

COLOR STEREO.COM
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**NCVHS -
HIPAA Transactions
and
the National Health Information
Infrastructure**

John R. Lumpkin, MD, MPH

Chairman,

National Committee on Vital and Health Statistics

Senior Vice-President

Robert Wood Johnson Foundation

NCVHS Mission

- The mission of the National Committee on Vital and Health Statistics (NCVHS) is to advise on shaping a national information strategy for improving the population's health.

NCVHS

- Formed in 1949
- Refined and expanded ICD
- 1969 Uniform Hospital Discharge Data Set
- 1974 Uniform Ambulatory Care Data Set
- 1980 Long Term Care Data Set
- 1996 Core Data Set

- “With the advent of new technology, data can be collected in any format, aggregated by the computer and arrayed in any desired output ... collecting masses of data untouched by human thought

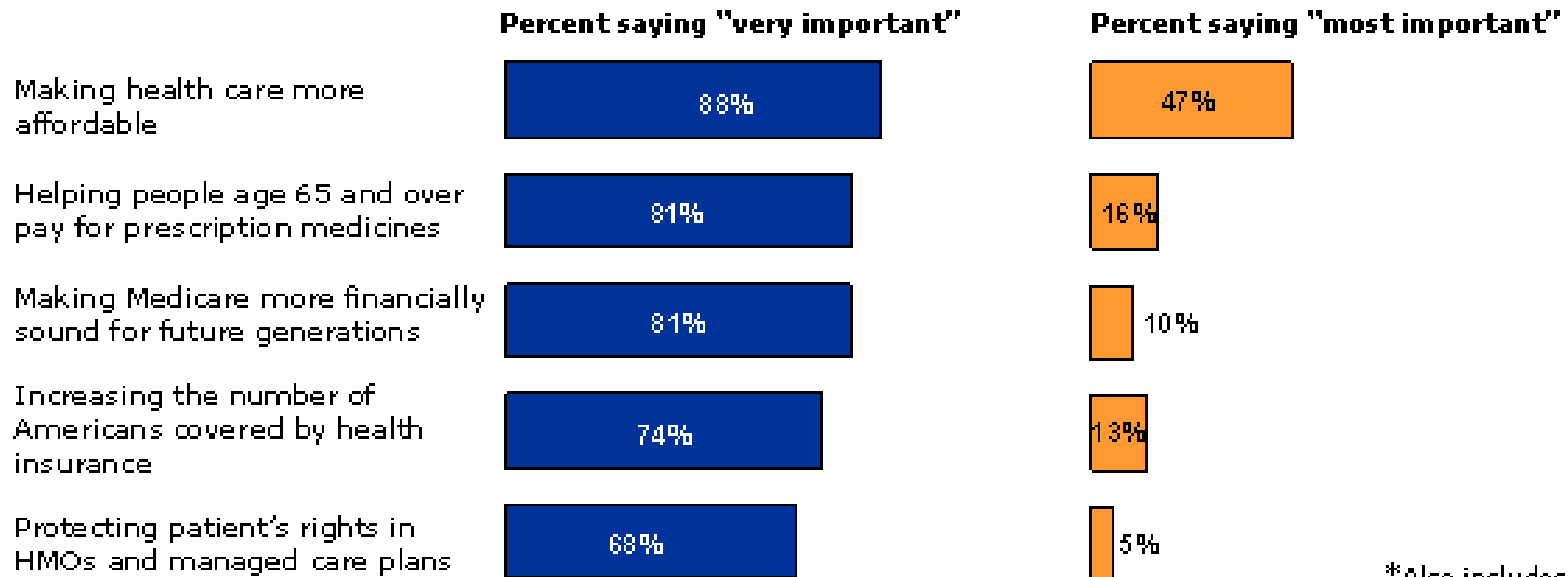
1974 - Kerr White
Chairman NCVHS

Priorities for the President and Congress – December 2002

Now, I'm going to read you some different health care issues. As I read each one, please tell me how important you think it is for the President and Congress to deal with this issue – very important, somewhat important, not too important, or not important at all.

When forced to choose...

Which of the following issues you say are very important do you think is **most** important?*



Source: Kaiser Family Foundation *Health Poll Report*

*Also includes those who named only one issue as "very important"

GEORGE
CLOONEY

MARK
WAHLBERG

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.

A WOLFGANG PETERSEN...

THE
PERFECT STORM

WARNER BROS.

BALTIMORE SPRING CREEK PICTURES... A WOLFGANG PETERSEN... GEORGE CLOONEY MARK WAHLBERG "THE PERFECT STORM" DAVID LANE WILLIAM FICHTNER
KAREN ALLEN BOB GUNTON MARY ELIZABETH MCKASTON JON C. HILL JAMES RORNER RICHARD FRONCO BRUCE A.C.E. WILLIAM SANDRELL JOHN SAJE, A.C.S., A.S.C.
DAVEY LEVISON DONALD HENDERSON SEBASTIAN JUNGER BILL WITLIF BO GILBERT PAULA WEINSTEIN WOLFGANG PETERSEN GAIL KURT WOLFGANG PETERSEN

