completed in August of 2003.

Equipment:

Nine medstation main units, one medstation console unit, five auxiliary units, one tower unit, one Pyxis C^{II} safe controlled substance management system unit, one auxiliary vault unit, and one Pyxis PARx Auto-Replenishment system.

Transmission:

Mediware's WORx computerized pharmacy management system – Pyxis interface.

MINNESOTA

RTGP FY 94-96, RTGP FY 00-02, TNGP FY 03-05

Fairview-University of Minnesota Telemedicine Network

University of Minnesota

University of Minnesota
420 Delaware Street, Box 293 Mayo
Minneapolis, MN 55455
<http://www.fairview.org/telemedicine/>

Stuart M. Speedie, Ph.D
Ph: (612) 624-4657
Fax: (612) 626-0489

Email: speed002@umn.edu

Network Partners:

Fairview Health Svcs, Mpls/MN, U of MN Physicians, St. Paul/MN, MN Area Health Education Center, Mpls/MN, Human Development Center, Duluth/MN, Prairie at St. Johns, Fargo/ND, Northern Pines Mental Health Center, Brainerd/MN, U of MN, Duluth Medical School, Duluth/MN. Thirteen spoke sites located in north central and north eastern Minnesota.

Project Purpose:

Meet the needs of rural Minnesotans for a greater range of specialty medicine consultations with an emphasis on mental health, geriatric issues and perinatal care; improve treatment of chronic conditions including heart disease, diabetes, organ transplants and chronic pain; and provide health professional education. The overall goal of the project is to facilitate the continued growth of FUMTN into an even larger, open network of multiple telemedicine providers and users to reach a larger percent of the State's rural underserved populations in multiple settings. Patients will be served by telemedicine not just in hospitals, but in rural clinics, homes, and long term care facilities.

Outcomes Expected:

Increase the number of network members where patients can seek telemedicine consultations and assist those sites to extend telemedicine into the community through home care agencies, long-term care facilities and rural health clinics. It is anticipated that the outcomes will be increased numbers of available services, providers and network sites; greater number of consults; larger number of educational programs; more home care visits and discharges to lower levels of care.

Service Area:

The area consists of portions of 12 Minnesota counties. It covers 11 HPSAs and PHPSAs; 13 full and partial mental health HPSAs; 10 MUAs and pumas; one partial MUP. Counties served: Aitkin, Carlton, Cass, Crow Wing, Goodhue, Itasca, Mille Lacs, Otter Tail, Pine, St. Louis, Todd and Wadena.

Services Provided:

Started with one site (Wadena) in October 1994. Current specialties: dermatology, orthopedic surgery, cardiology, pulmonology, neurology, gastroenterology, asthma/allergy and child psychiatry. New services: geriatrics, mental health, chronic illness and fetal and maternal health.

Equipment:

Currently using: four Polycom FX's and six Polycom Viewstation videoconferencing units, six derm exam cameras, six digital cameras, four digital stethoscopes, one otoscope, and five document cameras. Planned installations: five Polycom Viewstation videoconferencing units, and four digital cameras, seven video phones for home care.

Transmission:

Four network members utilize ISDN connections. Five network members are using IP connection. Telehome care will be either h.324 over POTS lines or h.323 for IP communications.

Logan College of Chiropractic
1851 Schoettler Road, P. O. Box 1065
Chesterfield, MO 63006-1065
<http://www.logan.edu>

L. Gary Gross
Ph: 636-227-2100
Fax: 636-207-2419
Email: gary.gross@logan.edu

Network Partners:

N/A

Project Purpose:

Incorporate distance learning technology equipment into the overall Learning Resources Center renovation. This equipment will provide for the integration of technology at all levels of teaching and learning at the College. Thousands of high school, community college and four-year university students and teachers will have access to "The Tour of the Body" through distance learning media available as a result of this grant. Finally, the equipment will be used to deliver continuing education opportunities to practicing doctors of chiropractic.

Outcomes Expected:

To integrate the technology to all levels of teaching and learning at the College. In addition, the distance learning equipment will deliver academically sound courses and educational support services for the college's three current constituencies: current students in Logan's BS in Human Biology and Doctor of Chiropractic degree programs, high school and college students interested in science and doctors of chiropractic who must meet continuing education requirements.

Service Area:

Eastern Missouri and western Illinois, potentially beyond those areas.

Services Provided:

Distance learning, continuing education of health care providers, education and training of health profession students in neurology, nutrition, orthopedics (non-surgical), pain management, radiology and chiropractic.

Equipment:

Polycom VS4000 videoconference unit, Vbrick VBX coder, Vbrick VBVD server, complete hardware and software system.

Transmission:

IDSN, PRI, T1 and/or fiber connection depending on the target recipient.

MISSOURI
Missouri Telehealth Network
The Curators of the University of Missouri

RTGP FY 97-99

Missouri Telehealth Network
2401 Lemone Industrial Blvd, DC 345.00
Columbia, MO 65212
<http://www.telehealth.muhealth.org>

Joseph A. Tracy
Ph: 573-884-7958
Fax: 573-882-5666
Email: tracyj@health.missouri.edu

Network Partners:

University of Missouri Health Care (21 sites)
MU Behavioral Health Services (seven sites)
Capital Region Medical Center (three Sites)

Project Purpose:

To enhance access to care in underserved areas of Missouri through interactive videoconferencing technologies, electronic medical instruments and a teleradiology system; to provide educational programs for healthcare providers; to further homeland security efforts related to disaster preparedness; to be available in the event of a disaster; and to provide research opportunities for clinicians wanting to study telehealth.

Outcomes Expected:

Basic patient demographic and billing information is collected. One patient satisfaction question is asked on a Likert type scale and information regarding the distance between the telehealth site and MU Health Care is recorded.

Service Area:

The service area covered by the network includes 27 Missouri counties. Three counties are considered urban. Thirteen counties are designated as geographic HPSAs for either primary care, mental health or dental. The rural counties account for approximately 11 percent of Missouri's population.

Services Provided:

The network started providing educational and clinical services in 1995. In addition to CME programming, core clinical services include mental health, dermatology, cardiology, child health, neurology, radiology, surgical follow-up, pre-operative workups, burn care, autism, and children with special health care needs.

Equipment:

Polycom videoconferencing systems, Polycom multipoint control unit, JedMed video scopes, Elmo and Cannon video cameras for dermatology, Kodak teleradiology scanners, Elmo document cameras, Cardionics Simulscope system.

Transmission:

T1 Frame Relay to all sites.

MONTANA
NMHA & REACH Telehealth Network Development Project
Benefis Healthcare Foundation

TNGP FY 03, 04

Northcentral Montana Healthcare Alliance
1126 26th St. So.
Great Falls, MT 59405
<http://www.benefis.org>

Jack W. King
Ph: 406-455-4285
Fax: 406-455-4141
Email: kingjacw@benefis.org

Network Partners:

The Northcentral Montana Healthcare Alliance (NMHA), Realizing Education And Community Health Telehealth Network (REACH), and Benefis Healthcare in Great Falls as the hub. NMHA and Reach Network have sites in Havre, White Sulphur Springs, Chester, Chinook, Chouteau, Ft. Benton, Big Sandy, Conrad, Cut Bank, Shelby Blackfeet Community Hospital in Browning, and Benefis Healthcare Foundation.

Project Purpose:

To expand and enhance the connectivity and clinical capabilities of the existing REACH network. To improve access and reduce costs overall of providing medical specialty and mental health services to rural residents. To positively impact the financial, psychological, emotional, and spiritual well being of rural communities by improving retention of healthcare services and revenues.

Outcomes Expected:

Attain financial, strategic, and operational synergies (measure) - Financial data, retention and turnover rates, budget comparisons (tool). Expand clinical and education capabilities of Network (measure) - REACH Participant Satisfaction Survey (tool). Positively impact well-being of communities (measure) - Comparative data for financial and participant satisfaction surveys of psychological, emotional, and spiritual (tool).

Service Area:

Twelve sites in 10 counties, including one rural and nine Critical Access Hospitals (25 beds or less). Region and network communities include seven MUA's and eight full or partial HDSA's 10 mental health and seven dental health HPSA's.

Services Provided:

Currently include CME for credit, professional development (non-credit), mental health consults, educational programming, the clinical service of teleradiology that has expanded to all hospital members of the network and NMHA, and examination of the development of further clinical services. Services to be added in 2005 will include home health telemonitoring, pre and post surgery follow-up, telecardiology (remote echo), and increased mental health consults due to a new REACH site, Golden Triangle Mental Health.

Equipment:

USDA grants funds provided for an upgrade of the network from a purely switched-video network to an IP-based network, allowing greater connectivity to other state telemedicine networks. Several Alliance sites receive new televideo equipment.

Transmission:

The REACH network uses dedicated Full T1 lines connected to a Lucent MCU Bridge. The network currently uses a robbed-bit, switched video conferencing network at a speed of 336kbps. The REACH network has acquired and is testing an Accord bridge which will allow NMHA to connect to regional sites via IP at a speed of 384kps.

MONTANA
Eastern Montana Telemedicine Network
Deaconess Billings Clinic Foundation

RTGP 94-96, RTGP 00-02

Eastern Montana Telemedicine Network
2800 Tenth Ave North
Billings, MT 59101
<http://www.emtn.org>

Thelma McClosky Armstrong
Ph: 406 657 4057
Fax: 406 657 4875
Email: tmcclosky@emtn.org

Network Partners:

The Eastern Montana Telemedicine Network (EMTN) is a consortium of 22 medical and mental health facilities located in eastern and central Montana and northern Wyoming in the communities of Livingston, Big Timber, Columbus, Forsyth, Colstrip, Miles City, Baker, Glendive, Sidney, Culbertson, Glasgow, Plentywood, Scobey, Malta, and Poplar MT and Cody and Lovell, WY.

Project Purpose:

To improve access to specialty medical and mental health services in rural and frontier communities of Montana and Wyoming. To decrease the overall cost of accessing specialty healthcare services by rural residents of Montana and Wyoming.

Outcomes Expected:

Increased numbers and variety of telemedicine services provided to partner sites. Significant out of pocket savings for patient receiving services via telehealth. Improved access to specialty care. Data will be collect using EMTN developed data base.

Service Area:

Sixteen counties in eastern and central Montana and northern Wyoming serving eight HPSA's/MUA's. Area served covers over 27,000 square miles and on an average has population density of five people per square mile.

Services Provided:

Operational since 1994, EMTN provides the following services: Mental Health, Cardiology, CV surgery follow up, Shriners orthopedics, ENT, Diabetes, Nephrology Case Management, Emergency Medicine, consultation upon request, planned to be implemented in the early 04, teleoncology.

Equipment:

Twelve VTEL and 10 PolyCom videoconferencing units, one VTEL MCU videoconferencing Bridge and Adtran CSU.

Transmission:

Dedicated T1's running video at 384 kbps.

MONTANA
Medication Errors and Disease Management
Deaconess Billings Clinic Foundation

CMP FY 02, 03, 04

Deaconess Billings Clinic Center on Aging
P. O. Box 37000
Billings, MT 59107
<http://www.billingsclinic.com>

Connie Koch, CMPE
Ph: 406-238-2489
Fax: 406-238-5193
Email: ckoch@billingsclinic.org

Network Partners:

N/A

Project Purpose:

Consists of two separate research studies. 1) Medication Errors Study: to determine: a) systems irregularities that lead to increased medication errors during hospitalization and upon discharge home; b) to determine effect of computerized inpatient pharmacy system on these errors; c) use of inpatient nurse case managers to reconcile medications during acute hospital stay. 2) Quality Measures Pilot Study: to determine: a) effect of computerized Disease-specific Registries on providers' adherence to best practice guidelines in managing congestive heart failure, acute myocardial infarction, and bacterial pneumonia; b) effect these Registries have on the health care system's ability to monitor quality and improve operational efficiencies.

Outcomes Expected:

1) Medication Errors: a) demonstrate a significant number of medication errors and discrepancies during care transition, i.e. hospital discharge; b) inconsistencies in medications patients take at home compared to discharge medications; c) implementation of CIS will reduce errors during discharge process; d) improve patient compliance; e) improve provider knowledge of patient's altered regimen; f) RN case manager led MARx program, medical record reviews and patient, family/caregiver interviews. 2) Quality Measures: demonstrate that CIS will abstract and integrate patient clinical information to generate robust chronic disease registries. Measurement tools: Review of medical records and electronic Disease Registries.

Service Area:

Serves 31 central and eastern Montana counties and nine northern Wyoming counties. Of the 40 counties: 17 are HPSA designated for Dental; 38 for Mental Health and 22 for Primary Care.

Services Provided:

DBC includes Billings Clinic, Deaconess Hospital, Psychiatric Center, Welch Heart Center, Cancer Center, Wellness Center, Orthopedics & Sports Medicine and the DBC Foundation. The DBC Heights, DBC West, The Wellness Center and Aspen Meadows Retirement Community and Nursing Home. DBC has 10 regional clinics and affiliate relationships with eight regional hospitals.

Equipment:

Utilizes Eastern Montana Telemedicine Network's videoconferencing using V-Tel TC 1000 and Polycom View Station. Cerner Integrated Clinical Information System (CIS).

Transmission:

Dedicated T1 running at 384kbps for videoconferencing, PRI ISDN for off-network videoconferencing, DSL for desktop videoconferencing.

Rocky Mountain Technology Foundation (RMTF)
1045 N 30th Street
Billings, MT 59102
<http://www.rmtf.org>

Luke Kobold
Ph: 406-255-8478
Fax: 406-247-6492
Email: lkobold@billingsclinic.org

Network Partners:

Deaconess Billings Clinic, Daniels Memorial Hospital (Scobey, Montana), Livingston HealthCare (Livingston, Montana), Rosebud Healthcare Center (Forsyth, Montana), Beartooth Hospital and Health Center (Red Lodge, Montana), Sheridan Memorial Hospital (Plentywood, Montana), Rocky Mountain College, Fort Peck Community College, Big Horn Community College, and Chief Dull Knife Community College.

Project Purpose:

Offer business solutions and telehealth alternatives to rural clinics and hospitals in order to improve patient care. Also, efforts are underway to expand distance learning opportunities for Montanans based in rural settings and tribal communities across the state. This project includes technological upgrades to five rural hospitals to improve clinical efficiency and allow those clinics an opportunity to participate in telehealth programs with Deaconess Billings Clinic. Additional benefits include offering online CME/CEU certification programs and baccalaureate degrees from Rocky Mountain College for students enrolled in the two year Tribal College institutions.

Outcomes Expected:

Deaconess Billings Clinic affiliate hospitals gained Accounts Receivable efficiency measure of 15 percent - 20 percent on average. Rocky Mountain College has realized a 25 percent increase in Native American Students enrollment to date and an approximate overall student enrollment increase of 15 percent for the Fall Semester of 2003.

Service Area:

Rural hospitals and clinics in six Eastern Montana counties and three Tribal Colleges in Eastern Montana.

Services Provided:

Business Information system upgrades for rural clinics and the development and implementation of online course material.

Equipment:

WebCT for online learning modules, teleconferencing via VisionNet.

Transmission:

T1 Lines.

MONTANA
Pharmacy Support to Rural Clinics
Rocky Mountain Technology Foundation

CMP FY 03

Rocky Mountain Technology Foundation (RMTF)
1045 N 30th Street
Billings, MT 59102
<http://www.rmtf.org>

Luke Kobold
Ph: 406-255-8478
Fax: 406-247-6492
Email: lkobold@billingsclinic.org

Network Partners:

Deaconess Billings Clinic, Beartooth Hospital and Healthcare (Red Lodge, MT), Stillwater Community Hospital (Columbus, MT), and North Bighorn Hospital (Lovell, WY).

Project Purpose:

RMTF will address the critical issue of medication errors in rural hospitals and clinics by funding a state-of-the-art telepharmacy project, helping to provide pharmaceutical care through the use of telecommunication and information technologies to patients and care providers in remote areas. Deaconess Billings Clinic, through funding from RMTF, will assist in the implementation of decentralized and clinical pharmacy concepts, providing a host of services and support to rural clinics and hospitals.

Outcomes Expected:

Objective 1: Implementation of an integrated Clinical Information System will significantly decrease medication errors and Adverse Drug Events (ADEs) in the acute hospital setting.

Objective 2: Implementation of an integrated Clinical Information System will significantly decrease medication errors and ADEs during times of care transition, i.e. admission to and discharge from an acute hospital setting.

Objective 3: Implementation of an integrated Clinical Information System will significantly decrease medication errors that occur in local community pharmacies. (We could do this by working with a few local pharmacies that track the number of calls for clarification or random questionnaires to high risk patients).

Service Area:

Three counties in Eastern Montana and one site in Northern Wyoming.

Services Provided:

Implementation of a computerized pharmacy system that supports pharmacy operation and patient safety initiatives through the use of alerts for drug/allergy, drug/drug, drug/laboratory and dose range checking.

Equipment:

Cerner PharmNet Software.

Transmission:

Dedicated T1 Lines.

MONTANA
Mansfield Health Education Center (MHEC)
St. Vincent Healthcare Foundation

CMP FY 01, 02, 03

St. Vincent Healthcare Foundation
1106 North 30th Street
Billings, MT 59101
Svh-mt.org/www.svfoundation.org

Doris T. Barta
Ph: 406-237-3602
Fax: 406-237-3619
Email: doris.barta@svh-mt.org

Network Partners:

The Mansfield Health Education Center (MHEC) is a state of the art—high tech conference center available for the educational, training, or telehealth telecommunications use statewide, nationally, and internationally. MHEC provides telehealth activities such as grand rounds for pathology and radiology physicians.

Project Purpose:

To provide the cornerstone for health education and conferencing programs regionally, expanding to national and international health education programs. To provide a venue for healthcare forums addressing current local, national and international issues regarding the state of healthcare. MHEC deploys video telecommunications to extended community areas, providing access to high-speed Internet services, store and forward technology, satellite education and two way videoconferencing.

Outcomes Expected:

Outcomes include increased educational programs improving public information about health topics and increased educational opportunities. Health Library consumers have access to a library that is centrally located in the medical corridor. Increased space in the Library provides better services to consumers with a private area for family consultation, and access to HIPAA compliant computer terminals and training materials. Evaluation consists of Customer Service Surveys.

Service Area:

The Mansfield Center provides health education and training services to the whole state of Montana, but the primary service area served by St. Vincent Healthcare, a regional tertiary care center. That area consists of 28 counties in south-central Montana; and two counties in Wyoming. All or part of the 28 counties served by St. Vincent are designated as HPSAs/MUAs, Mental Health shortage areas and Dental Shortage Areas, with the exception of Fergus County (Lewiston).

Services Provided:

The Mansfield Center was completed in November 2003. Telehealth services have been provided for grand rounds by the Pathologists and Radiologists. The Partners in Health Telemedicine Network uses the center for ongoing education and training for network sites and physicians as they develop telehealth services which include orthopedics, mental health, dermatology, radiology, pediatrics, Perinatology, congestive heart failure, administrative and education. PHTN has been in existence since 1998.

Equipment:

PolyCom Video Codec's from IP based Via Video to FX and Custom VS4000 room systems, VCONN Executive IP systems, Accord Polycom MGC 100 MCU that performs audio, ISDN, and IP video bridging and data collaboration services, Panasonic 3 CCD Cameras, and AMD General Exam Cameras.

Transmission:

Standardized delivery at 12 channels, @ 64 Kpbs over leased T1 lines, microwave wireless, cellular and IP based transmission services.

MONTANA
Partners in Health Telemedicine Network (PHTN)
St. Vincent Healthcare Foundation

RTGP FY 00-02

St. Vincent Healthcare Foundation
1106 North 30th Street
Billings, MT 59101
<http://www.svhhc.org>

Doris T. Barta
Ph: 406-237-3602
Fax: 406-237-3619
Email: doris.barta@svh-mt.org

Network Partners:

(4) Frontier/rural hospitals in Montana: Lewistown, Butte, Miles City, Harlowton; (1) in Cody Wyoming. (6) Rural Clinics in Montana: Absarokee, Ashland, Bridger, Hardin, Stanford, Lewistown (Mental Health Clinic); (5) Physician offices in Billings – Montana Orthopedics, Orthopedic Surgeons, Mental Health Center, Yellowstone Dermatology and the Fetal Diagnostic Center; (1) Montana Hospital Association in Helena, MT.

Project Purpose:

To develop telemedicine links between Billings based physicians and frontier/rural hospitals and clinics to improve access to specialist health care services for their rural healthcare facility, providing a cost-effective alternative to travel for both the patients and the healthcare providers, in addition to improving timely intervention when health care issues arise. The network is also used to provide surgical follow-up and case management reviews, continuing medical and laboratory education, community health education, business and administrative meetings.

Outcomes Expected:

Evaluation focuses on determining if telemedicine applications are medically effective means of delivering health care. PHTN partners measure whether the costs involved in telemedicine applications are cost effective means of provision of care. The telemedicine technology has been evaluated to determine what process is associated with optimal health outcomes, and to the extent possible, appropriate use. Tools used include OAT GPRA Performance Measures, patient and provider satisfaction surveys, internal calculations of costs saved through travel savings.

Service Area:

Twenty-eight counties in south, central, eastern and central Montana; two counties in Wyoming. All or part of the 28 counties served by PHTN are designated as HPSAs, MUA's Mental Health shortage areas and Dental Shortage Areas, with the exception of Fergus County (Lewistown).

Services Provided:

Orthopedics, mental health, dermatology, radiology, pediatrics, Perinatology, congestive heart failure, administrative meetings and education services. PHTN began operations in 1998. A secondary hub is St. James Healthcare that operates a wireless network in Southwest Montana.

Equipment:

PolyCom Video Codec's from IP based Via Video to FX and Custom VS4000 room systems, V-Tel custom and room systems, VCONN Executive IP systems, Accord Polycom MGC 100 MCU that performs audio, ISDN and IP video bridging and data collaboration services, Panasonic 3 CCD Cameras, AMD General Exam cameras, Olympus video microscope, Vidar digital Imagers and various other traditional computer based peripherals.

Transmission:

Standardized telemedicine delivery at 12 channels, @ 64 Kpbs over leased T1 lines, microwave wireless, cellular and IP based transmission services. Segmentation of circuits for voice/video or data provided for more cost effective utilization of leased circuits and is used as appropriate.

ImProving Health Among Rural Montanans (IPHARM)
The University of Montana – Missoula

School of Pharmacy and Allied Health Sciences
32 Campus Drive
Missoula, MT 59812-1522
<http://www.spahs.umt.edu/IPHARM/>
<http://www.spahs.umt.edu/DIS/index.htm>

Donna Beall, Pharm.D.
Ph: 406-243-6710
Fax: 406-243-6955
Email: donna.beall@umontana.edu

Network Partners:

N/A

Project Purpose:

The goals of the IPHARM project are to deliver health screening services to rural and frontier Montanans, serve as a model rural ambulatory care practice site for pharmacy students, and educate health care providers in Montana in geriatric wellness testing. The project offers bone density, blood lipids, lung function, blood sugar, and blood pressure testing. These tests were chosen because they can be performed outside of clinical labs, they meet the goals of the Federal “Healthy People 2010” program, and they address diseases and conditions that are often silent and can be moderated or treated.

Outcomes Expected:

5. 57 Events to date, 2,564 Montanans screened, 4,298 Tests performed, Average 1.7 tests/client, 33.6 percent tests – “abnormal,” Over 56 percent - “Rural”

Service Area:

For the DIS, the entire state of Montana. For the disease screening services, the 7-county Golden Triangle in north central Montana. This latter area has expanded, and eight additional counties (three frontier, three rural, two non-rural) have also had IPHARM screening and educational programs conducted.

Services Provided:

Developing an outcomes tool to be used by patients after an event to ascertain what occurred after results were given to them at an IPHARM event. The following screening services are offered to rural/frontier Montanans: bone density, blood lipids, lung function, blood sugar control, blood pressure

Equipment:

DIS uses an electronic database, web-based subscriptions, and a new website. Disease screening uses an ultrasound heel bone densitometer, Cholestech LDX for lipids, GDX for HbA1C, and an EasyONE spirometer. Wireless Internet uses a MotoSAT DataStorm.

Transmission:

N/A

NEBRASKA
Mid-Nebraska Telemedicine Network (MNTN)
Good Samaritan Hospital Foundation

CMP FY 04

Good Samaritan Hospital Foundation
P.O. Box 1810
Kearney, NE 68848-1810
<http://www.gshs.org>

Wanda Kjar
Ph: 308-865-2718
Fax: 308-865-2986
Email: wandakjar@catholichealth.net

Network Partners:

NE: Good Samaritan Hospital, Richard Young Hospital, Jennie M. Melham Memorial Medical Ctr., Callaway District Hospital, Tri-Valley Health Systems, Cozad Community Hospital, Gothenburg Memorial Hospital, Valley County Hospital, Dundy County Hospital, Rock County Hospital, Franklin County Hospital, Chase County Hospital, Brown County Hospital, Webster County Hospital, St. Anthony's Hospital, Kearney County Health Services. KS: Norton County Hospital, Phillips County Hospital, Jewell County Hospital, Smith County Memorial Hospital.

