The Transformation of Health and Health Care
The Role of the NHII

John Lumpkin, M.D., M.P.H.,
Senior Vice President,
Director of Health Care Group
Robert Wood Johnson Foundation

June 10, 2003
IOM Panel Reports
November 2002

• “The American health care system is confronting a crisis.”

• “The health care delivery system is incapable of meeting the present, let alone the future, needs of the American public.”
In the Fall of 1991, the Andrea Gail left Gloucester, Mass., and headed for the fishing grounds of the North Atlantic.

Two weeks later, an event took place that had never occurred in recorded history.

WOLFGANG PETERSEN

THE PERFECT STORM

HITS JUNE 30TH
“Perfect Storm” Forming Around Health and Health Care

- 41 Million + Uninsured in America
- Health Care Costs Rapidly Rising
- Those Covered Paying More for Their Coverage and More Out-of-Pocket
- State Budget Crises Threatening Coverage
- Quality is not a given
- Public Health System is Stressed
- Seeking Health Information is a Major Internet Task
Capacity Determines Need?

R² = 0.49

Jack Wennberg
Dartmouth
Atlas of Health Care
Capacity Determines Need?

Jack Wennberg
Dartmouth
Atlas of Health Care
What does Greater Per Capita Spending BUY?
*not more effective or preference sensitive care*

<table>
<thead>
<tr>
<th>Medicare Reimbursements</th>
<th>Effective Care</th>
<th>Preference-Sensitive Care (Discretionary Surgery)</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 15% Below Average</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>0-15% Below Average</td>
<td>1.18</td>
<td>0.98</td>
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<tr>
<td>0-15% Above Average</td>
<td>1.38</td>
<td>0.97</td>
</tr>
<tr>
<td>More than 15% Above Average</td>
<td>1.66</td>
<td>1.00</td>
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</tbody>
</table>

Jack Wennberg
Dartmouth
Atlas of Health Care
Medicare Reimbursements (Part A and B) in Relation to the National Average (2000)

More than 15% Above Average (36)
0 - 15% Above Average (68)
0 - 15% Below Average (112)
More than 15% Below Average (90)
Not Populated

Jack Wennberg
Dartmouth
Atlas of Health Care
Quality of Health Care in US??

- Overall Care 54.9%
- Preventive 54.9%
- Acute 53.4%
- Chronic 56.1%
- History 43.4%
- Counseling or Ed 18.3%
- Immunization 65.7%

The focus must shift from blaming individuals for past errors to a focus on preventing future errors by designing safety into the system

To Err is Human
- Institute of Medicine
Back Surgery per 1,000 Medicare Enrollees on a Race-Specific Basis (1999-2000)
Figure 1. Changes in Adequacy of Hemodialysis Dose, 1993-2000

Hemodialysis Dose by Race

A. Sehgal- JAMA 2003;289:996-1000
Current practice depends upon the clinical decision-making capacity and reliability of autonomous individual practitioners, for classes of problems that routinely exceeds the bounds of unaided human cognition

Daniel R. Masys, M.D.
2001 IOM Annual Meeting
Her mom gets cancer.  
They find the tumor early.  
Her mom is OK.

Her mom gets cancer.  
She’s diagnosed too late.  
Her mom is gone.

When you’re uninsured, life turns out differently.

There are 41 million Americans with no health insurance.  
March 10-16 is Cover The Uninsured Week in your community. Get involved—and help get America covered.
“We have wonderful technology, but some grocery stores have better technology than our hospitals and clinics.”

Secretary Tommy Thompson
Chicago Medical School Commencement
June 7, 2002
We stand on the “tipping point” of the rapid enhancement of the health care system into a high quality, efficient and effective system. Automation of information systems is the transforming technology
NHII

Health Infospace

- Personal Health
- Healthcare Provider
- Population Health (Preparedness)
NHII

Healthcare Provider

Personal Health

Population Health (Preparedness)

Health InfoSpace
Framework for PMRI Standards

Comparability

Data Quality

Interoperability
We're stuck on an interoperable definition of interoperability
Interoperability Status

(Adapted from Electronic Health Records: Changing the Vision, Eds. GF Murphy, MA Hanken, and KA Waters. Philadelphia: W. B. Saunders Company, 1999)
Comparability Issues

- Comparability requires that the meaning of data is consistent when shared among different parties

Vocabulary
Set of highly granular, specialized terms

Classification
Organization of related terms

Code
Representation of term

Terminology
The Health Informatics Pipeline

Foundation

HIPAA Standards
NHII

Health Infospace

Population Health (Preparedness)