HITS JUNE 30TH

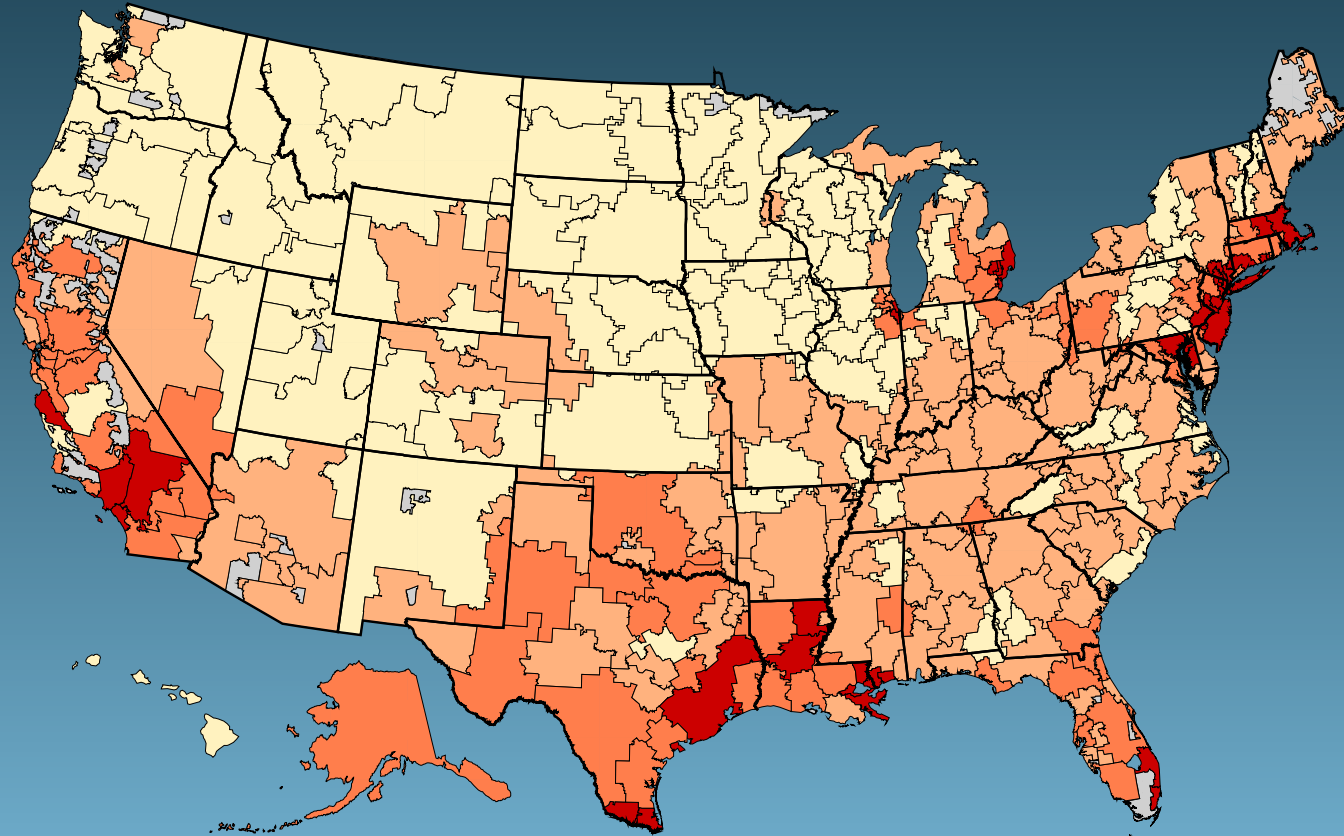
www.perfectstorm.net








“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**

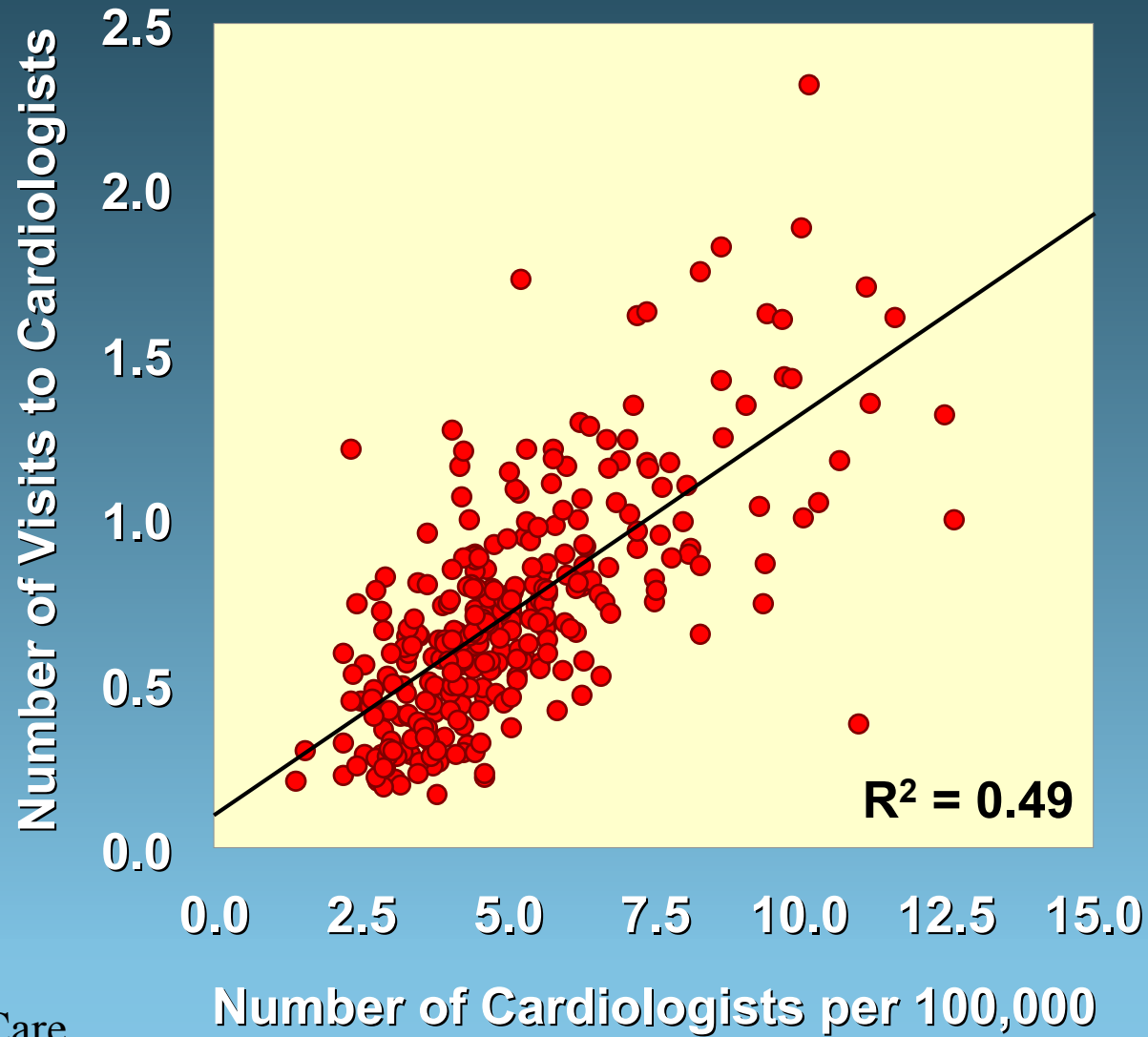
Medicare Reimbursements (Part A and B) in Relation to the National Average (2000)



