



EHR for Inpatient

Really Powerful at Measuring Stuff

IHIMC

Tuesday December, 16 2008

1:00 – 2:30 PM

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EHR Inpatient Sites

- Fort Defiance Indian Hospital*
- Cherokee Indian Hospital*
- Crow Indian Hospital*
- WW Hastings Hospital
- Whiteriver Indian Hospital
- ACL Hospital
- Winnebago Indian Hospital

“Inpatient Slave Driver Work-a-thon”



“The Best Tech Writer in the World”



Phase I

Optimization of RPMS Inpatient Pharmacy & ADT

- Inpatient Pharmacy, Unit Dose and IV
- Computer Generated Medication Administration Record (MAR)
- Pyxis® and Omnicell® Interfaces
- Admission, Discharge & Transfer
- EMR Printing (Device File)

EHR Preparation Documents and Resources

- EHR for Inpatient Guide
- EHR for Inpatient CAC Setup Guide
- EHR for Inpatient Tracking “Milestones”
- EHR for Inpatient Training
- EHR for Inpatient WebEx Meetings

Phase II

Nursing Documentation

Allergy, Wellness, and Vital Signs

- Allergies
- Health Factors and Exams
- Patient Education
- Immunizations
- Vital Signs

Phase III

Physician Documentation

- History and Physical
(TIU Template or Upload)
- Discharge Summaries
(TIU Template or Upload)
- Progress Notes
(TIU Template and/or Dictation)

Phase IV

Nursing Documentation

- Nursing Assessments
- Nursing Notes
- “Problem List”

Phase V

Consults

- Request Consults
- Resolve Consults
- Consults Tracking

Phase VI

“EHR for Inpatient Training”

- Quick Orders and Menus for Unit Dose, Topicals, Injectables, Inhalations, IVPB, and IV Fluids
- Generic Admission “ADCVANDISL” or “ADCVANDALISM”
- Generic Orders for Vitals, Wound Care, Diet, Activity, Nursing Care, Oxygen
- Order Sets
- Printing and Print Formats

Phase VII

CPOE of Lab and Radiology

- Radiology CPOE
- Lab CPOE
- Immediate Collect, Ward Collect, Lab Collect
- Printing Orders and AM List
- Notifications

Phase VIII

Remote “EHR for Inpatient” Setup

- General Orders (Diet, Activity, Oxygen)
- Standing Orders (CIWA, Chest Pain, ADCVANDISL, ADCVANDALISM)
- Generic Orders - Complex Text Orders (Restraints, Wound Care)

Phase VIII

Remote “EHR for Inpatient” Setup, cont’d

- Nursing Orders - Simple Text Orders (Dressing Change, Activity, Call Orders)
- Order Sets (Detox, Chemical Restraints, Radiology Exam and Preps, Peak & Trough)
- Delayed Orders & Auto D/C Orders
- Printing

Phase IX

Onsite “EHR for Inpatient” Setup

- Complete Admission Orders, Auto D/C, Delayed Orders
- Test – Test – Test!!!
- Physician CPOE
- Printing (Device File, Print Formats)

Phase IX

Onsite “EHR for Inpatient” Setup

- Complete Admission Orders, Auto D/C, Delayed Orders
- Test - Test - Test!!!
- Physician CPOE
- Printing (Device File, Print Formats)

Phase X

“Super End User & Go-Live”

- CPOE
 - Medications,
 - Admission Orders,
 - Generic Orders, and
 - Order Sets

Phase XI & XII

BCMA

- On-site BCMA Setup
- On-site BCMA Training & Go-Live

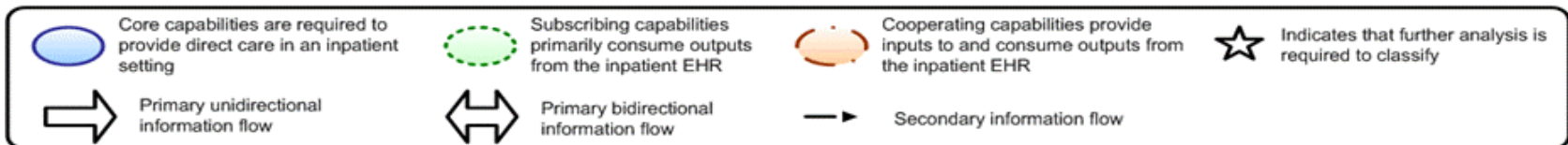
DoD VA Joint Inpatient Project “Wounded Warrior”

- VA and DoD Moving Towards Common Inpatient System
- Booz - Allen - Hamilton
- Gartner
- Requirements and Analysis
- IHS Invited to the Table

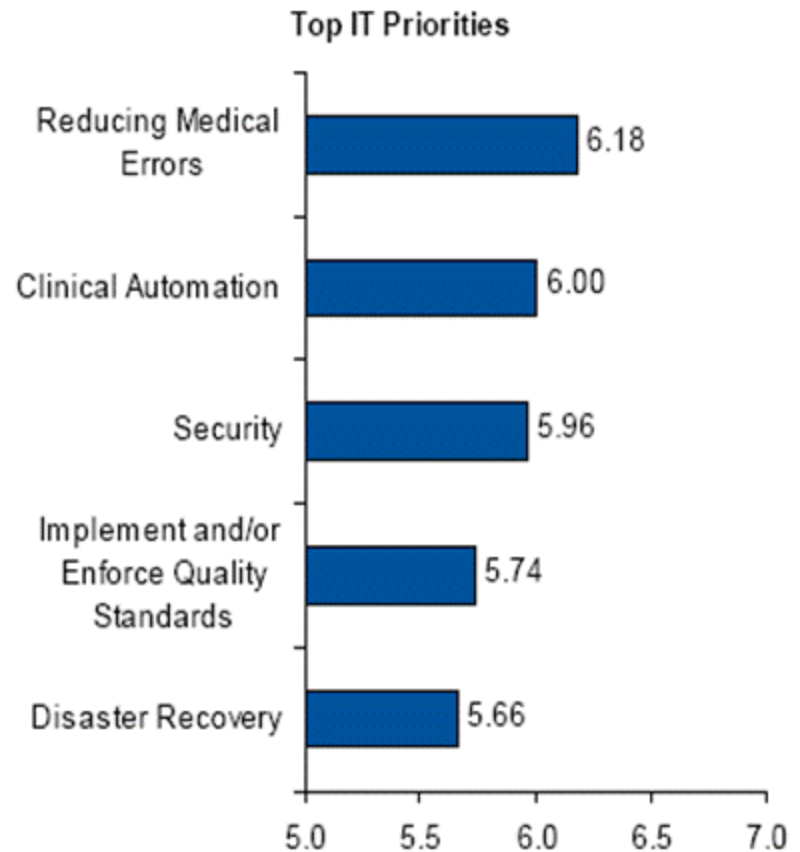
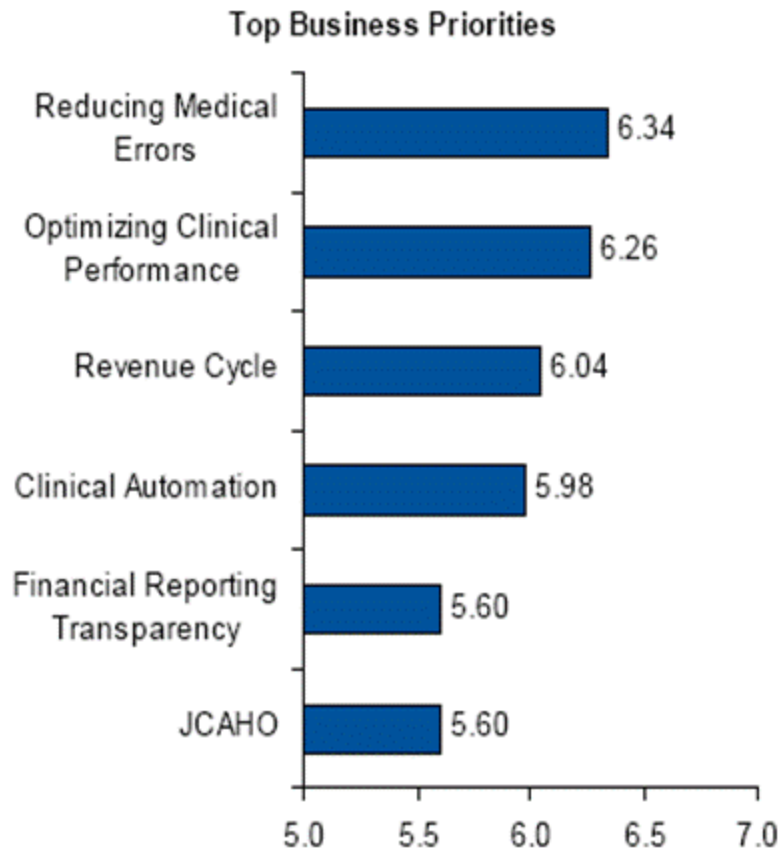
Gartner Defined Core Capabilities of CPR (Patient Centric)

- Clinical system management
- Interoperability, clinical data repository (CDR)
- Controlled medical vocabulary (CMV) and vocabulary server (VOSER)
- Clinical workflow
- Clinical decision support
- Clinical documentation and data capture
- Clinical display (including clinician dashboards)
- Clinical order management (including computer-based physician order entry and e-prescribing)
- Knowledge management

Joint DoD-VA Inpatient EHR Capabilities Reference Model (Clinical and Business)