Project Purpose:

The Good Samaritan Hospital Mid-Nebraska Telemedicine Network (MNTN) provides improved access to health care services for rural underserved populations in Nebraska and Kansas. The network provides both clinical consults and educational offerings to 18 rural hospitals. In 2003, the MNTN received the "Integrated Rural Healthcare Award" by the Nebraska Rural Health Association.

Outcomes Expected:

Program data collection is built around the key concepts of clinical effectiveness, use of the system and cost-effectiveness. Patient/Provider Satisfaction (measure) –surveys (tool), Quantify Patient Usage of Services Provided (measure) – OAT GPRA Performance Measure (tool).

Service Area:

The target population for this project includes 187,471 individuals residing in a 28-county area in Central, Northern and Southwest Nebraska and North-central Kansas. Of the 28 rural counties to be served through the Mid-Nebraska Telemedicine Network, 20 are either full or partial Medically Underserved Areas (MUAs). Twelve of the counties are either full or partial Health Professional Shortage Areas, with seven listed under HPSA Primary Care, nine listed under HPSA Mental Health and under HPSA Dental.

Services Provided:

The Mid-Nebraska Telemedicine Network became operational in 1995. Mental health, cardiology, dermatology, diagnostic test, emergency medicine, infectious disease, geriatric assessment, neurology, oncology, orthopedics, occupational therapy, speech therapy, home health, hospice, diabetic education, speech pathology, wound ostomy care, domestic/child abuse interviewing, education for professionals and community.

Equipment:

Accord Network Bridge, Polycom FX and V.35, InfoView and StarView Home Care units, American Telecare AMD stethoscope, otoscope

Transmission:

Eighteen full T1 lines, ISDN, POTS for home health.

Distance Education of Undergraduate Nursing Students
University of Nebraska Medical Center

College of Nursing
985330 Nebraska Medical Center
Omaha, NE 68198-5330
<http://www.unmc.edu>

Catherine M. Todero, Ph.D. RN
Ph: 402-559-4270
Fax: 402-559-6379
Email: ctodero@unmc.edu

Network Partners:

N/A

Project Purpose:

Pilot test a model program that uses a distance education strategy for delivery of a traditional baccalaureate nursing curriculum to increase enrollment and access to nursing education. Develop and implement the didactic portion of a traditional BSN nursing curriculum for distance delivery. Evaluate the model of distance education for learner and faculty satisfaction and learner outcome attainment, with a goal to provide nursing education to those unable to relocate for educational purposes and who need opportunities provided in or near their own communities.

Outcomes Expected:

- 1) 17 courses redesigned and presented in Blackboard.
- 2) 10 new students admitted and retained through graduation.
- 3) Learner/faculty satisfaction with the model – Focus groups and students complete the survey- “Student Evaluation of Courses Delivered using Technology”.
- 4) Course grades, clinical learning outcomes and NCLEX pass rates for distance students are similar to students in the classroom.

Service Area:

Students are currently located in the Lincoln, Nebraska area.

Services Provided:

We provide a distance learning option for a Bachelor of Science in Nursing degree. Students take classes from their homes and occasionally come to campus/health care agencies for lab/clinical activities.

Equipment:

Personal computers and the usual and customary clinical equipment for assessment and provision of nursing care.

Transmission:

Internet and Interactive satellite television.

NEBRASKA
Rural Telemedicine Program
University of Nebraska Medical Center

CMP FY 01

University of Nebraska Medical Center
Rural Telemedicine Grant Program
985330 Nebraska Medical Center
Omaha, NE 68198-5330

Carol Pullen, RN, EdD.
Ph: 402-559-6548
Fax: 402-559-6379
Email: chpullen@unmc.edu

Network Partners:

Rural hospitals, outpatient clinics, Educational Service Units, and community colleges.

Project Purpose:

The University of Nebraska Medical Center Rural Telemedicine Grant Program was funded July 2001. The purpose of this grant is to expand and enhance the delivery of telemedicine, distance education, and consumer education in partnership with rural clinicians and educators in selected sites throughout Nebraska.

Outcomes Expected:

Increased access to health care services by rural residents in the areas of mental health, diabetes care and management, and children with special needs; increased access to health information by consumers; increased access to degree programs in nursing and allied health by rural students.

Service Area:

11+ counties in Nebraska.

Services Provided:

Psychiatry, dermatology, communication and behavioral health services; distance education to nursing, medical technology, and medical students; and Web-based consumer education.

Equipment:

Pictoretel 970 and Polycom Viewstation Systems, Polycom Via Video, AMD General Exam Camera.

Transmission:

T1, Web-based.

NEVADA
Digital Imaging System for Rural Nevada (DISRN)
Nevada Rural Hospital Partners Foundation

CMP 04

Nevada Rural Hospital Partners Foundation
4600 Kietzke Lane, Suite I-209
Reno, NV 89502
www.nrhp.org

Ms. Robin Keith
Ph: 775-827-4770
Fax: 775-827-0939
Email: robin@nrhp.org

Network Partners:

Compressus
101 Constitution Avenue, N.W., Suite 800
Washington DC 20001

Project Purpose:

The program enables rural and frontier hospitals to capture digital radiographic images, implement Picture Archive Computer Systems, integrate patient information with those diagnostic images, and transmit them over an existing, secure wide area network to a new shared, centralized image archive. While initially focused on radiology, the system will support any type of digital diagnostic image. The program enhances access by rural physicians to virtually instant diagnostic support across great geographic distance, and is a dynamic example of how small, autonomous hospitals can share technology to reduce cost, improve quality, and increase workforce productivity.

Outcomes Expected:

Key outcomes include: (1) Reduction in the cost of x-ray film by 30 percent as measured by actual "before and after" hospital film expenditures; (2) Increases in staff productivity as measured by "before and after" time and cost studies for film retrieval and film scanning; (3) Standards-based interoperability between existing and new equipment as measured by system testing and monitoring; and (4) Local and distant physician satisfaction as measured by written survey.

Service Area:

When fully implemented, the program will include 11 rural hospitals serving approximately 310,000 rural residents in 14 counties covering about 91,000 square miles. Ten of the hospitals serve areas with HPSA, MUA, and/or partial or full dental and mental health HPSA designations.

Services Provided:

Formed in 1987, Nevada Rural Hospital Partners supports fourteen autonomous rural hospitals with a wide variety of services. Examples include advocacy, shared financial and technology experts, a revolving capital loan pool, various insurance products, group contracts and discounts, a teleradiology network, internet support, critical access designation support, and shared information technology.

Equipment:

The program will use Konica Express Computed Radiography units, and Compressus RadSight PACS gateways and central archive.

Transmission:

The program will use multi-application full T1 transmission.

National Supercomputing Center for Energy and the Environment (NSCEE)
4505 South Maryland Parkway
Las Vegas, NV 89154-4028
http://www.nscee.edu/Research/nv_telehealth.html

Joseph Lombardo
Ph: 702-895-4153
Fax: 702-895-4156
Email: lombardo@nscee.edu

Network Partners:

University of Nevada School of Medicine, University Medical Center, Nevada Rural Hospital Project, Nevada Cancer Institute, State Office of Rural Health, U.S. Department of Energy, Heidelberg (Germany) Pulmonary Disease Clinic, British Columbia Cancer Agency, and Sierra Pacific Communications.

Project Purpose:

Evaluate the technical requirements for public health applications and to establish the infrastructure to effectively deliver health and medical care through a technology-based infrastructure. Solve the technical challenges in deploying and developing networking technologies to empower health and medical care delivery. This project focuses and helps support the following three application areas: 1) remote diagnosis and consultation, 2) continuing medical education, and 3) medical informatics.

Outcomes Expected:

1) A review of current efforts to improve the capabilities of network technology and an evaluation of them based upon the needs of the health care sector. 2) Improved network technologies, which have traditionally provided only best-effort service, will provide some type of service guarantees for different types of traffic (i.e., streaming video that often requires a significant amount of bandwidth). 3) A plan to migrate from the dominant, relatively high-cost, low-volume UNIX environment to the lower-cost, higher-volume Windows XP/NT/2000/98 environment.

Service Area:

The service area includes 17 counties in Nevada and two international spoke sites located in Heidelberg, Germany and Vancouver, British Columbia, Canada.

Services Provided:

Digital library services, remote education and professional development, medical informatics, web-based health information, evaluation of technical requirements for health care applications, and lung fluorescence endoscopy databank.

Equipment:

SGI Onyx 3800, StorageTek PowderHorn Mass Storage Unit, HP/Intel Titanium 2-based Cluster, PCs, visualization workstations, Internet2 networking equipment, HF wireless laptop, wireless PDAs, and the Access Grid (AG).

Transmission:

Gigabit Ethernet, multiple T1 lines, Internet2 (primarily OC-192c), modem access, high frequency (HF) wireless, store and forward, AG and IPv6.

University of Nevada School of Medicine
Office of Medical Research/338
1664 N. Virginia Street
Reno, NV 89557-0161
<http://www.unr.edu/med/>

David M. Lupan, Ph.D.
Senior Associate Dean
Ph: 775-784-4908
Fax: 775-327-2008
Email: dmlupan@med.unr.edu

Network Partners

N/A

Project Purpose

To develop of a premier Center for Biomedical Imaging on the School of Medicine campus at the University of Nevada, Reno (UNR). This Center will support biomedical research within the School and the community of scientists at the University who have a need for high-end confocal microscopy. Resources will be used for purchasing a multi-photon scanning confocal microscope, and for hiring professional personnel who will operate the instrument and be responsible for training graduate students, post-doctoral fellows, and the School of Medicine's scientists.

Outcomes Expected

New multi-photon confocal microscopy instrumentation in a Center for Biomedical Imaging will directly benefit School scientists by providing access to technology that does not presently exist in the region. The Center will facilitate the development of collegial and interdisciplinary interaction among scientists. A secondary benefit will be the nurturing of excitement for scientific exploration in the next generation of undergraduate and graduate students, and postdoctoral fellows who come to School of Medicine scientists for mentoring.

Service Area

The service area will be the campus of the University of Nevada, Reno, located in Washoe County of northern Nevada. This is the area of focused services. Extension of services beyond the UNR boundary will be promoted, but is predicted to be infrequent.

Services provided

The goal of this award is to improve access to the latest technology for biomedical imaging, i.e., visualization and recording of the dynamic interactions among and/or within cells, including molecular-cellular interactions.

Equipment

Carl Zeiss Model LSM 510 Multi-Photon Scanning Confocal Microscope

Transmission

N/A

**Ultrasound Education and Training: Vascular Technology Degree
Bergen Community College**

Bergen Community College
400 Paramus Road
Paramus, NJ 07652-1595
<http://www.bergen.edu>

Network Partners:

Society of Vascular Technology (SVT)
Phoenix Cardiovascular, Inc.
University of Medicine and Dentistry of New Jersey, School of Health Related Vascular
George Washington University Diagnostic Medical Sonography Program
Society of Diagnostic Medical Sonographers

Project Purpose:

The purpose of this project was to prepare an entry-level skilled vascular technologist who is able to meet the requirements for national certification, and who can perform according to the national scope of practice for Sonography, and to enhance the learner's personal educational goals and career potential.

Outcomes Expected:

OAT funding was used for staffing to develop the curriculum, courses, student and clinical handbooks for an on-site, accredited program which can eventually be developed with a distance learning component. Funding was also cited to purchase vascular testing equipment, computers, and other instructional supplies which are crucial for the start up of the program.

Service Area:

Twenty-one counties in New Jersey and at least two in Southern New York State.

Services Provided:

College services include diagnostic medical Sonography, nursing, radiologic technology, respiratory technology, dental hygiene, distance learning, and continuing education.

Equipment:

Two Acuson Aspen ultrasound machines, one Acuson XP ultrasound machine, machine for physiological vascular testing, DICOM capabilities, video over IP (H.323) capability, SONY 123 videoconferencing units, and WebCT software.

Transmission:

The college has 5-megabyte ATM transmission and ISDN capabilities.

Telehealth Program
MSC09 5220, 1 University of New Mexico
Albuquerque, NM 87131-0001
<http://hsc.unm.edu/touch/>

Dale Alverson, M.D.
Ph: 505-272-8633
Fax: 505-272-0800
Email: dalverson@salud.unm.edu

Network Partners:

The University of New Mexico School of Medicine, University of Hawaii John A. Burns School of Medicine, Maui High Performance Computing Center, The UNM Health Sciences Library and Informatics Center, The UNM Center for High Performance Computing, Northern Navajo Medical Center, Maui Community College.

Project Purpose:

A research project that attempts to determine whether an integrated, collaborative, interactive immersive virtual environment can enhance human comprehension, learning, training, and performance as compared to more traditional methods. The project is designed to demonstrate the feasibility of employing advanced computing methods, such as virtual reality, multipoint simultaneous telecommunications, computer generated volumetric imaging and graphics allowing manipulation and computer generated and governed patient simulation, to enhance educational outcomes.

Outcomes Expected:

- Enhance the problem-based experiential learning approach within a medical education curriculum - Comparative evaluation using standardized evaluation tools
- Increase consistency in medical student education independent of location - Comparative evaluation using standardized evaluation tools
- Assess impact of using integrated technologies and environments on learning and performance outcomes - Comparative evaluation using standardized evaluation tools

Service Area:

The states of New Mexico and Hawaii are involved in this research project. Since this is a research project, the traditional service area definition does not apply. Hawaii and New Mexico face similar challenges in providing and delivering services and training to remote and rural areas. Both states must deal with common challenges such as barriers to healthcare access (water in Hawaii, land in New Mexico), unique indigenous populations, large multicultural and minority populations, and isolation of healthcare professionals and students/trainees in remote settings

Services Provided:

Distributed Virtual Reality Simulators for experiential learning. This is the fourth year of research.

Equipment:

Graphic design tools, high performance computers, 3-dimensional visual equipment, Haptics devices, and other computational equipment for Distributed Virtual Reality.

Transmission:

Internet2 is the primary network involved in the research.

NEW MEXICO
Rural Health Telemedicine Program
University of New Mexico Health Sciences Center

RTGP FY 97-99, TNGP FY 03-05

School of Medicine/Pediatrics/Center for Development and Disability
2300 Menaul Blvd., NE
Albuquerque, NM 87107-1851
<http://cdd.unm.edu>

Sandy Heimerl, PT, MS
Ph: 505-272-0096
Fax: 505-272-0386
Email: sheimerl@salud.unm.edu

Network Partners:

UNM Center for Telehealth (Albuquerque), Hidalgo Medical Services (Lordsburg), Tresco (Las Cruces), Zia Therapy (Alamogordo), CARC (Carlsbad), LifeQuest (Silver City and Deming), Tobosa Developmental Services (Roswell), New Vistas (Las Vegas), Growing in Beauty (Farmington), Roundtree (Farmington), ELS (Gallup), Children's Workshop (Raton).

Project Purpose:

Improve healthcare outcomes for young children who demonstrate developmental issues, as well as their families and the providers who serve them by improving accessibility, providing needed ongoing consultation and training, and by cutting cost for families and providers who do not have to travel to distant tertiary centers of expertise.

Outcomes Expected:

1) Provide accessible and on-going developmental specialty care to young children, their families and providers; 2) Expand and improve the quality of information and training to providers and families; and 3) Link providers and families statewide to share information/resources. Tools: Client/provider, trainee/trainer pre and post satisfaction surveys (Likert Scales); videototechnology evaluations which quantify usage of services provided; cost comparison of telehealth vs. traditional service provision; documenting travel cost savings.

Service Area:

Fifteen counties in rural New Mexico. Nine of the counties are full HPSAs, three are partial HPSA, 11 are MUA, three are partial MUA, and 11 are mental health HPSA.

Services Provided:

Developmental clinical services including assessment, consultation and technical assistance, and distance learning to health care providers, educational providers and families of young children with developmental disabilities.

Equipment:

Polycom Viewstation FX videoconferencing units, 5 Leadtek TeleEye, and 4 StarView videophones.

Transmission:

ISDN H.320, IP H.323 for videoconferencing, POTS H.324 for videophones.

Daemen College
4380 Main Street
Amherst, NY 14226
<http://distance.daemen.edu/endsite3.htm>

Keith Taylor, Ph.D., PT
Ph: 716-839-8554
Fax: 716-839-8314
Email: ktaylor@daemen.edu

Network Partners:

Medina Memorial Hospital, Medina, NY
Mercycare Residential Health Care Facility, North Hornell, NY
Wyoming County Community Health System, Warsaw, NY
Charles May Vocational Center (Genesee Valley BOCES), Mt. Morris, NY

Project Purpose:

To provide and coordinate health education resources in partner communities through video conferencing and Web-based facilities established in partner organizations including academic (secondary and post-secondary) and clinical facilities (hospital and long-term care settings). To improve access to a broad spectrum of educational content for career exploration and professional development and training of allied health professionals and students in professional education programs (primarily nursing, physical therapy, and physician assistant training). To serve as a communications link between Daemen College and students completing off-site internship training.

Outcomes Expected:

Deliver credit and non-credit bearing instructional programs for Nursing, PA and PT professionals (number of courses, number participants, satisfaction surveys). Communication between allied health students completing internships in rural settings and faculty (number interactions, performance of students, satisfaction surveys). Rural middle and high school student education regarding allied health professional career opportunities available in rural health care settings (number of career modules/activities, number participants, enrollments of participants in professional programs).

Service Area:

Genessee, Livingston, Orleans, Wyoming, Stueben, Monroe and Erie Counties in Western New York State serving nine HPSAs (three mental, three primary care, three dental), 41 MUAs.

Services Provided:

Daemen College provides video-conference and web-based experiences (credit courses and continuing education) for health professionals and students in allied health professional programs; credit and noncredit courses on health topics and health careers for the general public, and health professional student supervision in rural settings via video conferencing.

Equipment:

Two PictureTel and three Polycom video conferencing units, three Portable Video Conferencing Units, and 30 port IP video MCU.

Transmission:

ISDN (384) (for all partner sites), PRI for IP video bridge and DS3 Broad Band (select sites).

**Develop a Computerized Referral and Recording System
HealthReach NY, Inc.**

HealthReach NY
72-35 112th Street, PR5
Forest Hills, NY 11375
<http://www.healthreachny.org>

Patricia A. Gallegos
Ph: 718-263-1964
Fax: 718-263-8326
Email: Healthreachny@aol.com

Network Partners:

YWCA – Flushing branch, HANAC, Northern Queens Health Coalition, Jewish Board of Family and Children's Services, NYANA. Hospitals-New York Hospital of Queens, Mt. Sinai Medical Center - Queens Campus.

Project Purpose:

HealthReach NY is a not-for-profit organization that provides access to free medical care for the uninsured and economically disadvantaged adult population of Queens, NY. HealthReach NY began its work in 1998. In the New York City area, Queens is the most ethnically diverse county and has the highest percentage (33 percent) of uninsured people.

HealthReach NY meets the needs of the ethnically diverse and uninsured population of Queens through a network of health care providers who provide free medical care in private offices and institutions, through collaboration with community organizations and through the provision of community health education. The computer network allows tracking and recording of data on patients from each of the satellite community sites. This information will serve to determine which diseases are prevalent in each community, and enable the project to do targeted screenings and health education.

Outcomes Expected:

Improve health of individuals by providing access to free primary and specialty care by volunteer providers in private offices and through case managers tracking care.

Service Area:

Queens County

Services Provided:

Primary care, cardiology, gynecology, orthopedics, diabetes care and management, asthma management, health education, laboratory and imaging services.

Equipment:

Intel Pentium III Server, Pentium III workstations, Adaptec Controller, 3 Com 3c905-TX 10/100 T-PRO Ethernet NIC Card, HUB Etherfast.

Transmission:

56 K.

NEW YORK
Informatics Telehealth Project (EMR)
Institute for Urban Family Health

CMP 02, 03

Institute for Urban Family Health
16 East 16th Street
New York, NY 10003
<http://institute2000.org>

Susanne Callahan
Ph: 212-633-0800, ext. 234
Fax: 212-989-2840
Email: scallahan@institute2000.org

Network Partners:

Continuum Health Partners, ABC Health Plan, Care for the Homeless, and the Bronx REACH 2010 Coalition.

Project Purpose:

To increase access to health care and health information for underserved communities in New York City. The project period was September 2002 – August 2003. The objectives were to: improve coordination of care; permit tracking and monitoring of patient care; increase enrollment in insurance programs; and enhance patients' ability to care for and advocate for themselves. The cornerstone of this telemedicine project was the development and implementation of an electronic medical record (EMR) called EpicCare.

Outcomes Expected:

Implemented the EMR at 12 of the Institute's practices; developed systems and guidelines in the EMR to improve patient care; trained more than 100 staff members in use of the system; provided primary care to 2,500 uninsured patients, roughly half of whom were new patients, and were screened for insurance eligibility and assisted with insurance enrollment; through installed exam room computers and printers, medical providers provide patients health education materials and portions of the patients' medical records from the EMR.

Service Area:

Six ZIP code areas in Manhattan and the Bronx, with a population of approximately 500,000. The communities served are comprised predominately of low-income ethnically diverse groups.

Services Provided:

Primary health care, health education, social services, mental health, care to special populations, including the homeless, persons living with HIV/AIDS, and the uninsured. In addition, the project facilitated a electronic medical record and practice management system and computer-based health information.

Equipment:

Desktops - Compaq Evo300s/Pentium 4; 1-7 Nortel switches, Cisco Router Multiple NT and Citrix servers in the server location.

Transmission:

IP Frame Relay WAN; bandwidth is fractional T1 from remote sites into two Hub sites; full T1 with redundancy from Hub sites to server location where Epic/EpicCare are located.

Electronic Medical Records Expansion

Montefiore Medical Center & The Children's Hospital at Montefiore

Montefiore Medical Center
111 East 210 Street
Bronx, NY 10467
<http://montefiore.org>

Jack Wolf
Ph: 914-457-6311
Fax: 914-547-6070
Email: jwolf@montefiore.org

Network Partners:

N/A

Project Purpose:

Link Group Practice site and Integrated Delivery network into a single electronic medical record.

Outcomes Expected:

Quality improvement in patient care allowing the doctor to review all relevant patient information in one depository.

Service Area:

Bronx, NY, and lower Westchester County.

Services Provided:

Buy equipment and programming for Primary Care and referrals into larger Montefiore Delivery Network.

Equipment:

Network Communications Equipment, Workstations, and Printers.

Transmission:

T1 line with frame relay.

NEW YORK
Electronic Linkage
New York Presbyterian Hospital

CMP FY 03

New York - Presbyterian Hospital
161 Fort Washington Avenue
New York, NY 10032
<http://www.nyp.org>

Karen Colón
Ph: 212-305-4530
Fax: 212-927-8447
Email: colonka@nyp.org

Network Partners:

Emergency Departments (EDs) at New York-Presbyterian Hospital (NYP) in three locations in Manhattan.

Project Purpose:

This project is to electronically provide to community hospitals the full resources of an academic medical center in the event of infectious disease or possible terrorist incident. In addition, public health is facilitated though the capture of clinical data is captured at the community hospital site and immediately available to the academic health centers and subsequently to public health authorities. This linkage will furnish much-needed, real-time syndromic surveillance ability.

Outcomes Expected:

- Provide a state-of-the-art information services infrastructure to gather, track, and aggregate patient data for the purpose of identifying symptomatic and syndromic trends.
- Make patient data and trends available to clinical staff and Hospital administrators on a real-time basis across the footprint of the New York-Presbyterian diverse geographic locations.
- Create an environment in which the Hospital can rapidly initiate appropriate treatment responses and isolation protocols.
- Develop a real-time notification system of reporting to local, State and Federal emergency response and health agencies.

Service Area:

New York City.

Services Provided:

This project will create a proof-of-concept to demonstrate that the exchange of clinical data (laboratory results, pharmacy results, etc) between academic medical centers and a community hospital can serve as an early warning system for large-scale incidents and improve point-of-service care at all hospitals.

Equipment:

TIBCO Portal Builder and TIBCO Business Factor software, eleven Dell PowerEdge 2650 Servers.

Transmission:

Full T1, ISDN at 128 kbps.

NEW YORK
Patient Health Monitor (Vigilens)
New York Presbyterian Hospital

CMP FY 01, 02

Department of Medical Informatics
622 West 168 Street, VC5
New York, NY 10032
<http://www.dbmi.columbia.edu/homepages/val7001/Vigilens.html>

Yves A. Lussier (Co-PI)
Ph: 212-305-0939
Fax: 212-343-0669
E-mail: Lussier@dbmi.columbia.edu

Network Partners:

New York Presbyterian Hospital

Project Purpose:

The goal of the proposed research is to examine ways in which the design a telemedicine-enabled, vendor-independent, reusable, modular, multi-institution decision support server can favorably influence healthcare.