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

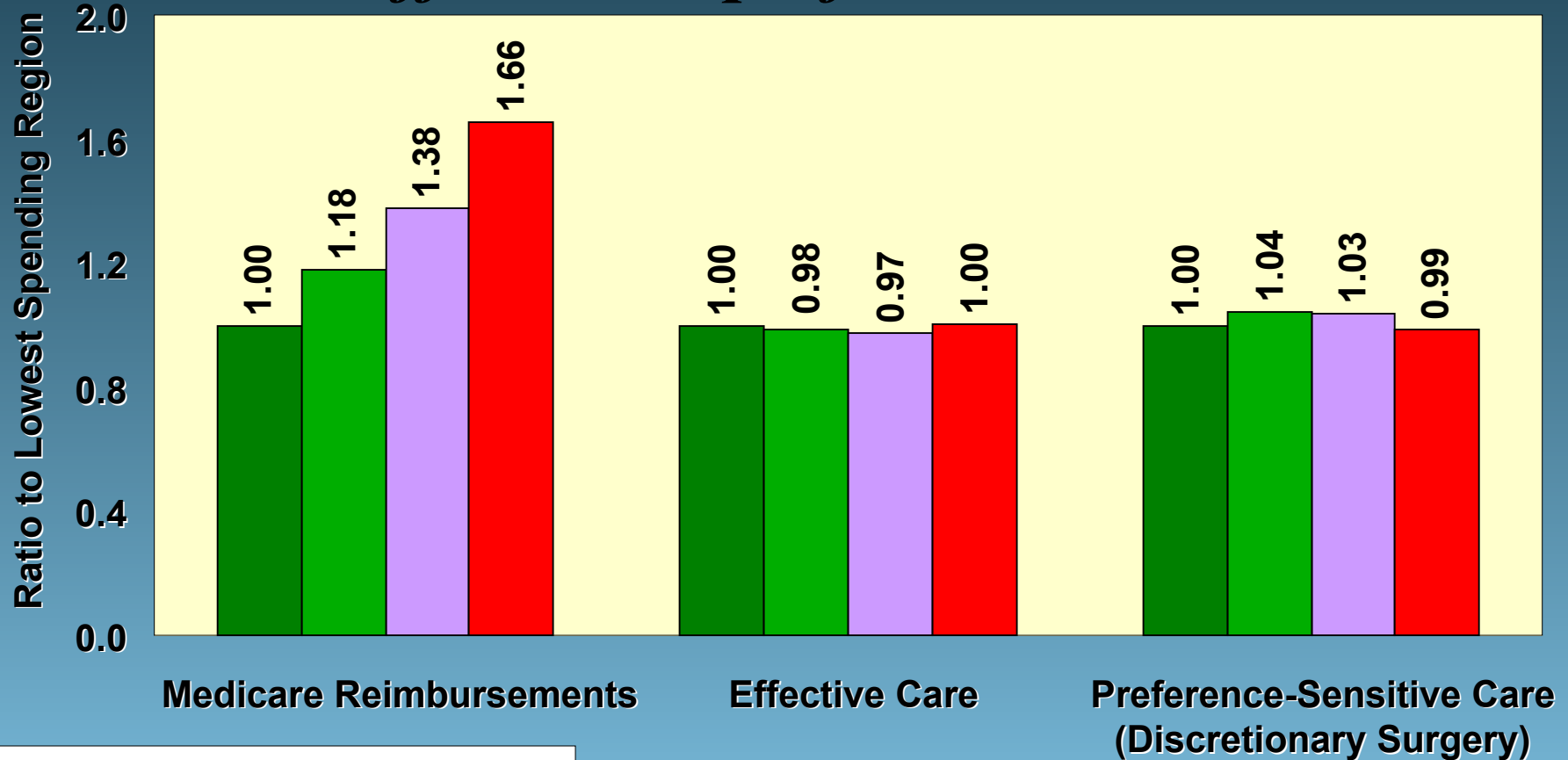
Jack Wennberg
Dartmouth
Atlas of Health Care

Capacity Determines Need?



What does Greater Per Capita Spending BUY?

not more effective or preference sensitive care

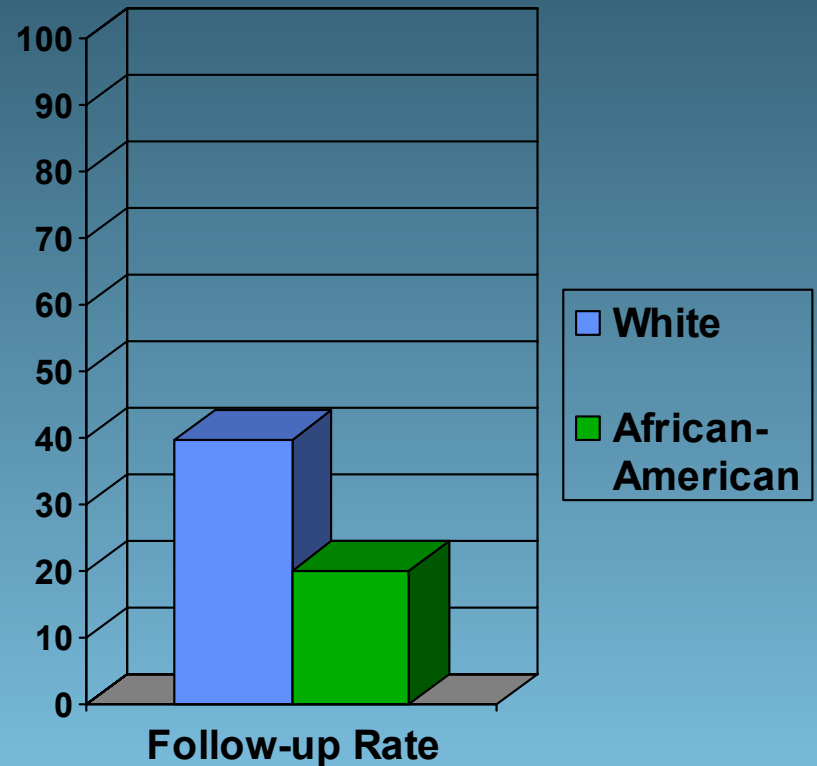


- More than 15% Below Average
- 0-15% Below Average
- 0-15% Above Average
- More than 15% Above Average

