

# ***Healthcare Informatics: A Perspective from Gaithersburg***

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## ***Topics***

- ❑ What is healthcare informatics and why is it important?
- ❑ A Perspective from Gaithersburg ...
  - ATP past and current cost-shared projects in this area
  - Intramural efforts
- ❑ Beyond Gaithersburg ...
  - ATP/NIST involvement in fulfilling the President's vision of interoperable electronic healthcare records within the decade
  - ATP/NIST activity with the private sector



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# ***What is Healthcare Informatics?***



## ***Healthcare Informatics***

- ❑ Uses information technology to support healthcare applications, including
  - **Clinical applications**
  - **Home-based healthcare**
  - **Clinical research**
  - **Medical training**
- ❑ Includes developing infrastructural tools that will
  - **Integrate, synthesize, and define the information that needs to be shared across the healthcare enterprise**
  - **Transport, store, and access that data in a way which enhances, rather than impedes, user productivity**

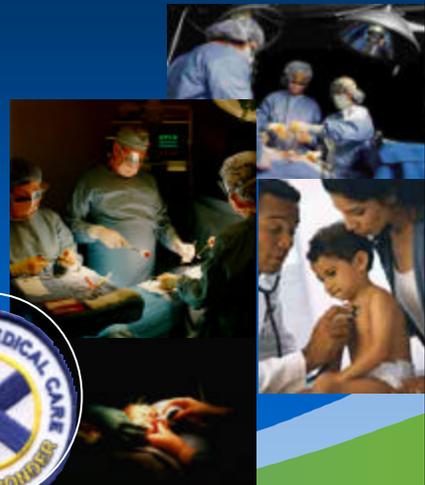


# *Why is Healthcare Informatics Important?*



## *Importance of Healthcare Informatics to You!*

- ❑ Our Nation enjoys the best medical care and the brightest medical personnel in the world



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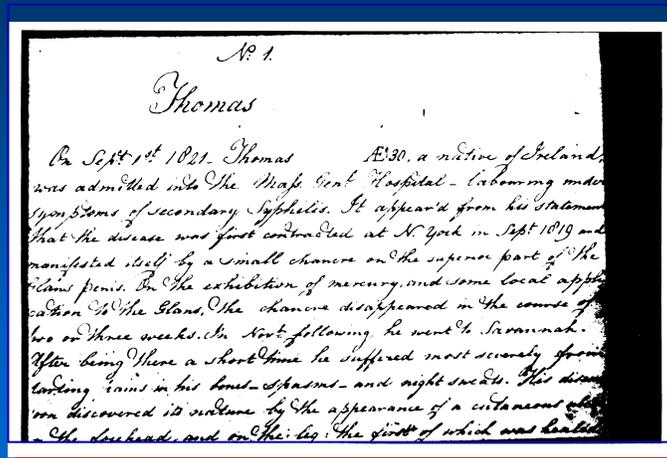
## Why Do We Need Advances in Healthcare Informatics?

- ❑ The enterprise is fraught with poor coordination, inefficiencies in administration, avoidable medical errors and high costs
- ❑ These shortcomings are closely related to failure to adequately adopt and develop information technology for the health-care system



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## 1821 ... the very first record from Massachusetts General Hospital



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## *Medical Systems for Tomorrow ... The goal*



- Universally-available
  - multimedia patient records
  - clinical alerts and guidelines
  - Other healthcare information
- All with 24/7 accessibility



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## *The President Has ...*

- Called for advances in healthcare informatics in his last two State of the Union Addresses to
  - “avoid dangerous medical mistakes, reduce costs, and improve care” (January 2004)
  - “prevent medical errors and needless costs” (February 2005)
- A Health Information Technology Plan with a mandate to make our country’s healthcare system safer, more affordable, and more accessible
- Suggested public- and private-sector efforts to accelerate broader adoption of healthcare information technology
- Called for the adoption of interoperable electronic healthcare records within the next decade



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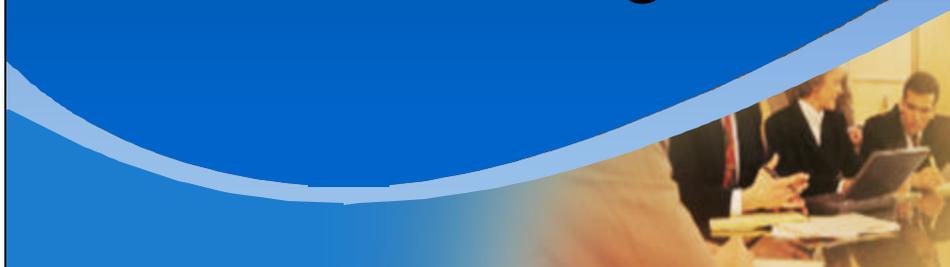
## ***Electronic Health Records***