Outcomes Expected:

The modular and reusable design of the *Vigilens* Patient Health Monitor shares some substantial development and maintenance costs across several institutions. Technological goals: To demonstrate that the development of a modular, multi-institution decision support server is technically feasible by, (i) Allowing easy swapping of different controlled vocabularies. (ii) Facilitating easy substitution of data repositories, and (iii) Augmenting data capture capability to facilitate intelligent alarms (Process variables were used as measurement tools).

Service Area:

Tri-state area near New York City. This region includes MUAs 180-273, excluding 181, 183, 185, 187, 197.01, 199, 201.01, 203, 305, 207.01, 234.01, 245, 249, 251, 253, 255, 261, 263 and 267.

Services Provided:

Automated reminders and alerts over NYPH patient health data. The estimated number of daily events that the event monitor must track at the NYPH are the following: 30,000 laboratory results; 17,000 admission-discharge-transfer events; 4,000 inpatient pharmacy prescriptions and 3,000 radiology events.

Equipment:

Hardware: Two Solaris dual-processor V880 Servers. The system utilized the established computing infrastructure of the NYPH, Comparing networked computers including one IBM mainframe and over 2000 Deployed PCs. Software: DB2 database, DB2 replicator, DB2 connect.

Transmission:

Internet T1.

State University of New York (SUNY) at Buffalo
C/o ECMC, Dept. Emergency Medicine
462 Grider Street
Buffalo, NY 14215

David Ellis MD
Ph: 716-898-4957
Fax: 716-898-4432
Email: dellis@ecmc.edu

Network Partners:

- 1) The TLC Healthcare Network, 100 Memorial Dr., Gowanda, NY 14070, with clinics in Chautauqua and Cattaraugus Counties.
- 2) Wyoming County Community Health System, 400 N. Main St., Warsaw, NY 14569, located in Wyoming County.
- 3) Erie County Medical Center, Comprehensive Psychiatric Evaluation Program.
- 4) Erie County Medical Center, Regional Resource Center & Healthcare Preparedness.

Project Purpose:

This project builds on a successful, state-wide correctional emergency telemedicine network (Y2003, >3000 patients, with 41 percent ER trip avoidance) to develop clinical services, distance learning (Grand Rounds) and informatics through rural and tertiary care hospital ER linkages. The project will improve health outcomes for victims of rural trauma (tele-trauma) through rural EMS telehealth coordination and a virtual-on-site trauma care partnership using wireless roll-about IP-based multi-protocol label switched (MPLS) network protocol videoconferencing units. This will provide a flexible, scalable model for rural access and 24x7 mental health, serving children and adolescents, as well as adults.

Outcomes Expected:

Rural Trauma Care: Resuscitation times (arrival – transfer), Patients intubated – GCS \leq 12, blood administration when hypotensive, FAST ultrasound performed, mode of transfer, length of admission/stay (LOS) in trauma center, LOS in trauma center ED, Time to Operating Room, Physiologic outcomes for trauma based on Injury Severity Scores specific locations Head/Spinal injury, Chest, Abdominal, Extremity injury; General indicators: Patient/Provider Satisfaction – Likert surveys, Quantifying Patient Usage of Services Provided through OAT GPRA Performance Measures.

Service Area:

Chautauqua Co. (HPSA) 3 full, full mental, 27/30 cities full dental; MUAs #2401, #5034.
Cattaraugus Co. (HPSA) 5 full, full mental, full dental; MUAs #2409, #2410.
Wyoming Co. (HPSA) 3 full, full dental, MUAs #2396, #2408.

Services Provided:

Emergency / Trauma (Tele-trauma), Mental Health, Emergency Mental Health, Child /Adolescent Psychiatry, Hand, Maxillo-Facial, Infectious Disease / HIV, Gastroenterology. Future (2005-6) Services: Pediatric Emergency / Trauma, Pediatric Cardiology, Pediatric Specialties, Dental.

Equipment:

Three Wireless IP roll-about videoconferencing units, Polycom codecs, Dual-screen consultation systems, networking hubs, Cisco routers.

Transmission:

Full T1 connections with IP transmission MPLS network protocols.

NORTH CAROLINA
Patient Inclusion in a Community-based Telehealth Network
Duke University Medical Center

TNGP FY 03-05

Division of Clinical Informatics, Duke University
DUMC 2914
Durham, NC 27710
<http://dmi-www.mc.duke.edu/>

Dr. David Lobach
Ph: 919-684-6421
Fax: 919-684-8675
e-mail: david.lobach@duke.edu

Network Partners:

Duke (Hospital, Family Medicine Center, Pediatrics, Urgent Care North and South, Outpatient Clinic), Lincoln Community Health Center (Center, Urgent Care), Durham Co. (Health Dept., Dept. of Social Services), Durham Regional Hospital, Durham Community Health Network, Durham Pediatrics, El Centro Hispano, Catholic Social Ministries.

Purpose:

To support proactive care management; facilitate communication between clinicians, social workers, care managers, health educators and patients; provide access to personal health information and education materials to patients. Clinical information is collected directly from patients through a computer interface that adapts to fit the native language, reading literacy and computer skills of the user. Thus, care management services will be customized to each patient and will include disease-specific education, health risk reduction programs, and assistance accessing appropriate clinical services and complying with medications.

Outcomes Expected:

Expected improvement in HEDIS indicators for cancer screening, immunizations, diabetes care, asthma care, Chlamydia screening, well-child visits and post-partum care will be measured from site encounter data. Decreased emergency department utilization and admissions for ambulatory care-sensitive conditions will be measured from site encounter data. Tested instruments to assess condition-specific health literacy and surveys of patients' self-efficacy for managing their illnesses will be measured by patient surveys.

Service Area:

Durham County, North Carolina. Nine MUAs and two HPSAs.

Services Provided:

The provider network has been in existence since July of 1998. Members of the network will provide telemedicine services, receive telemedicine services, provide distance education services and receive distance education services.

Equipment:

This project is Internet based. The equipment used includes a specially designed touch-screen patient data entry kiosk with a video camera to provide real time contact to a care manager. Partner sites access the data via the Internet on their office personal computers.

Transmission:

T1 lines at the partner sites, over the Internet.

**NORTH CAROLINA
REACH-TV (Rural Eastern Carolina Health Network)
East Carolina University**

RTGP FY 94-04

The Brody School of Medicine at East Carolina University
600 Moye Blvd., Brody Bldg. Rm. 1S-10
Greenville, NC 27834
<http://www.telemmed.med.ecu.edu>

Gloria Jones
Ph: 252-744-3855
Fax: 252-744-1872
Email: jonesgl@mail.ecu.edu

Network Partners:

The Telemedicine Center is affiliated with a large regional tertiary care hospital, rural hospitals and clinics, Federal prison, rehabilitation center, home health agencies, state agencies (School for the Deaf, Mental Hospital, Adult Homes for the Developmentally Disabled, prisons) and community-based organizations.

Project Purpose:

To maintain and expand an existing telemedicine network across eastern North Carolina, by connecting the regional trauma center to rural emergency rooms and local hospitals to specialty care units, prisons, schools and other State agencies for numerous telehealth needs. To continue research and development for homeland security and disaster relief applications, using telecommunication in local rural areas. To develop and support a Web-based inventory tool for HRSA grantee information.

Outcomes Expected:

The telemedicine staff and associated healthcare providers will use the Telehealth links, locally and regionally, to meet on a regular basis to discuss delivery of quality care. Annually written surveys are collected to assess the Center's telehealth program.

Service Area:

The Telemedicine Center provides telehealth to a 29-county area in eastern North Carolina, serving a combination of 101 HPSAs, MUAs and MHPSAs. Also included are contractual services to prisons and other State agencies outside the east part of the State.

Services Provided:

Since 1992, the Telemedicine Center has delivered a variety of specialty care consultations and other healthcare services. The telehealth services have grown with the increased use by healthcare providers throughout the region. Radiology, Cardiology, Dermatology, Pediatrics, Rehab Medicine and Psychiatry continue to be high volume users.

Equipment:

A combination of a variety of equipment mainly controlled through an Accord Bridge. Other equipment consist of PolyCom, Tandberg, V-Brick, and 8 X 8 analog units as codecs with ALI Radiology stations and an array of diagnostic tools.

Transmission:

T1s (768kps), ISDN (128 to 384kps), IP (Internet Protocol) at 512kps-1.5M, POTS, and a 45 MB microwave network.

NORTH CAROLINA
Western NC Regional Data Link Project
Education and Research Consortium of Western Carolinas

CMP FY 02

Education and Research Consortium of Western Carolinas
22 South Pack Square, Suite 500
Asheville, NC 28801
<http://www.wnchn.org>

Jennie Pressley
Ph: 828-281-1954
Fax: 828-281-1988
Email: jenniepressley@ercwc.org

Network Partners:

The 16 hospitals serving western North Carolina: Angel Medical Center, Cherokee Indian Hospital, Harris Regional Hospital, Haywood Regional Medical Center, Highlands-Cashiers Hospital, McDowell Hospital, Mission Hospitals, Murphy Medical Center, Pardee Hospital, Park Ridge Hospital, Rutherford Hospital, Spruce Pine Community Hospital, St. Luke's Hospital, Swain County Hospital, Thoms Rehab Hospital, Transylvania Community Hospital.

Project Purpose:

Develop and implement a system to electronically transfer patient data among the 16 independent, community-based hospitals serving western North Carolina. There is currently no means to electronically transmit or access patient information from one hospital to another within the region. This slows access to critical patient information, delays care, and increases the chance of medical transcription errors. The long-term goal is to create a longitudinal electronic medical record that can be accessed and updated by any authorized health care provider in the region.

Outcomes Expected:

The project will improve the delivery of patient care in western North Carolina by speeding access to critical patient medical information, eliminating the potential for transcription errors, speeding the timeframe for treatment of patients, eliminating the need for patients or family members to repeat information at other providers, and reducing the cost of care by creating efficiencies within the hospitals.

Service Area:

The 16 counties in western North Carolina.

Services Provided:

Electronic transmission of patient medical information between western NC hospitals and between local hospitals and their admitting physicians. Implementation planned for early 2005.

Equipment:

To be determined following RFP phase.

Transmission:

The project plans to use VPN lines for transmission.

North Dakota Center for Persons with Disabilities
500 University Ave. West
Minot, ND 58707
<http://ndcpd.org/wellness>

Steve Peterson
Ph: 701-858-3055
800-233-1737
Fax: 701-858-3483
Email: steve.peterson@minotstateu.edu

Network Partners:

Enable, Inc., Bismarck, ND
H.I.T. Inc., Mandan, ND
HAV-IT Inc., Harvey, ND
Pride Inc., Bismarck, ND
VTC Inc., Fargo, ND

Project Purpose:

As a group, people with developmental disabilities such as mental retardation are significantly less active and more susceptible to the health and social problems associated with inactivity than the general population. The purpose of this project is to increase the overall level of physical fitness in this group through an exercise program that uses specialized recordkeeping software, motivational software, and interactive computer video support.

Outcomes Expected:

- 1) Improved Health and Wellness in participants. Standard measures of body mass index, resting heart rate, and blood pressure will be used.
- 2) Validation Data. Staff will collect daily measures of participant performance in an individualized exercise program that may include aerobic, flexibility, and strength activities (e.g., steps walked, sit and reach in cm, weight lifted, exercise repetitions). Video records of exercise will be kept.
- 3) Replication Package. Delivery of a replication package that includes: data collection software, protocols for Internet-based video monitoring, and protocols for validated behavioral intervention.

Service Area:

North Dakota Counties which serve 14 MHPSAs, including: Burleigh, Cass, Morton, and Wells.

Services Provided:

Physical education, fitness and psychological services.

Equipment:

- 1) Del Internet servers supporting: Wave3 Corporation's Session Audio/Video teleconferencing *server* software and NDCPD's Online Exercise Support System.
- 2) Remote site PCs supporting Wave3 Corporation's Session Audio/Video teleconferencing *client* software, USB cameras, and Echo canceling microphones.

Transmission:

Full T1 to Internet, full T1 at three remote sites, and DSL at the fourth site.

NORTH DAKOTA
North Dakota Telepharmacy Project
North Dakota State University

CMP FY 02, 03, 04

College of Pharmacy
123 Sudro Hall
Fargo, ND 58105
<http://telepharmacy.ndsu.nodak.edu/>

Charles D. Peterson, Pharm.D.
Ph: 701-231-7609
Fax: 701-231-7606
Email: Charles.Peterson@ndsu.edu

Network Partners:

Licensed rural community and hospital pharmacists and pharmacies, rural communities, North Dakota State Board of Pharmacy, and North Dakota State Pharmaceutical Association.

Project Purpose:

To establish, restore, or retain pharmacy services in medically underserved rural communities in North Dakota through the use of telepharmacy technology. To allow a licensed pharmacist at a central pharmacy site to supervise a registered pharmacy technician at a remote telepharmacy site in the processing of prescriptions for patients. Activities are in full compliance with all rules and regulations for the practice of pharmacy in the State as established by the North Dakota State Board of Pharmacy.

Outcomes Expected:

To restore access to health care, pharmacy services, and pharmacists in remote rural communities throughout the State; to improve rural economic development by building new businesses and adding new jobs; to make rural community pharmacies more financially viable, profitable, and sustainable as a business; to improve the chances of recruiting and retaining pharmacists in rural areas; to provide educational opportunities in telepharmacy for pharmacy students at the University.

Service Area:

Twenty-eight rural communities in 22 MUA counties in North Dakota and one in Minnesota geographically located in western, north central, and southeastern regions of North Dakota and western Minnesota serving a total population of approximately 20,000 people. Twenty-eight pharmacies are participating including 11 central sites serving a total of 17 remote telepharmacy sites with 25 being retail stores and three being hospital pharmacies.

Services Provided:

Full service retail pharmacies including complete inventory of prescription and nonprescription drugs which process prescriptions, provide drug utilization reviews as well as mandatory patient education counseling and other health, beauty aids, and convenience items. Hospital pharmacy model includes a licensed pharmacist providing on-call services from their home to process initial medication orders for patients being admitted.

Equipment:

Pharmacy operations software on a standard PC computer; digital imaging camera, and Polycom- FX and VSX video conferencing equipment located at both remote telepharmacy spoke site and central pharmacy hub site.

Transmission:

Transmitted over the Internet using DSL lines at 512K bandwidth or dedicated fractional T1 and secured through a VPN.

NORTH DAKOTA
St. Alexius/Northland Telecare Network
Northland Healthcare Alliance

RTGP 97-99, RTGP 00-02, TNGP 03-05

St. Alexius Medical Center
900 East Broadway, PO Box 5510
Bismarck, ND 58506-5510
<http://www.st.alexius.org/telecare>

Nancy R. Willis, VP
Ph: 701-530-7050
Fax: 701-530-7099
Email: nwillis@primecare.org

Network Partners:

North Dakota: Northland Healthcare Alliance, Ashley Medical Center, Missouri Slope Clinic, Carrington Hospital, St. Joseph's Hospital and Health Center and Great Plains Clinic, Garrison Memorial Hospital (Garrison), Glen Ullin Marion Manor, St. Aloisius Hospital, Sakakawea Medical Center, West River Regional Health Center, Linton Medical Center, Presentation Medical Center, Prairie Health Clinic, Strasburg Nursing Home, Community Memorial Hospital, Mercy Medical Center, Wishek Community Hospital and Clinics.
South Dakota: Isabel Clinic, McLaughlin Clinic, Mobridge Regional Hospital and Clinics.

Project Purpose:

Provide health-related services at provider, patient and community request including clinical visits, clinical consults, professional and community education, and administrative functions.

Outcomes Expected:

Clinical outcomes for all services would be equal to outcomes expected for outpatient care within the medical center. Speech therapy outcomes are those used by therapists to determine quality of life improvement in and return as much as possible to normalcy. A specific rehabilitation tool is used to assess these. Educational outcomes for students participating in the paramedic program, graduation objectives would be equal to sponsoring college requirements. For other education outcomes would be that educational objectives are met. Outcomes for all activities is 100 percent customer satisfaction measured through the use of evaluation tools specific to each audience (providers, patients, customers).

Service Area:

Service area includes 12 counties in North Dakota serving eight MUAs and eight HPSAs and three counties in South Dakota serving two MUAs and two HPSAs. ND Counties: Adams, Emmons, Foster, Kidder, McIntosh, McLean, Mercer, Morton, Rollette, Stark, Wells, and Williams. SD Counties: Corson, Dewey, Walworth. Total population of 15 counties: 97,779.

Services Provided:

Specialty consults for both rural physicians and patients in a variety of specialties, speech therapy, medication management for nursing home patients, wound management, professional and community education and training (including paramedic and leadership training), care conferences and support groups, administrative meetings. Follow up burn care for patients from Regions Medical Center in Minneapolis.

Equipment:

NEC TeleDocs with Canon exam cameras, and Kodak digitizers for tele-radiology purposes. Accord bridge with Todd proprietary software for multi-point conferences. Moving to PolyComs for network purposes and a PACS system for teleradiology.

Transmission:

Dedicated point-to-point T-1 lines to all sites. Some sites are piggy-backed on these lines (more than one site to a line). Use PRI connections through AT&T to connect to non-network sites. Moving to an ATM network using video over IP.

OHIO

CMP FY 02, 03, 04

NetWellness

Case Western Reserve University, University of Cincinnati,
The Ohio State University

Case Western Reserve University
10900 Euclid Ave.
Cleveland, OH 44106-4956
Project: <http://www.netwellness.org>
Organization: <http://www.cwru.edu>

Susan Wentz, MD, MS
Ph: 216-368-5493
Fax: 216-368-0263
Email: sww2@cwru.edu

Network Partners:

Ohio State University
University of Cincinnati

Project Purpose:

Develop a website that incorporates easy to understand information on hundreds of health topics, current health news, and an Ask an Expert feature where users can get individual responses on hundreds of health topics from volunteer faculty experts at the three universities. Over 250 academic medical and research professionals donate their time by writing articles on many of the health topics and through the site's Ask an Expert feature.

Outcomes Expected:

The intended outcomes are increased knowledge of the healthcare consumer, improved physician/patient communication and ultimately reduced healthcare costs. User surveys, continuous feedback from a form available on every NetWellness page, continuous analysis of use and other site data are used to evaluate its effectiveness. Additionally, through collaboration with the Ohio Public and School Library networks and other academic, professional, community, and government partners, virtual focus groups are occasionally formed to advise NetWellness on specific issues.

Service Area:

Nationwide.

Services Provided:

This year marks the 10th year of NetWellness, which has been in operation since 1994. With the introduction of a completely redesigned site, Netwellness continues to provide health information via the Web. This includes access to a portfolio of health resources such as an encyclopedia, directories, manuals, reviewed weblinks, and original content on health topics written by university health sciences faculty. A key component is our Ask an Expert feature through which users can get individual responses on hundreds of diseases, conditions, and wellness topics from over 300 volunteer faculty experts at the three universities.

Equipment:

Standard Web and database servers.

Transmission:

Internet.

**Automated Inpatient Medication Management System
Greene Memorial Hospital**

Greene Memorial Hospital
1141 North Monroe Dr.
Xenia, OH 45385
<http://www.greene-memorial.org>

Ellie Wenzke
Ph: 937-376-8011
Fax: 937-376-7397
Email: ewenzke@med-health-system.org

Network Partners:

The project is contained within the closed network at Greene Memorial Hospital and consists of the Pharmacy, MIS, and Nursing departments.

Project Purpose:

The Greene Memorial Hospital Automated Inpatient Medication Management System provides increased patient safety for inpatient and outpatient hospital services. The automated medication dispensing cabinets provide secure storage and accurate dispensing and tracking of decentralized medications. The system allows for interface with patient profiles to help assure medications are appropriate.

Outcomes Expected:

Increased and enhanced outcomes expected will include:

- Provide accuracy for an average of 560 patient doses per week.
- Allow dispensing of medications in a controlled fashion to better track medication usage, especially narcotics.
- Free pharmacists from labor-intensive distributive functions allowing them to provide more clinically oriented services.

Service Area:

Greene County located in southwest Ohio.

Services Provided:

Greene Memorial Hospital's services include: emergency, diagnostic, rehabilitative, surgical services, chemical dependency, mental health, oncology, sports medicine, and occupational health services.

Equipment:

Automated Medication Dispensing Units integrated with patient data systems.

Transmission:

T1 transmission connection.

OHIO
NEOHON Telehealth Project
Northeast Ohio Health Outreach Network

CMP FY 01, 02

Northeast Ohio Health Outreach Network (NEOHON)
264 E. Rice St.
Alliance, OH 44601

Vicki Marshall
Ph: 330-684-4749
Fax: 330-829-4205
Email: vdm44667@yahoo.com

Network Partners:

Rural hospitals and affiliated outpatient sites, local employer groups and public health agencies.

Project Purpose:

The project will include several activities. The first activity will develop videoconferencing capabilities to effectively enable the NEOHON facilities to conduct physician education activities, physician consultations, community education sessions, and administrative meetings. The second activity will work with Emergency Departments to enable remote consultation in cardiology and neurology. The project will utilize an advanced radiology/PACS system to support such consultations. The third activity will expand mobile health services presently delivered via a specially equipped bus. The expanded services would include delivering prenatal services to remote communities, particularly the Amish population. The bus will also be used to deliver occupational health services in conjunction with an existing occupational health program.

Outcomes Expected:

Project seeks to improve patient wellness and health outcome objectives.

Service Area:

Four counties in northeastern Ohio.

Services Provided:

Obstetrics, occupational health, cardiology, neurology, teleradiology, physician education, community education, administrative conferencing.

Equipment:

Standard videoconferencing, videophones and cameras suitable for remote and mobile consultations, potentially a PACS system for remote image sharing and storage.

Transmission:

T1.

**Patient Safety and Medication Error Reduction
Northeast Ohio Health Outreach Network**

Northeast Ohio Health Outreach Network (NEOHON)
981 Wooster Road
Millersburg, OH 44654

Steven J. Berkhouse
Ph: 330-763-2003
Fax: 330-675-3019

Email: steveb@pomerenehospital.org

Network Partners:

NEOHON hospitals (Pomerene Hospital, Dunlap Memorial Hospital, Alliance Community Hospital, Union Hospital).

Project Purpose:

As a result of the Institute of Medicine's 1999 report on medical errors and the Leapfrog Group's development of patient safety initiatives, NEOHON evaluated the costs and benefits of implementing specific safe and effective processes for the ordering, dispensing, and administering of patient medications. The goal of the project is to automate error prone processes and increase community and medical community awareness of medical errors and their role in prevention. The project will achieve this goal by capitalizing on the infrastructure put in place from the existing NEOHON Telehealth Project. Activities include automating the drug distribution process, installing point-of-care devices to decrease the potential for medication administration errors, and increasing the public's and the medical community's awareness of medication errors and their respective roles in prevention. The project will also provide health care professionals access to electronic drug databases and journal articles.

Outcomes Expected:

Project seeks to improve patient safety and reduce medical errors.

Service Area:

Four, independent not-for-profit hospitals located in four counties in northeast Ohio have formed the Northeast Ohio Outreach Network (NEOHON). Member hospitals range from 52 beds, 200 employees to 169 beds, 840 employees.

Services Provided:

The purpose of the network is to provide preventive health and medical services, and to provide public awareness of preventive health issues.

Equipment:

Pyxis medication administration and inventory control equipment.

Transmission:

T1 and Web-based.

**Medical Education Network Teaching Ohio Region III (MENTOR)
Northeastern Ohio Universities College of Medicine (NEOUCOM)**

Northeastern Ohio Universities College of Medicine
4209 State Route 44
Rootstown, OH 44272
<http://www.neoucom.edu>

Thomas C. Atwood, M.S., M.A.
Ph: 330-325-6611
Fax: 330-325-0522
Email: tcatwood@neoucom.edu

Network Partners:

The University of Akron, Kent State University, Youngstown State University, Cleveland State University, eight Major Teaching Hospitals located in Akron, Canton and Youngstown, three Area Health Education Centers (AHEC), 12 Clinics for Underserved Populations, three Veterans Administration Clinics.

Project Purpose:

Provide medical education to patients, physicians, residents, undergraduate medical education students and other health professionals in northeastern Ohio through a variety of methods. Improve the quality of medical education by using technology to develop and deliver materials over the Internet. Provide access to NEOUCOM's Read Distance Education Center and associated training materials. Improve the quality and availability of undergraduate and continuing medical education in the region.

Outcomes Expected:

Enhanced communications throughout the region for live (synchronous) presentations and archived (asynchronous) materials. New content is being developed for a regional audience of the underserved populace, veterans, migrant workers, and healthcare professionals and an ever-expanding circle of participants including students, physicians, psychologists, nurses, counselors, social workers, clergy, nursing home administrators, and safety officers. MENTOR will enhance the services already provided and increase public health awareness.

Service Area:

Twenty-two counties in northeastern Ohio.