Jack Wennberg
Dartmouth
Atlas of Health Care

Asthma: Outpatient Follow-up After Acute Episodes

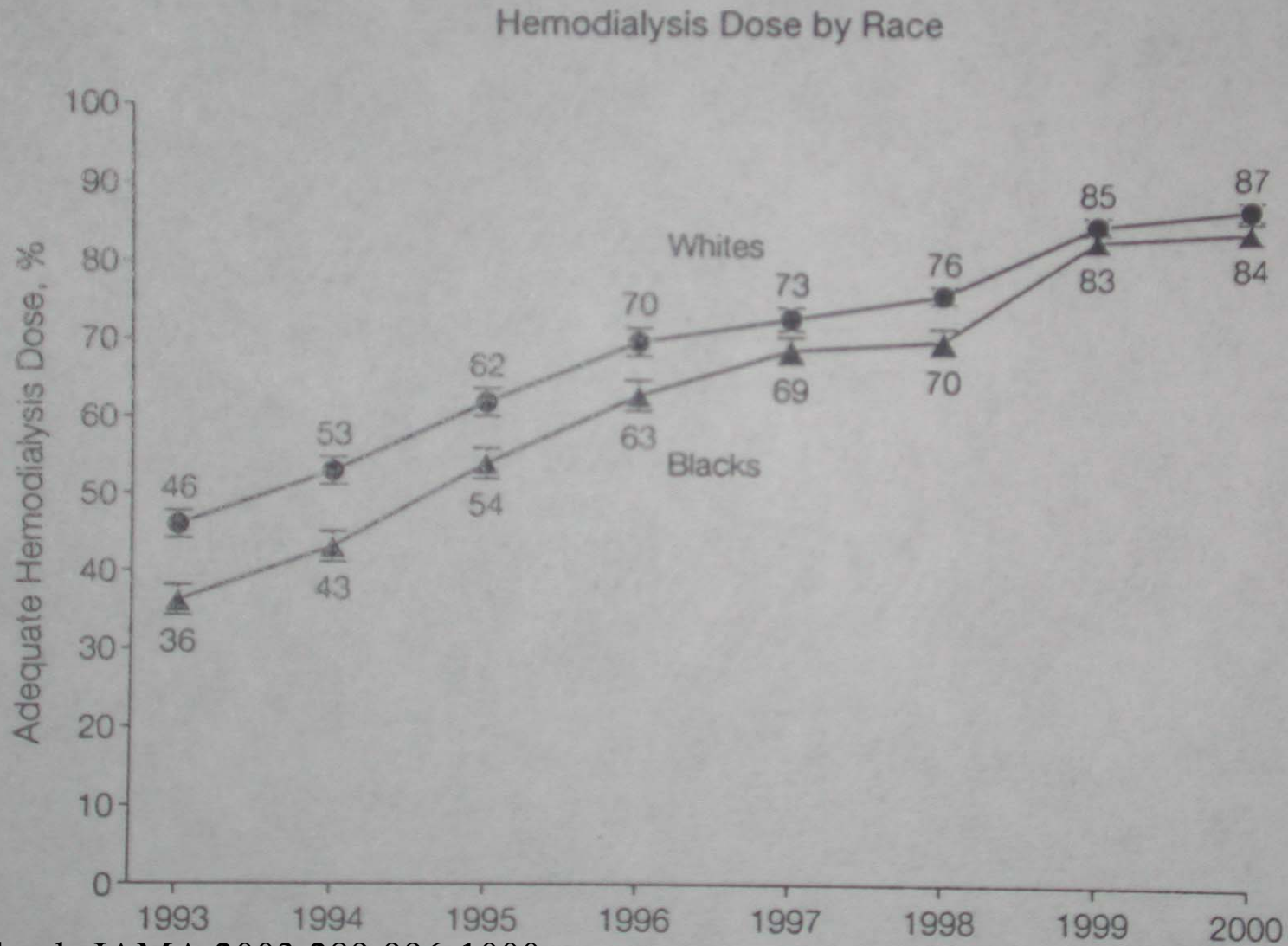
- **Core concept:**
Outpatient follow-up after either ER visit or admission
- **Children 5-17 years old**
- **Standard based on national expert panel guidelines**



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%

Figure 1. Changes in Adequacy of Hemodialysis Dose, 1993-2000



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

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

Cover The Uninsured Week • March 10-16

Her mom gets cancer.
They find the tumor early.
Her mom is OK.

<or>

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.

CoverThe
UninsuredWeek

www.CoverTheUninsuredWeek.org

U.S. Chamber of Commerce • AFL-CIO • The Business Roundtable • Service Employees International Union • Healthcare Leadership Council • AFSCME • American Medical Association • American Nurses Association • Health Insurance Association of America • Families USA • Blue Cross and Blue Shield Association • American Hospital Association • Federation of American Hospitals • Catholic Health Association of the United States • AARP • United Way of America • The California Endowment • W. K. Kellogg Foundation • The Robert Wood Johnson Foundation

HIPAA



Health Insurance Portability and Accountability Act 1996

- PUBLIC LAW 104-191
- Title II Subtitle F
- It is the purpose of this subtitle to improve the Medicare program under title XVIII of the Social Security Act, the Medicaid program under title XIX of such Act, and the efficiency and effectiveness of the health care system, by encouraging the development of a health information system through the establishment of standards and requirements for the electronic transmission of certain health information

Transaction Standards

- Claims or equivalent encounter information
- Coordination of benefits information
- Referral certification and authorization
- Enrollment & disenrollment in a health plan
- Eligibility for a health plan

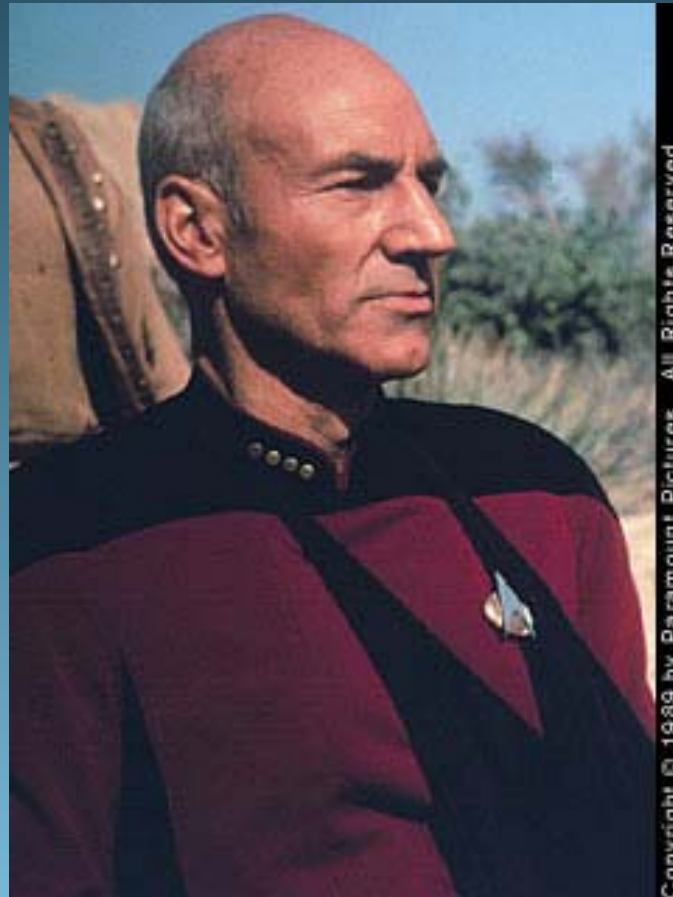
Transaction Standards

- Health care payment & remittance advice
- Health plan premium payments
- First report of injury
- Health claims status
- Health claims attachments

Supporting Standards

- Privacy
- Security
- Code sets
- Unique identifiers (including allowed uses) for:
 - Individuals
 - Employers
 - Health Plans
 - Health Care Providers

"Darmok and Jalad at Tanagra"



Copyright © 1989 by Paramount Pictures. All Rights Reserved.