- ❑ Electronic health records could reduce medical costs by as much as 20 percent
- ❑ Represents significant savings in yearly healthcare bill
  - Expected to rise at an average annual rate of 7.3 percent over the next decade
  - Expected to reach \$2.8 trillion by 2011
  - Expected to be 17 percent of the GDP by 2011



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## ***A Perspective from Gaithersburg ...***



## ***ATP Past and Current Cost-Shared Projects***

- Information Infrastructure for Healthcare Focused Program
  - Technology investment area defined by industry 1994-1998
  - Three solicitations generating 221 proposals, 32 awards, 79 participants
- General competitions in other years led to additional awards
- Focused and General competitions together
  - Endorse and support current healthcare informatics goals
  - Over three dozen projects
  - Over \$150 million investment from ATP
  - Almost \$150 million industry cost share



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## ***Sample Successes***



## ***Berdy Medical Systems***

- ❑ Natural speech recognition in a healthcare environment
  - Captures and stores dictated medical records
  - Populates an electronic patient record system
- ❑ SmartClinic incorporates this technology
  - Licensed by over 1,000 healthcare providers
  - Over \$2.5 million in sales and approximately \$250,000 in annual recurring revenue
  - Allows clinicians to see about 20 percent more patients without extending hours



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## ***Vital Works***

- ❑ Automates the clinical note by allowing providers to easily enter patient data directly into the electronic medical record
- ❑ Installed at over 250 endoscopy sites and 100 primary care and emergency medicine sites involving approximately 5,000 physicians
- ❑ Reduces errors of omission for 30 to 60 percent of patient charts to as few as 1 percent
- ❑ Expected to save millions of dollars annually at Veterans Administration medical regions
- ❑ Incorporated into an Olympus America, Inc. product supporting gastrointestinal endoscopy



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## ***3M Company***

- ❑ Developed software to integrate legacy systems and to incorporate an expert alert system
- ❑ Functionality can be embedded in software of other vendors
- ❑ Used in an increasing number of commercial healthcare facilities
- ❑ Foundation of Department of Defense's Military Health System's electronic record system



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## ***Advanced Technology Institute***

- ❑ Developed a teleradiology network
  - Provides rural facilities access to a board certified radiologist 24/7
  - Reduces time to transit and interpret a radiology report from 10 hours to within 15 minutes of an exam
  - Allows sick and elderly patients to stay close to home during treatment
  - Greatly reduces number of transfers and repeat exams required



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## *Intramurals*

- ATP supported intramural efforts in this area
  - Past intramural projects addressed role-based methodologies, security, image compression, interoperability, ontology development
  - Major effort just completed to integrate emerging electronic commerce technology into the healthcare enterprise
  - Newly begun as a major project focusing in the integration of clinical informatics, specifically electronic medical records, vocabularies, and clinical guidelines



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## *Beyond Gaithersburg ...*



## ***ATP/NIST Activity With the Private Sector***

- NIST/ATP staff members have a long history of collaboration in healthcare informatics
  - Reviewing proposals and serving on evaluation boards
  - Attending and serving in leadership roles in national conferences, such as the National Healthcare Information Infrastructure annual meetings
    - Efforts acknowledged in Journal of the American Medical Informatics Association (July/August 2004)



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## ***ATP/NIST Activity With the Private Sector (cont'd)***

- NIST/ATP staff members have a long history of collaboration in healthcare informatics
  - Co-sponsoring workshops, such as Designing for Quality, an e-Health Workshop
  - Serving on the presidentially-mandated Quality Interagency Coordinating Task Force
  - Serving on the Joint Working Group on Telemedicine



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## ***Substantial Current Involvement***

- **DHHS healthcare information activity**
  - **Office of the National Coordinator for Health Information Technology**
    - Framework for Strategic Action
  - **National Health Information Network Request for Information**
    - Seeks opinions on how to achieve interoperability of health information
    - Overwhelming response
  - **NIST/ATP staff members serving on working groups to summarize, analyze responses**
  - **Issues include architecture, standards, business frameworks, financial implications, etc.**
  - **Goal ... input to policy discussions inside/ outside government**



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## ***Substantial Current Involvement ...***

- **Center for Aging Services Technologies**
  - **Discussions on relevant ATP-Funded projects addressing issues people face as they age**
    - Areas include independent living devices, chronic disease, medication delivery, organ transplantation, tissue engineering
  - **Potential for CAST/NIST joint workshop early in 2006**
    - Identify existing technologies and gaps
    - Discuss legal, social, and financial issues



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## *In Summary ...*

- ATP is proud of our efforts towards an electronic, up-to-date healthcare information system for
  - **Patients to have**
    - Vital medical information available at the time and point of care
    - Access to accurate, useful health information to maintain their own wellness and to select best treatments for their needs
  - **Healthcare providers to**
    - Manage the voluminous information about clinical guidelines, drug interactions, etc.
    - Make informed decisions on best treatments for their patients



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