Services Provided:

H.323 (IP-Sept 2003) and H.320 (ISDN-Jan 2004) video conferencing. Instructional materials delivered via the Internet using WebCT course management system, custom applications, CDROM, DVD and streaming video.

Equipment:

Two academic servers provide online access to educational materials and applications. Tandberg 6000 and Tandberg 2500 systems provide video conferencing capabilities. DVD recorders, cameras, scanners, printers, etc., used to develop content.

Transmission:

Web-based, T1 (H.323) and ISDN (H.320) to Consortium Universities and Major Teaching Hospitals. Future plans include Internet 2 capability.

OHIO
Medical Collaboration Network
Ohio Board of Regents

CMP FY 04

Ohio Board of Regents
36th Fl., 30 E. Broad St.
Columbus, OH 43215
<http://www.regents.state.oh.us>

David Barber
Ph: 614-752-9530
Fax: 614-466-5866
Email: dbarber@regents.state.oh.us

Network Partners:

Columbus Children's Hospital
Ohio Supercomputer Center
University of Cincinnati Genome Research Institute
Ohio State University (Medical Center and Department of Family Medicine)

Project Purpose:

The Medical Collaboration Network will interconnect Ohio's colleges and medical schools with Ohio's hospitals through the Third Frontier Network and remove barriers to the collaboration among the researchers, educators, students, and physicians at these sites by the implementation of gigabit networks and high-quality video conferencing.

Outcomes Expected:

Researchers, educators, students, and physicians will gain experience with the improved ability to collaborate created by high-quality video conferencing. Shared access will be created to facilities for drug discovery research to support related research and education programs. A study on the impact of telemedicine on Medicaid costs will be conducted. A multi-institutional continuing medical education program will be created, and educational programming will be shared between homeland security training sites. Telemedicine equipment capable of supporting neonatology will be identified.

Service Area:

Project will serve the entire State of Ohio through the Third Frontier Network.

Services Provided:

Neonatology, administrative conferencing, distance education, research support, and technology evaluation.

Equipment:

H.323 videoconferencing equipment with H.264 Codec; Experimental HD and DV video capture cards; telemedicine peripherals for neonatology.

Transmission:

Gigabit Ethernet.

Computational Approaches to Research on Cancer in Children and Others
Ohio State University Research Foundation

Ohio Supercomputer Center
1224 Kinnear Road
Columbus, OH 43212
<http://www.osc.edu>

Eric A. Stahlberg
Ph: 614-292-2696
Fax: 614-292-7168
Email: [eas@osc.edu](mailto: eas@osc.edu)

Network Partners:

Cincinnati Children's Hospital Medical Center
The Medical College of Ohio

Project Purpose:

Develop software to support network system for pediatric cancer research. System will securely transfer and transform protected pediatric patient information for correlative studies involving related genetic and proteomic data. The effort will employ advanced computing technologies for information transformation, correlation and meta-analysis studies. Ultimately, the project provides a set of proven technologies for future safe, secure, and compliant participation for community and service hospitals in efforts requiring transport of protected health information.

Outcomes Expected:

System for Clinical Information Transfer (SCIT) and Clinical Bioinformatics Integrated Visualization (CBIV) system for transforming and normalizing pediatric patient information for cancer research (measure). Software product validation tests (tool).

Service Area:

Primary areas are Franklin, Hamilton, and Lucas counties in Ohio serving pediatric patients nationally. Areas will extend incrementally to additional sites in Ohio and nationwide.

Services Provided:

Collaboration clinical information transfer capabilities and tools (2005).

Equipment:

Three each of Virtual Private Network (VPN) appliances connected to Linux server systems.
Aggregated database will be housed at OSC.

Transmission:

OC3 from Columbus to Cincinnati (future gigabit connectivity via TFN fiber-optic).
DS3 from Columbus to Toledo (future gigabit connectivity via TFN fiber-optic).

OHIO
Southern Ohio Telepsychiatric Network
Southern Consortium for Children

TNGP FY 03-05

Southern Consortium for Children
507 Richland Avenue, Suite 107
Athens, OH 45701-0956
<http://www.scchildren.com>

Steven C. Trout
Ph: 740-593-8293
Fax: 740-592-4170
Email: strout@frognet.net

Network Partners:

Ohio University's College of Osteopathic Medicine (OU-COM) - Athens, OH.
Shawnee Mental Health Center - West Union (Adams), Coal Grove* (Lawrence), and Portsmouth (Scioto), OH. (* *two Locations*)
Tri-County Mental Health and Counseling Services, Inc. – Athens (Athens), Logan (Hocking), McArthur (Vinton), OH, and Belpre (Washington), OH.
Washington County Community Mental Health Services – Marietta (Washington), OH
Woodland Centers, Inc. – Gallipolis (Gallia), Jackson (Jackson), and Pomeroy (Meigs), OH.

Project Purpose:

To create a telepsychiatric and distance learning network by linking eight new sites to an existing 4-site network. A telepsychiatric program for children will be created in year one and expanded to serve adults in years two and three and will add one advance practice nurse (APN) to an existing psychiatric practice. Distance learning programs will be expanded and more readily accessed throughout the 10-county region.

Outcomes Expected:

Project outcomes include: connecting eight new satellite sites to an existing 4-site videoconferencing network, Internet accessibility for all sites will be achieved using one ISP, children and adults will use videoconferencing technology for routine med/somatic visits, four APNs will be hired to expand the psychiatric practice regionally, the adult psychiatric caseload will be doubled by grants end, greater efficiency in scheduling clients will reduce “no show” rates by 15 percent by grants end, and greater access for distance learning will be achieved.

Service Area:

Counties include Athens, Hocking, Vinton, Gallia, Jackson, Meigs, Adams, Lawrence, and Scioto. Three counties are designated primary health HPSAs, six counties p-HPSA, and Gallia County is not designated. Eight counties are designated mental health HPSAs (Lawrence and Washington are excluded), six of the counties are designated MUAs, with three counties designated partial MUAs.

Services Provided:

The major focus in telepsychiatry for children in year one and then move onto the adult population in years two and three. The second service priority has to do with expanded distance learning capacity for regional behavioral health care providers.

Equipment:

At each site: Polycom VSX 7000, Router - Cisco 1760, Switch - Cisco 2950, PC
At OU-COM (Athens): Main Router - Cisco 3745.

Transmission:

T1 lines to all sites except Tri-County Mental Health and Counseling Services, Inc., in Athens which utilizes line-of-sight microwave transmission.

INTEGRIS Health, Inc.
Suite 800, 3366 NW Expressway
Oklahoma City, OK 73112
<http://INTEGRIS-Health.com>

Pam Forducey, Telehealth Director/
Micha Post, Telehealth Coordinator
Ph: 405-644-5343/405-636-7080
Fax: 405-951-885/405-951-9793
Email: pam.forducey@integris.health.com/
mickie.post@integris.health.com

Network Partners:

Rural hospitals, tertiary care center, rural health clinics, rehabilitation center, public schools, and long term care facilities.

Project Purpose:

The purpose is to expand telehealth services to rural Oklahoma citizens. Telehealth will be used to serve the population with chronic disease management, home health, palliative care, wound care, cardiology, and diabetes education.

Outcomes Expected:

1) Increase access to quality health services and disease management for rural residents with chronic conditions. 2) Establish a wound care network. 3) Collect and disseminate clinical outcome data for chronic disease, wound care and rehabilitation, as well as related costs/cost savings.

Service Area:

Providers from seven counties serve 30 counties including 17 HPSAs/MUAs in four regions of Oklahoma.

Services Provided:

Telehealth services include disease management for chronic conditions, palliative care, mental health, primary care, wound care and other allied health services will be supplied over interactive video conferencing and utilizing data from remote vital sign monitoring.

Equipment:

Sixty-three StarView 500 Video Phones; six camcorders; and three medicine dispensers.

Transmission:

Internet/WWW and analog.

OKLAHOMA
Rural Health Telemedicine Program
Oklahoma Office of Rural Health

CMP FY 02, 03, 04, 05

Oklahoma Office of Rural Health, Oklahoma State University
900 N. Portland, Suite BT-200
Oklahoma City, OK, 73116
<http://osu.com.okstate.edu/research/orh/index.html>

Kaleb Bennett
Ph: 405-945-9197
Fax: 405-945-9186
Email: bkaleb@chs.okstate.edu

Network Partners:

Oklahoma State University Telemedicine, Education and Training Center (Tulsa, OK)
Oklahoma State University Rural Health Policy and Research Center (Tulsa, OK)
Oklahoma Critical Access Hospitals (CAH), potential CAHs and other rural health providers.

Project Purpose:

The Rural Health Telemedicine Program will help CAHs, potential CAHs and other rural health providers purchase telemedicine equipment, services, and training. We will provide \$16,000 of the cost of the equipment each participant believes is necessary to improve the quality of healthcare for their patients. Training will also be provided. Each participant will pay a fee of \$1,500 for training and the maintenance of their network. Additionally, each participant must secure their specialists. Participants will have access to OSU's Telemedicine expertise to help with equipment, training and specialists' decisions.

Outcomes Expected:

Increase access to specialty care – GPRA tool.
For medical staff, increase access to continuing education - provider satisfaction survey tool.
Decrease amount of time traveled for patients - GPRA tool.
Decrease number of miles traveled for patients - GPRA tool.

Service Area:

Statewide, *potentially* representing 72 counties, including five HPSAs, 16 MUAs, and 18 counties that are both HPSA and MUA classified. Final number *will* be much smaller as there are only enough funds for so many sites. Eight MUAs, two HPSAs are currently being serviced by the 26 sites.

Services Provided:

Diabetes Care and Management, Dermatology, ENT, Mental Health, Orthopedics, Pediatrics, Radiology, Trauma/Emergency Medicine.

Equipment:

Polycom video conferencing, AMD otoscope, Vidar Digitizer, and e-Film software.

Transmission:

Full T1, Internet.

OREGON
Assante Clinical Systems Initiative
Asante Health System

CMP FY 04

Rogue Valley Medical Center Foundation
2600 Siskiyou Blvd., Suite 100
Medford, OR 97504
asante.org

Sandra Olson
Ph: 541-608-5298
Fax: 541-608-5856
Email: solson@asante.org

Network Partners:

Rogue Valley Medical Center, Three Rivers Community Hospital, Ashland Community Hospital, Merle West Medical Center, Providence Medford Medical Center, Oregon Health Sciences University, Emmanuel Legacy Children's Hospital, over 300 physicians.

Project Purpose:

The Asante Clinical Systems Initiative has been designed to provide real time inpatient and outpatient information and decision support across a network of health providers, including seven hospitals and over 300 private practice physicians to improve quality healthcare in southern Oregon and northern California.

Outcomes Expected:

- a) To improve safety, effectiveness and timeliness of care for patients in southern Oregon and northern California
- b) To improve the comprehensiveness of the plan of care across the continuum of care regionally
- c) To improve patient-centered care for southern Oregon and northern California patients
- d) To improve organizational effectiveness in managing patients across a continuum of care, including physician's offices, rural and regional hospitals, homecare and hospice.
- e) To increase efficiencies and effectiveness of care across relational units of hospital care.

Service Area:

Primary service area is Jackson and Josephine Counties in Oregon. Secondary service area includes: Curry, Douglas, Klamath and Lake Counties in Oregon and Del Norte, Siskiyou, and Modoc Counties in California.

Services Provided:

Central repository of inpatient data accessible over a secure medical network, image transfers, remote consultation, lab and other reports available for review and on-line encrypted signature.

Equipment:

The Asante Clinical Systems Initiative will implement an integrated, comprehensive and interoperable health information system that includes the following modules: Pharmacy, Medication Administration Check, Clinical Access, Common Clinicals, Clinical Team (EHR), and Physician Team (CPOE), Radiology Information System (RIS), Cardiology Information System (CIS), and Picture Archive and Communication System (PACS), as well as the technology and infrastructure to support it across a secure medical information network.

Transmission:

A combination of: Fiber Optic, ISDN, T1, wireless and Internet.

OREGON
Oregon Community Health Information Network
Oregon Community Health Information Network

CMP FY 02, 03

Oregon Community Health Information Network (OCHIN), Inc.
707 SW Washington, Suite 1200
Portland, OR 97205
<http://www.ochin.org>

Howard Balshem
Ph: 503-943-2500
Fax: 503-943-2501
Email: balshemh@community-health.org

Network Partners:

Multnomah County Health Department, Clackamas County Public Health Department, Tillamook County Health Department, Benton County Health Department, Lane County FQHC, Deschutes County Health Department, Virginia Garcia Memorial Health Center, Klamath Health Partnership, Pike Market Medical Clinic, Ochoco Medical Clinic, La Clinica Del Valle, Santa Cruz Health Consortium, OHSU.

Project Purpose:

Sustain the viability of the health care safety net by improving and providing support for information infrastructure through implementation of Epic Practice Management Software, implementation of Epic Electronic Medical Record (EMR) to support clinical activities and provide population-based outcomes data, build a Knowledge Bank that will inform providers and patients about patient care at an individual level, and provide caregivers and policy-makers with a population-based perspective on patient care and outcomes, as well as on resource use and allocation at a statewide and regional level.

Outcomes Expected:

Improved claims and billing processes; improved reporting.
User satisfaction—Likert survey

Service Area:

Oregon, Washington, and California.

Services Provided:

The network has provided Practice Management Information Systems since July 2002. Will implement EMR beginning in Fall 2005. In addition, clinics provide primary care services including services for diabetes and asthma disease management, HIV care, mental health, dental care, nutritional counseling, OB/GYN services, and pediatric care.

Equipment:

Sun 4800 database servers; Intel-based Citrix servers, Cisco Routers.

Transmission:

Full or fractional T1, Internet.

**Tillamook Lightwave Telehealth Technologies for Tillamook County Rural
Communities
Tillamook Lightwave Intergovernmental Agency**

Tillamook Lightwave IGA.
4000 Blimp Blvd.
Tillamook, OR 97141
www.tillamooklightwave.org

Jack Crider
Ph: 503/842-2413 X 0
Fax: 503/842-3680
jcrider@potb.org

Network Partners:

Port of Tillamook Bay
Tillamook People's Utility District
Tillamook County

Project Purpose:

To enable telemedicine between Tillamook County Hospital and County Health Departments, provide distance learning opportunities for medical community, enable a rapid sharing of patient data between the County Hospital and designated trauma hospitals in Portland.

Outcomes Expected:

To bring telemedicine, informatics and medically oriented distance learning opportunities to the Tillamook County medical community by providing fiber optic connectivity to Portland trauma centers. Additionally it will connect the County Hospital and Health Departments to enable telemedicine capabilities.

Service Area:

Tillamook County was established in 1853 and is still a rural community of 24,600 people. The median household income is \$34,270. The county is 1,125 square miles that include nine rivers, four bays and 75 miles of coastline.

Services Provided:

No fiber connectivity exists between the County Hospital, Health Clinics and Portland trauma centers. Vital diagnostic data will be transmitted quickly for consultation/collaboration and clinical decision making. At present staff must travel out of the county for educational needs. The fiber connection will allow distance learning and educational activities.

Equipment:

Proposed project will be a new system.

Transmission:

County Hospital now uses T1 copper.

PENNSYLVANIA
Primary Care Education for the Citizens of Rural PA
Clarion University of Pennsylvania

CMP FY 02

Clarion University of Pennsylvania
330 Main Street
Clarion, PA 16214
<http://www.clarion.edu/hsec>

Nancyann C. Falvo, Ph.D.
Ph: 814-227-1901
Fax: 814-227-2036
Email: nfalvo1@clarion.edu

Network Partners:

Clarion University of PA
Slippery Rock University of PA
Edinboro University of PA
Warren- Forest County Higher Education Council and Warren General Hospital

Project Purpose:

The purpose of this project is to address the health care needs of northwestern Pennsylvanians by ensuring increased access to high-quality primary care for both rural and under-served populations of this region. The goal of this project is to expand the delivery area of the current Clarion / Edinboro / Slippery Rock Universities' MSN-FNP program to provide educational access for registered nurses of northwestern Pennsylvania.

Outcomes Expected:

Develop a Community Health Care Improvement Advisory Committee including residents of rural communities serviced by the Warren-Forest Higher Ed. Council. Establish a scholarship incentive program for students enrolling in the MSN-FNP program. Extend the delivery area of the program to the northwest area of the state, using distance education modalities, beginning in August of 2002.

Service Area:

Students enrolled in this program at the Warren-Forest site are from various northwestern Pennsylvania counties and from New York state. It is anticipated that all six students in the program will practice in the Warren-Forest area after graduation.

Services Provided:

Educational – students enrolled in the MSN-FNP program been enrolled in two courses (six credits) per semester since August 2002. A clinical instructor is present with the students during the clinical courses.

Equipment:

Polycom and Pictur-tel Venue videoconferencing equipment primary sites, PCs for Blackboard instruction.

Transmission:

ISDN 128 – 384K.

PENNSYLVANIA
Home Telehealth
Community Nurses Home Health and Hospice, Inc.

CMP FY 04

Community Nurses, Inc.
757 Johnsonburg Road, Suite 200
Saint Marys, PA 15857 Fax: (814) 781-6987
www.communitynurses.org

Liz Fitch, Clinical Supervisor
Ph: (814) 781-1415

Network Partners:

N/A

Project Purpose:

The telehealth project is utilizing state-of-the-art home equipment to monitor patients in between personal nursing visits in the rural region of North Central Pennsylvania. As it becomes more prevalent for seniors taking care of seniors, it has become necessary to increase the standard of care for at-home patients. The video monitors allow for interaction between the nurse and the patient while the nurse is compiling the patient's vital statistics (i.e. blood pressure, blood sugars, weights, heart and lung sounds, etc). This project will provide quality service to the patients while the area addresses the nursing shortage.

Outcomes Expected:

The project is expected to improve patient care and outcomes. By monitoring patients on a regular basis health conditions can be stabilized quickly resulting in fewer hospital admissions. Patients with congestive heart failure, chronic pulmonary disease, diabetes and wound care have been targeted to date. However, the medical uses of the equipment are endless.

Service Area:

The Community Nurses service the counties of Cameron, Elk and McKean in North Central Pennsylvania. The total population of the area is 87,022.

Services Provided:

Services provided include the monitoring of home health patients suffering from chronic diseases as mentioned above.

Equipment:

The Community Nurses are presently utilizing American TeleCare home health equipment. However, they are interviewing additional vendors who provide home health equipment.

Transmission:

The home telehealth program runs on an analog phone line.

Geisinger Clinic
100 N Academy Avenue
Danville, PA 17822-1335
<http://www.geisinger.org>

Tracey W. Wolfe
Ph: 570-214-9391
Fax: 570-214-9451
Email: twwolfe@geisinger.edu

Network Partners:

Laurel Health System, Moses Taylor Hospital, Sunbury Community Hospital, Dubois Regional Medical Center, Shamokin Community Hospital, VA Medical Center, Evangelical Hospital, Robert Packer Hospital, Center City Medical Complex, Family Practice Center, Geisinger Community Practice, Health South and Wyoming Valley, Guthrie Clinic, Soldiers and Sailors Hospital.

Project Purpose:

Create a regional partnership where, by targeted distance education of consumers and providers and by use of other telehealth methods, information is shared and used by all stakeholders to motivate and monitor change in stroke outcomes in rural Pennsylvania. This is needed to ultimately decrease response time from the onset of stroke, address gaps in training to manage stroke victims, and develop regional based triage protocols to optimize appropriate use of local hospitals, regional centers of care and clinical expertise.

Outcomes Expected:

Assess needs to educate consumers and providers, to initiate work relevant to developing a rational rural network of care, and to initiate work for long-term evaluation of these efforts. This will be done through knowledge surveys, educational program development to address gaps, a partnership with each hospital using the distance education platform, which will assist in developing a model plan, and the creation of a blueprint for a stroke registry.

Service Area:

Care is provided to patients who reside in predominantly rural areas of Pennsylvania. Twenty-four of Geisinger's 31 county areas are officially designated as Medically Underserved Areas; the Office of Rural Health officially designated 15 of these as rural.

Services Provided:

Twenty-four hour service line to Geisinger neurologist on call, Train the Trainer courses (Mini Fellowships), and Screenings (through calendar year 2003).

Equipment:

Five computer workstations, Software (MapInfo, MS Project, Reference Manager), one network printer, and two PDAs.

Transmission:

Phone, fax, computers (including internet).

Magee-Womens Hospital Telehealth Initiative

Magee-Womens Hospital of University of Pittsburgh Medical Center (UPMC)

Magee-Womens Hospital of UPMC
300 Halket Street
Pittsburgh, PA 15213
Organization: <http://www.magee.edu/>
Project: <http://www.fightingspirit.org>

Deborah W. Linhart
Ph: 412-641-4024
Fax: 412-641-1221
Email: dlinhart@mail.magee.edu

Network Partners:

UPMC Bedford; UPMC Northwest; UPMC Horizon; UPMC Lee Regional; UPMC McKeesport; UPMC St. Margaret's; UPMC Shadyside; UPMC Presbyterian; UPMC Southside; Children's Hospital of Pittsburgh; University of Pittsburgh Center for Continuing Education in the Health Sciences

Project Purpose:

To develop and implement a multifaceted telehealth initiative that enhances access to women beyond Magee's geographical service area. To utilize a variety of telehealth strategies that will use electronic information and telecommunications to disseminate public health information, enhance clinical services and support professional education. There are 5 components of this initiative: Gender-Based Medicine Education Series; Women's Cancer Tumor Board Conference; Breast CA Web site; Neonatal Radiology; OB Virtual Tour.

Outcomes expected:

Gender-Based Medicine - CMEs obtained; participant satisfaction; Women's Cancer Tumor Board - Number of participants, number of cases submitted by community-based providers, number of women enrolled in clinical trials from the community sites. Breast CA website - Number of Web hits, user satisfaction, Neonatal teleradiology - Number of consults, tracking turn around time. Virtual Tour - Number of Web hits, user satisfaction.

Service Area:

Western Pennsylvania, Tri-State Region, and the World Wide Web.

Services Provided:

Core Services provided within the scope of the project include distance learning to health care professionals in urban and rural settings; health care information to the community via the Web, video and written materials; neonatal teleradiology between two hospital sites; and a multi-disciplinary cancer conference between geographically separate sites.

Equipment:

VTEL Video-conferencing equipment; Compaq Deskpros, Compaq Server platform; Stentor's ISyntax TM, NT, UNIX, and Macintosh server resources, OC-12 ATM network, Microsoft SQL Server 7.0, digital camera, computed radiography.

Transmission:

ISDN, Web, OC-12, T1.

Using Information Technology to Enhance Patient Safety
Mercy Health Partners

Mercy Health Partners
746 Jefferson Avenue
Scranton, PA 18510-1697
<http://www.mercyhealthpartners.com>

John T. Howells
Ph: 570-348-7778
Fax: 570-348-7639
Email: jhowell@health-partners.org

Network Partners:

Mercy Hospital, Scranton, PA
Mercy Hospital, Wiles Barre, PA
Mercy Special Care Hospital, Nanticoke, PA

Project Purpose:

Mercy Health Partners will implement mobile, wireless PC carts allowing for the electronic capture, storage, and retrieval of nursing assessments, vital signs, and outcome information, presently captured and stored on paper. This information, combined with other electronic patient information, will be utilized to build clinical support rules into a CPOE and automated medication administration system.

Outcomes Expected:

Electronic capture and storage of this information will provide improved access to clinical information at point of care and at ancillary clinical areas. The information will be more accurate, complete, and legible ensuring medical decisions are based on complete diagnostic and clinical information.

Service Area:

Primary service area includes inpatient acute care, emergency services, outpatient services, home health, and inpatient SNF and Hospice.

Services Provided:

Services provided include inpatient acute care, emergency services, outpatient services, home health, and inpatient SNF and Hospice.

Equipment:

The program will utilize wireless network access points, mobile, wireless, PC carts and handheld PDAs.

Transmission:

Within facilities, wireless and 1GB fiber backbone with 100bt to the desktops will be utilized. Remote providers will utilize a secured, encrypted Internet link via dial up or high speed access.

PENNSYLVANIA
Urban Ophthalmic Telehealth
Pennsylvania College of Optometry

CMP FY 02, 04

Pennsylvania College of Optometry
8360 Old York Road
Elkins Park, PA 19027
<http://www.pco.edu>

Felix M. Barker, II, O.D., M.S.
Ph: 215-780-1427
Fax: 215-780-1325
Email: Felix@pco.edu

Network Partners:

The Eye Institute of the Pennsylvania College of Optometry, City of Philadelphia Public Health Department, Strawberry Mansion Clinic, Mount Airy Clinic.

Project Purpose:

This project used store and forward telemedicine technology to link two outlying eye clinics located in urban underserved areas of Philadelphia to a major academic eye care center, The Eye Institute. Telemedicine emphasizes providing critically needed specialty services for endemic eye problems: glaucoma and diabetic eye disease to an underserved, primarily African-American population.

