The National Perspective: National Health Information Infrastructure (NHII): Key to the Future of Health Care

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“The committee believes that establishing this information technology infrastructure [NHII] should be the highest priority for all health care stakeholders.”

-- Committee on Data Standards for Patient Safety: “Patient Safety: Achieving a New Standard for Care” Institute of Medicine, November, 2003 (Executive Summary)
Overview

I. Why does health care need NHII?
II. What is NHII?
III. Current status of NHII
IV. Accelerating NHII progress
V. Summary and what you can do
I. Health Care System Challenges

- Error rates are too high
- Quality is inconsistent
- Research results are not rapidly used
- Costs are escalating
- New technologies continue to drive up costs
- Demographics of baby boomers will greatly increase demand
- Capacity for early detection of bioterrorism is minimal
Solution: Information Technology (IT) for Health Care

- 20% of labs and x-rays done because prior results unavailable
- 1 in 7 hospitalizations occur because information about patient not available
- “NHII is required to make patient safety a standard of care” – IOM, 2003
- Ambulatory CPOE could save $44 B/yr
- Potential net efficiency gain from use of information technology in health care: > $87 Billion/yr
Agreement that the NHII is Needed

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<th>Organization</th>
<th>Year</th>
<th>Title</th>
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<tr>
<td>IOM</td>
<td>1991</td>
<td>Computer-Based Patient Record</td>
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<td>IOM</td>
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<td>IOM</td>
<td>2000</td>
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<td>Networking Health: Prescriptions for the Internet</td>
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<td>Crossing the Quality Chasm</td>
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<td>Transforming Health Care Through Information Technology</td>
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<td>IOM</td>
<td>2002</td>
<td>The Future of the Public’s Health in the 21st Century</td>
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<td>IOM</td>
<td>2002</td>
<td>Fostering Rapid Advances in Health Care: Learning from System Demos</td>
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II. What is NHII?

- “Anywhere, anytime health care information and decision support”
  - Comprehensive knowledge-based network of interoperable systems
  - Capable of providing information for sound decisions about health when and where needed
- NOT a central database of medical records
- It is NOT a Federal mandate
Benefits of NHII

- Monitor and Protect Public Health (e.g. rapid disease detection)
- Improve Patient Safety
  - IOM: 44,000-98,000 preventable deaths/year (more than motor vehicle accidents, breast cancer, or AIDS)
- Improve Quality of Care
- Effectively Share Decision Support
- Increase Efficiency
- Better-informed Health Care Consumers
Four Domains of NHII

- Personal/Consumer
- Public Health/Community
- Clinical
- Research/Policy
NHII 03 Final Recommendations

I. Management
   1) Governance
   2) Education
   3) Shared Resources
   4) Metrics

II. Enablers
   1) Financial Incentives*
   2) Standards*
   3) Legal Issues

III. Implementation Strategy
   1) Demonstration Projects
   2) Architecture*
   3) Identifiers

IV. Targeted Domains
   1) Consumer Health*
   2) Research*

*original breakout track

Views expressed do not necessarily represent U.S. Government policy
NHII Requirements: Functions

Overall: “Anytime, anywhere health care information and decision support”

- Immediate availability of complete medical record (compiled from all sources) to any point-of-care
- Enable up-to-date decision support at any point of care
- Enable selective reporting (e.g. for public health)
- Enable use of tools to facilitate delivery of care (e.g. e-prescribing)
- Allow patients to control access to their information
Realizing the Benefits - NHII Net National Savings

TOTAL $87

~55 Community Health Information Exchange
~6 Inpt EHR
~25 Outpatient EHR

$ Billions

Source: Center for Information Technology Leadership, Partners Health Care, Harvard (2004)
Inpatient EHR

- Benefits go to hospital
- Larger hospitals are investing
- Capital is obstacle for small & rural institutions
Outpatient EHR

- Benefits go to payer
- No business case for physicians (especially small practices)
- Payer incentives needed (e.g. Maine)
Community Health Information Exchange

- Substantial benefits to all
- First mover disadvantage
- Seed funding needed
- Focus of current Federal initiatives
NHII Requirements: Implementation Strategy

- No national database or identifier
- Alignment of incentives
- Allow each care facility to maintain its own data
- Minimize cost & risk
- Use proven implementation strategies (where possible), e.g. incremental approach
  - Each implementation step benefits all participants
  - Implementation scope coincides with benefits scope
community

Requests for Records

Hospital Record
Laboratory Results
Specialist Record

Index of where patients have records

Temporary Aggregate
Patient History

LHII system

Patient data delivered to Physician

Clinical Encounter

Patient Authorized Inquiry

Records Returned

community
Index of where patients have records

Hospital Record
Laboratory Results
Specialist Record

Requests for Records

Authorized Inquiry from LHII

Temporary Aggregate Patient History

LHII system

Records Returned

another LHII

Patient data delivered to other LHII

U.S.
Advantages of LHII Approach

- Existing HII systems are local
- Health care is local → benefits are local
- Facilitates high level of trust needed
- Easier to align local incentives
- Local scope increases probability of success
- Specific local needs can be addressed
- Can develop a repeatable implementation process
- Parallel implementation → more rapid progress
- Use of standards allows connectivity between LHII s → NHII
III. Current Status of NHII

- Islands of Information
- Fragmentary & isolated elements of NHII exist
  - Uneven distribution
  - Lack of coordination
  - Minimal interoperability
  - Many “one-of-a-kind” systems
- Much duplicative work
  - Limited dissemination of
    - Systems
    - Lessons learned
IV. Accelerating NHII progress

- Inform
  - Disseminate NHII vision
  - Catalog NHII activities
  - Disseminate “lessons learned”

- Collaborate with Stakeholders

- Convene
  - NHII 04: 7/21-23/2004 in D.C.
  - National meeting to
    - Refine the consensus action agenda for NHII
    - Report on NHII progress
V. Accelerating NHII progress (2)

- **Standardize**
  - HL7, DICOM, IEEE 1073, NCPDP SCRIPT
  - SNOMED, LOINC
  - HL7 project: functional EHR model

- **Demonstrate**
  - $50 million in FY 04 budget for NHII demonstration projects (AHRQ)
  - President has requested additional $50 million for FY 05 for LHIIs

- **Evaluate**
  - Rigorous assessment of NHII benefits
  - Policy options for aligning financial incentives
V. Summary

- Health care is in crisis
- NHII is needed for safety & efficiency
  - Anywhere, anytime health care information
  - Decision support
  - Communication
- Most elements of NHII already exist somewhere
- HHS is working to accelerate progress: inform, collaborate, convene, standardize, demonstrate, evaluate
V. How can you help with NHII?

- Cost-benefit data needed
  - Good data hard to find
  - Consider making your internal studies available

- Consider starting an LHII
  - Convene community partners
  - Discuss information sharing

- Keep informed on these issues
  - Ask for periodic reports

- Make your views known
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Questions?

For more information about NHII
http://aspe.hhs.gov/sp/nhii

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