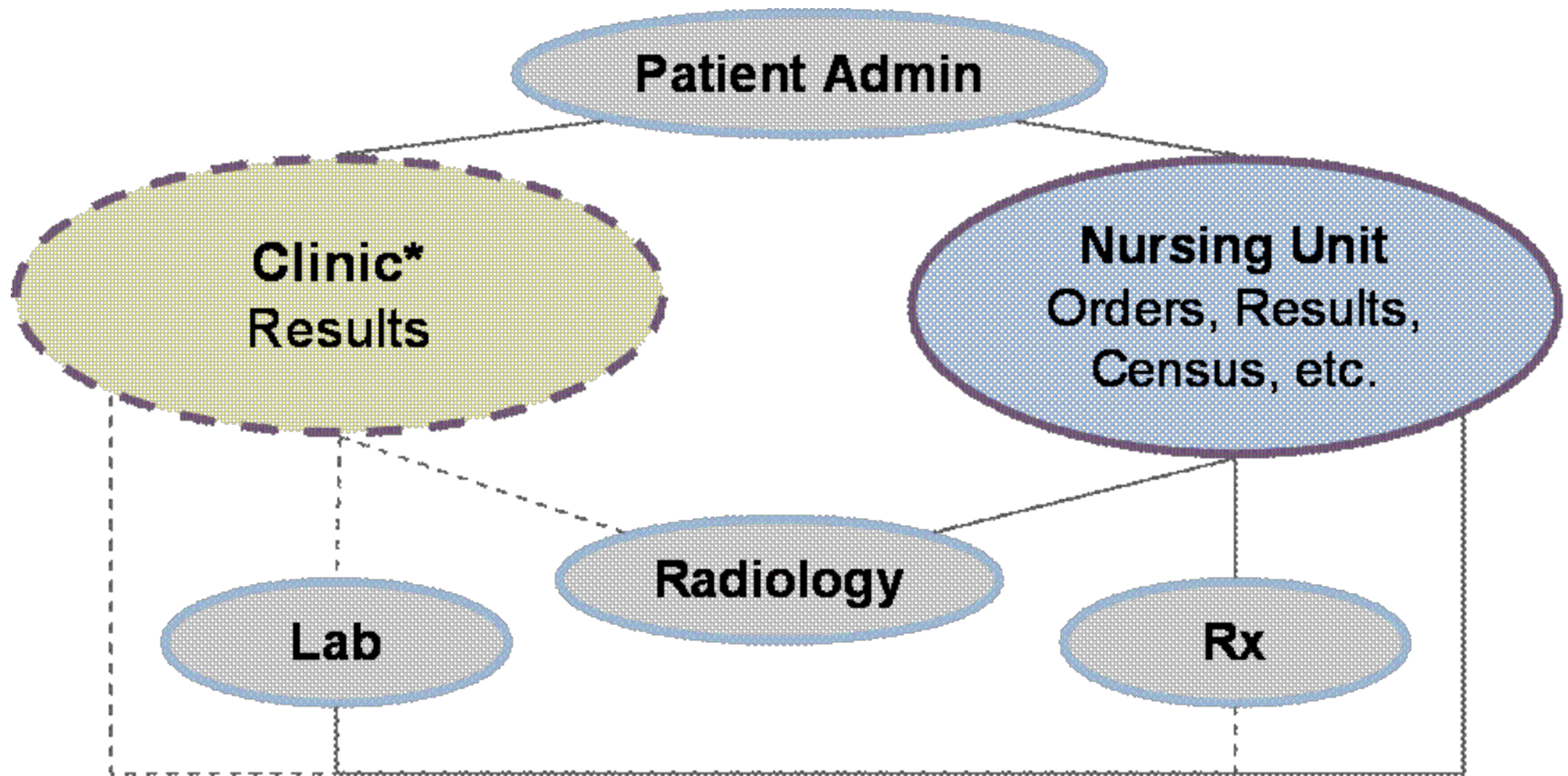


Business and IT Priorities

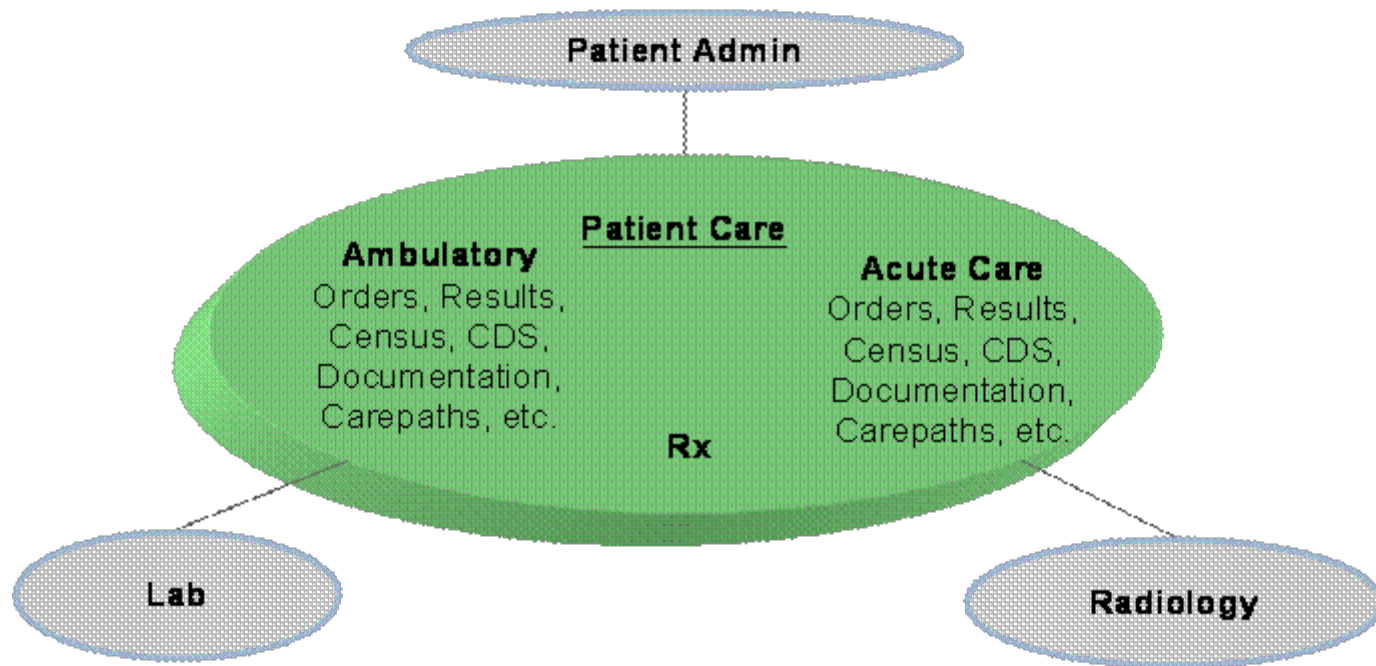


Note: Rated from 1 (lowest) through 7 (highest)

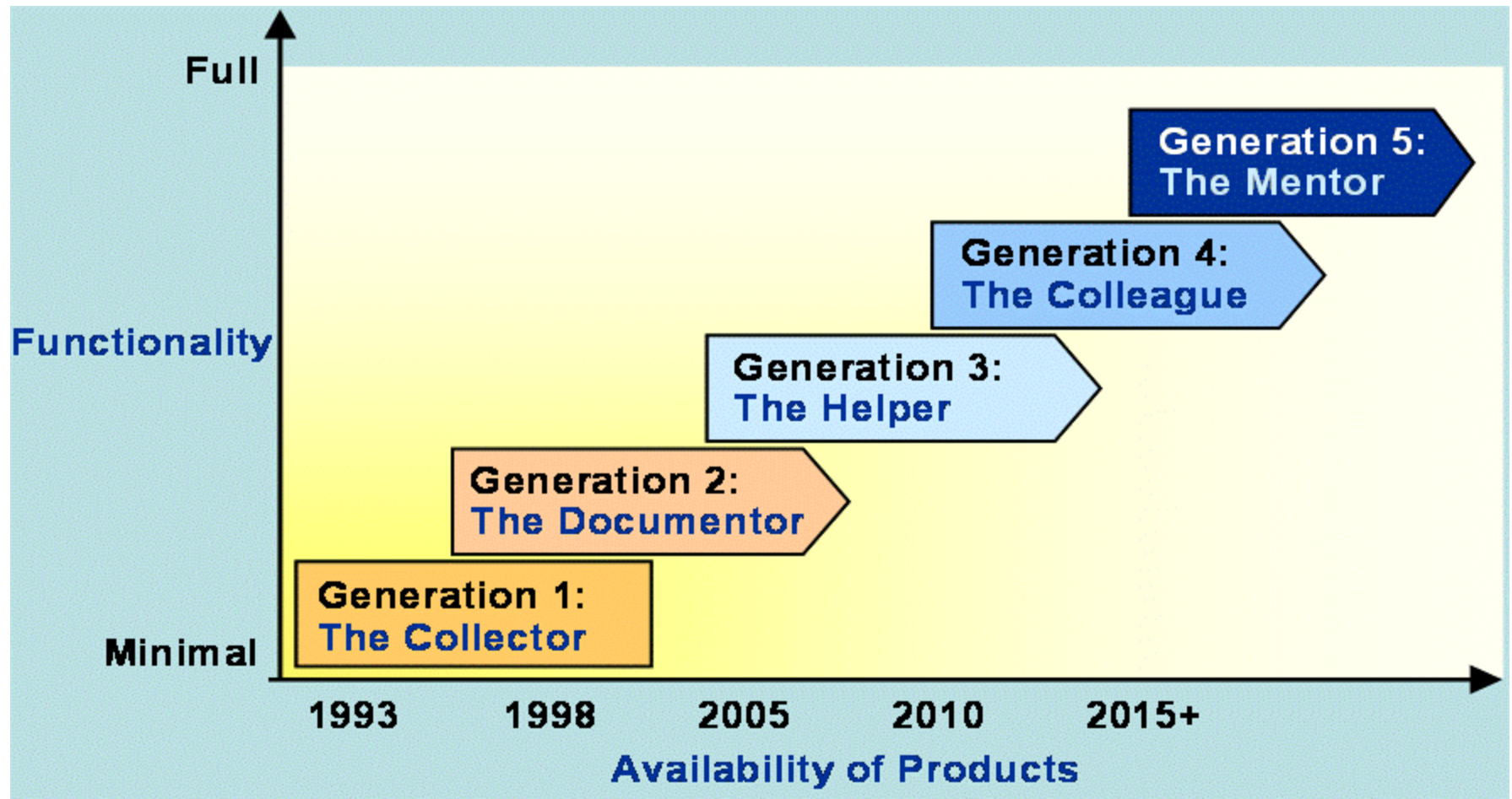
Shifting from “Best-of-Breed” to Integrated Traditional Healthcare Architecture



Shifting from “Best-of-Breed” to Integrated New Model for Healthcare Architecture



The Five Generations of EHR Systems



Five Generations of EHR Systems (Gartner)

Each stage in the Generations Model has a different level of expected functionality

- **Generation 1: The Collector** - results oriented tools that enable users to access clinical data that previously may be scattered across multiple systems or only available in hard copy for one individual at a time
- **Generation 2: The Documenter** - basic systems that permit clinicians to do more than access data, including rudimentary documentation functionality
- **Generation 3: The Helper** - products that allow users more direct interaction with the system and data, and have technical capability of facilitating CDO's attempts to bring evidence-based medicine to the point of care; functionality for multiple care venues is required
- **Generation 4: The Colleague** - advanced systems that have more decision support and workflow capabilities, along with tools that permit CDOs to more easily bring EBM to the point of care
- **Generation 5: The Mentor** - systems that can guide the clinicians in caring for patients, especially those with conditions the user may not have diagnosed or treated before

GARTNER DEFINED EHR CAPABILITIES

PRODUCTS	GARTNER DEFINED EHR CAPABILITIES									
	System Management	Interoperability	Clinical Data Repository	Controlled Medical Vocabulary	Clinical Workflow (Manage Clinical Tasks & Processes)	Clinical Decision Support (Provide Automated Clinical Decision Support)	Clinical Documentation & Data Capture (Manage Documentation + Patient-reported Data)	Clinical Display (Manage Results)	Order Management (Manage Orders)	Clinical Knowledge Management (Provide Knowledge Resources)
Cerner	▲+	▲	▲+	▲	▲	▲+	▲+	▲	▲+	▲
Eclipsys	▲	▲	▲+	▲	●+	▲+	▲	●+	▲+	●+
Epic	▲	▲	■	▲	▲+	▲+	▲+	▲+	▲+	▲
GE / IDX	▲	▲	▲+	●+	●	▲+	●+	●+	▲	●+
McKesson	▲	●+	▲+	●+	●+	●+	●+	●+	●+	●+
Meditech	▲	▲	■	●+	●+	●+	▲	●+	▲+	●+
Siemens	▲	▲	▲	▲	▲+	▲	●+	●+	●	●+

= Meets Some Generation 2 Criteria
 = Meets All Generation 2 Criteria
 = Exceeds Generation 2 Criteria
 = Meets All Generation 3 Criteria
 = Exceeds Generation 3 Criteria
 = Meets All Generation 4 Criteria

Conclusions

- DoD and VA Consider Moving to Common Inpatient EHR System
- EHR Product Market is Maturing
- EHR Products Fall Short on Knowledge Management and Clinical Documentation
- “Best-of-Breed” versus “Home Grown”
- What Does this Mean for IHS?

Inpatient EHR Implementation

Fort Defiance Indian Hospital (FDIH)

E.H.R. Inpatient

- Implementation Team
 - CACs, pharmacy, IT, Medical Records
- Focus was clinical processes and CAC tasks
 - Pharmacy
 - Nursing
 - Physicians
- IRM – software and hardware
- Medical Records/Coding
 - Initially peripheral involvement
 - Reviewed business processes in relation to E.H.R.

Overall Implementation

- Sequential Implementation
 - “The Plan”
 - Domino effect
 - Completion of tasks by other work groups necessary before advances can be made
- Transition from paper documentation and order entry system to an electronic system
- Hardware and software hurdles

Timeline ~ 18mths

- Nursing (Oct 2005)
 - Vital Signs/Allergies
 - Immunizations, Health Factors, Patient Education
 - Notes
- Emergency Department (ERS)
- Physicians: notes, H&P in E.H.R. (March 2006)
- Computer Order Entry Go Live (Aug 2006)
 - Medications, labs, radiology, nursing, consults
- Med/Surgical/ Pediatric (20 beds)
- ICU (4 beds)
 - Medical patient initially
 - Progressed to Pediatric, then Surgical patients

Emergency Department

- ERS – Emergency Room System
- Electronic triage log
- 3 major components
 - IN - creates visit in ADT **
 - TRI - triage - enter chief complaint
 - OUT - disposition from ED

IRM Considerations

- Software - optimize packages
- Hardware
 - Thin Clients, PCs, Servers, Wireless etc
 - Printers, med carts, scanners etc
- 24/7 maintenance
- E.H.R. access and menu assignment
- Increased staff demands
- Budget

Pharmacy Considerations

- Inpatient Medication Quick Orders
 - Huge task
- Facilitate printed MAR
 - Required process prior to medication computer order entry
- (BCMA project)
- Discussions - Omni cell Interface

Nursing Considerations

- Training & competencies
 - E.H.R. / RPMS / equipment
- Support 24/7
- Opportunity to improve clinical practices
- Most workflow processes remain “the same”
 - Focus shifts from “pen and paper” to E.H.R.
- High number of contact staff - training
- Clerks – change in workflow focus

Physicians Considerations

- POV and E&M entry
- Focus to optimize electronic order entry and documentation processes
- Consults - hybrid trail
- Training and support
- Contract staff - training

Inpatient E.H.R. Lessons Learned

- Recommended National support for future sites
- Need for Inpatient E.H.R. CAC & End User Manual
 - Printer parameter set-up
 - Delayed orders and auto d/c parameters
 - Observation set-up (later phase)
 - Overall order entry preparation
- Pharmacy
 - Preparation in general
 - Volume of orders

Inpatient E.H.R. Lessons Learned

- Physicians
 - Order entry – do not to enter med, lab, radiology orders as text nursing orders
 - POV entry - alternative method devised
 - E&M – each entry linked to visit date
 - use Edit to add “today’s date”
 - Delayed order entry process
- Nursing
 - Order verification
 - Compliance with documentation
 - POV missing notification (also applicable for MD)

Inpatient E.H.R. Lessons Learned

- ESR (Emergency Room System)
 - Identified issues with software
- ADT
 - Timely admissions imperative
 - Delayed Orders
 - Admit patient when orders entered vs. patient arrives on unit
 - ADT errors could have negative impact on orders

Inpatient E.H.R. Lessons Learned

- Medical Records
 - Business processes impacted by E.H.R.
 - More involvement and autonomy during implementation
 - Discharge Summary upload

Inpatient E.H.R. Lessons Learned

- Coding/Business Office
 - Promote involvement and autonomy during implementation (e.g. reporting and trouble shooting errors, managing pick lists)
 - Error rate increased
 - POV errors – immunization entry was “primary” POV
 - E&M codes – no date attached to concurrent entries
 - Had to learn to navigate E.H.R. (vs. RPMS)
 - “I” vs. “H”
 - Coding queue