Conversation

- **Vocabulary**
 - **What words you choose**
- **Grammar**
 - **How you put the words together**
- **Context**
 - **What environmental factors are influential**

Data Flow as Conversation

- **Vocabulary (software-independent)**
 - **Content Standards: SNOMED, LOINC**
- **Grammar (software-independent)**
 - **Transmission/Structure Standards: HL7, ASTM, X12**
- **Context**
 - **Conceptual Data Model**
 - **HL7 EHR**
 - **ISO/TC 215**

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





Vision of the NHII

- The set of technologies, standards, applications, systems, values, and laws that support all facets of individual health, health care, and public health.
- NOT a centralized database.
- Connects distributed health information in the framework of a secure network with strict confidentiality protections.

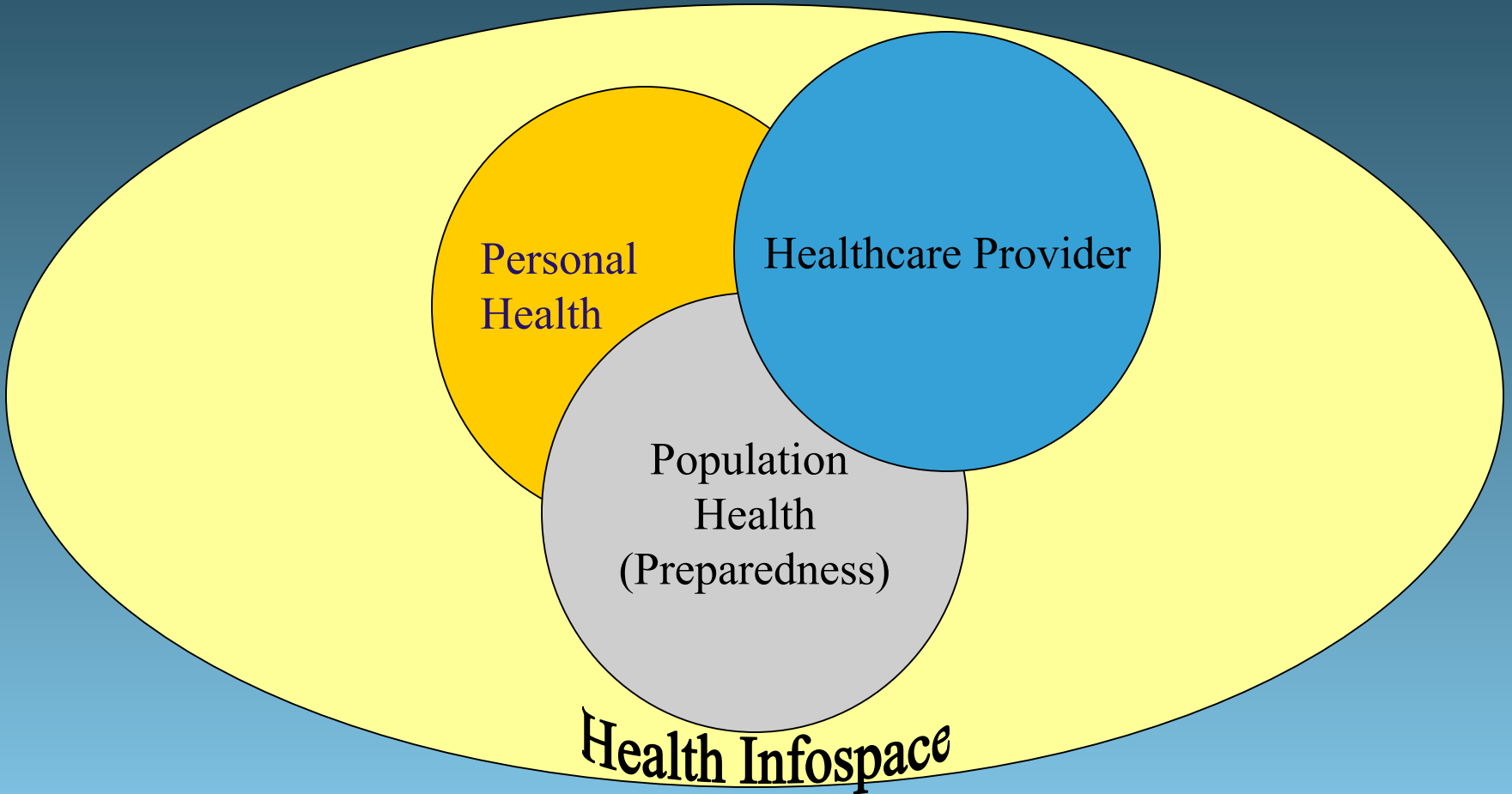
NHII

- THE GOAL IS TO PUSH KNOWLEDGE TO THE POINT OF SERVICE (CONTACT)
 - EXPERT SYSTEMS
 - DECISION SUPPORT
 - PRACTICE GUIDELINES