Outcomes Expected:

Patient satisfaction surveys, indicators of improved access to and utilization of care.

Service Area:

Philadelphia and Montgomery Counties in Pennsylvania.

Services Provided:

Ophthalmic consultation services to underserved urban areas of Philadelphia. Recently we started receiving consultations from rural areas of Central Pennsylvania—i.e., non MUAs.

Equipment:

Digital fundus and slit lamp biomicroscopes with images transmitted via a store and forward software—i.e., Image Consultant, Unique Media, Canton, PA.

Transmission:

T1 between campuses and Internet to off-campus sites.

**Researching Telehomecare Affects on Nursing Retention and Productivity
Pennsylvania Homecare Association**

Pennsylvania Homecare Association
20 Erford Road, Suite 115
Lemoyne, PA 17043
<http://www.pahomecare.org>

Tammy Sanner
Ph: 717-975-9448, Ext. 22
Fax: 717-975-9456
Email: tsanner@pahomecare.org

Network Partners:

Pennsylvania State University and 36 homecare agencies located throughout Pennsylvania (29 of which are providing telehomecare services).

Project Purpose:

To determine if the use of telehomecare enhances the recruitment, retention and productivity of homecare nurses. The study will conduct an analysis of 36 home health agencies that are broken down into four distinct research groups: A) Agencies that implemented telehomecare prior to 2003; B) Agencies that implemented telehomecare in 2003; C) Agencies that implemented telehealth in 2004; D) Agencies that are in the process of implementing telehomecare; and E) Agencies that have not implemented telehomecare.

Outcomes Expected:

A survey of home health nurses and data collection surveys of the 36 participating agencies will be used to determine project outcomes. Outcomes for agencies with telehomecare are anticipated to be: 1) increased RN job satisfaction; 2) decreased RN intent to leave; 3) improved nurse to patient ratio for top diagnoses; and 4) increased total contact time with patients for top diagnoses.

Service Area:

Of the 36 participating agencies, 29 are providing telehomecare services in 50 of Pennsylvania's 67 counties.

Services Provided:

Remote patient monitoring and video-home visits.

Equipment:

Agencies are using home telemonitors that transmit vital signs over POTS and/or video telephone devices that also transmit over POTS. Equipment varies by agency. There are a total of approximately 800 units state-wide in this study.

Transmission:

Information transmits from the homes over POTS to a central station at the home health agency.

Penn State Cancer Institute
500 University Drive H069
Hershey, PA 17033
<http://www.hmc.psu.edu/cancer/>

Andrea Lazarus, Ph.D.
Ph: 717-531-5640
Fax: 717-531-5103
Email: alazarus@psu.edu

Network Partners:

Hershey Medical Center (HMC)
Mount Nittany Medical Center (MTMC)
Lehigh Valley Hospital (LVH)

Project Purpose:

The goal of this project is to establish a digital informatics and communications system which will provide a virtual work environment in offering patient services across central and northeastern Pennsylvania. The advantages of such a system include the ability to bring continuing education and training to isolated rural areas and the ability for immediate interpretation of medical information and laboratory and radiology test results. The system will also allow patients to get cancer care from their local physicians while having increased access to clinical trials. Through this system, unnecessary travel to tertiary care facilities can be avoided.

Outcomes Expected:

The ultimate indicator of achieving these goals will be submitting a successful application to achieve NCI-designation as a comprehensive cancer center. Since submission of such a proposal is still 3-4 years away, we will rely on achieving unity in conducting clinical trials as a short-term goal. We have already started the process of establishing a common tumor bank with the three clinical partners (HMC, MNMC, and LVHS), and have been conducting cooperative group trials at all sites through our clinical trials network. Within the next year we hope to have a plan in place for a central IRB and a common data safety and monitoring plan for oversight of clinical trials. With the installation of the new videoconferencing equipment, we hope to make more of the educational (both professional and public) offerings available at the HMC more accessible to the MNMC and LVHS as well.

Service Area:

The primary service area is a 27-county region in Central Pennsylvania.

Services Provided:

Clinical telemedicine, public education and outreach, professional education (including CME), clinical trials access.

Equipment:

Tandberg dual monitor Codecs in multiple sites at the three partnering institutions; desktop polycom units; SM fiber transceivers; high-resolution video/data projectors; videoconference cameras.

Transmission:

Transmission is achieved using the internet and videoconferencing areas across T1/T3 links between partnering institutions.

PENNSYLVANIA
Regional Electronic Medical Record
Susquehanna Health System

CMP FY 01, 02, 03, 04

Susquehanna Health System
777 Rural Avenue
Williamsport, PA 17701
<http://www.shscares.org>

Pamela R. Wirth
Ph: 570-321-3172
Fax 570-321-3199
Email: pamela.wirth@shscares.org

Network Partners:

The Laurel Health System, Wellsboro, PA
The Jersey Shore Hospital, Jersey Shore, PA
The Bucktail Medical Center, Renovo, PA

Project Purpose:

To implement an electronic patient record that spans the continuum of care and the life of the patient that can be accessed and utilized by all care providers participating in this project from any location to enable more efficient quality patient care.

Outcomes Expected:

Over the life of this project, many outcomes have been determined and met and more yet to come. Some of the outcomes have been the use and access of this record by physicians and caregivers, testing and validity of user interfaces, testing of security methods (such as digital certificates, tokens, and biometrics) and acceptable use, elimination of paper charts both in physicians' offices and acute care settings, testing and validation of Web portals and on-line resource usage, mass education of physicians on health care informatics, elimination of printed radiology films, complete transformation to digital radiography films, and remote access of records.

Service Area:

North Central Pennsylvania to the New York State border including Lycoming, Clinton, and Tioga counties of Pennsylvania.

Services Provided:

Electronic Health Record development including wide-area network development, laboratory, radiology, respiratory therapy, and pathology. History and physicals, discharge summaries, operative reports, consults, Picture Archiving and Communication System (PACS) images, scanned documents like Emergency room records, pharmacy drug histories, Physician Office Ambulatory record for over 100 providers. This information is accessible to clinicians from any place at any time via a Web portal which also contains our electronic medical library.

Equipment:

Wide Area Network (WAN) equipment, Compaq servers, Cisco routers, and many varieties of laptops and desktops.

Transmission:

Redundant ATM ringed network interconnecting other facilities and organizations via various methods such as regional cable service company provided fiber, Telco T1s, Telcom frame relays, Internet VPNs and cable modem services. Band width ranges from 56KB to 100 MB.

PENNSYLVANIA
Integrative Medicine Informatics Feasibility Project
Thomas Jefferson University

CMP FY 04

Thomas Jefferson University (USA)
Jefferson-Myrna Brind Center of Integrative Medicine
1015 Chestnut Street, Suite 820
Philadelphia, PA 19107
<http://jeffline.jefferson.edu/JMBCIM/>
Research Homepage links to Hospital Clinic
Click on JMBCIM TJU Hospital Home

Kathy McMearty
Ph: 215-503-4423
Fax 215-503-0414
Email: kathy.mcmearty@jefferson.edu

Network Partners:

N/A

Project Purpose:

The primary purpose of the project is to establish the feasibility of a data sharing network for the development and utilization of national practice standards for Integrative Medicine. The study will address priority areas and required capabilities, including systems architecture, transmission capability, network security, and HIPAA compliance.

Outcomes Expected:

- 1.) Develop, administer, and analyze intramural survey of information needs relevant to the development of clinical standards in Integrative Medicine.
- 2.) Develop, administer, and analyze extramural survey of selected healthcare institutions engaged in the development of these standards.
- 3.) Develop feasible, strategic plan for applying medical informatics to support clinical standards in Integrative Medicine.

Service Area:

Intramural and National.

Services Provided:

Assessment and application of data sharing capability. Network is in development.

Equipment:

Computer.

Transmission:

Internet.

PENNSYLVANIA

CMP FY 01, 02

**Clinical Integration of Outpatient Care and Web-enabled Physician Access to the Enterprise Clinical Information System
University of Pittsburgh Medical Center**

Information Services Division
200 Lothrop Street, Forbes Tower Suite 10072
Pittsburgh, PA 15213
<http://www.upmc.com>

Cathy Poole
Ph: 412-647-9235
Fax: 412-647-6003
Email: pooleca@upmc.edu

Network Partners: N/A

Project Purpose:

Implementation and rollout of the Electronic Health Record (EHR) - Outpatient to provide the University of Pittsburgh Medical Center (UPMC) related physician practices with access to a patient's EHR and to link the individual physician practices with other UPMC Health System entities. Enable clinicians to automate clinical functions such as order entry, results reporting, physician inbox messaging and action items, reference library access and clinical documentation. Provide web-based remote access to patient clinical data that resides in the EHR, secure messaging capabilities and automation of the referral process to affiliate physicians.

Outcomes Expected:

- Improved provider access to relevant patient-related clinical information.
- Improved clinical decision making.
- Methods to be used include pre- and post-implementation time-motion studies, workflow analysis, tracking of volume, compliance, and patient safety indicators, and patient and provider surveys.

Service Area:

UPMC Health System facilities in Western Pennsylvania.

Services Provided:

N/A

Equipment:

N/A

Transmission:

N/A

Nurse Anesthesia Rural and Elderly Expansion Project (NAREEP)
University of Pittsburgh School of Nursing

University of Pittsburgh School of Nursing
Nurse Anesthesia Program
3500 Victoria St.
336 Victoria Building
Pittsburgh, PA 15261-0001
<http://www.pitt.edu/~napcrna>

John O'Donnell, CRNA, MSN
Ph: 412-624-4860
Fax: 412-383-7227
Email: jod01@pitt.edu

Network Partners:

1. Elk Regional Medical Center, St. Mary's, Pennsylvania
2. Covenant Healthcare, Saginaw, Michigan
3. University of Pittsburgh Medical Center (UPMC) Lee Hospital, Johnstown, PA
4. Altoona Hospital, Altoona, PA (Plan to partner in Jan. 04 semester).

Project Purpose:

Enables Nurse Anesthesia Students to participate in classes provided at the parent University while affiliating at rural and distant hospitals, especially those with a high percentage of elderly patients. These sites are in areas with a shortage of Certified Registered Nurse Anesthetists (CRNA). Increase the number of students accepted into the Nurse Anesthesia Program by providing additional clinical education opportunities.

Outcomes Expected:

Student and Instructor Evaluations of each distant class will determine the effectiveness of classes at distant affiliations. Distant student's test grades are statistically correlated with student grades at home site. Increase in student's specialty case numbers upon graduation compared with those of graduates before implementation of distant affiliations. Increase in number of graduates employed in HPSAs.

Service Areas:

Underserved areas in Western and Central Pennsylvania and Northern Michigan.

Major Services:

Distance learning of key components of the anesthesia curriculum to students recruited from and affiliating in rural/distant clinical sites.

Services Provided:

Transmission of classes to Master's level Nurse Anesthesia students and CRNA instructors began in October 2003. Recruitment of students from rural areas for admission began in January 2003. This program endeavors to increase the total number of rural providers. Additional sites are planned for implementation January 2004.

Equipment:

One Polycon View Station MP, four Tandberg 1000 Standard Mode 1128 kbps, four Dell Inspiron 5100 desktop computers, 4 ISDN wall outlets to 2 NT 3 Network Termination Devices.

Transmission:

ISDN Network connections. Web transmission of case numbers using Typhon program.

**The Venango Center for Healthcare Careers (VCHC)
Venango Economic Development Corporation**

Venango Economic Development Corporation
P.O. Box 128
Oil City, PA 16301-0128
www.venangoedc.org

Cynthia Linnon
Ph: 814-677-3152 ext. 19
Fax: 814-677-5206
clinnon@venandoedc.org

Network Partners:

Venango Economic Development Corporation, Clarion University of Pennsylvania, Dubois Business College, University of Pittsburgh, Venango Technology Center, Clarion/Venango Educational Resources Alliance

Project Purpose:

The purpose of this project will be to address the educational/training needs of three distinct segments within the healthcare industry: Respiratory Therapy, Clinical Medical Assistant Program; and Pre-Nursing Distance Learning Opportunities. This will be accomplished through the development of new comprehensive programs of study in those three distinct areas. These programs will emphasize a distance learning format to supplement and enhance existing regional programs.

Outcomes Expected:

Provide high-quality training programs to meet the needs of the vital health care industry, which will provide careers in health services offering career mobility, flexibility and security. Recruit capable students and a more diverse student body by building the image of working in the health care sector. The outcome will be to increase retention rates of those who do enroll by employing learner-centered instructional strategies.

Service Area:

Initially, this project is targeted to serve a multi-county region in northwest Pennsylvania, encompassing Venango, Warren, Forest, Clarion and Bradford counties primarily, with the potential of drawing residents from every county in northwest Pennsylvania.

Services Provided:

Core services provided within the scope of the project include a focus on education for health care career opportunities. This education will primarily be provided via distance learning opportunities.

Equipment:

Laptop computers, video conferencing equipment, 12 ITV classrooms w/Pictur-tel and Polycom equipment, ISDN and IP technology PCs for Blackboard instruction.

Transmission:

ISDN 128K, ATM 512K and above IP 712K and above, DSL, Broadband Cable Modem and Wireless.

RHODE ISLAND
HIV/AIDS Comprehensive Psychosocial Support Project
Family Resources Community Action

CMP FY 04

Family Resources Community Action
245 Main Street
Woonsocket, RI 02895
Famresri.org

Benedict F. Lessing, Jr.
Ph: 401-766-0900
Fax: 401-767-4075
Email: blissing@famresri.org

Network Partners:

Thundermist Health Center
Doctors from various hospitals in the Providence area
AIDS Project Rhode Island
AIDS Care Ocean State

Project Purpose:

Develop a holistic approach to overall health maintenance and well being for persons living with HIV/AIDS by engaging clients in healthy lifestyle behaviors. This program uses health education, exercise training, nutritional counseling, and alternative therapies to enhance medical services and maximize gains made through consistent medical care and treatment adherence. By working closely with medical providers, personalized exercise and nutritional care plans are implemented.

Outcomes Expected:

Over 25 percent will be engaged in exercise related activities. Nearly 50 percent will be actively using nutrition services. Both groups will report improved physical functioning, daily stamina, and overall mental health. At least 50 percent will use educational resources, support groups, weekly meals, and other social activities. A clearer understanding of the disease and access to safe, drug free environments will be reported. Measurement tools will include a qualitative interview, self-reporting, satisfaction surveys, the Beck's Depression Inventory, and participation statistics. Other measures include, but are not limited, to weight, body mass index, lung capacity, blood pressure, and 24 hour recalls.

Service Area:

The service area includes Northern Rhode Island, which is defined as all points north of Providence, Rhode Island.

Services Provided:

Personal exercise training, nutritional counseling, food pantry, meals, cooking classes, educational forums, massage therapy, computer classes, support groups, social events, substance abuse, and mental health counseling. Art classes will be implemented by February 2005.

Equipment:

N/A

Transmission:

N/A

RHODE ISLAND**CMP FY 04****Advancing Point-of-Care Technology at VNA of Care New England
Kent County Visiting Nurse Association d/b/a VNA of Care New England**

VNA of Care New England
51 Health Lane
Warwick, RI 02886
www.cnehomehealth.org

Lisa Scott
Ph: 401-737-6050
Fax: 401-732-6210
Email: scottl@kentri.org

Network Partners:

None

Project Purpose:

VNA of Care New England Point of Care Technology allows all home health staff involved in a single patient's care to use a notebook computer to carry an electronic copy of a patient's record into their home and then send updated information back to a common database, making it available in real-time to other field staff involved in the patient's care. Additionally, medication orders are automatically checked for potential drug interactions greatly enhancing patient safety.

Outcomes Expected:

- Ensure that the patient, all field staff involved in their care, and agency have access to needed clinical information when and where it is needed;
- Deliver cost-effective care;
- Ensure that patient needs are met in a timely and accurate manner;
- Minimize the chance for potential error; and
- Enhance overall patient safety.

Service Area:

Our service area is the entire state of Rhode Island.

Services Provided:

VNA of Care New England provides a comprehensive range of home healthcare services.

Equipment:

Fujitsu B-series Touch screen Notebook computers.

Transmission:

N/A

**Healthcare and Emergency Awareness Response for Telehealth (HEART)
Advanced Technology Institute (ATI)**

Advanced Technology Institute (ATI)
5300 International Blvd.
N. Charleston, SC 29418
Organization: <http://www.aticorp.org/hc.htm>
Project: <http://tdrt.aticorp.org>

Jack Corley
Ph: 843-760-3792
Fax: 843-207-5238
Email: corley@aticorp.org

Network Partners:

Center of Excellence for Rural and Minority Health (Voorhees College); Orangeburg Family Health Center (South Carolina Comprehensive Health Clinic); Healthcare Information and Management Systems Society (HIMSS); and Healthcare Outreach.

Project Purpose:

The Healthcare and Emergency Awareness Response for Telehealth (HEART) program will continue to provide the mechanisms to impartially evaluate the effectiveness and practical utility of telehealth technologies, providing both laboratory and “real-world” evaluations. The HEART program disseminates results to the user community, providing the guidelines and methods to simplify telehealth technology deployment and effective use. The focus is on the needs of rural and minority communities and the healthcare organizations that serve those communities in the areas of home health and telehealth distance learning.

Outcomes Expected:

Guidelines for effective use of telehealth technology for rural and underserved communities and the healthcare organizations that serve them. These guidelines will be published on the web. The success of these guidelines will be measured by the number of “hits” the web-site is given. Web-based mechanisms will be provided on the web-site to encourage questions, comments, and any other feedback. This input will also be examined.

Service Area:

U.S. rural and underserved communities and healthcare organizations that serve them.

Services Provided:

Evaluation of the effectiveness and practical utility of telehealth technologies, providing both laboratory and “real-world” settings for the evaluations.

Equipment:

Videoconference equipment from Sony, Tandberg, and Polycom. Home telehealth equipment as appropriate.

Transmission:

T1 and cable modem.

SOUTH CAROLINA

CMP FY 00, 02, 03

South Carolina Prostate Cancer/Telehealth Project Beaufort-Jaspert-Hampton Comprehensive Health Services

Beaufort-Jasper-Hampton Comprehensive Health Services
721 Okatie Highway 170
Ridgeland, SC 29936
<http://www.bjhchs.com>

Roland J. Gardner
Ph: 843-987-7400
Fax: 843-987-7484
Email: rjgardner1@hargray.com

Network Partners:

The Institute for Cancer Prevention, The Urology Group, Wirefree Network Services.

Project Purpose:

Bring translational research in prostate cancer from Institute for Cancer Prevention (IFCP) in New York City to rural, underserved men in the Beaufort-Jasper-Hampton Comprehensive Health Services (BJHCHS) service area in South Carolina to enhance the understanding of hormonal, nutritional, and lifestyle factors that increase the risk of prostate cancer in aging males.

Outcomes Expected:

Increase screening and education of men ages 20-89 to help identify those who may be at risk for prostate cancer. By collecting information from men in this age group, researchers in New York gain knowledge of risk factors for prostate cancer, and using the data collected, can initiate clinic trial interventions that will continue to expand the base of knowledge pertaining to prostate cancer.

Service Area:

The South Carolina Prostate Cancer/Telehealth Project will serve men ages 20-89 in Beaufort, Jasper, and Hampton counties.

Services Provided:

All eligible men receive an annual clinical prostate exam, including a digital rectal exam, blood analysis (PSA, Lipids, Testosterone), nutritional and lifestyle assessment, and ongoing lifestyle educational programs.

Equipment:

PolyCom Videoconferencing equipment including Polycom Viavideo, Dell servers, Cisco routers (2611, 3600).

Transmission:

Full T1, Internet, 128 bit encryption tunnel through Citrix Metaframe XP, VPN.

**SOUTH CAROLINA
ICU Telemedicine Project
Greenville Hospital System**

CMP FY 04

Greenville Hospital System
701 Grove Road
Greenville, SC 29605
<http://www.ghs.org/>

Howell Clyborne
Ph: 864-455-3434
Fax: 864-455-8439
Email: hclybourne@ghs.org

Network Partners:

N/A

Project Purpose:

An electronic ICU network enables clinical management of intensive care patients by physician intensivists and critical care nurses working from a central monitoring station. Physicians and nurses use real-time video and audio, electronic stethoscopes and advanced life-monitoring equipment to assess, treat; and monitor ICU patients at four Greenville Hospital System campuses. The network leverages the limited number of intensivists by expanding coverage from Greenville Memorial Hospital to three satellite hospitals. Quality of clinical process will be improved, variation in outcomes reduced, and costs reduced.

Outcomes Expected:

Equipment installed and working properly. May evaluate extension of standardized care processes to more patients, decreased ICU mortality, decreased length of stay in ICU and floor, and cost reduction from remaining ICU days.

Service Area:

10 counties in the Upstate area of South Carolina, including Anderson, Greenville, Laurens, Oconee, Pickens, Spartanburg counties.

Services Provided:

Comprehensive, integrated healthcare delivery.

Equipment:

Eight eICU eCareManager HIS/PACS workstations. 116 high-resolution video zoom cameras, microphones, speakers, and bedside monitors in patient rooms. Data Center of eVantage Production, Test Server Rack, and hospital HIS, ADT, Lab, and PACS systems.

Transmission:

Internet, ASP hosted source and VISICU VPN Access.

SOUTH DAKOTA

RTGP FY 94-96, RTGP FY 97-99, TNGP 03-05

Avera Rural and Frontier Disease Management Telehealth Network

Avera Health

Avera Rural Health Institute
610 W. 23rd Street
Yankton, SD 57078
<http://www.averahhealth.org>

Mary DeVany
Ph: 605-322-6038
Fax: 605-322-6006
Email: mary.devany@mckennan.org

Network Partners:

Avera Queen of Peace Hospital, Mitchell, SD (3 sites—Wessington Springs, Platte, Parkston); Avera St. Luke's Hospital, Aberdeen, SD (4 sites—1 specialty clinic, 3 SD sites in Eureka, Miller, Britton); Avera Sacred Heart Hospital, Yankton, SD (2 sites—1 hospital in O'Neill, NE, 1 local clinic); Avera McKennan Hospital, Sioux Falls, SD (5 receiving sites—Sioux Center, IA, Pipestone, MN, Scotland SD; 2 mental health centers in Luverne, MN and Pierre, SD; various specialty physician providers).

Project Purpose:

Develop a telehealth disease management program focusing in the areas of Congestive Heart Failure (CHF), Diabetes, Asthma/Allergy, Mental Health and Dermatology; expand currently available telehealth specialty services to additional regional sites indicating a need, specifically in the area of pediatrics (cardiology, neurology and infectious disease); expand availability of Certified Nurse Assistant (CNA) training; continue the expansion of distance education events to interested regional facilities; establish a network-wide telehealth "standard of practice".

Outcomes Expected:

1. Disease Management – a) CHF: compare admission/readmissions, improve patient education, improve quality of life (SF36); b) Diabetes: increase participation in appropriate diabetes management measures, compare hospitalizations, decrease hemoglobin A1C levels; c) Asthma/Allergy: compare emergency room visits, improve quality of life; d) Dermatology: increase access, improve provider efficiency; e) Mental Health: improve access; f) Pediatrics: (cardiology, neurology, infectious disease) – reduce patient travel, increase access and decrease diagnostic turn-around time; and g) Certified Nurses Assistant Training: increase access to state-required CNA training opportunities.

Service Area:

Includes 32 counties in: South Dakota (26), Iowa (1), Minnesota (2), and Nebraska (3) of which 21 counties are Primary Care HPSAs and 30 counties are Mental Health HPSAs.

Services Provided:

This network has been operational since December 1993 and has provided a variety of services over the years. This project will focus on Disease Management (CHF, Diabetes, Asthma/Allergy, Dermatology, Mental Health); Pediatrics (Cardiology, Neurology, Infectious Disease), and Certified Nurses Assistant training.

Equipment:

The interactive video portion utilizes various Polycom videoconferencing models, including iPower 9000, iPower 600, ViaVideos, and various Viewstation models. The home telehealth equipment being used is the American Telecare Inc., model 1010.

Transmission:

Most sites utilize either a converged or a fractional T1. In addition, some sites will continue to utilize ISDN lines. The video bridge allows for both network options and provides "cross-networks" connectivity. The telehomehealth piece may also incorporate POTS lines.