Inpatient EHR Implementation & Lessons Learned

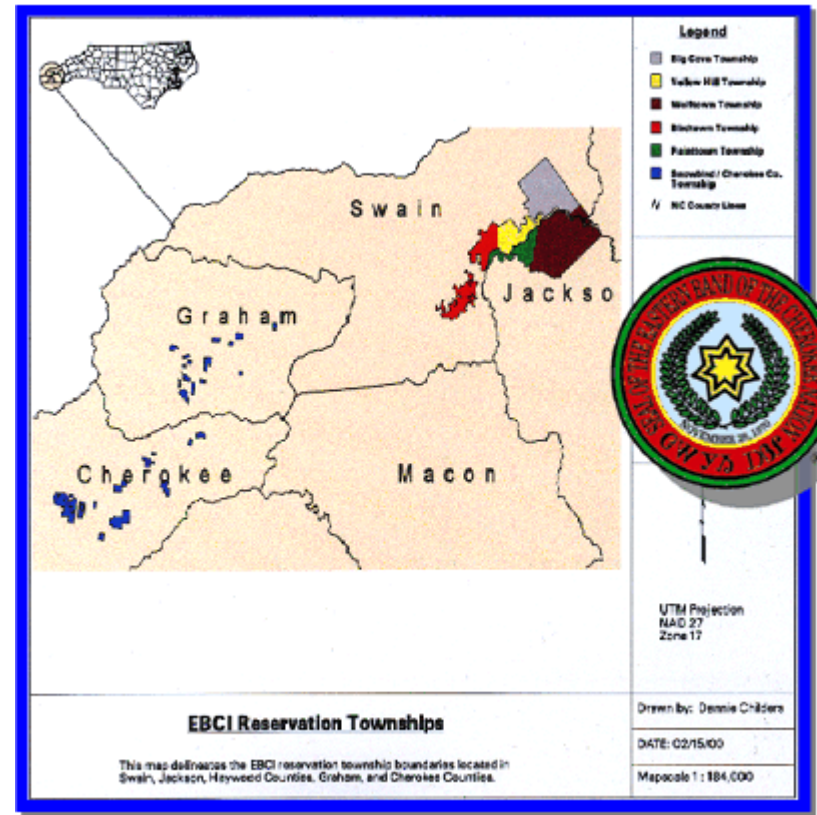
Cherokee Indian Hospital

Objectives

- Provide overview of relationship between RPMS packages and EHR
- Review preparation required prior to Inpatient EHR Implementation
- Review Inpatient EHR Implementation Plan (phase 1 and phase 2)
- Discuss issues and lessons learned from Inpatient EHR Implementation

Cherokee Indian Hospital Authority

- Located on the Eastern Band of Cherokee Indian Reservation.
- Enrolled Members
= 12,669
- Hospital User Population
= 10,842



Cherokee Indian Hospital

- Cherokee Indian Hospital is a 29 bed facility that features a busy outpatient department and other services:
 - Laboratory
 - Radiology
 - Pharmacy
 - Physical therapy / wound care
 - Dental
 - Eye clinic
 - Emergency room
 - Contract health services



Cherokee Hospital Affiliations

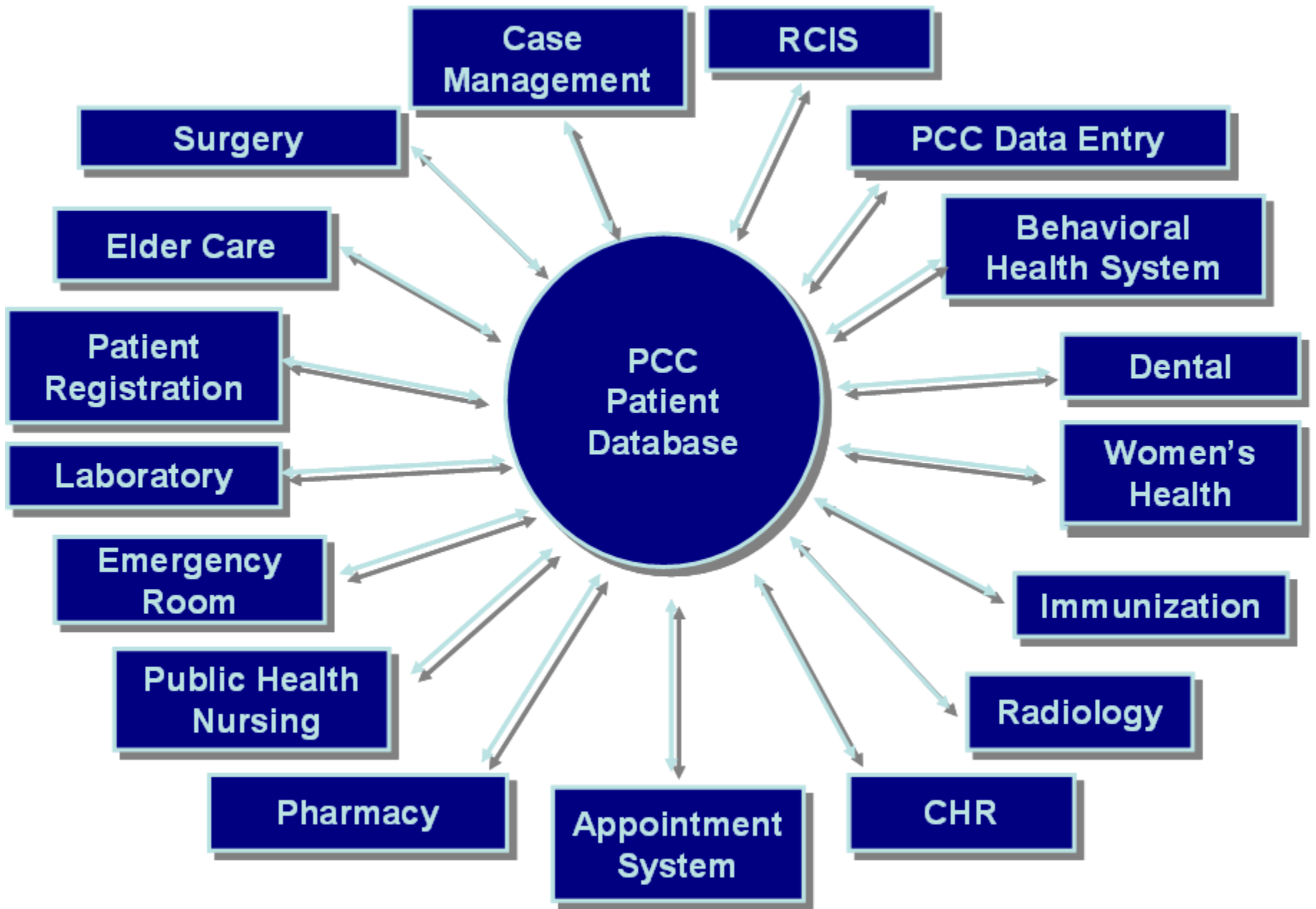
- Outlying Outpatient Clinics
 - Snowbird Clinic
 - Marble (Cherokee County) Clinic
- Cherokee Health & Medical Tribal Programs
 - Cherokee Diabetes Program
 - Cherokee Women's Wellness Clinic
 - Qualla Youth Teen Center
 - Analenisgi Behavioral Health Center

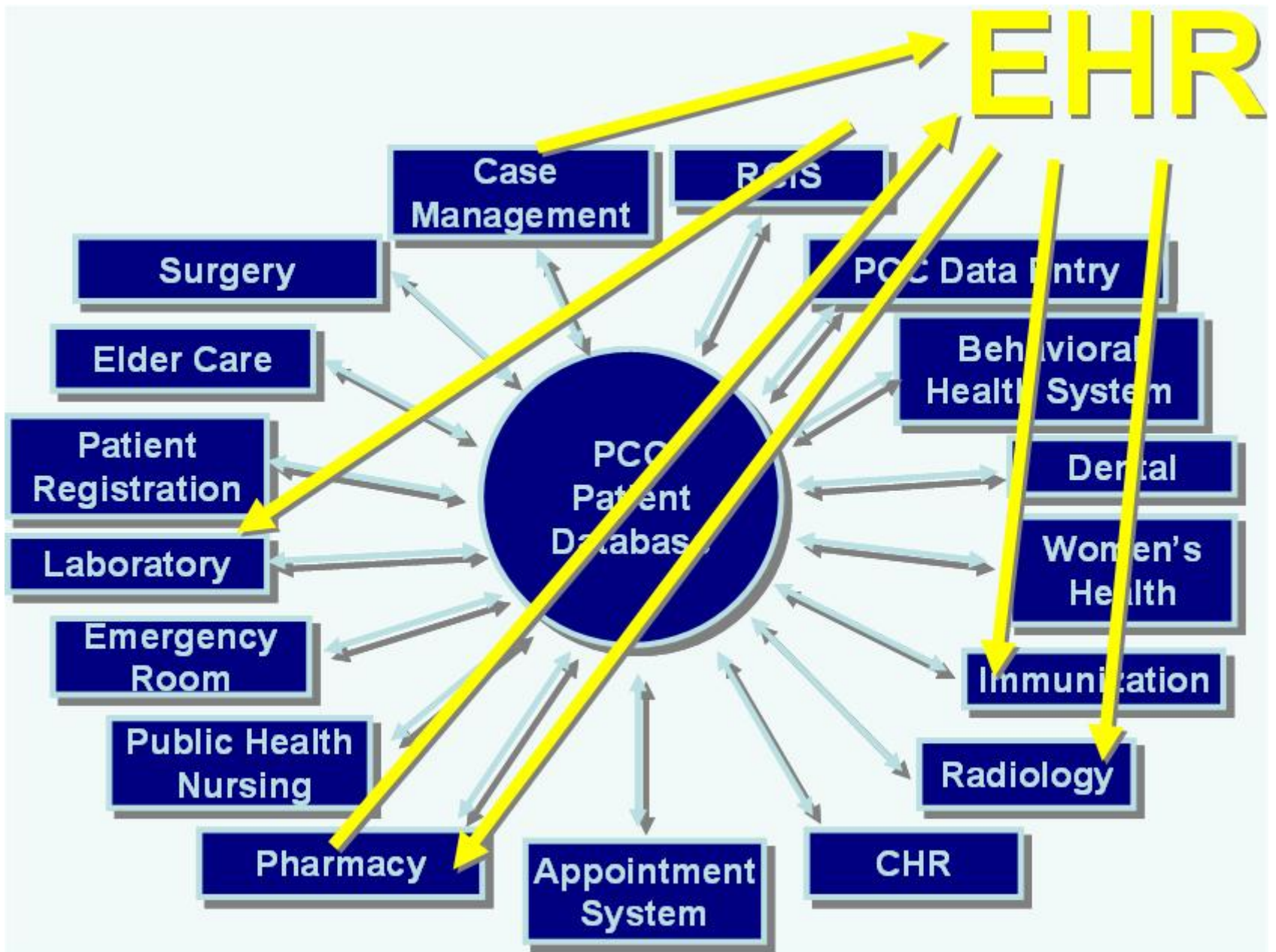
Mission Statement

- To continuously improve the health status of the Eastern Band of the Cherokee nation through a comprehensive health care system sensitive to the culture and values of the community.

RPMS

- Resource Patient Management System (RPMS) as the database for patient information.
 - Developed in the 1970s
- The Patient Care Component (PCC) and the Indian Health Service Electronic Health Record (EHR) are tools to enable the entry of patient data into the database.
 - PCC developed in the 1980s
- A number of packages have been added to improve the functionality of the RPMS system.





Preparation for
Phase 1 Inpatient EHR
Implementation

Evaluate Current Process

- Important to evaluate your current process prior to inpatient EHR implementation
 - ER Staff (Clerk/CNA/RN)
 - Admits patient via Emergency Room System (ERS) in RPMS
 - Process creates Emergency Medicine visit
 - Inpatient Staff (Clerk/CNA/RN)
 - Admits patient to Inpatient via Admission-Discharge-Transfer (ADT) package in RPMS
 - When patient physically arrives on inpatient ward

Emergency Room System (ERS) in RPMS

```
*****  
*           Emergency Room System           *  
*           Indian Health Service           *  
*           Version 2.5                     *  
*****  
CIHA HOSPITAL
```

IN Admit to Emergency Room

TRI Triage Nurse Update Admission Record

BAT Batch Mode ER Admission/Discharge

OUT Discharge from Emergency Room

DNA Cancel Visit (did not answer or left AMA)

DOA DOA Admission to ER

REG Mini-Registration of New Patients

SCAN Scan Patient Names or Chart Numbers

HERE List Patients Currently Admitted to ER

INST Patient Instruction Menu ...

RPTS Reports Menu ...

Admission/Discharge/Transfer (ADT) in RPMS

```
*****  
** INDIAN HEALTH SERVICE **  
** ADMISSION/DISCHARGE/TRANSFER SYSTEM **  
** VERSION 5.3 **  
*****
```

CIHA HOSPITAL

Bed Control

(CIHA HOSPITAL)

BC Bed Control ...
DS Day Surgery Menu ...
IC Incomplete Chart Menu ...
PI Patient Inquiry
RM ADT Reports Menu ...
SI Seriously Ill List Entry
SM ADT Supervisor Menu ...
SU Scheduled Visit Entry/Edit

ADM Admit a Patient
DSC Discharge a Patient
EBC Extended Bed Control
EPI Extended Inpatient Inquiry
PCH Provider Change
SWB Switch Bed
TTX Treating Specialty Transfer
WTX Ward Transfer

Inpatient EHR Preparation

- EHR Progress Note Template Development
 - Import national inpatient EHR progress note templates from www.ihs.gov website
 - Review EHR templates and alter to facility as needed
 - Create Progress Note Titles (INPT...)

