


ATP Initiatives in Healthcare Informatics

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Advanced Technology Program...

Overview of presentation:

- **Advanced Technology Program (ATP).**
- **ATP Information Infrastructure for Healthcare (IIH) Focused Program, (1994-1997)**
- **ATP vision of healthcare informatics for the 21st century.**

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Advanced Technology Program...

Advanced Technology Program Mission:

- To further the development and dissemination of “high-risk” technologies which offer the potential for significant, broad-based economic benefits for the nation;
- To support industry leadership in planning and implementing projects;
- With a focus on civilian technologies.




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Advanced Technology Program...

ATP addresses the “funding gap”:

- that exists between invention and innovation;
- in which technical innovators face a “valley of death” in institutional support between a scientific breakthrough and a market-ready prototype.




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Advanced Technology Program...

Information Infrastructure for Healthcare (IIH) Focused Program:

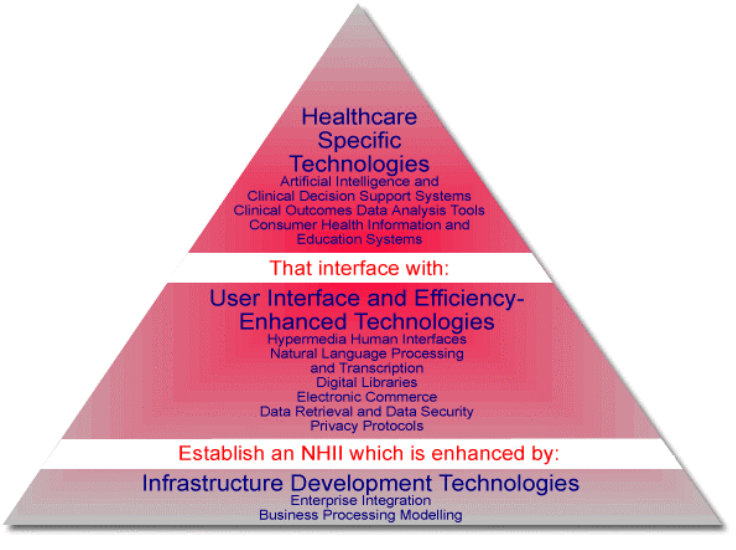
- Three solicitations: 1994, 1995, 1997;
- Infrastructure Development Technologies (1994);
- User Interface and Efficiency Enhancement Technologies (1995);
- Healthcare-Specific Technologies (1997).



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IIH Focused Program




Healthcare Specific Technologies
Artificial Intelligence and Clinical Decision Support Systems
Clinical Outcomes Data Analysis Tools
Consumer Health Information and Education Systems

That interface with:


User Interface and Efficiency-Enhanced Technologies
Hypermedia Human Interfaces
Natural Language Processing and Transcription
Digital Libraries
Electronic Commerce
Data Retrieval and Data Security
Privacy Protocols

Establish an NHII which is enhanced by:

Infrastructure Development Technologies
Enterprise Integration
Business Processing Modelling




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Information Infrastructure for Healthcare (IIH) Focused Program

Purpose:

- to develop automated tools to catalyze the growth of the healthcare portion of the National Information Infrastructure (NII);
- to enable enterprise-wide integration of information among ATP initiatives in healthcare informatics.




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Development of IIH

Requires:

- the integration, synthesis, and definition of any information that needs to be shared across the business enterprise; and,
- the means by which to transport, store, and access information in a way that enhances user productivity.




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ATP and IIH Awarded Projects....

- **Between 1990 and 2001, ATP awarded funds to:**
 - 526 projects totaling \$3.2B in which industry contributed \$1.6B;
- **During 1994, 1995, and 1997, the IIH focused program awarded funds to:**
 - 32 projects totaling \$295M in which industry contributed \$149M;
 - 7 additional projects from the Open Competition totaling \$27M in which industry contributed \$14M.
- **Average award per project is \$2.5M over 3 years.**



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Advanced Technology Program...

ATP vision of healthcare informatics for the 21st century:

- seamless continuum of care;
- evidence-based healthcare;
- wellness and prevention;
- privacy and security.




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ATP Vision for Healthcare Informatics....

Healthcare informatics will be used:

- to deliver healthcare to the patient by the most cost effective means, most frequently by medical practitioners other than physicians;
- for diagnosis and treatment based on evidence of effectiveness determined by the collection of outcomes data.




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Seamless Continuum of Care.....

- Information Technologies provide the means for information sharing, knowledge representation and management required to establish a seamless continuum of care;
- Useful in driving the issues of quality of care and cost-effectiveness;




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*Seamless Continuum
of Care, Delivery.*

- **Delivery of healthcare to local or regional populations will take place through a progressive spectrum of delivery entities:**
 - home healthcare;
 - ambulatory clinics;
 - trauma centers;
 - hospitals.




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*Seamless Continuum
of Care, Tools.....*

- **Sensor and actuator software technologies;**
- **Communications architectures;**
- **Data collection and assessment capabilities;**
- **Analysis and response systems.**




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*Evidence-Based
Healthcare.....*

Provides:

- the best and most current scientific evidence applied at the point of care;
- the development of practice guidelines;
- the standardization of care.



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*Evidence-Based
Healthcare, Metrics....*

Healthcare Metrics:

- enable a healthcare organization to identify areas of high and low operational performance;
- allow for implementation of risk mitigation strategies;
- provide customers with informative, accurate knowledge;
- contribute to the formulation of national policy.




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Wellness and Prevention.....

Empowers the consumer:

- through the provision of personalized healthcare information;
- offering health education information and decision-support directly over the Internet, via newsletters, and telemedicine.




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*Wellness and Prevention,
Disease Management....*

Requires intervention at all stages:

- emphasizing the prevention of acute episodes and complications that could result in expensive and unpleasant hospitalizations.



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*Wellness and Prevention,
Disease Management Tools.....*

- **Physicians guidelines;**
- **Monitoring (drug and other treatment interventions);**
- **Patient education; and,**
- **Behavior modification interventions.**




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Privacy and Security.....

- **Makes systems and data more accessible outside of the organization where the system and data reside;**
- **Increases the need to deliver information directly to the patient to encourage patient involvement in his/her own healthcare decisions.**



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ATP
ADVANCED TECHNOLOGY PROGRAM

Privacy and Security needs...

- **Require solutions to link clinical data to personal data; and,**
- **Prevent unauthorized access.**




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ATP
ADVANCED TECHNOLOGY PROGRAM

Conclusions.....

- **ATP has contributed to the development of infrastructural technologies in healthcare that provide for:**
 - **business process reengineering and the automation of current manual processes;**
 - **the implementation of a Seamless Continuum of Care, Evidence-Based Healthcare and Wellness and Prevention.**




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Conclusions, cont....

- **Unobtrusive data capture tools remains an obstacle.**
- **Development of such tools will contribute to:**
 - the longitudinal patient record; and,
 - knowledge services and clinical repositories.




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Conclusions, cont.

- **Providing information alone will not serve to improve quality of healthcare delivery;**
- **What is needed is intelligent, context-based presentation of information offered to the practitioner in a fashion synergistic to his/her manner of practicing medicine.**



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