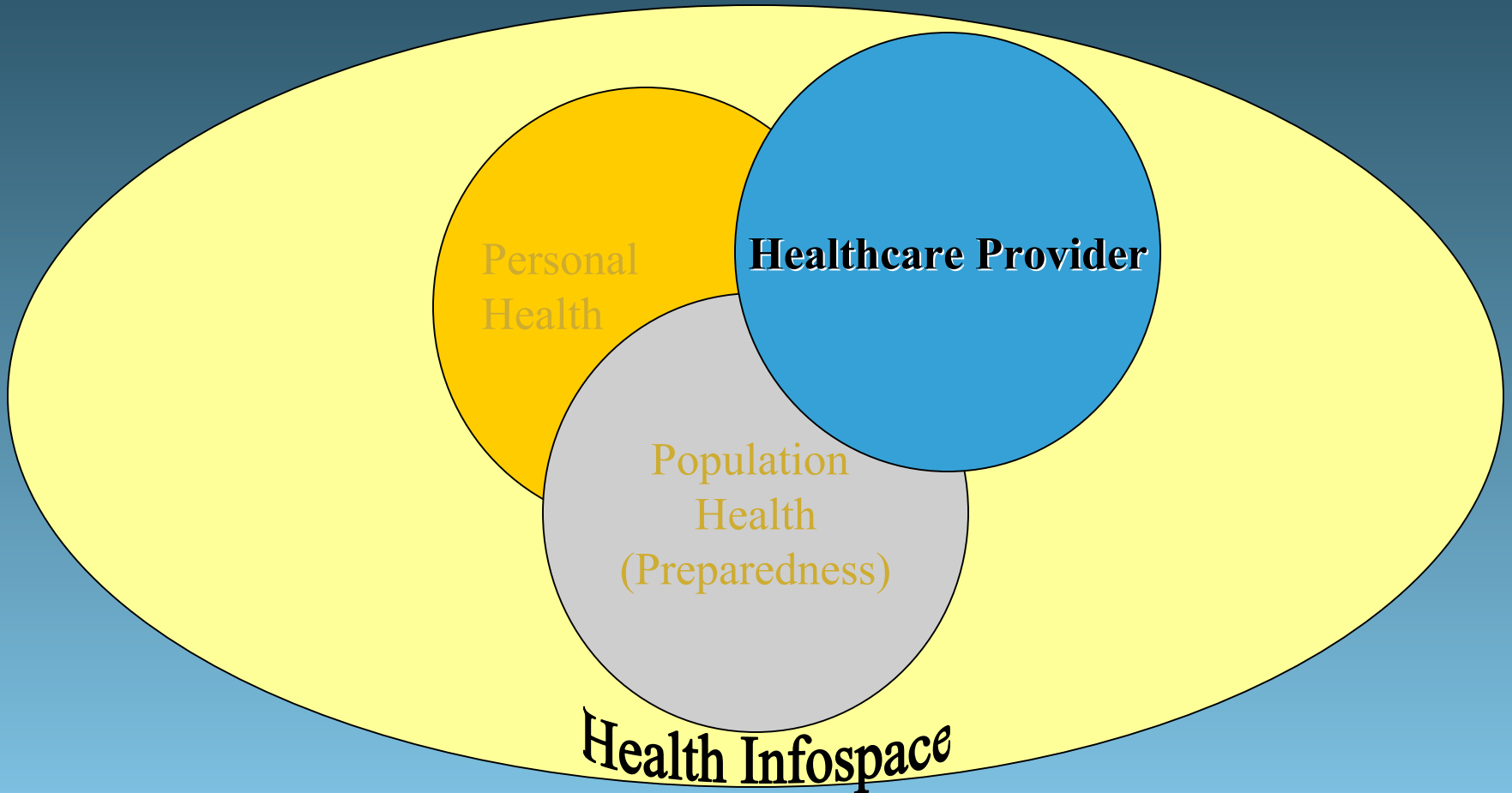
AMERICAN APPROACH

- RESPECT INDIVIDUAL PRIVACY
- ASSURE CONFIDENTIALITY
- ENGINEERED FOR SECURITY

NHII



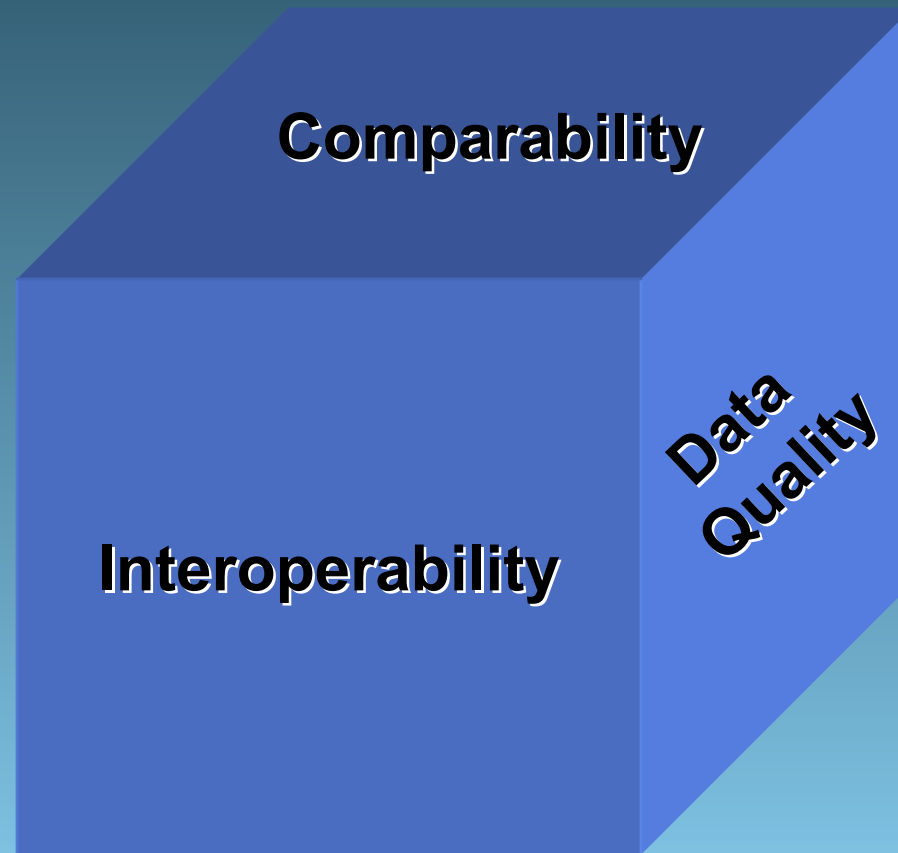
NHII



Health Care Provider Dimension

- Encompasses information to enhance the quality and efficiency of health services for individual
- Includes information captured during patient care process
- Integrates clinical guidelines and protocols, specific information from PHD, as authorized, and from Community Health Dimension