Progress Note Properties

Progress Note Title: INPT NURSE ADMISSION

- INPT NURSE ADMISSION
- INPT NURSE CIWA
- INPT NURSE DISCHARGE
- INPT NURSE PROBLEM LIST
- INPT NURSE RESTRAINT
- INPT NURSE SHIFT
- INPT NURSE TRANSFER

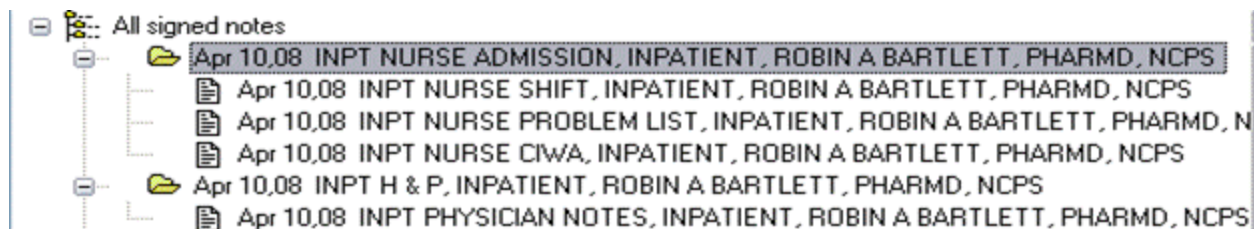
Date/Time of Note: 10-Apr-2008 17:16

Author: Bartlett, Robin A

OK Cancel

Inpatient EHR Preparation

- Set up Parent/Child ID notes as desired
 - Fort Defiance set-up
 - Day shift RN note parent - drag RN notes each day
 - MD notes remain separate
 - Cherokee set-up
 - INPT H&P - drag all MD notes
 - INPT NURSE ADMISSION ASSESSMENT - drag all RN notes

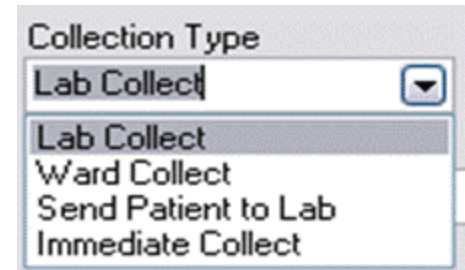


Phase 1 Implementation Issues

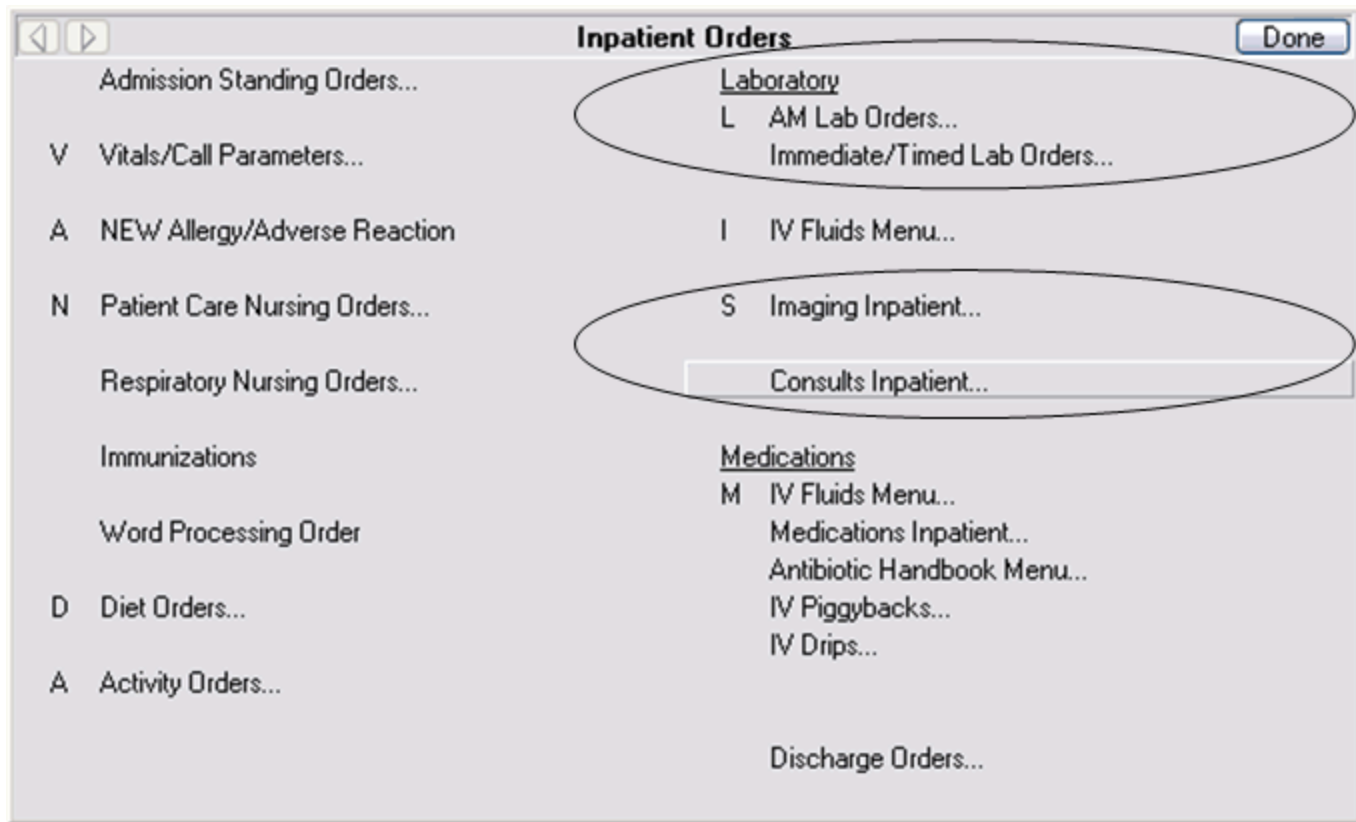
- Initially, progress notes were not consistently dragged into interdisciplinary folders
- Outpatient providers could not see previous outpatient visit notes at quick glance due to multiple inpatient notes
 - Custom View of Progress Notes to sort by note titles or location instead of chronological is possible but our providers preferred chronological for tracking of patient visits throughout system
- Assign responsibility of note dragging (multiple tiers)
 - Night Nurse staff during 24 hour chart check
 - Day Nurse staff upon patient discharge (added reminder on INPT NURSE DISCHARGE note)
 - Coder upon review/coding of inpatient chart

Inpatient EHR Preparation

- Print Parameters (notes, orders)
- Quick Order Development
 - Lab quick orders
 - Lab AM Collect (LRZ LC)
 - Immediate Collect (LRZ IC)
 - Ward Collect (LRZ WC)
 - Send Patient (LRZ SP) [Outpatient]
 - Radiology quick orders (RAZ)
 - Consult quick orders (GMRCZ)



Inpatient Quick Orders



Lab Quick Orders

Inpatient Orders

Laboratory

AM Lab Orders...

Immediate/Timed Lab Orders...

AM Lab Orders...

Chemistry... Common Labs...

Hematology/Blood Bank... Diabetes Menu...

Renal Related Labs... Prenatal Labs...

Women's Health...

All Other Labs...

Common Labs

CMP	CBC	RPR
BMP	HGB	Pregnancy Test
Electrolytes	HCT	Urine Dipstick
Calcium	PT & INR	Urine Drug Screen (In House)
Phosphate	PTT	TSH
Magnesium	A1C	T4
Uric Acid	Lipid Profile (Fasting)	ESR
Ammonia	Troponin	CRP
Glucose	CKMB	Digoxin
Fasting Glucose	Stool Guiac	Lithium
LDH	Stool Guiac x3	Phenytoin (Dilantin)
GGTP	PSA	H. Pylori (IGG)
Amylase		
Lipase		
Ethanol		

Order a Lab Test

Available Lab Tests: CBC

Collect Sample: BLOOD (LAVE)

Specimen: BLOOD

Urgency: ROUTINE

Collection Type: Lab Collect

Collection Date/Time: Next scheduled lab collection

How Often?: ONCE

How Long?:

Clinical Indication:

CBC BLOOD LC ONCE

Accept Order

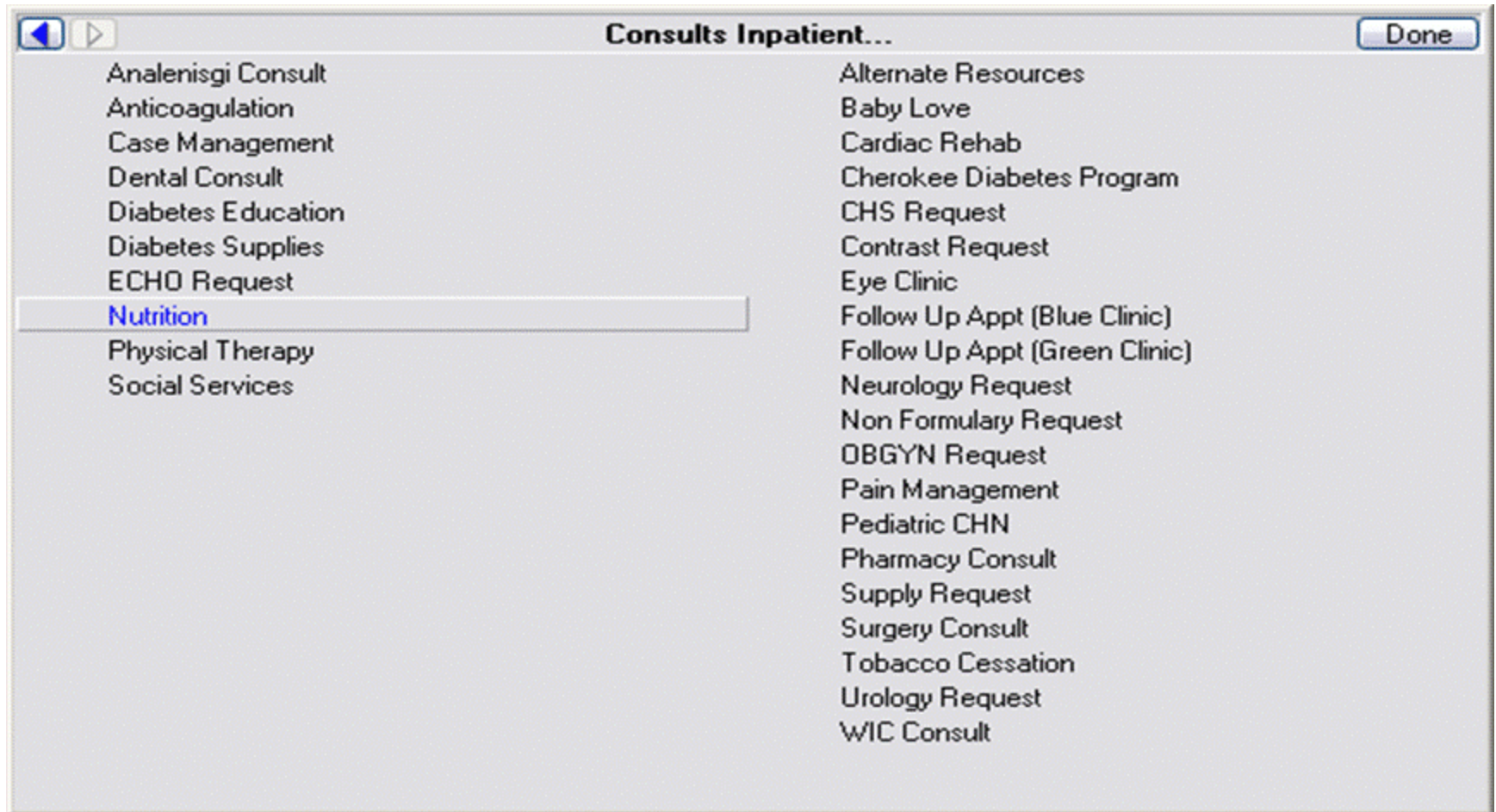
Quit

Radiology Quick Orders

The image displays a software interface for ordering radiology procedures. It consists of three main components:

- Imaging Inpatient... Menu:** A top-level menu with options: General Radiology..., Fluoroscopy..., Ultrasound..., Mammogram..., CT Scans..., and Other Imaging Exams... A light blue arrow points from this menu to the 'General Radiology...' sub-menu.
- General Radiology... Sub-menu:** A list of radiology procedures. The 'Chest Portable' option is highlighted with a light blue background. A light blue arrow points from this option to the 'Order an Imaging Procedure' dialog.
- Order an Imaging Procedure Dialog:** A detailed form for ordering a procedure. It includes:
 - Imaging Type:** GENERAL RADIOLOGY
 - Imaging Procedure:** CHEST SINGLE VIEW
 - Available Modifiers:** A list including '6 MONTH FOLL', '90 DEGREE LA', 'AIR-CONTRAST', 'ANKLES', 'ANNUAL', 'AORTA', 'AP', and 'ASIAL'. The 'PORTABLE EXAM' modifier is selected in the 'Selected Modifiers' list.
 - History & Reason for Exam:** cough
 - Requested Date:** TODAY
 - Urgency:** ROUTINE
 - Transport:** WHEELCHAIR
 - PreOp Scheduled:** (empty)
 - Category:** INPATIENT
 - Submit To:** RADIOLOGY - CIHA
 - Isolation:**
 - Exams Over the Last 7 Days:** (empty)
 - Final Procedure List:** CHEST SINGLE VIEW PORTABLE EXAM
 - Buttons:** Accept Order, Quit

Consult Quick Orders



Consult Template (Nutrition)

Reason for Request: NUTRITION REQUEST (INPATIENT)

Cherokee Indian Hospital -- Inpatient Nutrition Consultation Request

DEMO, PATIENT 00-00-01 is referred to nutritional services
for the purpose(s) of:

Reason for Referral/Provisional diagnosis:

Pertinent history and findings include:

- Tube feeding
- Persistent nausea/vomiting > 5 days
- Unintentional weight loss > 10 lbs in 3 months
- Poor appetite > 5 days
- Swallowing impairment
- Chronic diarrhea > 5 days
- Pressure ulcer > stage II / nonhealing wound
- Pregnant or lactating
- New-onset diabetes
- Gestational diabetes
- NPO > 3 days
- Failure to thrive
- Pancreatitis
- Hepatic encephalopathy

* Indicates a Required Field

Preview OK Cancel

Inpatient EHR Implementation Phase 1 - April 2007

Inpatient EHR Implementation

Phase 1 - April 2007

- Physician Coding Documentation
 - Purpose of Visit
 - Evaluation and Management Codes
- Inpatient Progress Notes (MD, RN)
- Inpatient Provider Order Entry (Labs, Radiology, Consults)
- Medication Reconciliation (PCC+)

Inpatient EHR Implementation

Phase 1 - April 2007

- **Physician Documentation**
 - Purpose of Visit
 - Selected from patient Problem List, patient Historical POVs, or Inpatient POV Picklist (contains most common admission diagnosis from QMAN search of inpatient visits)
 - Progress note template field added to pull POVS into history and physical, daily physician progress notes, and discharge summary for consistency

Inpatient Purpose of Visit Picklist

The screenshot displays a medical software interface for patient BARTLETT, ROBIN A. The patient's information includes: Pharm Ed 1, Demo.Patient, 22-Mar-1947 (61) F, INPATIENT, 10-Apr-2008 16:08, and attending physician Bolig, John J. The interface features a navigation menu on the left with sections for Overview and Screening, Coding, and Orders and Results. The main area is titled 'Purpose of Visit' and contains three tabs: Problem List, Historical POVs, and ICD Pick List. The 'ICD Pick List' tab is active, showing a list of medical conditions with checkboxes for selection. The list includes conditions such as Abdominal Pain, Alcohol Withdrawal, Asthma Unspec with Acute Exacerbation, Diabetes Type II, Uncontrolled, Unspecified, and many others. A 'Show All' checkbox is located at the bottom left of the list. Below the list, there is a 'Visit Diagnosis' section with a table for recording diagnoses and a 'Crisis Alerts' section with a table of alerts.