SOUTH DAKOTA

CMP FY 02

Reducing the Prevalence of Diabetes by Building a Bridge of Healing Cultures between Indigenous, Alternative and Western Healing Practices South Dakota State University Foundation

South Dakota State University Foundation
815 Medary Avenue
Box 525/SDSU
Brookings, SD 57006
<http://sdenterpriseinstitute.org> and <http://keyatracker.com>

Marcia Hendrickson
Ph: 605-697-7475
Fax: 605-697-5641
Email: marciah@sdei.org

Network Partners:

InteractiveTHINK, Sioux Falls, SD
Koerner Learning, Sioux Falls, SD
Yankton Sioux Tribe, Marty, SD
Sisseton-Wahpeton Sioux Tribe, Agency Village, SD
South Dakota State University, Brookings, SD
University of South Dakota School of Medicine, Vermillion, SD

Project Purpose:

An integrated disease prevention/management template for Native People was created, beginning with diabetes mellitus. Health summits were convened to increase the understanding of diabetes management from Western, Indigenous, Alternative Healing, and Tribal Health Educator perspectives. Resources and tools were created or modified to enhance the quality of life of Native People through collaborative work and a culturally based health care information database. The health care template provides resource materials and an internet-based Health Tracker database and communication tool to help Native Peoples, in partnership with healers, manage their ongoing health and build self care capacity.

Outcomes Expected:

Increased patient compliance, increased patient awareness of their health, decreased reliance on medications, increased communication between health care providers and patients, culturally sensitive care plans, improve clinical indicators, utilization and care satisfaction outcomes for Natives living with diabetes while sensitizing social support networks to the needs of diabetics and the mutual benefits of successful management to the whole community.

Service Area:

Two reservations in South Dakota.

Services Provided:

Web-based wellness tracking, develop better communication between various caregivers and their patients, culturally sensitive integrated care plans for diabetes, reproducible template for culturally-sensitive disease prevention/management.

Equipment:

InteractiveTHINK, Inc., software, PCs with internet connections.

Transmission:

Dial up modem, ISDN.

**Growing Our Own: A Nursing Education/Provider Partnership
The University of South Dakota (USD) - Vermillion**

University of South Dakota
Department of Nursing
414 E. Clark Street
Vermillion, SD 57069
<http://www.usd.edu/nursing>

Kathy Manning
Ph: 605-677-6224
Fax: 605-677-5886
Email: kmanning@usd.edu

Network Partners:

Evangelical Lutheran Good Samaritan Society (ELGSS) and USD Continuing Education department.

Project Purpose:

The University of South Dakota Department of Nursing will deliver nursing lecture and seminar content via the Internet with clinical experiences supervised by USD faculty hired from the local communities. The University of South Dakota Continuing Education department will deliver the general education coursework. This Nursing Education/Partnership will create a supportive, connected learning environment; enabling the student to “attend college” and earn an Associate of Science in nursing in a part-time format while employed by the partnering Evangelical Lutheran Good Samaritan Society.

Outcomes Expected:

The goal of the project is to utilize distance learning methods to train a supply of registered nurses (RNs) for long-term care agencies realizing a critical shortage of RNs. Beyond successful passage of the N-CLEX examinations for RNs, a number of evaluation methodologies are used to inform faculty about outcomes which focus on critical thinking, communication, therapeutic nursing interventions, completion/graduation rates, and program satisfaction.

Service Area:

Six states in Plains States Region, in communities with a population of 10,000 or less.

Services Provided:

Deliver pre-licensure nursing education to employees of the ELGSS.

Equipment:

Interactive, satellite-based Distance Learning Network (DLN), and Dakota DigitalNetwork (DDN), VTel LC-5000 videoconferencing system, WebCT software, Internet II.

Transmission:

T1, web-based, satellite (DLN) which utilizes Echostar 61.5 Mhz, and DDN that operates at a line speed of 768 bytes per second.

Mid-Appalachia Telehealth Project

University of Tennessee Graduate School of Medicine (Knoxville)

University of Tennessee Telehealth Network™ (UTTN)
1924 Alcoa Highway #70
Knoxville, TN 37923
<http://www.UTtelehealth.net>

Sam Burgiss, Ph.D.
Ph: 865-544-8059
Fax: 865-544-8975
Email: sburgiss@mc.utmck.edu

Network Partners:

Rural Education and Community Health Services (FQHC), Jacksboro, TN
Morgan County Medical Center (FQHC), Wartburg, TN
Mountain People's Health Councils (FQHC), Huntsville, TN
Ridgeview Psychiatric Hospital and Center, Oak Ridge, TN (provider)

Project Purpose:

Develop telehealth services in three underserved counties in the traditionally coal mining Appalachian region of Tennessee. Provide disease management services from county clinic nurses to asthmatic and diabetic patients. Asthmatic children in schools in each county will use peak flow meters daily and record data. County clinic nurses will have videoconferences with each student at least weekly. Nurses will have telephone assessments with each patient at least weekly. Clinic nurses will receive data transmitted by Type 2 diabetic patients in each county. Counseling will be provided to patients having black lung disease.

Outcomes Expected:

Pediatric asthmatic disease management – increase appropriate treatment with anti-inflammatory medication from typical level <70 percent to target level of >95 percent, and reduce lost school days per six weeks from typical two to <1. Diabetes disease management – reduce average HbA1C readings from typical >9 percent to <7 percent and increase patients having dilated eye exams from typical <30 percent to target of >70 percent. Black lung clinics – increase access of coal miners to black lung benefits and education.

Service Area:

Counties served are contiguous in Tennessee: Campbell (Jacksboro), low income HPSA, dental HPSA, and a full county MUA; Morgan (Wartburg), full county HPSA, dental HPSA, and a full county MUA; and Scott (Huntsville), low income HPSA, dental HPSA, and a low-income MUA. Ridgeview provides mental health services for all counties with huge waiting lists for services.

Services Provided:

UT Telehealth Network has been operational since September 1995 and is providing services in dermatology, rehabilitation medicine, pre-anesthesia evaluation, emergency mental health, home agency care, disease management in diabetes, congestive heart failure, and pediatric asthma; black lung benefits consultations; and practitioner and patient education.

Equipment:

At remote sites: 5 Polycom videoconferencing systems; 9 component POTS videoconferencing systems; 90 Roche Accu-Chek glucometers with modems; and 3 PCs. At UTTN office: Polycom and POTS CODEC, Polycom bridge, and server and network for data collection.

Transmission:

Full T1 lines between clinics and UTTN office (distance independent UT contract), POTS to homes and schools, ISDN to mental health provider and hospital, Internet and Internet2 for medical staff and patient education.

Telehealth for the Aging Population and for Diabetic Patients in Hispanic and Underserved Rural Communities
University of Tennessee Graduate School of Medicine (Knoxville)

University of Tennessee Telehealth Network™ (UTTN)
1924 Alcoa Highway #70
Knoxville, TN 37923
<http://www.UTtelehealth.net>

Sam Burgiss, Ph.D.
Ph: 865-544-8059
Fax: 865-544-8975
Email: sburgiss@mc.utmck.edu

Network Partners:

Putnam County Health Department (PCHD), Cookeville, TN
Monroe County Health Department (MCHD), Madisonville, TN

Project Purpose:

Demonstrate the value of using telehealth in providing care for vulnerable populations specifically rural and Hispanic communities and the aging population. A national educational conference will be held for health care professionals and providers of social services to older adults to showcase how telehealth technologies can help people age comfortable and safely in the place of their choosing. Diabetes education and care for patients (including Hispanic) will be provided in two additional underserved mountainous counties in Tennessee – Putnam and Monroe.

Outcomes Expected:

National educational conference – Educate providers about current telehealth technologies and how they can be deployed to improve quality of care. Diabetes disease management to Hispanic – Increase number of patients receiving HbA1C readings per year from <25 percent to target level of >90 percent, reduce average HbA1C reading from typical level of >9.0 percent to <7.0 percent. Diabetes education through audio-conferencing – Hold 12 monthly tele-support group meetings; do pre- and post-tests to determine knowledge gained through attendance at support group meetings.

Service Area:

Counties served are contiguous in Tennessee: Putnam County (Cookeville), Non-NSA; p-MUA (low income); HPSA (low income), Dental HPSA; Monroe County (Madisonville) Non-NSA; NUA; HPSA (low income); Dental HPSA.

Services Provided:

UT Telehealth Network has been operational since September 1995 and is providing services in dermatology, rehabilitation medicine, pre-anesthesia evaluation, emergency mental health, home agency care, disease management in diabetes, congestive heart failure, and pediatric asthma, and education. National Conference on Aging to be held in June 2005.

Equipment:

At remote sites: 2 Polycom videoconferencing systems, 2 component POTS videoconferencing systems, 15 Roche Accu-Chek glucometers with modems, 5 conference phones, and a PC. At UTTN office: Polycom and POTS CODECs, Polycom bridge, data server and network.

Transmission:

Full T-1 lines between clinics and UTTN office (distance independent UT contract), POTS to homes, Internet and Internet2 for medical staff and patient education.

TENNESSEE
Mid-South Telehealth Consortium
University of Tennessee, College of Medicine (Memphis)

RTGP FY 01-05

Mid South Telehealth Consortium
877 Madison Ave., 7th Fl.
Memphis, TN 38163
<http://www.utmem.edu/telemedicine>

Karen Fox
Ph: 901-448-5092
Fax: 901-448-8199
Email: kfox@utmem.edu

Network Partners:

Hub: UT Memphis

Spokes: Haywood Park Hospital, Brownsville, TN; UT Family Practice, Jackson, TN; McKenzie Regional Hospital, McKenzie, TN; Dyersburg Regional Hospital, Dyersburg, TN; Volunteer Hospital, Martin, TN.

Project Purpose:

Access – Increase the availability of a variety of adult and pediatric healthcare services for the residents of rural West Tennessee.

Isolation – Empower both rural and urban healthcare providers the ability to pursue and advance professional interactions.

Integrated Delivery System – Maximize the efficiency and effectiveness of all healthcare providers.

Community Education Networking – Partner with various healthcare organizations, government, and other entities to achieve a standard of consistently high quality healthcare to all residents in West Tennessee and throughout the State of Tennessee.

Evaluation – Ensure proper measurement tools are implemented and business strategies are reevaluated on a regular basis.

Outcomes Expected:

Measure:

- 1) Program Description (over time),
- 2) Need/Objectives of the program,
- 3) Impact of the program,
- 4) Sustainability of the program, and
- 5) How barriers/facilitators to program development affect sustainability.

Tool: Utilize both quantitative and qualitative data analysis methods to convert the data into useful information.

Service Area:

Twelve West Tennessee counties through five sites (four are HPSAs/MUAs).

Services Provided:

Asthma Management, Cardiology, Dermatology, Endocrinology, ENT, Mental Health, Neurology, Orthopedics, Pediatrics (General, ENT, Neurology, Orthopedics), Radiology, Urology.

Equipment:

Six Polycoms, six 27" Sony monitors, five hand-held cameras, five document cameras, five otoscopes and light sources.

Transmission:

T1 lines, Internet, ISDN, MCG Bridge.

TEXAS
Rural Specialty Health Telemedicine Initiative
Cook Children's Medical Center

CMP FY 03, 04

Cook Children's Medical Center (CCMC)
801 Seventh Avenue
Fort Worth, Texas 76104
<http://www.cookchildrens.org>

Steve Anderson
Ph: 682-885-7638
Fax: 682-885-1646
Email: stevea@cookchildrens.org

Network Partners:

Cook Children's Subspecialty Clinic in Abilene, Texas, is the single spoke partner.

Project Purpose:

To: 1) implement Rural Specialty Health Telemedicine as a pilot project utilizing genetics as the chosen pediatric specialty; and 2) implement a mechanism to provide Continuing Medical Education (CME) in CCMC's rural service area. Major project activities include equipment selection, acquisition, and installation; training project participants in the use of the equipment; and project implementation, including the provision of genetic services and distance learning opportunities, and the evaluation of those services and opportunities.

Outcomes Expected:

Telemedicine: 1) increased number of referrals by at least 20; 2) increased number of patient encounters by 60 percent; 3) decreased costs of care; 4) increased time efficiency of service delivery; 5) patient families will choose to utilize telemedicine services; (all of which can be measured via data analysis); and 6) patient families will be satisfied with telemedicine services (as measured by satisfaction survey).

Distance Learning: 1) health care providers in outlying areas will have increased access to educational opportunities and Pediatric Grand Rounds (project implementation provides the opportunity); 2) health care providers will utilize distance learning (measured by numbers of CMEs applied for); and 3) health care providers will be satisfied with distance learning services (as measured by satisfaction survey).

Service Area:

Telemedicine: the primary service area is Abilene, Texas, in Taylor County, serving one HPSA and two MUAs.

Distance Learning: overall service area is 110 counties in Texas, serving a total of 210 HPSAs and 139 MUAs.

Services Provided:

Telemedicine: direct patient clinical assessment, counseling, follow-up within the scope of Genetics, and videoconferencing for general medical consultation.

Distance Learning: videoconferencing for medical consultation and education and "anytime" access to pediatric-specific education. Overall project implementation is expected to begin in March 2004.

Equipment:

Router, View Station FX - H.3232, Monitors and Cart, Medlink Cart for VC, Telemedicine Peripherals, 5 Megapixel Camera, MiniDV Video Camera, MGC25 VC Bridge.

Transmission:

Fractional T1 up to 1.5 Mbps, ISDN up to 768kbps.

Diabetes Risk Reduction via Community-Based Telemedicine (DiRReCT)

University of Texas Health Science Center at San Antonio (UTHSCSA)

Division of Pediatric Endocrinology and Diabetes
7703 Floyd Curl Drive, MC 7806
San Antonio, TX 78229-3900
<http://www.pediatrics.uthscsa.edu/pediando>

Peggy M. Visio, MS, RD, LD
Ph: 210-567-5283
Fax: 210-567-0492
Email: visio@uthscsa.edu

Network Partners:

Rio Grande City Consolidated Independent School District (RGCCISD)
Community Action Council of South Texas (CACST)

Project Purpose:

The objective of this program is to implement a comprehensive diabetes screening program in the school system and then enroll children at high risk for type II diabetes into a treatment program. The children "at risk" are randomized into either a group that receives traditional treatment available in Rio Grande City or they are enrolled in a group receiving telemedicine consultations with a Pediatric Endocrinologist, Behavioral Therapist, and Pediatric Dietitian located at the University of Texas Health Science Center at San Antonio, 250 miles away.

Outcomes Expected:

The goal of this project is to determine if access to specialized therapy via telemedicine will affect measurable parameters such as weight, blood pressure, blood glucose, insulin levels and hemoglobin A1C levels.

Service Area:

The UTHSCSA/RGC Telehealth Network serves children in the Rio Grand City School District, which encompasses the communities of Rio Grande City, La Grulla and Graciasville, all located within Starr County. Starr County includes over 125 colonias: pockets of poverty with little access to adequate housing, employment, and health services.

Services Provided:

The UTHSCSA/RGC Telehealth Network will provide clinical telemedicine services and distance learning. The Pediatric Endocrinologists, Behavioral Therapists and Pediatric Dietitians will provide consultations to patients and families via interactive videoconferencing. Distance learning will take place when the healthcare team has quarterly patient care conferences to discuss the patient care plans.

Equipment:

The equipment at UTHSCSA is a VCON Monitor 1000 Desktop videoconferencing system with a Sony EV1-D31 tilt and zoom camera, a goose neck microphone, on a Dell PC with a wireless keyboard. Similar equipment is available at the CACST clinics.

Transmission:

Transmission is across T1 capacity lines at 384 bandwidth using H323 and H320 connections.

TEXAS**CMP FY 01, 02, 03, 04****Texas Telehealth Resource Center
University of Texas Medical Branch - Galveston**

Telehealth Center
301 University Blvd.
Galveston, TX 77555-1042
<http://www.utmb.edu/telehealth/>

Jeanette C. Hartshorn, RN, PhD, FAAN
Ph: 409-747-6290
Fax: 409-747-6249
Email: jhartsho@utmb.edu

Network Partners:

Rural hospitals, state universities, distance education programs, telemedicine services through agreements with counties, corporations, foundations, community mental health centers, assisted living communities, nursing homes, prison systems, and cruise lines.

Project Purpose:

To continue the development of the Texas Telehealth Resource Center (TTRC) by providing guidance, technical assistance, and training to others for the development of telehealth programs.

Outcomes Expected:

- (1) Increased use of TTR monitored by various measures of use (visits to website, questions, information services for telemedicine providers, etc); and
- (2) Patient satisfaction with telemedicine clinics-patient satisfaction survey.

Service Area:

Eastern and coastal Texas, state wide and world wide through various contracts. The Telehealth Center has contracts with Brazoria and Liberty counties to provide primary and specialty care. Brazoria County has nine MUAs and no HPSAs. The entire county of Liberty County has been designated as an MUA and as an HPSA.

Services Provided:

Telehealth assistance: shared resources, expertise, information, distance education, telemedicine services.

Equipment:

Two-hundred-fifty-six stations, some distance education and telemedicine stations with Polycom videoconferencing equipment with appropriate medical peripherals.

Transmission:

Connectivity: private IP network over dedicated T1 lines, which carry voice, data, and video.

Home Monitoring: Demonstration Pilot of Cost Control
Christus Visiting Nurse Association of Houston

Telemonitoring Program
Christus Visiting Nurse Association of Houston
2905 Sackett Street
Houston, TX 77098

Sandy McNeely, RN, MSN
Ph: 713-630-5579
Fax: 713-630-5510
Email: sandra.mcneely@christushealth.org

Network Partners:

The Methodist Hospital, community hospitals, cardiology, internal medicine, and family practice clinics.

Project Purpose:

Examine a model for seamless transition between hospitalization, home care, and self-management for patients with Congestive Heart Failure (CHF) utilizing home monitoring technology; determine whether health care costs in a 60-day period are lowered among CHF patients who are home monitored; demonstrate improvement of clinical outcomes, patient quality of life and patient satisfaction through daily home monitoring of vital signs of CHF patients. Additional project activities: Development of CHF home telecare clinical pathway, determination of telephone CHF intervention decision tree; and implementation of a telehealth continuing education program for clinicians involved with project.

Outcomes Expected:

Decreased ER visits, hospitalizations, length of stays (measure) – Generalized Linear Mixed Models (GLMM) analysis; telephone interventions successful (measure) - Trending data reports, descriptive analysis; increased quality of life (measure) - SF-36 Standard Tool, repeated measures of Analysis of Variance (ANOVA); high patient satisfaction (measure) – Visiting Nurse Association (VNA) Patient Satisfaction Survey.

Service Area:

Six southeastern Texas counties (Harris, Galveston, Liberty, Montgomery, Brazoria, Fort Bend) serving one Primary Medical HPSA, one Dental HPSA, three Mental Health HPSAs.

Services Provided:

Since September 2001, home vital sign monitoring for CHF management: daily remote collection and evaluation of clinical data, telephone intervention protocol at first symptom recognition, and telephone teaching program. Other services: diabetes, chronic disease management, respiratory, infectious diseases, assisted living centers, and Left Ventricular Assistive Device (LVAD) patients.

Equipment:

Seventy HomMed Sentry Observer System units, one Central Station Monitor with Intel Pentium 500 MHz processor.

Transmission:

Java application of Windows 95/98 NT platform using Oracle 8 database server; dual communication modes via wireless pager technology or standard phone lines.

Association for Utah Community Health Telehealth Program
Association for Utah Community Health

Association for Utah Community Health
2570 West 1700 South
Salt Lake City, UT 84104
<http://www.auch.org>

Ilan Hurvitz
Ph: 801-974-5522 ext. 29
Fax: 801-974-5563
Email: ilan@auch.org

Network Partners:

Association for Utah Community Health (AUCH) members including all Federally Qualified Community Health Centers in the State of Utah (seven urban and 12 rural/frontier sites), Utah Telehealth Network, Wire One Technology, Inc.

Project Purpose:

The AUCH Telehealth Program will supply resources for all Community Health Centers in Utah to provide telemedicine services in order to increase access to specialized clinical services currently unavailable. Furthermore, a videoconferencing network will be implemented to increase participation in support of training and technical assistance goals. Additionally, the telehealth program will support an expansion of online resources and digital tools to enhance training/technical assistance, and peer-to-peer mentoring interactions to strengthen existing health center operations. AUCH will also incorporate additional services to more fully realize the potential of its program in the areas of telehealth and distance learning as the program grows.

Outcomes Expected:

The AUCH telehealth program, including telemedicine services, videoconferencing, and online tools will be evaluated using the following criteria: (a) completion of tasks, (b) tracking of equipment utilization, (c) clients- served statistics, (d) reports on network provider partners, (f) identification of resources for expansion of telehealth program, (f) client satisfaction and follow up statistics, and (g) quantitative measure of usage.

Service Area:

The service area for the AUCH telehealth program will correspond to the service areas for each of its member sites. Those site's service areas include the counties of Box Elder, Cache, Rich, Weber, Salt Lake, Utah, Carbon, Emery, Iron, Washington, San Juan, and Wayne. All of the counties with existing sites have a HPSA designation, and all but Weber, Salt Lake, and Utah counties are designated as a MUA and MUP's.

Services Provided:

Services to be provided through the first phase ending in February, 2006 and the second phase ending in September 2007 of the project include: diabetes care and management, dermatology, mental health, pharmacy, radiology, and ophthalmology medical services. Additionally, videoconferencing and on-line tools, including a database driven website, will be completed by the end of phase one.

Equipment:

The AUCH telehealth program currently plans to leverage the following equipment for use: (a) Kowa retinal camera and associated software, (b) AMD teleradiology digitizer, (c) Polycom videoconferencing equipment, (d) videoconferencing bridge or bridging service, (d) off-site Web server, and (e) cisco router and firewall products.

Transmission:

The AUCH telehealth program will provide connectivity through T1 lines for each community health center provided by AT&T. Additionally, program staff will assist health centers with universal service refund application, where applicable.

Utah Telehealth Network Comprehensive Telehealth Services
University of Utah

Utah Telehealth Network
585 Komas Drive, Suite 204
Salt Lake City, UT 84108
<http://www.utahtelehealth.net>

Deb LaMarche
Ph: 801-587-6190
Fax: 801-585-7083
Email: deb.lamarche@utahtelehealth.net

Network Partners:

University of Utah Spencer S. Eccles Health Sciences Library, John A. Moran Eye Center, Utah Diabetes Center, Intermountain Spinal Cord Injury Program, Bear Lake Community Health Center, Garden City; Utah Navajo Health System, Montezuma Creek; San Juan Hospital, Monticello; Monument Valley Health Center; Gunnison Valley Hospital; Beaver Valley Hospital; South Davis Community Hospital; plus 17 UTN member hospitals and local health departments.

Project Purpose:

Upgrade network infrastructure to support expanding telehealth activity.
Implement telehealth services for diabetes management and diabetic retinopathy.
Implement remote spinal cord injury patient management.
Expand continuing education modalities and offerings.
Implement a planning process to provide remote access to centralized patient-related IT resources by rural hospitals.
Produce an updated business plan for long term financial stability.

Outcomes Expected:

Improved network management and staff efficiency—automated reporting via integrated database.
Patient/Provider and Education Participant Satisfaction—Likert surveys.
Quantify Patient Usage of Services Provided—OAT GPRA Performance Measures.
Quantify Education Participation—OAT GPRA Performance Measures.

Service Area:

Current project serves five counties (Rich, San Juan, Sanpete, Beaver, Davis) which include 4 full county HPSAs, 1 partial county HPSA, 3 full county MUAs, and 1 partial county MUP. Network serves 18 Utah counties, all of which are full or partial HPSAs.

Services Provided:

Dermatology; psychiatry (medication management); developmental disabilities; cardiology; infectious disease; orthopedics; pediatric orthopedics; acute stroke intervention; burn; pharmacy; radiology; continuing education and training; nursing oncology doctoral program; bioterrorism preparedness; diabetes services (2005); spinal cord injury patient management (2005).

Equipment:

Accord MGC100 bridge, Polycom Viewstations, VS 4000 and VSX7000 videoconferencing systems; Polycom Via Videos desktop videoconferencing units; Madge multiplexer; Cisco routers; HP Procurve switches; Netscreen firewalls; Pyxis pharmacy dispensing system.

Transmission:

Dedicated T1 lines and T1 frame relay, DS3s, ISDN PRI, DSL.

Community Health Center Technology Upgrade
The Community Health Center of Burlington

The Community Health Center
617 Riverside Avenue
Burlington, VT 05401

Peter Brown
Ph: 802-864-6309 ext. 198
Fax: 802-860-4325
Email: pbrown@chcb.org

Network Partners:

Fletcher Allen Health Care, Champlain Valley Area Health Education Centers.

Project Purpose:

CHCB will completely upgrade all technology infrastructure including patient management systems software, and add electronic medical records and real time connections to three satellite sites. Project improves quality assurance capacity, allows for the addition of oral health services, reduces potential for medical errors, and supports growth in numbers of patients seeking care from Chittenden County's only Federally Qualified Health Center.

Outcomes Expected:

Improved scheduling and patient access to providers.
Enhanced chronic disease management capability and follow-up care.
Streamlined billing functions with electronic submissions.
Improved accuracy of data reports as system moves from manual data entry to automated, immediate, real time access to electronic medical records at all sites.
Measurement tools include Patient Satisfaction Tools, Uniform Data System Reports.

Service Area:

Chittenden County and the Medically Underserved Area (MUA) of Burlington and Winooski Cities.