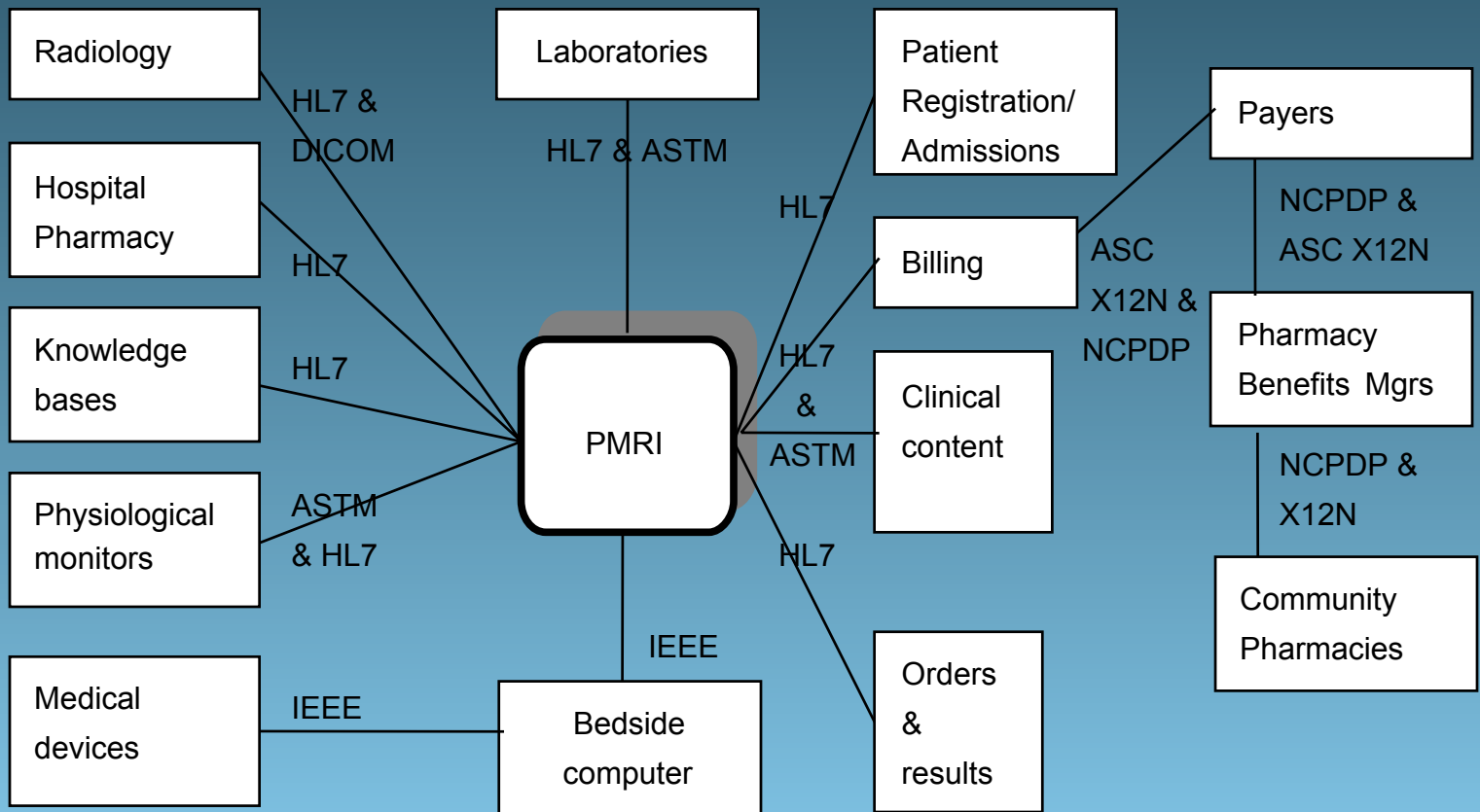
Framework for PMRI (Patient Medical Record Information) Standards





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 Status

Other Codes

- Health Language Center
- UMDNS (ECRI)*
- DEEDS
- UPN (HIBCC)/UPC (UCC)

Message Specific Codes

- DICOM
- NCPDP
- IEEE
- HL7*
- X12N

Nursing Codes

- HHCC*
- NANDA*
- NIC*
- NMMDS
- NOC*
- OMAHA*
- PCDS*
- PNDS

Convergence

SNOMED RT/
NHS Clinical Terms

Diagnoses & Procedure Codes

- Alternative Link*
- CDT-2*
- CPT-4*
- HCPCS*
- ICD-9-CM/ICD-9-V3*
- ICD-10-CM*
- ICD-10-PCS
- ICDH-2

Clinically Specific Codes

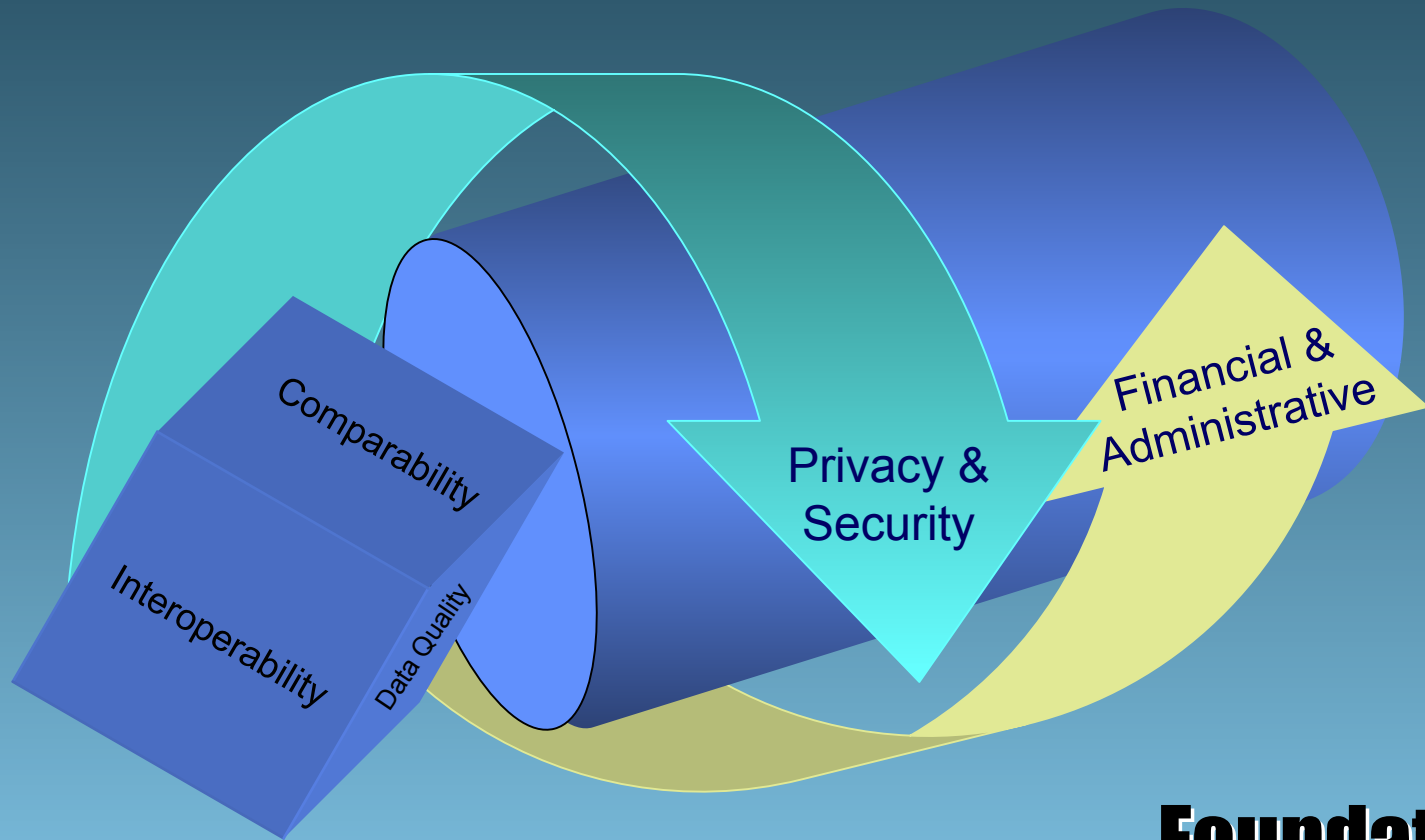
- DSM*
- Gabrieli
- LOINC*
- MEDCIN
- MedDRA
- SNOMED V3*
- NHS Clinical Terms*