ICD Pick Lists Display Freq. Rank Code Description Cols 2

- Abdominal Pain
- Alcohol Withdrawal
- Alcohol Withdrawal Delirium
- Alcoholism, Chronic, Continuous
- Alcoholism, Chronic, Episodic
- Alcoholism, In Remission
- Anemia
- Asthma Unspec with Acute Exacerbation
- Cellulitis of Leg
- Chest Pain NOS
- Cholecystitis, Acute
- Cholecystitis, NOS
- Congestive Heart Failure, Unspecified
- Dehydration, Volume Depletion, Unspec
- Diabetes Type II, Controlled, Unspecified
- Diabetes Type II, Uncontrolled, Unspecified
- Diabetes with Ketoacidosis, Type II, Uncontrolled
- Diabetes With Renal Manifestations, Type Ii Or Unspecified Type, Not Stated As Uncontrolled
- Diabetes With Renal Manifestations, Type Ii Or Unspecified, Uncontrolled
- Edema
- Fluid Overload Disorder
- Gastritis, Acute, No Hemorrhage
- Gastritis, Alcoholic, No Hemorrhage
- Gastroenteritis, Presumed Infection
- GI Hemorrhage, Unspecified
- Hypertension, Unspecified, Essential
- Hypertensive Chronic Kidney Disease, Benign, With Chronic Kidney Disease Stage I Throu
- Intoxication, Alcohol Abuse, Continuous, Nondependent
- Intoxication, Alcohol Abuse, Episodic, Nondependent
- Intoxication, Alcohol Dependence, Continuous
- Intoxication, Alcohol Dependence, Episodic
- Intoxication, Alcohol Dependence, In Remission
- Lack of Housing
- Long Term Use of Anticoagulants
- Long-Term Insulin Use
- Noncompliance with Medical Treatment
- Obstructive Chronic Bronchitis, With Exacerbation
- Pneumonia, Organism NOS
- Pyelonephritis, Unspecified
- Urinary Tract Infection

Visit Diagnosis

Provider Narrative	ICD	ICD Name	Priority	Cause	Injury Date	Injury Cause	Injury Pl

Crisis Alerts

Crisis Alert	Date
**GIVE NO CONTROLLE...	12-Apr-2007 09:57
ADVANCE DIRECTIVE	25-Jan-2005 13:47
BH MASTER TREATME...	26-Oct-2007 19:43
BH SUBSTANCE ABUSE ...	26-Oct-2007 19:51
CRISIS NOTE	10-Apr-2007 11:46

Phase 1 Implementation Issues


- Purpose of Visits
 - Inappropriate codes/incomplete documentation common when provider selected POV from problem list and historical POVs
 - (i.e. DM type 2, NOS vs. controlled or uncontrolled; Alcohol dependence vs. abuse, chronic vs. in remission)
 - Entire admission documented with incomplete diagnosis since POV was being pulled into daily progress notes
 - INPT Coding progress note developed for deficiencies and clarifications to assist with communication with inpatient physicians and nurses
 - Sometimes POV crossed over to business office prior to completion of visit in ADT by coder ?mystery?


Inpatient EHR Implementation


Phase 1 - April 2007

- Physician Documentation
 - Evaluation and Management Codes (Superbill)
 - Inpatient ward admission – E&M codes entered
 - Initial Hospital Care
 - Subsequent Hospital Care (daily)
 - Discharge Hospital Care
 - Observation visits – E&M codes entered
 - Selected from Superbill Picklist vs. E&M tab due to incomplete list

Inpatient E&M Documentation

Evaluation n Management		Historical Procedures		CPT Pick List													
 Evaluation and Management																	
Type of Service			Level of Service														
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<input type="checkbox"/> Detailed	Straightforward	99221															
<input checked="" type="checkbox"/> Comprehensive	Moderate	99222															
<input type="checkbox"/> Comprehensive	High	99223															

Evaluation n Management		Historical Procedures		CPT Pick List													
 Evaluation and Management																	
Type of Service			Level of Service														
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Evaluation n Management		Historical Procedures		CPT Pick List							
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History and Exam	CPT Codes										
<input checked="" type="checkbox"/> 30 min or less	99238										
<input type="checkbox"/> more than 30 min	99239										

Observation E&M Documentation

- Observation E&M Codes (E&M tab list incomplete)

The screenshot shows the 'Evaluation and Management' software interface. It has three tabs: 'Evaluation n Management', 'Historical Procedures', and 'CPT Pick List'. The 'Evaluation and Management' tab is active, displaying a list of 'Type of Service' on the left and a table of 'Level of Service' on the right.

Type of Service	Level of Service	Complexity	CPT Codes
Initial Hospital Care	<input type="checkbox"/> Observation Inpatient Care	Straightforward	99234
Subsequent Hospital Care	<input type="checkbox"/> Detailed	Moderate	99235
Observation Inpatient Care	<input type="checkbox"/> Comprehensive	High	99236
Hospital Discharge			
Initial Inpatient Consult			

- Observation E&M Code Superbill Picklist Developed

The screenshot shows the 'Super-Bills' software interface. It has three tabs: 'Evaluation n Management', 'Historical Procedures', and 'CPT Pick List'. The 'Super-Bills' tab is active, displaying a list of medical services on the left and a list of CPT codes on the right. The 'CPT Pick List' tab is also visible, showing a list of CPT codes.

Medical Service	CPT Code	Description
Dental Consult	<input type="checkbox"/> 99217	Observation Care Discharge
Diabetes	<input type="checkbox"/> 99218	Observation Care (Detailed)
Diabetes Clinic Supplies	<input type="checkbox"/> 99219	Observation Care (Comprehensive Moderate)
Diabetes Supplies	<input type="checkbox"/> 99220	Observation Care (Comprehensive High)
E & M Observation Codes	<input type="checkbox"/> 99234	Same Day Hospital Admission (Detailed)
Education	<input type="checkbox"/> 99235	Same Day Hospital Admission (Comprehensive Moderate)
Emergency Room	<input type="checkbox"/> 99236	Same Day Hospital Admission (Comprehensive High)
Epogen Injection, Esrd		

Phase 1 Implementation Issues

- Evaluation and Management Codes
 - Difficult to determine event date since only inpatient admission date shown
 - May Edit narrative to include date in parenthesis assist in determining intended date without looking at visit detail

Code	Narrative	Qty	Diagnosis	Prim	Modifier 1	Modifier 2	Provider	CPT Name	Visit Date
99222	Initial Hospital Care (4/10)	1		Y			BARTLETT,ROBIN A	Initial Hospital Care	04/10/2008
99231	Subsequent Hospital Care (4/11)	1		N			BARTLETT,ROBIN A	Subsequent Hospital Care	04/10/2008
99231	Subsequent Hospital Care (4/12)	1		N			BARTLETT,ROBIN A	Subsequent Hospital Care	04/10/2008
99238	Hospital Discharge Day (4/13)	1		N			BARTLETT,ROBIN A	Hospital Discharge Day	04/10/2008

Inpatient EHR Implementation Phase 1 - April 2007

- Nursing Documentation

- Vital Signs
- Immunizations
- Health Screenings
 - Tobacco Use
 - Alcohol Use
 - Domestic Violence
 - Depression Screen
- Patient Education

Vitals Display	Vitals Entry	Vitals Description	Immunizations	Screening
Default Units	10-Apr-2008 16:31	Range	Units	
Temperature	98.6		F	
Pulse	80	60 - 100	/min	
Respirations	20		/min	
Blood Pressure	145/85	90 - 150	mmHg	
O2 Saturation	98		%	
Peak Flow				
Pain	5			
Height	64		in	
Weight	160		lb	

Add Immunization

Vaccine: INFLUENZA, SPLIT (INCL. PURIFIED) ...

Administered By: BARTLETT,ROBIN A ...

Lot: UT2475AA SANDFI PASTEUR

Injection Site: Right Deltoid IM

Volume: .5

Vac. Info. Sheet: 07/16/2007 ...

OK

Cancel

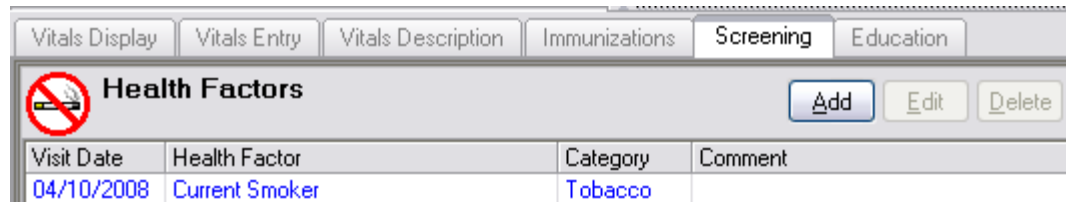
Current

Historical

Refusal

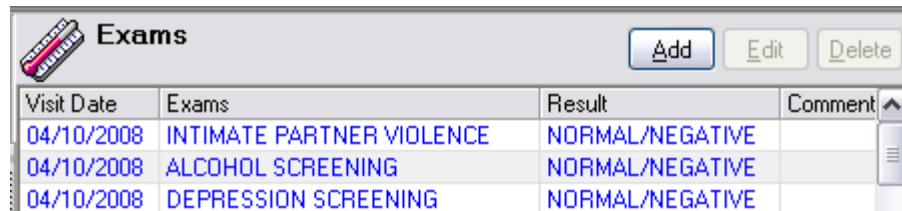
Health Screening Documentation

- Health Factors
 - Tobacco Screen



Visit Date	Health Factor	Category	Comment
04/10/2008	Current Smoker	Tobacco	

- Exams
 - Alcohol, Domestic Violence, Depression Screens



Visit Date	Exams	Result	Comment
04/10/2008	INTIMATE PARTNER VIOLENCE	NORMAL/NEGATIVE	
04/10/2008	ALCOHOL SCREENING	NORMAL/NEGATIVE	
04/10/2008	DEPRESSION SCREENING	NORMAL/NEGATIVE	

Patient Education Documentation

Education Topic Selection

0 items

Select By Category List Disease & Topic Entry Pick List
 Name Lookup Procedure & Topic Entry

Pick Lists: Inpatient Admission

Show All

- Admission To Inpatient Admission
- Admission To Inpatient Blood Transfusions
- Admission To Inpatient Discharge
- Admission To Inpatient Fall Prevention
- Admission To Laboratory
- Admission To Medication
- Admission To New
- Admission To Nutrition - Child, Maternal, Elder Health
- Admission To Hospitalization of Care
- Admission To Hospital-Safety/accident Prevention
- Advance Directives-Durable Power Of Attorney For Health Care
- Advance Directives-Information
- Advance Directives-Living Will
- Advance Directives-Patient Information Literature
- Advance Directives-Patient Rights And Responsibilities

Type of Training Individual Group

Comprehension Level: GOOD

Length: 30 (min)

OK Cancel

Phase 1 Implementation Issues

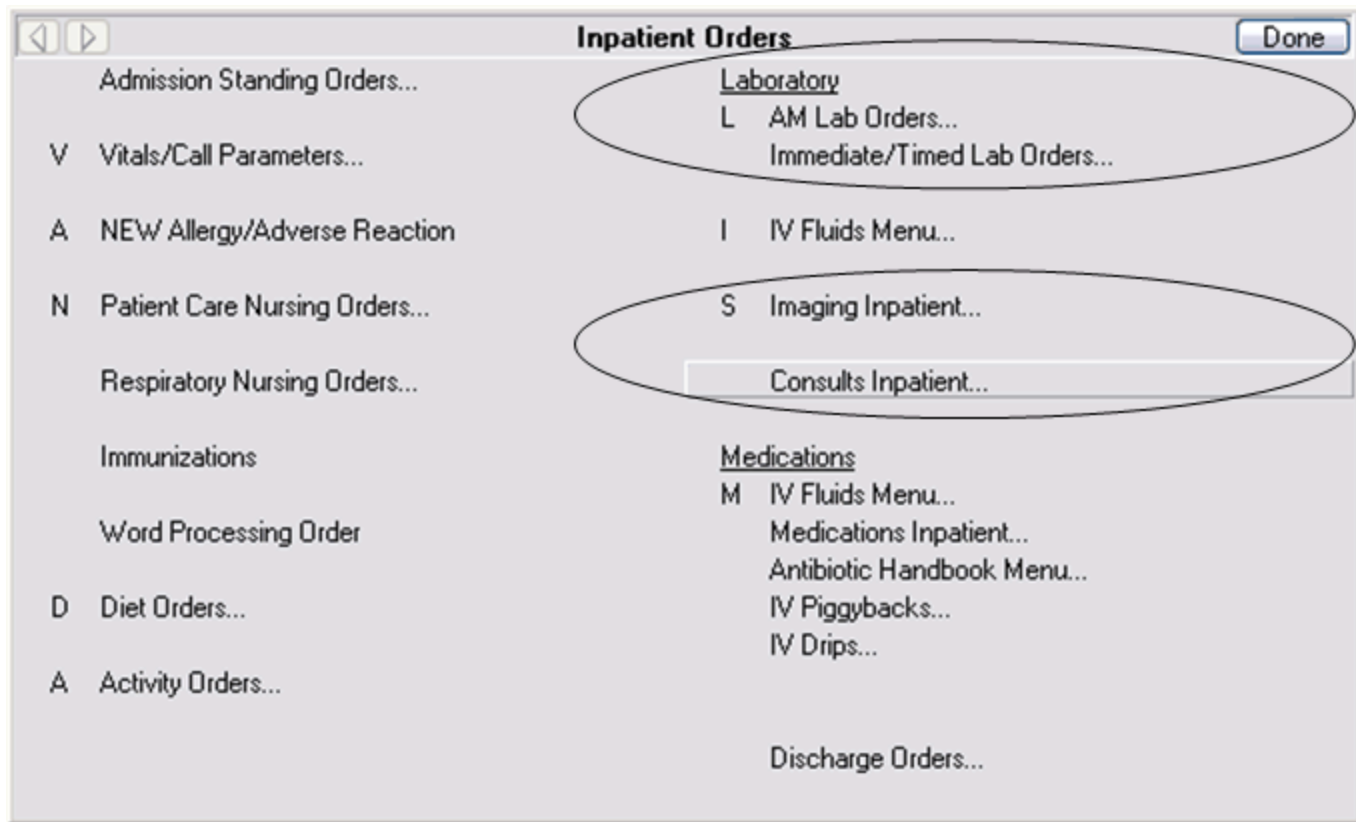
- Nursing staff documents vitals and immunizations/skin tests on regular basis via EHR
 - Immunization tab shows inpatient admission date vs. event date
- Inpatient Nurse Admission Assessment contains all the health screening questions but nurses often busy and forget to document on screening tab
 - Inpatient coders can assist in picking up these codes and documenting via ADT after discharge
- Patient Education picklists developed for common inpatient admission, disease states, and discharge education topics
 - Nurses often forget to document on Education tab but progress notes do contain information regarding education provided