Services Provided:

Primary health care and human services program, behavioral health services.
Dental services (implemented January 2004).

Equipment:

Dell 2650 and 6650 servers. New medical and dental practice management software systems including Electronic Medical Records.

Transmission:

Gigabit Ethernet WAN via fiber network to remote sites including lab services at Fletcher Allen Health Care. T1 speed Internet access via fiber network.

University of Vermont College of Medicine
89 Beaumont Avenue
Burlington, VT 05401
www.fahc.org/telemedicine

Michael P. Caputo, M.S.
Ph: 802-656-9658
Fax: 802-656-4800
Email: Michael.Caputo@uvm.edu

Network Partners:

This project expands the University of VT/Fletcher Allen Health Care Teletrauma network, which currently includes the hub site of Fletcher Allen Health Care, Burlington, VT, two VT spoke hospitals in Middlebury and Rutland, and five NY rural spoke hospitals in Massena, Malone, Canton-Potsdam, Saranac Lake, and Ticonderoga. This project will add two additional spoke hospitals in Morrisville and St. Albans, VT.

Project Purpose:

Although only one third of the population of the United States resides in rural areas, over one half (56.9 percent) of deaths due to motor vehicle accidents (MVA) occur in rural areas. Both adults *and* children in rural communities die at nearly twice the rate of their urban counterparts from MVAs, homicides, falls, and suicides. This is partially due to discrepancies in access to care at specialized trauma centers. Using a two-way interactive video telemedicine link between our Level 1 trauma center, trauma surgeons' homes and 8 rural hospital EDs, our goal is to reduce disparities in clinical trauma care and medical education by 1) providing 24-hour access to trauma center specialty surgeons and connection to the pediatric intensivist and 2) educating rural ambulance personnel and doctors, who have a low volume of trauma and limited access to trauma education opportunities.

Outcomes Expected:

Compare the impact of teletrauma upon survival, complications, length of stay and injury severity of a teletrauma vs. general trauma population using data from the FAHC Trauma Registry and from the Teletrauma Evaluation Form. This form collects data on patient's injuries, mechanism of injury, vital signs, questions from the rural provider and advice from trauma surgeon, as well as data using a Likert-type scale to measure trauma surgeon's perception of improved quality of care, quality of video and audio equipment ease of use, and quality of communication between the consulting physicians. The Trauma Registry includes variables such as injury time, injury severity score, arrival/discharge times, complications, discharge disposition. It is expected that the use of this system will reduce time to transfer and improve outcomes.

Service Area:

The teletrauma network services four counties in Vermont and three non-MSA or rural counties in northeastern New York. All but one of these areas have designated partial HPSAs and partial MUAs.

Services Provided:

We provide teleconsults for trauma/emergency (24/7), surgical follow-up, psychiatry, and dermatology services. We provide Continuing Medical Education to network providers and distance education to EMS personnel in our network. Also provide contractual services to prisons and a private company in NY.

Equipment:

Polycom Viewstation 512 and Polycom VSX 7000 videoconferencing units.

Transmission:

ISDN 3-BRI up to 384 kbps. Working toward use of IP.

VERMONT
The Vermont Tele-Trauma Project
The University of Vermont (UVM)

CMP FY 02, 04

University of Vermont College of Medicine
86 Beaumont Avenue, Given D-104c
Burlington, VT 05405
www.fahc.org/telemedicine

Michael P. Caputo, M.S.
Ph: 802-656-9658
Fax: 802-656-4800
Michael.Caputo@uvm.edu

Network Partners:

Fletcher Allen Health Care, Burlington, VT, with two VT rural spoke hospitals in Middlebury and Rutland and five NY rural spoke hospitals in Massena, Malone, Canton-Potsdam, Saranac Lake and Ticonderoga

Project Purpose:

Victims of trauma in rural regions like Vermont and Northeastern NY State die at higher rates than their urban counterparts because of discrepancies in access to care at specialized trauma centers. Using a 2-way interactive video telemedicine link between our Level 1 trauma center, trauma surgeons' homes and eight rural hospital EDs, our goal is to reduce disparities in clinical trauma care and medical education by 1) providing 24-hour access to trauma center specialty surgeons and 2) educating rural ambulance personnel and doctors, who have a low volume of trauma and limited access to trauma education opportunities.

Outcomes Expected:

Compare the impact of teletrauma upon survival, complications, length of stay and injury severity of a teletrauma vs. general trauma population using data from the FAHC Trauma Registry and from the Teletrauma Evaluation Form. This form collects data on patient's injuries, mechanism of injury, vital signs, questions from the rural provider and advice from trauma surgeon, as well as data using a Likert-type scale to measure trauma surgeon's perception of improved quality of care, quality of video and audio equipment ease of use, and quality of communication between the consulting physicians. The Trauma Registry includes variables such as injury time, injury severity score, arrival/discharge times, complications, discharge disposition.

Service Area:

The UVM College of Medicine /Fletcher Allen teletrauma network services three counties in the state of Vermont and three non-MSA or rural counties in northeastern New York. All of these areas are designated as partial HPSAs and partial MUAs.

Services Provided:

We provide teleconsults in the areas of 24/7 trauma/emergency, surgical follow-up, mental health/psychiatry, and dermatology services. We provide distance education to EMS personnel in our network.

Equipment:

Polycom Viewstation 512 and Polycom VSX 7000 videoconferencing units.

Transmission:

ISDN 3-BRI up to 384 kbps, working towards use of IP.

University of Virginia
1214 Lee Street
Charlottesville, VA 22908
<http://www.telemed.virginia.edu>

Karen S. Rheuban, M.D.
Ph. 434-924-5470
Fax: 434-924-5747
Email: KSR5G@VIRGINIA.EDU

Network Partners:

Augusta Medical Center, Rockingham Memorial Hospital, Stonewall Jackson Medical Center.

Project Purpose:

The purpose of this project is to expand an existing 48 site Telehealth network in Virginia to expand access to specialty care and interactive health-related distance learning to the citizens and health professionals served by three additional community hospitals in the Commonwealth of Virginia. The hospitals identified are located in Central Virginia and serve a population of more than 258,763 citizens. The hospitals also serve patients from surrounding counties; which are medically underserved (Page, Bath, Highland, and Alleghany).

Outcomes Expected:

Outcomes: Increased utilization of specialty services; increased referrals by regional providers; decreased patient transfers out of primary medical community.

Tools: Medical Center/Physician practice plan referring data (pre-post telemedicine in community; Patient satisfaction survey (per Health Evaluation Sciences); provider satisfaction survey (per Health Evaluation Sciences).

Service Area:

Seven counties in central, west, and southwest Virginia (pop 258,763): Augusta, Rockingham, Rockbridge, Bath, Page, Highland, and Alleghany.

Services Provided:

Cardiology; Dermatology, Endocrinology; Ear/Nose/Throat; Emergency, Gastroenterology, Genetic Counseling, Geriatrics, Gynecology, Hematology, Infectious Disease, Nephrology, Neurology, Neurosurgery, Nutrition, Oncology, Ophthalmology, Orthopedics, Pain Management, Pediatrics, Pediatric Cardiology, Psychiatry; Pulmonary, Plastic Surgery, Retinopathy, Rheumatology, Surgery, Thoracic Cardiovascular, Transplant, Urology, and Wound Care.

Equipment:

Polycom and Tandberg Videoconferencing units with peripherals, electronic stethoscope, camcorder, document camera computer with TV/Monitor.

Transmission:

ATM, T-1, ISDN, Internet using our own VTC Bridge.

WASHINGTON

CMP FY 00, 01, 02, 03

Children's Health Access Regional Telemedicine (CHART) Program Children's Hospital & Regional Medical Center - Seattle

Children's Hospital & Regional Medical Center
4800 Sand Point Way NE
PO Box 5371/Mail Stop 3G-3
Seattle, WA 98105-0371

Sandy Melzer, MD
Project Director
Ph: 206-987-2622
Fax: 206-987-5022

Email: sandy.melzer@seattlechildrens.org

Network Partners:

Spoke sites include rural and community hospitals, regional outpatient specialty clinics, a pediatric clinic, a juvenile detention facility, and related children's services.

Project Purpose:

The purpose of the project is to improve the health of children with chronic conditions who reside in rural and underserved areas of the Pacific Northwest. This will be accomplished primarily through use of telemedicine technology to provide effective and timely access between community-based providers, patients and their families who are in need of pediatric specialty services, and pediatric specialty providers at Children's. The CHART Program also supports continuing medical education, health education for parents, and care coordination efforts among professionals and families.

Outcomes Expected:

The Project will improve access to pediatric specialty care in rural and under-served areas of the Pacific Northwest; promote coordinated care through clinical partnerships that enhance care for children with chronic conditions; provide continuing health education to health care professionals and health education sessions to parents of children with chronic conditions; and work toward Program sustainability. Parent and provider satisfaction questionnaires are used to evaluate telemedicine services. Program growth and service need statistics are documented.

Service Area:

The CHART Program uses a telemedicine and video teleconferencing network to link Children's with 11 regional spokes—in Alaska, at Anchorage; in Washington, at Wenatchee, Olympia, Yakima, Naselle, Aberdeen, Longview, Bellingham, Kennewick, and Spokane; in Montana, at Missoula; and, in Idaho, at Boise.

Services Provided:

Clinical pediatric specialty services include pulmonary, dermatology, endocrinology, neurology and neuro-developmental follow-up services, mental health (including child psychiatry and psychology), echocardiography, and distance learning (including case conferences).

Equipment:

Two Polycom FX and 11 MP units, digital cameras, document cameras, LCD projectors with laptop PCs, electronic stethoscope, and a Woods light for dermatology.

Transmission:

Clinical video teleconferencing occurs with three ISDN lines. Two of the systems have four ISDN lines.

WASHINGTON
Northwest Telehealth
Inland Northwest Health Services

CMP FY 04

Inland Northwest Health Services
157 S. Howard, Suite 500
Spokane, WA 99201
www.inhs.org
www.nwtelehealth.org

Janet Constable
Ph: 509-999-2236
Fax: 509-443-6226
Email: constaj@inhs.org

Network Partners:

Northwest Telehealth's network includes 49 sites. The OAT funded project includes the following sites: Sacred Heart Medical Center, Pullman Memorial Hospital, Mid Valley Hospital, Newport Community Hospital, and Forks Community Hospital.

Project Purpose:

1) To develop a Telepharmacy model that utilizes existing technology to provide quality 24-hour pharmacy services with reasonable cost limits to rural health care settings; 2) enhance rural, underserved communities' safety and well-being by reducing the number of medication errors; 3) address the growing health professional shortage of pharmacists through the use of Telepharmacy; and 4) utilize shared information to drive performance improvement regarding rural pharmacy services.

Outcomes Expected:

1) Rural Hospitals will have continuous pharmacy oversight. 2) Rural hospitals without full time pharmacist coverage will be compliant with the Washington State Board of Pharmacy's policies; 3) Increased trust in the medication administration process used in the community's health care settings; 4) Reduced number of Adverse Drug Events (ADEs); 5) Reduced health care dollars being spent as a result of preventable events; 6) The location of a pharmacist will become less significant; 7) Improvement of all Telepharmacy hospitals' medication administration process; 8) The development of common policies, procedures and formularies; and 9) Telepharmacy program demonstrates cost savings, administrative efficiencies, and increased patient safety.

Service Area:

Serving 49 sites within Washington State and Northern Idaho, including 22 counties, 27 HPSAs, and 49 MUAs.

Services Provided:

Telemedicine, Distance Learning, Patient Education, Health Information Services, and Telepharmacy.

Equipment:

Polycom FX VCU; Polycom VS4000, Polycom ViaVide, Desktop VCU, PyxicConnect Automatic Dispensing Systems for Telepharmacy.

Transmission:

TeleHealth is a private (full) T1 network with a videoconferencing bridge (Polycom/Accord 100).

WEST VIRGINIA**CMP FY 04****Physician Education, Community Outreach Program to Prevent Diversion of
Prescription Drugs
Appalachian Pain Foundation**

Appalachian Pain Foundation
Post Office Box 3312
Charleston, WV 25333
<http://www.paincentral.com>

Joanna Reed
Ph: 304-342-6970
Fax: 304-342-6973
Email: joanna@maplecreative.com

Network Partners:

Purdue Pharma
Novartis Pharma
Medtronic Neurological
American Osteopathic Medicine Association

Project Purpose:

To develop a curriculum for a pain management course to be taught in medical centers throughout the region. In addition, the APF is developing education initiatives, management forums, information web sites and meeting with law enforcement, industry, physicians, clinicians, and community leaders to address this issue.

Outcomes Expected:

Grow the dues-paying APF membership to self-sustaining levels; validate APF as a regional resource for clinical and administrative dialogue on appropriate and outcome supported pain management; represent to legislation generators, administrators and enforcers the importance of reasonable, rational and responsible assessment and management of chronic pain; create a Board of Advisors from broad interdisciplinary and administrative backgrounds to promote balance and reality-tested goals and activities of APF.

Service Area:

Primary service area includes West Virginia and the Appalachian region; however, using a telephone and the Internet, patients and providers can be located in almost any region.

Services Provided:

The services provided in this project include developing a comprehensive educational curriculum designed to educate the general public and various sectors of our communities about effective pain management and the dangers of the abuse of prescription medication.

Equipment:

Server for web hosting and recording keeping.
Distance learning video and audio processing equipment.

Transmission:

Home based teleconference, Internet, Instant Messaging, Network/Pods.

WEST VIRGINIA

CMP FY 02

**West Virginia Community Mental Telehealth Project
West Virginia Research Corporation**

School of Medicine/Mountaineer Doctor TeleVision (MDTV)
Robert C. Byrd Health Science Center
PO Box 9081
Morgantown, WV 26501
<http://wvthenet.hsc.wvu.edu>

Christopher Budig
Phone: 304-293-6945
Fax: 304-293-8565
Email: cbudig@hsc.wvu.edu

Network Partners:

N/A

Project Purpose:

To develop a link between West Virginia University and the community mental health care centers throughout the state of West Virginia to assist in the managed care of their patients.

Outcomes Expected:

By cutting down on travel times, the mental health care centers would save resources that could be used in other operations to make them better suited for self sufficiency.

Service Area:

Thirty-two counties in the State of West Virginia servicing 41 Community Mental Health Centers.

Services Provided:

Telepsychiatry Consultations.

Equipment:

Frame Relay 768 kbps.

Transmission:

Internet Protocols (IP).

Virtual Population Health Centers in the Rural Midwest
La Crosse Medical Health Science Consortium

La Crosse Medical Health Science Consortium
1300 Badger Street, Suite 3065
La Crosse, WI, 54601
<http://www.uwlax.edu/lmhsc>

John N. Katrana
Ph: 608-785-5150
Fax: 608-785-5154
Email: katrana.john@uwlax.edu

Network Partners:

Gundersen Lutheran Medical System, Western Wisconsin Technical College, Viterbo University, Franciscan Skemp Healthcare/Mayo Health System, University of Wisconsin—La Crosse, Black River Falls Memorial Hospital, Tomah Memorial Hospital, Hess Memorial Hospital, Vernon Memorial Hospital, Prairie du Chien Memorial Hospital, Rural Wisconsin Health Cooperative, Ho Chunk Health Care Center—Black River Falls and Ho Chunk House of Wellness—Baraboo; Reedsburg Area Medical Center, Reedsburg.

Project Purpose:

Develop distance education partnerships among the Consortium's educational institutions, rural hospitals, and clinics. Focus is on delivery through interactive two-way video and web-based health programs for health professions education as well as professional development.

Outcomes Expected:

Project outcomes focus on: (1) degree to which the project is able to address shortages in allied health personnel in the region; and (2) the professional development and continuing education needs of health professionals throughout the region. Measurement is by the quantification of attendance at/or participation in the respective programs.

Service Area:

Counties in which network participants are located include: Jackson, Monroe, LaCrosse, Vernon, Crawford, Sauk, and Juneau counties.

Services Provided:

Credit Courses, noncredit and CEU courses, certificate programs and special workshops for nursing and allied health professionals and students pursuing health careers; in addition, nursing lectureships.

Equipment:

Teaching Station with AMX room control that controls the video projector, visualizer, audio, and computer. Classrooms and lecture halls in the Health Science Center (opened 2000) were designed specifically for distance education.

Transmission:

In designated rooms there is access to ISDN, Video Over IP, DS-3 connections. Polycom Viewstation Bridge allows to connect multiple locations simultaneously. For line Interconnections, T1 is used.

**Marshfield Clinic TeleHealth Network
Marshfield Clinic TeleHealth Network**

Marshfield Clinic TeleHealth Network
1000 N. Oak Avenue
Marshfield, WI 54449
<http://www.marshfieldclinic.org/telehealth>

Nina M. Antoniotti, RN, MBA, Ph.D.
Ph: 715-389-3694
Fax: 715-387-5240
E-mail: antoniotti.nina@marshfieldclinic.org

Network Partners:

Fifteen Physician Offices, four Dental Offices, two Skilled Nursing Facilities, one School, one County Jail, one Geriatric Education Center, one University School of Dentistry, three Food Manufacturers, one Indian Health Center.

Project Purpose:

Provide preventative dental and health services, dental and health case management, and public health services to address the needs of people with chronic conditions such as Diabetes in a variety of settings including the home, rural health clinics, and Native American health centers. Distance education will also be provided for health care professionals, patients, and their families in conjunction with the clinical services provided.

Outcomes Expected:

To increase the number of children and elderly who have access to dental services and participating in sealant programs by age six and 10; to provide preventative dental care or early oral health detection for residents of nursing homes; to decrease the delay in receiving timely retinal screening in high-risk populations; to increase the detection rate of hidden diabetic retinal damage in asymptomatic diabetic populations; to increase educational opportunities for communities in the areas of food safety; to increase access to timely referrals for suspected food contamination illnesses; to decrease the incidence of food contamination; to increase the safety of food production; and to control the impact of food contamination by intrinsic, secondary, or intentional threat.

Service Area:

Rural and underserved areas in North Central Wisconsin; 8.7 percent of the population lives below the poverty level; 15 percent are disabled; 9.6 percent are a designated dental Health Professional Shortage Area (HPSA). The majority of the counties to be served are partial primary care HPSAs.

Services Provided:

Dermatology, Psychiatry, Child Psychiatry, Psychotherapy, Oncology, Cardiology, Speech Pathology, Nutrition—Diabetes Management, Nutrition—all others, Diabetes Management, Endocrinology, Burn Care, Neurology, Pulmonary Medicine, Plastic Surgery, Long Term Care, School TeleHealth, BACH, Cancer, Prostate, and Chronic Pain Support Group, Research Oncology, Home TeleHealth, Parkinson Clinic, EAP, Infectious Diseases, Occupational Medicine, Wound Therapy, ADHD Parenting Class, Anticoagulation Management, Nurse Triage, and Diabetes and Asthma Care Management, Pain Management, Food Safety, TelePathology, Palliative Care, Dentistry, Remote Monitoring.

Equipment:

Polycom network for patient sites and VCON products on the PC for providers. AMD patient peripherals, patient exam cameras = commercially available high-end video camcorders.
Standard TV monitors/video switchers in exam rooms. Video bridge—ACCORD.

Transmission:

IP video at 512 kbps over proprietary lines, IP video at 384 kbps over proprietary lines,
ISDN video at 384 kbps over leased lines.

**WISCONSIN
RWHC/WPHCA Telehealth Initiative
Rural Wisconsin Health Cooperative**

CMP FY 04

Rural Wisconsin Health Cooperative (RWHC)
880 Independence Lane, P.O.B. 490
Sauk City, WI 53583
www.rwhc.com

Tim Size
Ph: 608-643-2343
Fax: 608-643-4936
Email: timsiz@rwhc.com

Network Partners:

Rural Wisconsin Health Cooperative
Wisconsin Primary Health Care Association

Project Purpose:

To help rural communities build the necessary human, technical; and financial infrastructure to develop sustainable telehealth/telemedicine programs. Establish a videoconferencing network that will connect multiple sites, thereby enabling rural hospitals and clinics to access a wide range of telehealth services. Within a year, the participating hospitals/clinics will be linked by a robust state-of-the-art videoconferencing system and have a workable plan for developing shared teleradiology/PACS services. Assess the participants' readiness for teleradiology and develop an implementation plan for a shared picture archiving and communications system (PACS).

Outcomes Expected:

Improve compliance and outcomes involving patients with chronic conditions through teleradiology, education and remote consultation with specialists, thereby reducing inappropriate clinic visits and hospital readmissions by 10 percent. Onsite telehealth coordinators will collect data relating to: costs, utilization, outcomes, and patient/provider satisfaction. With guidance from RWHC staff members with experience in clinical/financial performance measurement, the telehealth coordinators will design and implement a survey that will track the selected measures.

Service Area:

Three community health clinics (WPHCA members) and nine rural hospitals (RWHC members) provide enhanced primary care to over 625,000 residents in a 26-county region covering south-central Wisconsin. Most/all encompass HPSAs and MUAs.

Services Provided:

Services provided include: videoconferencing, distance learning, remote consultation with medical specialists, and teleradiology services that will include a shared PACS system.

Equipment:

Each of the participating sites will receive a Polycom H.323 Viewstation (videoconferencing system) with a 32" monitor and cart.

Transmission:

The network features frame-relay ports for dedicated T1 access, VPN options, videostreaming, and sub-network integration. The network also provides a video bridge for multi-point videoconferencing.

Affinity/UW Telemedicine Project
St. Elizabeth Hospital Community Foundation

St. Elizabeth Hospital Community Foundation
1506 South Oneida St
Appleton, WI 54915-1397
<http://www.affinityhealth.org>

Ann Byrne
Ph: 920-730-2650
Fax: 920-730-2665
Email: abyrne@affinityhealth.org

Network Partners:

Affinity Health System
University of Wisconsin Health

Project Purpose:

To broaden the population of pediatric patients served in the Fox River Valley. The first objective is to purchase peripheral attachments for patient exams in Appleton. The second objective is to purchase the basic receiving components for Madison. Provide training and education for physicians and staff on the use of the equipment and determination of the appropriate patient population to receive services through telemedicine.

Outcomes Expected:

By the end of the project grant period, St. Elizabeth Hospital will have purchased and installed the peripheral equipment, base unit, and conducted the training necessary to add 7-10 more pediatric sub-specialists to the telemedicine program. Patient satisfaction: at least 90 percent for all telemedicine encounters. Measurement tools used: Patient satisfaction survey, developed for project, completed implementation timeline and OAT Performance Measurement tool.

Service Area:

Predominantly Calumet, Outagamie and Winnebago counties. In addition, the project serves patients from Northeastern Wisconsin and the Upper Peninsula of Michigan.

Services Provided:

St. Elizabeth Hospital provides a pediatric endocrinology telemedicine clinic for stable endocrine patients, which was initiated in July 2002. Pediatric sub-specialty clinics will be increased by 7-10 by the end of the project.

Equipment:

One Tandberg 500213 HCSIII-6000 videoconferencing system. AMD peripheral attachments including stethoscope, otoscope, ophthalmoscope, and hand-held camera.

Transmission:

Three ISDN BRI lines, with each line operating at 115 kbps - for a total of up to 384 kbps.

**Wyoming Network for Telehealth (WyNETTE)
Wyoming Department of Health**

Office of Telemedicine
Wyoming Department of Health
211 West 19th Street, Suite 120
Cheyenne WY 82001
<http://wdh.state.wy.us>

Fran Cadez, JD, MBA
Ph: 307-638-4515
Fax: 307-638-4612
E-mail: fcadez@state.wy.us

Network Partners:

Center for Rural Health Research and Education, University of Wyoming, Laramie, WY
Institute for Rural Health, Idaho State University, Pocatello, ID
Other community partners and locations to be determined.

Project Purpose:

The Wyoming Network for Telehealth (WyNETTE) will improve access to, and quality of, Wyoming's health care through the application of technology. The project will take a three-pronged approach: (a) increasing care opportunities through telemedicine; (b) increasing the number, types, and skills of health professionals through distance delivery of health care education; and (c) increasing access to information that will support direct care and the administration of care through informatics. The project aims to improve the climate for the integration of health care and technology through pilot projects and demonstration grants.

Outcomes Expected:

WyNETTE will increase the use of telemedicine, distance education, and informatics among health-care practitioners in Wyoming. Data on these items, as well as evaluation of the access to services and quality of care, will be gathered through onsite interviews with community partners to be added as the project progresses, collection of data on variables to be determined by an advisory committee, and project-wide planning/implementation/evaluation data collected automatically through the point of service. Three representative sites will be selected for monitoring of patient health status and quality of care through implicit and explicit review of processes and outcomes.

Service Area:

The entire State of Wyoming (23 counties) will be served by this project. Eighteen of these counties are designated as single county HPSAs or contain service areas designated as HPSAs. Three additional counties contain designated MUAs as well. All 23 counties are designated as mental health PSAs. Pilot projects will be selected to represent a variety of geographic and demographic locations.