Personal Health

Healthcare Provider
2002 West Nile Virus Progression
Week of April 28

- Human Case
- Positive Test Result
2002
West Nile Virus Progression
Week of May 12

- Human Case
- Positive Test Result
2002 West Nile Virus Progression

Week of June 2
2002 West Nile Virus Progression
Week of June 16

- Human Case
- Positive Test Result
2002 West Nile Virus Progression

Week of June 23
2002 West Nile Virus Progression

Week of June 30

Human Case
Positive Test Result
2002
West Nile Virus Progression
Week of July 14

[Map of Illinois indicating counties with human cases and positive test results]
2002 West Nile Virus Progression

Week of July 28
2002 West Nile Virus Progression

Week of September 1

- **Human Case**
- **Positive Test Result**
2002 West Nile Virus Progression
Week of September 15

Legend:
- Black: Human Case
- Gray: Positive Test Result
2002 West Nile Virus Progression
Week of September 22

Legend:
- Human Case
- Positive Test Result
2002 West Nile Virus Progression

Week of October 6

- Black: Human Case
- Gray: Positive Test Result

Map of Illinois showing the progression of West Nile Virus in the year 2002.
2002 West Nile Virus Progression

Week of October 13

- Human Case
- Positive Test Result
TYPHOID FEVER!

I'LL be right over, Doctor, that's the first case of typhoid in this county for 6 months.

Ill. Dept. of Pub. Health Cartoon No. 193

FULL-TIME COUNTY MEDICAL HEALTH SERVICE PREVENTS DISEASE.
# Illinois Department of Public Health

## Report of a Communicable Disease

<table>
<thead>
<tr>
<th>Disease or Suspected Disease</th>
<th>Outbreak Related</th>
<th>Case</th>
<th>Carrier</th>
<th>Date of Onset</th>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>Patient's Last Name, First Name</td>
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<tr>
<td>Age</td>
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<td>Unk.</td>
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<tr>
<td>Patient's Street Address</td>
<td>City or Post Office</td>
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<td>County</td>
<td>Telephone</td>
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<tr>
<td>Out-Patient</td>
<td>Name and Address of Hospital</td>
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<tr>
<td></td>
<td>Physician's Name</td>
<td></td>
<td>Address</td>
<td>City or Town</td>
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<tr>
<td>Date of Report</td>
<td>Reported by (Please Circle)</td>
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<td>Health Jurisdiction</td>
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<td>State Lab</td>
<td>ICP</td>
<td>Hosp.</td>
<td>Physician</td>
<td>Hosp. Lab</td>
<td>Private Lab</td>
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<tr>
<td>Other</td>
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</table>

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C. Broome - CDC
The Need for Solutions is Urgent

09-11-01

You can not stop us.
We have this anthrax.
You die now.
Are you afraid?
Death to America.
Death to Israel.
Allah is great.
Third Wave of Public Health Information System Development

- Federal Centric
  - State developed prototype
  - Installed in many states

- State Centric
  - System Development by Consortium of States
    - Web enabled Immunization Registry
    - Reuse Model
    - ASP Model
Personal Health Dimension

- Supports the management of individual wellness and health care decision-making
- Includes a personal health record, created and controlled by the individual or family
- Includes non-clinical information such as self-care trackers, health materials, local public health and health care services
General attitudes toward PHR

When asked about specific aspects of a PHR, consumers react favorably:

• 83% of healthcare consumers want lab tests available online (Harris)
• 69% want online charts for managing chronic conditions (Harris)
• 80% want to receive personalized medical information online from their doctor after an office visit (Harris)
I always knew that Data was a four letter word,
I just never knew it was spelled T-U-R-F

Phil Lee, MD
HHS Agencies with NHII Responsibilities

- AHRQ
- ASIRM
- ASPE
- CDC
- CMS
- Data Council
- FDA
- HRSA
- NCHS
- NIH
- NLM
- OCR
- OPHS
In the modern era, every century has had its major advance that has brought medical science another giant step forward. .... What will the major advance of the 21st century be?

I am convinced that the medical revolution of our children’s lifetimes will be the application of information technology to health care.

Secretary Thompson
March 21, 2003
A Word of Caution

The real danger is not that computers will begin to think like men, but that men will begin to think like computers

Sidney J. Harris
A Word of Encouragement

Not only strike while the iron is hot,
make it hot by striking –
Oliver Cromwell