Inpatient EHR Implementation

Phase 1 - April 2007

- Provider Order Entry
 - Lab, Radiology, Consults
 - Clerk, Nurse, and Chart Check Order Verification
- Inpatient Progress Notes
 - Physician (H&P, Discharge Summary)
 - Nurse (Admission Assessment, Shift Note, Problem List, CIWA/COWS, Critical Labs, Discharge/Transfer Note, etc.)
 - Coding (Final Diagnosis Worksheet, Deficiency)
- Consult Service Tracking
 - Complete/Update Consults (all services)

Inpatient Quick Orders



Order Verification

- Clerk verifies order upon updating cardex
- Nurse acknowledges order via verification
- Night nurse verifies order during 24 hour chart check

Service	Order	Duration	Provider	Nurse	Clerk	Chart	Status
Lab	HEMOGLOBIN A1C BLOOD LC ONCE Indication: pancreatitis LB #15149	Start: 04/09/08 06:57 Stop: 04/09/08 08:31	Toedt,D	MEL	VLR	RFS	complete
Lab	TSH BLOOD SERUM LC ONCE Indication: pancreatitis LB #15149	Start: 04/09/08 06:57 Stop: 04/09/08 09:02	Toedt,D	MEL	VLR	RFS	complete
Lab	T4 (FREE T4) BLOOD SERUM LC ONCE Indication: pancreatitis LB #15149	Start: 04/09/08 06:57 Stop: 04/09/08 09:02	Toedt,D	MEL	VLR	RFS	complete

Inpatient Progress Note Templates

Progress Notes Consultation Notes Discharge Summaries

File View Action Options

Last 100 Signed Notes

All signed notes

- Apr 10,08 INPT NURSE ADMISSION, INPATIENT, ROBIN A BARTLETT, PHARMD, NCPS
- Apr 10,08 INPT NURSE SHIFT, INPATIENT, ROBIN A BARTLETT, PHARMD, NCPS
- Apr 10,08 INPT NURSE PROBLEM LIST, INPATIENT, ROBIN A BARTLETT, PHARMD, N
- Apr 10,08 INPT NURSE CIWA, INPATIENT, ROBIN A BARTLETT, PHARMD, NCPS

Templates

- CIHA INPATIENT
 - INPT PHYSICIAN
 - INPT H & P
 - INPT H & P SUBSTANCE ABUSE
 - INPT MINIMAL CLICKS
 - INPT PHYSICIAN NOTE
 - INPT CALL REPORT
 - INPT CODING
 - INPT DISCHARGE FOLLOWUP RECORD
 - DISCHARGE SUMMARY
 - DICTATION DISCHARGE SUMMARY
 - INPT FINAL DIAGNOSIS WORKSHEET
 - INPT CODING
 - A SHEET
 - UTILIZATION REV
 - INPT DEFICIENCY LIST
 - INPT FINAL DIAGNOSIS WORKSHEET

- INPT NURSE
 - INPT NURSE NEURO CHECKS
 - INPT NURSE CROUP SCORE
 - INPT NURSE ADMISSION
 - INPT NURSE SHIFT ASSESSMENT (med /surg)
 - INPT NURSE SHIFT ASSESSMENT (peds)
 - INPT NURSE PROBLEM LIST
 - INPT CRITICAL LAB VALUE
 - INPT IV FLUID RECORD
 - INPT NURSE CIWA
 - INPT NURSE ADL PROGRESS
 - INPT NURSE TEMPLATE COMPONENTS
 - INPT NURSE RESTRAINT
 - INPT NURSE TRANSFER
 - INPT NURSE DISCHARGE

Final Diagnosis Worksheet

```
*****
"Official Attestation for Billing Purposes"
Final Diagnosis Worksheet
Cherokee Indian Hospital Authority
Cherokee, NC 28719
*****

|PATIENT HRCN|      |PATIENT SSN|
Name: |PATIENT NAME|      |CURRENT WARD-ROOM|
DOB: |PATIENT DATE OF BIRTH|   Age: |PATIENT AGE|   Gender: |PATIENT
SEX|

Admission Date: |VISIT DATE| {FLD:DATE}
{FLD:CIH TRANSFER/DISCHARGE} {FLD:DATE}
Length of Stay: {FLD:CIH TEXT 6} days

Initial Impression: {FLD:CIH DRG IMPRES}
|ADMITTING DX|

Principal Diagnosis: {FLD:CIH DRG PRIN DX}

Secondary Diagnosis

Procedures: {FLD:N/A}

Out-of-Facility Procedures / Consults: {FLD:N/A}

I certify that the narrative description of the principal and secondary
diagnosis and the procedures performed is accurate and complete to the
best of my knowledge.
```

INPT Coding Deficiency List

Template: INPT DEFICIENCY LIST

ACTION NEEDED

Inpatient Deficiency List

Patient Name: DEMO, PATIENT HRN: 00-00-01

Admission Date: ... Discharge Date: ...

Provider Deficiency
 Nurse Deficiency

Provider Deficiency

Provider:

- Coding Worksheet: Complete (date)
- Review for Principle Diagnosis
- Additional Diagnosis Required:
- Additional Diagnosis Required:
- Additional Diagnosis Required:
- Complete Level of Care
- Sign A-Sheet Sign
- Procedure Documentation Required:
- Discharge Summary Narrative Required Complete (date)
- History I, II, III Complete (date)
- Progress Note Complete (date)
- Discharge Follow-up Records Complete (date)
- EKG Sign
- PCC / ER Record Complete (date)
- Physical Examination Complete (date)
- Procedure Consent Complete (date)

Nurse Deficiency

Nurse:

- Admission Note Complete (date)
- Progress Notes Complete (date)
- Discharge Note Complete (date)
- Missing?

Consult Service Tracking

The screenshot displays a medical software interface with three tabs at the top: "Progress Notes", "Consultation Notes", and "Discharge Summaries". The "Consultation Notes" tab is active. Below the tabs is a menu bar with "File", "View", "Action", and "Options".

The main window shows a list of consults on the left and a detailed view of a selected consult on the right. The selected consult is for "Nov 26,07 (c) NUTRITION REQUEST (INPATIENT) Cons" with "Consult #: 10504".

The "Consult Tracking..." menu is open, showing the following options:

- New...
- Consult Tracking...
- Consult Results...
 - Complete/Update Results...
 - Make Addendum...
 - Attach Medicine Results
 - Remove Medicine Results
 - Change Title...
 - Reload Boilerplate Text
 - Add to Signature List
 - Delete Note...
 - Edit Note...
 - Save Without Signature
 - Sign Note Now...
 - Identify Additional Signers
 - Print Note

The detailed view of the consult shows the following information:

- Current Pat. Status: Inpatient
- Ward: INPATIENT
- Information: NUTRITION REQUEST (INPATIENT)
- Location: PHARMACY
- Provider: [Redacted]
- to be rendered on an INPATIENT basis
- Bedside
- Routine
- Item: NUTRITION REQUEST (INPATIENT)
- Consult Request
- 1 Diagnosis: chest pain
- Request: Indian Hospital -- Inpatient Nutrition Consultation Request
- NT 00-00-01 is referred to nutritional services
- purpose(s) of: low fat diet education
- Referral/Provisional diagnosis: [Redacted]

Phase 1 Implementation Issues

- Delayed orders not set up properly during inpatient EHR phase 1 implementation
- Work around developed
 - Physicians ordered inpatient lab, radiology, and consult orders, and documented history and physical (INPT H&P) progress note prior to patient arrival on the floor under the Emergency Medicine Visit created by the ER check-in RPMS package (ERS)
 - Manual print of inpatient orders required since print parameters only set-up to print orders under inpatient location
 - Orders missed/delayed due to inconsistent order printing
 - Changed process for physicians to create a new Emergency Medicine visit with In-hospital type to assist in identification of visit so that it could be physically merged into Inpatient visit by inpatient coder
 - Difficult to do in real time – manual print of orders still needed

Inpatient (Phase 2) EHR Implementation and Lessons Learned

Mary Lambert, CCS
LCDR Jonathan Dando, RPH, NCPS
LCDR Robin Bartlett, PharmD, NCPS
Cherokee Indian Hospital

Preparation for Phase 2 Inpatient EHR Implementation

Inpatient EHR Preparation

- Quick Order Development
 - Pharmacy quick orders
 - Inpatient Medications (quick order type)
 - Unit Dose Meds (PSOZ)
 - IV Piggyback Meds (PSJIZ)
 - IV Medications (quick order type)
 - IV Admixtures/Infusions (PSJIVZ)
 - IV Fluids (PSIVZ)

Pharmacy Quick Order – Unit Dose

The image shows a software interface for creating medication orders. It consists of two main windows: a 'Medications Inpatient...' menu and a 'Medication Order' form.

Medications Inpatient... Menu:

- NEUROLOGIC & PSYCHOMO:** Seizure & Anxiety Meds..., Antidepressant Meds..., Other CNS Meds...
- HEENT:** Eye/Ear/Nose/Throat Me..., Allergy & Cold Meds...
- CHEST & LUNGS:** Pulmonary Meds..., CV Hypertension Meds..., CV Lipid Meds... (highlighted), CV Other Meds...
- ABDOMEN:** GI Meds...
- TOBACCO CESSATION:** Second Wind Warriors...
- BONES MUSCLES JOINTS:** Rheumatoid Meds..., Narcotic Meds..., Non Narcotic Pain Meds...
- ENDOCRINE:** Diabetes Meds..., Contraceptive Meds..., Other Endocrine Meds...
- SKIN:** Dermatologic Meds...
- HEMATOLOGY:** Anemia & Anticoag Meds...
- OTHER MEDICATIONS:** Vitamins & Lytes...
- INFECTIOUS DISEASE:** Anti Infective Meds..., Outside Rx Menu..., Discharge Meds...

CV Lipid Meds... Window:

STATINS	FIBRATES
Simvastatin 5mg QPM	Gemfibrozil 600mg BID
Simvastatin 10mg QPM	
Simvastatin 20mg QPM	
Simvastatin 40mg QPM	
Simvastatin 80mg QPM	
BILE ACID SEQUESTRANTS	NIACIN DERIVATIVES
Colestipol Pwdr 5G QDAY	Niaspan 500mg QPM
Colestipol Tab 2G QDAY	Niaspan 750mg QPM
	Niaspan 1000mg QPM
	Niaspan 1500mg QPM
	Niaspan 2000mg QPM

Medication Order Form:

Medication Order

SIMVASTATIN TAB Change

[Display Restrictions/Guidelines](#)

Dosage	Route	Schedule
40MG	ORAL	QPM <input type="checkbox"/> PRN
5MG	ORAL	QAM BB
10MG	J TUBE	QDAY
20MG	G TUBE	QHS
40MG		QHS (INSULIN)
80MG		QHS PRN
160MG		QID
		QID (ACCU)
		QPM

Comments:
FOR CHOLESTEROL

Expected First Dose: TODAY 10-Apr-2008@10:00 pm

Priority: ROUTINE

Give Additional Dose Now

SIMVASTATIN TAB
40MG PO QPM FOR CHOLESTEROL

ADR's Accept Order Quit

Pharmacy Quick Orders - IV Piggybacks

IV Piggybacks... Done

Aminoglycosides
 Gentamicin __MG IVPB Q24H
 Tobramycin __MG IVPB Q24H

Anaerobe Antimicrobials
 Clindamycin 600MG IVPB Q6H
 Metronidazole 500MG IVPB Q8H

Ampicillin Derivatives
 Ampicillin 1GM IVPB Q6H

Carbapenems
 Imipenem 500MG IVPB Q6H

Cephalosporins (First Generation)
 Cefazolin 1GM IVPB Q8H

Second Generation
 Cefotetan 2GM IVPB Q12H

Third Generation
 Cefotaxime 2GM IVPB Q8H
 Ceftazidime 1GM IVPB Q8H
 Ceftriaxone 1GM IVPB Q24H