Services Provided:

No services are currently implemented as the project is just beginning. Anticipated services include a Web portal for informatics applications and store-and-forward telemedicine applications, clinical care consultation and conferences, access to digital libraries, online/videoconferencing for continuing education, and legal and policy resources and information.

Equipment:

To be determined by applications and locations.

Transmission:

To be determined by applications and locations.

WYOMING
Distance Learning in Wyoming
United Medical Center

CMP FY 04

United Medical Center
214 E. 23th Street
Cheyenne, WY 82009
<http://www.umcwy.info/>

Jim Cussins
Ph: 307-633-3017
Fax: 307-633-3018
Contact Person Jcussins@umcwy.org

Network Partners:

Pickens Technical Institute.

Project Purpose:

- To establish a Tele Health link between Cheyenne and Aurora for increased educational and more efficient method for training nursing and clinical staff.
- Expand educational offerings to surrounding rural areas.
- To establish a Tele Health center for future expansion of healthcare.

Outcomes Expected:

- Increased number of well educated healthcare workers available.
- Stabilize the “grow your own” program.
- Decrease cost associated with distance learning.
- Increase in community educational offerings.
- Increased patient safety.
- Increased staff satisfaction thus decreasing staff turnover.

Service Area:

The primary service area is Laramie County, Wyoming. However, our offerings will be able to service all of rural Wyoming, primarily focusing on the southeast corner.

Services Provided:

The current service will provide a link with Pickens starting in January 2005 for nursing students. Future services offered in late spring will be continuing education for Medical Staff and Nursing staff for those who want to attend.

Equipment:

- This hardware is made by PolyCom and is a Viewstation FX H.323 system configuration.

Transmission:

- We are using the h.323 standards to transmit on a point to point dedicated T1 communication line from Qwest.

Acronyms And Glossary

Acronyms

ADSL	Asymmetrical Digital Subscriber Line
ATM	Asynchronous Transfer Mode
BRI	Basic Rate Interface
CATV	Cable television
Dental HPSA	Dental Health Professional(s) Shortage Area
DSL	Digital Subscriber Line
DDN	Defense Data Network
DS	Digital telecommunications channels
Gbps	Gigabits per second
HF	High frequency
HPSA	Health Professional(s) Shortage Area
IP	Internet Protocol
ISDN	Integrated Services Digital Network
K	Kilo
Kbps	Kilobits per second
LAN	Local Area Network
MAN	Metropolitan Area Network
Mb	Megabyte
Mbps	Megabits per second
MCU	Multipoint control unit
MHPSA	Mental Health Professional(s) Shortage Area
Mhz	Megahertz
MUA	Medically Underserved Areas
MW	Microwave
OC	Optical Carrier
PACS	Picture Archiving and Communications System
POTS	Plain Old Telephone Service
PRI	Primary Rate Interface
TCP/IP	Transmission Control Protocol/Internet Protocol
VLAN	Virtual local area network
VPN	Virtual Private Network
VTC	Video teleconference (ing)
WAN	Wide Area Network
WWW	World Wide Web

Glossary

Analog

An analog (US analog) signal is electrical and varies constantly in voltage, unlike a digital signal which varies between two constant values, usually denoted as 0 and 1. The value of the analog signal varies all the time during transmission, whereas a digital signal changes only between two set values without intermediate variations.

Asymmetrical Digital Subscriber Line (ADSL)

Refers to a pair of modems connected by a copper line that yields asymmetrical transmission of data.

Asynchronous Transfer Mode (ATM)

A way of transmission where a start signal precedes individual characters and one or more stop signals follow it. Due to this start/stop system, delays may occur between characters. Also denotes the complete system of protocols and equipment associated with cell based communications network. These networks have the ability to transmit voice, data, and video traffic simultaneously using a statistical multiplexing scheme. This type of switching is expected to bridge the gap between packet and circuit switching. ATM uses packets referred to as cells that are designed to switch cells so rapidly that there is no perceptible delay.

Audio-teleconferencing

Two-way electronic voice communication between two or more people at separate locations.

Backbone

The high-traffic-density connectivity portion of any communications network. In packet-switched networks, a primary forward-direction path traced sequentially through two or more major relay or switching stations. *Note:* In packet-switched networks, a backbone consists primarily of switches and interswitch trunks.

Bandwidth

Measures the ability of a communications channel to carry information. The capacity of information increases relative to a higher megahertz (cycles per second) in an analog transmission, and in megabits/second (Mbps) for digital transmission.

Basic Rate Interface (BRI)

An ITU-T Integrated Services Digital Network (ISDN) multipurpose user interface standard that denotes the capability of simultaneous voice and data services provided over two clear 64-kb/s channels and one clear 16-kb/s channel (2B+D) access arrangement to each user location.

Bit

Binary digit, the smallest possible unit of information making up a character or a word in digital code processed by computers.

Bridge

Device connecting two separate networks at the OSI Data Link Layer (Level Two Media Access Control Layer). Once bridging is accomplished, the bridge makes interconnected LANs look like a single LAN, passing data between the networks and filtering local traffic. There are two key classifications of bridge: those supporting Spanning Tree and, for Token Ring networks, those supporting Source Routing. Bridges connect networks using dissimilar protocols and do not interpret the data they carry. They control network traffic and security, filtering where necessary to boost network, performance, and contain sensitive data to particular LAN areas.

Broadband

A general term for a telecommunications medium of sufficient capacity to transmit high quality voice, data and video transmissions. Broadband has been defined in many ways; e.g., a Wide Area Network (WAN) providing bandwidth greater than 45 Megabits/sec (T3); voice, data, and/or video communications at rates greater than 1.544 Megabits/sec (T-1), but has been Federally defined as data transmission each way, of 200 kilobits/second or more.

Bundle(d)

A group of optical fibers or electrical conductors, such as wires and coaxial cables, usually in a single jacket. *Note:* Multiple bundles of optical fibers or electrical conductors may be placed in the same cable

Byte

A string or cluster of eight bits to represent a character.

Cable

An assembly of one or more insulated conductors, or optical fibers, or a combination of both, within an enveloping jacket. *Note 1:* A cable is constructed so that the conductors or fibers may be used singly or in groups. *Note 2:* Certain types of communications cables, especially long submarine cables, but also terrestrial cables, whether the communications media are metallic or optical fiber, may contain metallic conductors that supply power to repeaters (amplifiers).

Cable Modem

In CATV systems, a bidirectional high-speed digital communications interface, located on a subscriber's or user's premises, and used, for example, for Internet access or other digital communications.

Cable television (CATV)

A transmission system that distributes broadcast television signals and other services by means of a coaxial cable.

Codec

A "code/decode" electrical device that converts an analog electrical signal into a digital form for transmission purposes and then converts it back at the other end.

Dedicated T1

A permanent telephone line reserved exclusively for one patient, accessible all hours of the day. These lines usually offer better quality than standard telephone lines, but may not significantly augment the performance of data communications. May also be known as "leased," or "private" lines.

Defense Data Network (DDN)

Used generally to refer to Milnet, Arpanet, and the TCP/IP protocols those networks use. More specifically refers to Milnet and associated parts of the connected Internet that connect military installations.

Dental Health Professional(s) Shortage Area (Dental HPSA)

An area is so designated if the following three criteria are met: 1. The area is a rational area for the delivery of dental services. 2. One of the following conditions prevails in the area:
(a) The area has a population to full-time-equivalent dentist ratio of at least 5,000:1, or
(b) The area has a population to full-time-equivalent dentist ratio of less than 5,000:1 but greater than 4,000:1 and has unusually high needs for dental services or insufficient capacity of existing dental providers. 3. Dental professionals in contiguous areas are over utilized,

excessively distant, or inaccessible to the population of the area under consideration (See <http://bhpr.hrsa.gov/shortage/hpsacridental.htm>).

Digital Subscriber Line (DSL)

In Integrated Services Digital Networks (ISDN), equipment that provides full-duplex service on a single twisted metallic pair at a rate sufficient to support ISDN basic access and additional framing, timing recovery, and operational functions. *Note:* The physical termination of the DSL at the network end is the line termination; the physical termination at the customer end is the network termination.

Digital telecommunications channels (DS)

These channels are capable of transmitting high volume voice, data or compressed video signals. DS1 and DS3 are also known as T1 and T3 carriers. Transmission rates are 64 Kbps for DS0, 1.544 Mbps for DS1, and 45 Mbps for DS3.

Digitizer

A device that converts an analog signal into a digital representation of the analog signal. A digitizer usually samples the analog signal at a constant sampling rate and encodes each sample into a numeric representation of the amplitude value of the sample. A device that converts the position of a point on a surface into digital coordinate data.

Direct Digital Imaging

Involves the capture of digital images so that they can be electronically transmitted.

DS1 (T1)

A digital carrier capable of transmitting 1.544 Mbps of electronic information. The general term for a digital carrier available for high-value voice, data, or compressed video traffic.

DS3 (T3)

A carrier of 45 Mbps bandwidth. One DS3 channel can carry 28 DS1 channels.

Duplex

A transmission system allowing data to be transmitted in both directions simultaneously.

Encryption

A system of encoding data on a Web page or e-mail where the information can only be retrieved and decoded by the person or computer system authorized to access it. Often used on the web to protect financial data.

Ethernet

A communications protocol that utilizes various types of cable at a rate of 10 Mbps.

Fiber optics

Hair-thin, flexible glass rods encased in cables that use light to transmit audio, video, and data signals.

Film Digitizer

A device that allows scanning of existing static images so that the images can be stored, manipulated, or transmitted in digital form.

Filmless Radiology

Use of devices that replace film by acquiring digital images and related patient information and transmit, store, retrieve, and display them electronically.

Fractional T1

A portion of the 1.544 Mb/s (T1-aggregate) bit stream; the available fractions being determined by the type of multiplexer used to achieve the T1 aggregate bit stream.

Frame relay

Created to improve the rate of data transfer compared to previous transmission protocols, frame relay is a streamlined process of sending and acknowledging transmitted packets of data.

Full Duplex

A communication channel over which both transmission and reception are possible at the same time.

Full T1 *see T1***Gigabits per second (Gbps)**

A measure of bandwidth and rate of data flow in digital transmission.

Health Professional(s) Shortage Area (HPSA)

Means any of the following, which the Secretary determines has a shortage of health professional(s): (1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility (*See <http://bhpr.hrsa.gov/shortage/hpsacrit.htm>*).

Half-duplex

A communication channel over which both transmission and reception are possible, but only in one direction at a time.

H channel

The ISDN packet switched channel on Basic Rate Interface, designed to carry user information streams at different speeds, depending on type: H11=1536Kbit/s, H0=384Kbit/s and H12= 1920Kbit/s.

Hertz

A measure of radio frequency. One Hz = one cycle per second.

High frequency (HF)

Frequencies from 3 MHz to 30 MHz.

Image Processing

Use of algorithms to modify data representing an image, usually to improve diagnostic interpretation.

Informatics

The deployment of systems that collect, organize, and report health data to improve the quality and cost-effectiveness of health care, public health, and providers and consumers decision-making about health care management (e.g., electronic medical record, integrated health care management systems, disease tracking systems).

Integrated Services Digital Network (ISDN)

A completely digital telephone system that is slowly enjoying more popularity throughout the United States, which permits the integrated transmission of voice, video, and data to users at a higher speed than would be possible over typical telephone lines. It also provides connections to a universal network. It currently requires special installation and equipment.

Internet (1)

A group of networks that are interconnected so that they appear to be one continuous network and can be addressed seamlessly at the Network Layer Three of the OSI model. Typical internets are built using routers, either to form a backbone network comprised of routers, or to link together LANs at the Network Layer.

Internet (2)

A collection of networks and gateways, including the Milnet and NSFNET, all using the TCP/IP protocol suite. It functions as a single, cooperative virtual network. The Internet provides universal connectivity and three levels of network services: connectionless packet delivery; full duplex stream delivery and application level services including electronic mail and EDI.

Internet Protocol (IP)

The messenger protocol of the TCP/IP (Transmission Control Protocol/Internet Protocol), describing software that tracks the internet address of nodes, routes outgoing messages, and recognizes incoming messages. It facilitates the identification of the Internet Protocol Address (IP Address) of a computer or other device on the Internet (normally printed in dotted decimal form such as 128.127.50.224).

Interoperability

The condition achieved among communications and electronics systems or equipment when information or services can be exchanged directly between them, their users, or both.

Kilo

1,000 = 10^3

Kilobits per second (Kbps)

A measure of bandwidth and rate of data flow in digital transmission. One Kbps is 1,024 kilobits per second.

Local Area Network (LAN)

A network of computers, generally small in number, whose reach is limited, typically within a building or campus, linked to allow access and sharing of data and computer resources by users. Differentiated from MAN and WAN by the size of the area, LAN is the smallest.

Medically Underserved Areas (MUA)

May be a whole county or a group of contiguous counties, a group of county or civil Divisions, or a group of urban census tracts in which residents have a shortage of personal health services. (See <http://bhpr.hrsa.gov/shortage> ./)

Megabits per second (Mbps)

A measure of bandwidth and rate of data flow in digital transmission. One Mbps is equivalent to one million bits per second.

Mental Health Professional(s) Shortage Area (MHPSA)

An area is so designated if the following criteria are met: 1. The area is a rational area for delivery of mental health services. 2. One of the following conditions exists within the area: (a) population-to-core mental health professional ratio greater than or equal to 6,000:1 and a population-to-psychiatrist ratio greater than or equal to 20,000:1, or (b) a population-to-core-professional ratio greater than or equal to 9,000:1, or (c) a population-to-psychiatrist ratio greater than or equal to 30,000:1. 3. The area has unusually high needs for mental health services, and has: (a) a population-to-core mental health professional ratio greater than or equal to 4,500:1, and a population-to-psychiatrist ratio greater than or equal to 15,000:1, or

(b) a population-to-core professional ratio greater than or equal to 6,000:1, or (c) a population-to-psychiatrist ratio greater than or equal to 20,000:1. 4. An area will be considered to have unusually high needs for mental health services if one of the following criteria is met: (a) 20 percent of the population (or of all households) in the area have incomes below the poverty level; (b) the youth ratio, defined as the ratio of the number of children under 18 to the number of adults of ages 18 to 64, exceeds 0.6; (c) the elderly ratio, defined as the ratio of the number of persons aged 65 and over to the number of adults of ages 18 to 64, exceeds 0.25; (d) a high prevalence of alcoholism in the population, as indicated by prevalence data showing the area's alcoholism rates to be in the worst quartile of the nation, region, or State; or (e) a high degree of substance abuse in the area, as indicated by prevalence data showing the area's substance abuse to be in the worst quartile of the nation, region, or State (See <http://bhpr.hrsa.gov/shortage/hpsaguidement.htm>).

Metropolitan Area Network (MAN)

A network of computers whose reach extends to a metropolitan area. MANs may be used to link telemedicine applications at a data rate similar to DS1. In some cases, MANs may be used by cable companies to offer links to off-network services such as the internet, airline reservation systems, and commercial information services, in addition to data exchange abilities. Compared to LAN and WAN, MAN is in between the two.

Megabyte (Mb)

A measure of computer storage and memory capacity. One Mb is equivalent to 1.024 million bytes, 1,024 thousand bytes, or 1.024 kbs. However, this term is also applied to the more rounded term of 1 million bytes.

Megahertz (Mhz)

A measure of bandwidth and rate of information flow for analog transmission. One Mhz equals 10 to the sixth power cycles per second.

Microwave (MW)

Loosely, an electromagnetic wave having a wavelength from 300 mm to 10 mm (1 GHz to 30 GHz). *Note:* Microwaves exhibit many of the properties usually associated with waves in the optical regime, e.g., they are easily concentrated into a beam.

Modem (Modulator/De-modulator)

A device that translates digital signals to pulse tone (analog) signals to enable transmission over telephone lines and reconverts them to digital form at the point of reception, thus permitting a computer to communicate with another computer over a regular telephone line. These devices are usually identified by the speed (in bits per second or bps) of communication they permit. The higher the bps, the faster the modem.

Multipoint Control Unit (MCU)

A multipoint device, by means of which two or more audiovisual terminals may intercommunicate in a conference call. *Note:* A "principal MCU" has been assigned a superior controlling function in a call where two or more MCUs in that call are termed "satellite MCUs". The physical realization of an MCU may be such that two or more independent conferences may be set up within the same unit; logically, however, there is no relationship between these conferences; the text of this definition refers to an MCU only as a logical entity pertinent to the particular call of concern.

Network

A set of nodes, points or locations which are connected via data, voice, and video communications for the purpose of exchanging information. Interconnected telecommunications equipment used for data and information exchange. Consists of different types, LAN, MAN, and, WAN are examples.

Open Systems Architecture

A design that permits the interconnection of system elements provided by many vendors. The system elements must conform to interface standards.

Optical Carrier (OC)

The nomenclature for the line rate of the optical transmission signal.

Optical Ring (Disk)

A computer storage disk used solely for large quantities (Gbs) of data.

Peripheral

Any device that is attached to a computer externally. Scanners, mouse pointers, printers, keyboards, and monitors are all examples of this. Scales, blood pressure cuffs, spirometers, and glucometers are also examples.

Picture Archiving and Communications System (PACS)

A system capable of acquiring, transmitting, storing, retrieving, and displaying digital images and relevant patient data from various imaging sources and communicating the information over a network.

Platform

The type of computer on which a given operating system or application runs. The operating system in use on a given computer. The application program in use on a given computer and operating system. The term cross-platform may be used to characterize an application program or operating system that may be run on more than one platform.

Primary Rate Interface (PRI)

An integrated services digital network (ISDN) interface standard (a) that is designated in North America as having a 23B+D channels, (b) in which all circuit-switched B channels operate at 64 kb/s, and (c) in which the D channel also operates at 64 kb/s. *Note:* The PRI combination of channels results in a digital signal 1 (T1) interface at the network boundary.

Push

In networking, to send data from a server to a client in compliance with a previous request from (via) the client, as soon as the data are available.

Real Time

The capture, processing, and presentation of data, audio, and/or video signals at the time the data is originated on one end and received at the other end. When signals are received at rates of 30 frames per second, real time is achieved.

Redundant or Redundancy

Known as fault-tolerance, in data transmission, refers to characters and bits that can be removed from a transmission without affecting the message. In data processing and data communications, it means providing backup for components: should one of them fail, the system continues to run without operation. Total redundancy is usually impractical, but organizations with mission-critical applications attempt to install a high level of redundancy on the basis that downtime loses money, lives, depending on the business.

Router

In data communications, a functional unit used to interconnect two or more networks. Routers operate at the network layer (layer 3) of the ISO Open Systems Interconnection - Reference Model. The router reads the network layer address of all packets transmitted by a network, and forwards only those addressed to another network.

Satellite

An electronic retransmission instrument serving as a repeater, which is a bi-directional device used to amplify or regenerate signals, placed in orbit around the earth in geostationary orbit for the purpose of receiving and retransmitting electromagnetic signals. It typically receives signals from a single source and retransmits them over a wide geographic area, known as the satellite's "footprint."

Server

A network device that provides service to the network users by managing shared resources. The term is often used in the context of a client-server architecture for a local area network (LAN).

Slow scan video

A device that transmits and receives still video pictures over a narrow telecommunications channel.

Store-and-forward

Transmission of static images or audio-video clips to a remote data storage device, from which they can be retrieved by a medical practitioner for review and consultation at any time, obviating the need for the simultaneous availability of the consulting parties and reducing transmission costs due to low bandwidth requirements.

Streaming

A technique for transferring data (usually over the Internet) in a continuous flow to allow large multimedia files to be viewed before the entire file has been downloaded to a client's computer.

Switch

In communications systems, a mechanical, electro-mechanical, or electronic device for making, breaking, or changing the connections in or among circuits. To transfer a connection from one circuit to another. In a computer program, a conditional instruction and a flag that is interrogated by the instruction or a parameter that controls branching and that is bound, prior to the branch point being reached.

Synchronous transmission

The process by which bits are transmitted at a fixed rate with the transmitter and receiver synchronized, eliminating the need for start/stop elements, thus providing greater efficiency.

T1 (DS1)

A type of telephone line service offering high-speed data or voice access, with a transmission rate of 1.544 Mbps. It is also known as D1.

T3 (DS3)

A digital transmission system for high volume voice, data, or compressed video traffic, with a transmission rate of 44.736 Mbps. It is also known as D3.

Telecommunications

The use of wire, radio, visual, or other electromagnetic channels to transmit or receive signals for voice, data, and video communications.

Teleconferencing

Interactive electronic communication between multiple users at two or more sites which facilitates voice, video, and/or data transmission systems: audio, audiographics, computer, and video systems.

Teleconsultation

The physical separation between multiple providers during a consultation.

Telediagnosis

The detection of a disease as a result of evaluating data transmitted to a receiving station from instruments monitoring a remote patient.

Telehealth

The use of electronic information and telecommunications technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health, and health administration.

Telematics

The use of information processing based on a computer in telecommunications, and the use of telecommunications to permit computers to transfer programs and data to one another.

Telemedicine

The use of electronic communication and information technologies to provide or support clinical care at a distance. Included in this definition are patient counseling, case management, and supervision/preceptorship of rural medical residents and health professions students when such supervising/precepting involves direct patient care.

Telementoring

The use of audio, video, and other telecommunications and electronic information processing technologies to provide individual guidance or direction. An example of this help may involve a consultant aiding a distant clinician in a new medical procedure.

Telemonitoring

The process of using audio, video, and other telecommunications and electronic information processing technologies to monitor the health status of a patient from a distance.

Telepresence

The method of using robotic and other instruments that permit a clinician to perform a procedure at a remote location by manipulating devices and receiving feedback or sensory information that contributes to a sense of being present at the remote site and allows a satisfactory degree of technical achievement. For example, this term could be applied to a surgeon using lasers or dental handpieces and receiving pressure similar to that created by touching a patient so that it seems as though s/he is actually present, permitting a satisfactory degree of dexterity.

Transmission Control Protocol/Internet Protocol (TCP/IP)

The underlying communications rules and procedures that allow computers to interact with each other on the Internet.

Transmission Speed

The speed at which information passes over a communications channel; generally given in either bits per second (bps) or baud.

Videoconferencing

Actual-time, generally two way transmission of digitized video images between multiple locations; uses telecommunications to bring people at physically remote locations together for meetings. Each

individual location in a videoconferencing system requires a room equipped to send and receive video.

Videophone

A telephone that is coupled to an imaging device that enables the call receiver or the call originator, or both, to view one another as on television, if they so desire. A military communications terminal that (a) has video teleconference capability, (b) is usually configured as a small desktop unit, designed for one operator, and (c) is a single, integrated unit.

Video teleconference (ing) (VTC)

A teleconference that includes video communications. Pertaining to a two-way electronic communications system that permits two or more persons in different locations to engage in the equivalent of face-to-face audio and video communications. *Note:* Video teleconferences may be conducted as if all of the participants were in the same room.

Virtual Private Network (VPN)

The provision of private voice and data networking from the public switched network through advanced public switches. The network connection appears to the user as an end-to-end, nailed-up circuit without actually involving a permanent physical connection, as in the case of a leased line. VPNs retain the advantages of private networks but add benefits like capacity on demand.

Virtual Local Area Network (VLAN)

A computer network using internetworks as data links that are transparent for users and that do not have restrictions on protocols, so that the network has the characteristics of a local area network.

Virtual Reality

A computer-based technology for simulating visual, auditory, and other sensory aspects of complex environments to create an illusion of being a three-dimensional world. That world is designed by the computer, and viewed through a special headset that responds to your head movements while a glove responds to your hand movements. For example, while in a virtual room you may move your hand up in order to fly or tap to change the color of a wall.

Wide Area-Network (WAN)

Data communication networks that links together distant networks and their computers to provide long-haul connectivity between separate networks located in different geographic areas.

Wireless

Descriptive of a network or terminal that uses electromagnetic waves (including rf, infrared, laser, visible light—and acoustic energy) rather than wire conductors for telecommunications.

World-Wide Web (WWW)

The universe of accessible information, including graphics, sound, text and video accessible through the Internet. The Web has a body of software, a set of protocols and defined conventions for accessing such information, including HTML (HyperText Markup Language), the Web's software language, and TCP/IP, a family of networking protocols providing communication across interconnected networks.

Sources for this section include:

1. ACCdotCom, Glossary of telecommunications and internetworking terms, <http://www.accsystems.com/glossary.htm>, Accessed March 16, 2004.
2. American College of Physicians, Telemedicine glossary, <http://www.acponline.org/computer/telemedicine/glossary.htm>, Accessed March 16, 2004.
3. American National Standard for Telecommunications, Telecom glossary 2000, <http://www.atis.org/tg2k/>, Accessed March 23, 2004.
4. TelehealthNet, Telehealth and e-health glossary, <http://telehealth.net/glossary.html>, Accessed March 16, 2004.