Iron Supplements
 Ferrlecit 125mg/100ml IVPB ONCE

Penicillins
 Penicillin 5MIL UNITS IVPB Q6H

Antistaphylococcal Penicillins
 Nafcillin 1 GM IVPB Q6H

Penicillin and Beta Lactamase Inhibitors
 Unasyn 1.5GM IVPB Q6H
 Timentin 3.1GM IVPB Q6H

Extended Spectrum Penicillin
 Piperacillin 3GM IVPB Q6H

Macrolides
 Erythromycin 500MG IVPB Q6H

Tetracyclines
 Doxycycline 100MG IVPB Q12H

Vancomycin
Vancomycin 1GM IVPB Q24H

Fluoroquinolones
 Levofloxacin 500MG IVPB Q24H

Histamine H2 Receptor Antagonist
 Ranitidine 50MG IVPB Q8H

Medication Order Change

VANCOMYCIN INJ Change

Dosage Route Schedule PRN

Dosage	Route	Schedule
1GM/1VIAL	INTRAMUSCULAR	PREDHI
1GM/1VIAL	INTRAVENOUS	PREDLO
2GM/2VIAL	NASAL	Q 48 H
2GM/2VIAL	SUBCUTANEOUS	Q 8 HRS
500MG/1VIAL	IV PIGGYBACK	Q-OTHER-DAY
1000MG/2VIAL		Q12H
		Q1H
		Q24H

Comments:

Priority: ROUTINE

Give Additional Dose Now

ADR's

Accept Order

Quit

VANCOMYCIN INJ
 ONE GRAM IVPB Q24H

Pharmacy Quick Orders – IV Infusions

The image shows two windows from a pharmacy software interface. The top window, titled "IV Drips...", contains a list of infusion options:

- Banana Bag Infusion / 1000ml NaCl
- Calcium Gluconate 1gm / 1000ml NaCl
- Diltiazem 125mg / 100ml D5w
- Heparin 25000 Units / 500ml D5w
- Insulin Regular 100units / 100ml D5w
- Magnesium Sulfate 1gm / 100ml D5w
- Multivitamin Inj 10ml / 1000ml NaCl
- Nitroglycerin 50mg / 500ml D5w

A blue arrow points from the "Insulin Regular 100units / 100ml D5w" option to the "IV Fluid Order" window below. The "IV Fluid Order" window has two tabs: "Solutions" and "Additives".

Solutions Tab:

- AA <AMINO AC
- AMINO ACID 8.5%/ELECTROLYTES
- BANANA BAG INJ,SOLN
- D51/2NSKCL20 <DEXTROS
- D51/2NSKCL30 <DEXTROS
- D51/4NSKCL20 <DEXTROS
- D51/4NSKCL30 <DEXTROS
- D51 R <DEXTROS

Additives Tab:

Solution/Additive	Volume	Strength
DEXTROSE 5% IN WATER INJ,SOLN	100	ML
INSULIN, REGULAR INJ	100	UNITS

Comments: (FINAL CONC=1UNIT/1ML)

Infusion Rate: [] ml/hr

Priority: ROUTINE

Summary: INSULIN, REGULAR INJ 100 UNITS in DEXTROSE 5% IN WATER INJ,SOLN 100 ml (FINAL CONC=1UNIT/1ML)

Buttons: Remove, Accept Order, Quit

Pharmacy Quick Order - IV Fluids

IV Fluids Menu...
Done

HALF NORMAL SALINE (1/2 NS)
Sodium Chloride 0.45% (1000ml)

NORMAL SALINE (NS)
Sodium Chloride 0.9% (1000ml)
Sodium Chloride 0.9% (500ml)

LACTATED RINGERS (LR)
Lactated Ringers (1000ml)
Lactated Ringers in D5W (1000ml)

POTASSIUM SUPPLEMENTS

NS WITH KCL
NaCl 0.9% & KCl 20mEq/L (if K 4 to 5)
NaCl 0.9% & KCl 40mEq/L (if K 3 to 4)

D5 1/2NS WITH KCL
Dextrose 5%/NaCl 0.45%/KCl 20mEq/L

KCL MINIBAGS
Potassium Chloride 10mEq/100ml
Potassium Chloride 20mEq/100ml

Banana Bag Infusion / 1000ml NaCl

DEXTROSE 5% IN WATER (D5W)
Dextrose 5% in Water (1000ml)

DEXTROSE 5% NORMAL SALINE (D5 NS)
Dextrose 5% in NaCl 0.9% (1000ml)
Dextrose 5% in NaCl 0.9% (500ml)

Saline Lock

IV Fluid Order
Close

Solutions Additives

AA	<AMINO AC
AMINO ACID 8.5%/ELECTROLYTES	
BANANA BAG INJ,SOLN	
D51/2NSKCL20	<DEXTROS
D51/2NSKCL30	<DEXTROS
D51/4NSKCL20	<DEXTROS
D51/4NSKCL30	<DEXTROS
NS R	<DEXTROS

Infusion Rate: 100 ml/hr

Priority: ROUTINE

Solution/Additive	Volume/Strength
SODIUM CHLORIDE 0.9% INJ,SOLN	1000 ML

Remove

Comments

SODIUM CHLORIDE 0.9% INJ,SOLN 1000 ml 100 ml/hr

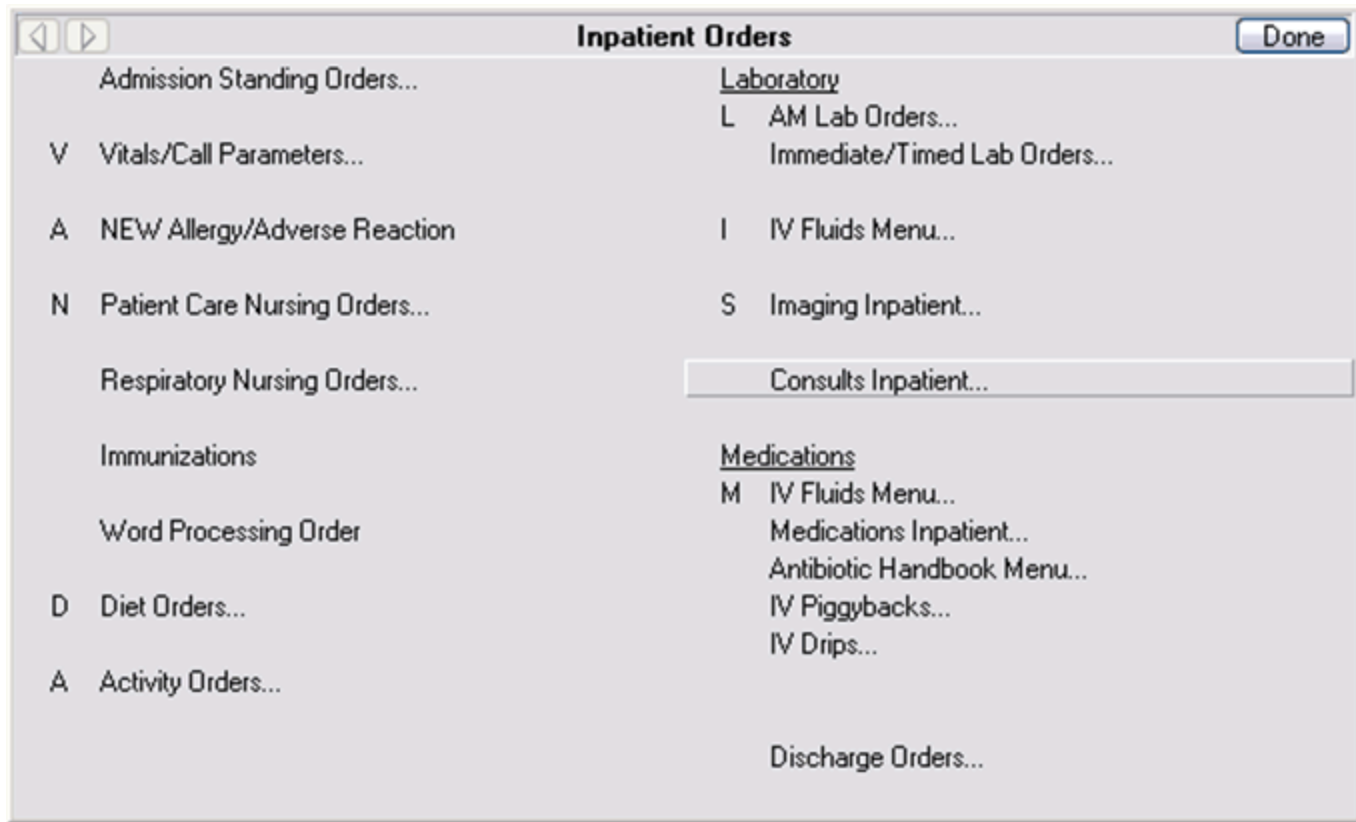
Accept Order

Quit

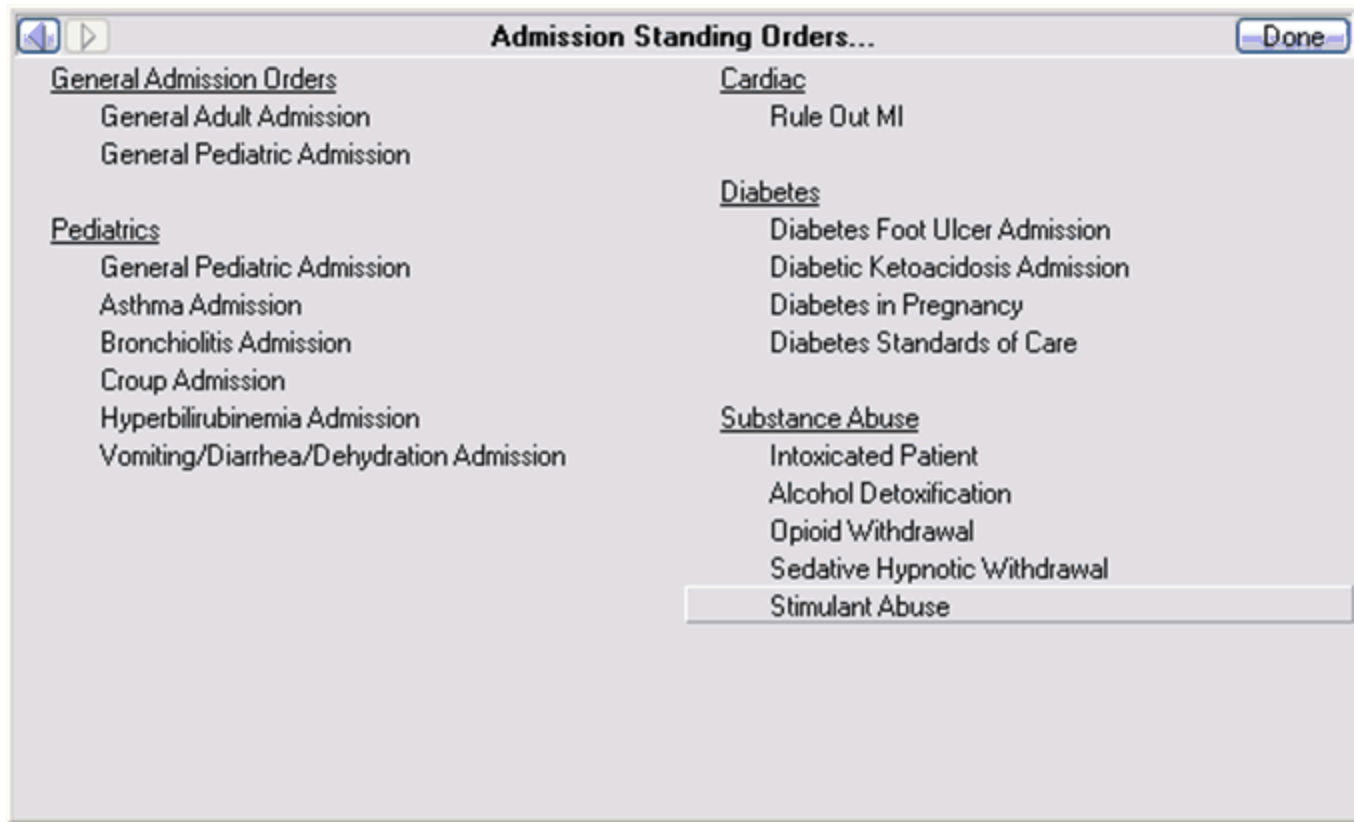
Inpatient EHR Preparation

- Quick Order Development
 - Nursing quick orders (ORZ)
 - Generic Nursing quick orders (ORGXZ)
 - Standing admission order sets
 - VANDALISM Acronym
 - V - Vitals
 - A - Allergies
 - N - Nursing orders
 - D - Diet
 - A - Activity orders
 - L - Labs
 - I - IV Fluids
 - S - Special orders (Imaging, Consults, etc.)
 - M - Medications

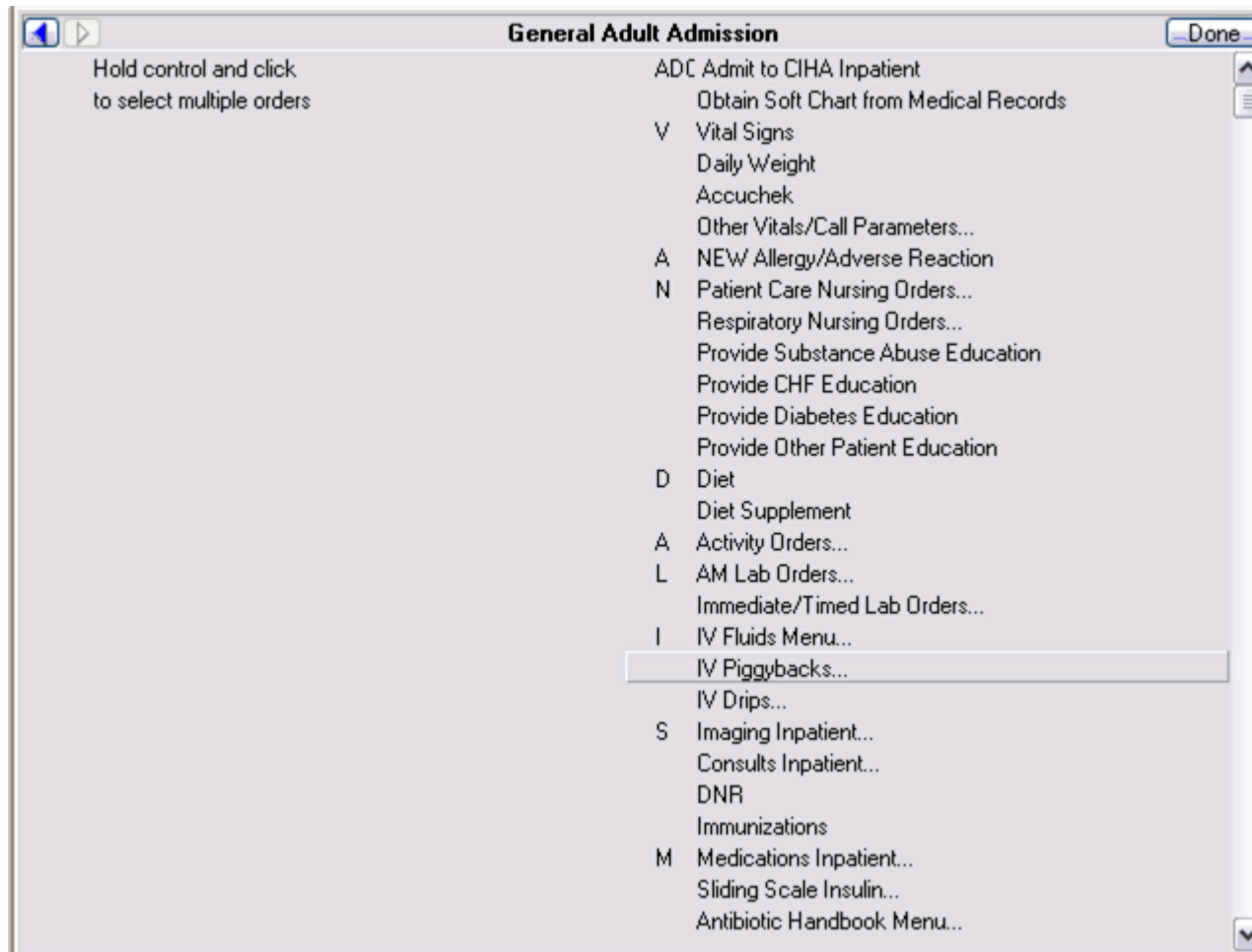
Inpatient Quick Orders



Standing Admission Orders



Admission Order Set



Inpatient EHR Setup

Office of Information Technology (OIT) Support

November 2007

Inpatient EHR Setup – OIT Support

November 2007

- Inpatient Site Parameters
- Delayed Orders Set up
- Auto Discontinuation Parameters
- Order Checks
- Notifications
- Team List Management
- Print Parameters (pharmacy orders)
- Standing Admission Order Set Development

Write Delayed Admit To
Delayed Orders

Delayed Order Issues

- Process change after delayed orders set up properly
 - Physician writes delayed inpatient admission orders released upon ADT admission
 - Document INPT H&P progress note under Emergency Medicine visit created during check-in to ERS package
 - After inpatient discharge, Medical Records can move note from Emergency Medicine visit into Inpatient visit

Inpatient EHR Implementation

Phase 2 - January 2008

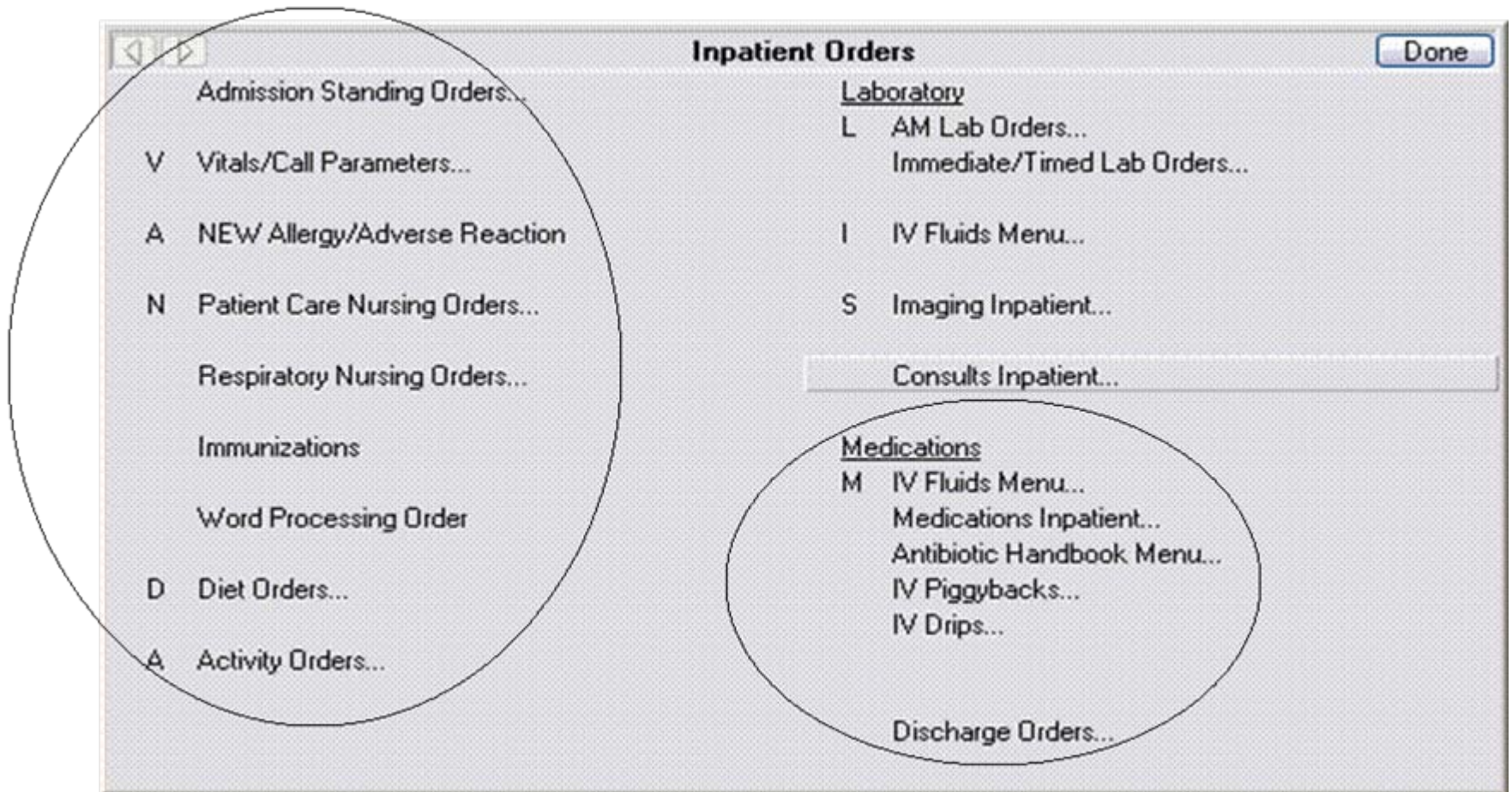
Inpatient EHR Implementation Phase 2 - January 2008

- Provider Order Entry
- Order Verification / Nursing Order Completion
- Coding Documentation (via EHR)
 - Final Diagnosis Worksheet
 - A Sheet
- Medication Reconciliation (via EHR)
 - EHR Progress Flag first dose medications
 - Note (Admission, Transfer, Discharge)

Inpatient EHR Implementation Phase 2 – January 2008

- Provider Order Entry
 - Standing Admission Orders (VANDALISM)
 - Vital Sign / Accucheck Orders
 - Nursing Orders
 - Diet Orders
 - Activity Orders
 - IV Fluid Orders
 - Medication Orders
- Order Verification / Nursing Order Completion

Inpatient Quick Orders



Coding Documentation

- E&M Code Documentation - back to paper
- Final Diagnosis Worksheet EHR note template
 - Includes Present on Admission documentation
 - Physician completed for awhile on patient discharge in addition to daily physician note and discharge summary – too many steps
 - Combined into Discharge Summary template
- A Sheet EHR note documentation
 - Copy and paste from ADT (RPMS) into EHR after coding completion

Coding Issues

- Evaluation and Management Code Documentation
 - Missed/duplicate E&M codes using EHR provider entry due to difficulty in determining event date (admission visit date appears with all codes)
 - Business office often had to remove all codes and reenter in order to drop bill due to inconsistencies
 - Date in parenthesis assisted but not all providers were consistent due to added steps to edit and training issues
 - May revisit if visit date column is changed to event date in EHR display (enhancement request submitted)
 - Business office scans paper E&M code documentation into Vista Imaging scanning software

Original Final Diagnosis Worksheet

```
*****  
"Official Attestation for Billing Purposes"  
Final Diagnosis Worksheet  
Cherokee Indian Hospital Authority  
Cherokee, NC 28719  
*****  
  
|PATIENT HRCM| |PATIENT SSM|  
Name: |PATIENT NAME| |CURRENT WARD-ROOM|  
DOB: |PATIENT DATE OF BIRTH| Age: |PATIENT AGE| Gender: |PATIENT  
SEX|  
  
Admission Date: |VISIT DATE| (FLD:DATE)  
{FLD:CIN TRANSFER/DISCHARGE} (FLD:DATE)  
Length of Stay: {FLD:CIN TEXT 5} days  
  
Initial Impression: (FLD:CIN DRG IMPRES)  
|ADMITTING DX|  
  
Principal Diagnosis: (FLD:CIN DRG PRIN DX)  
  
Secondary Diagnosis (Present on Admission):  
  
Secondary Diagnosis (NOT Present on Admission): (FLD:M/A)  
  
Procedures: {FLD:M/A}  
  
Out-of-Facility Procedures / Consults: {FLD:M/A}  
  
I certify that the narrative description of the principal and secondary  
diagnosis and the procedures performed is accurate and complete to the  
best of my knowledge.
```

Final Diagnosis Worksheet Combined with Inpatient Discharge Summary

```
=====
CHEROKEE INDIAN HOSPITAL -- Inpatient Discharge Summary
=====

|PATIENT HRCN|      |PATIENT SSN|
Name: |PATIENT NAME| |CURRENT WARD-ROOM|
DOB: |PATIENT DATE OF BIRTH| Age: |PATIENT AGE| Gender: |PATIENT
SEX|

Admission Date: |VISIT DATE| {FLD:DATE}
{FLD:CIH TRANSFER/DISCHARGE} {FLD:DATE}
Length of Stay: {FLD:CIH TEXT 5} days

REASON FOR ADMISSION - See Admission IMPT H&P progress note.
Initial Impression: {FLD:CIH DRG IMPRES}
|ADMITTING DX|

DISCHARGE DIAGNOSES:
Principal Diagnosis: {FLD:CIH DRG PRIN DX}

Secondary Diagnosis (Present on Admission):

Secondary Diagnosis (NOT Present on Admission): {FLD:N/A}

PROCEDURES PERFORMED:
Procedures: {FLD:N/A}

Out-of-Facility Procedures / Consults: {FLD:N/A}

PAST MEDICAL HISTORY:
|ACTIVE PROBLEMS| |
```

```
ALLERGIES:
|ALLERGIES/ADR|

HOSPITAL COURSE:

SIGNIFICANT FINDINGS:

STUDIES/LABS/CONSULTS PENDING AT TIME OF DISCHARGE:

CONDITION:

DIET:

ACTIVITY LEVEL:

DISCHARGE DISPOSITION:

AFTERCARE PLAN:

PATIENT EDUCATION:
|V EDUCATION EVALUATION|

DISCHARGE MEDICATIONS:
|ACTIVE MEDS OUTPATIENT|

I certify that the narrative description of the principal
and secondary diagnosis and the procedures performed is accurate and
complete to the best of my knowledge.
```

Dictation Discharge Summary

- Physician has option to dictate hospital course of discharge summary
- Physician completes EHR template under Discharge Summary tab with notation to see dictation addendum
- Transcriptionist makes addendum to Discharge Summary note with physician as author for dictation remarks
- Physician receives notification to sign addendum

A Sheet EHR Documentation

- Inpatient Coder completes inpatient coding via RPMS ADT package as usual
- Copy and pastes “A Sheet” from EHR RPMS tab (allows to scroll up) into EHR progress note with INPT A SHEET title
- Identifies MD as additional signer to note
- Physician receives notification to cosign A Sheet EHR note
- Eliminates need for physician to sign off on paper copy of A Sheet

Inpatient EHR Implementation Lessons Learned

- Interdepartmental Communication Important
 - EHR Meetings every week (Thurs)
 - Involve physicians, nursing, clerks, coding and business office staff with process updates
 - Clinical Applications Coordinator should be available to assist with trouble shooting issues and adding additional quick orders during implementation

Inpatient EHR Implementation Lessons Learned

- Staff Training Important
 - Training manual developed for quick reference
 - Multiple trainers ideal – train super end users that can reach night shifts
 - Ideal training setting
 - Group and/or one-on-one training
 - Away from patient care activities prior to implementation
 - Extra nursing staff coverage may be needed during initial implementation phases due to learning curve
 - One-on-one medical staff training

EHR for Inpatient Training

- EHR for Inpatient Training offered by Office of Information Technology (OIT)
 - First training session April 21-25, 2008 in Albuquerque, NM
 - Other training sessions TBA - additional training dates to be posted on www.ihs.gov
- Updated manuals now available on www.ihs.gov
 - Inpatient EHR CAC Set-up Guide (Revised Feb 2008)
 - Inpatient EHR User Guide (Revised Feb 2008)
- Join Inpatient EHR Listserv
EHRIP@LISTSERVE.IHS.GOV

Questions & Discussion

Really **P**owerful at **M**easuring **S**tuff