Drug Codes

- First Data Bank*
- Multum *
- NDC

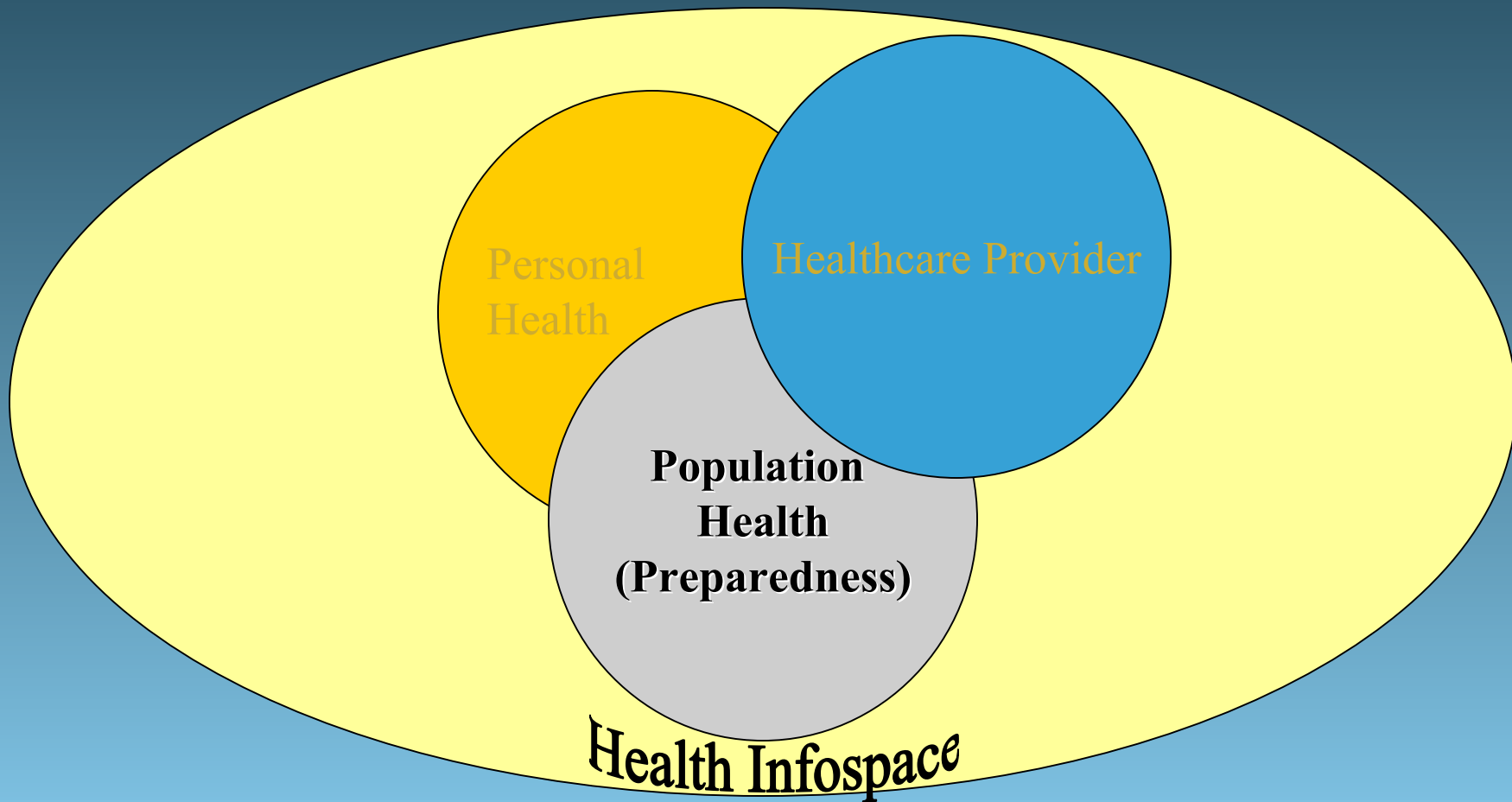
* Fully or partially included in the
UMLS Metathesaurus as of March 1, 2000

The Health Informatics Pipeline



**Foundation
HIPAA Standards**

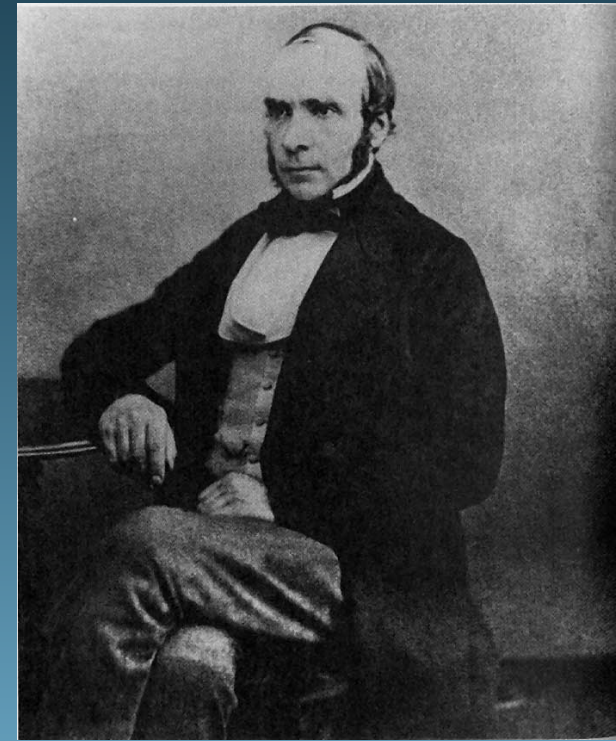
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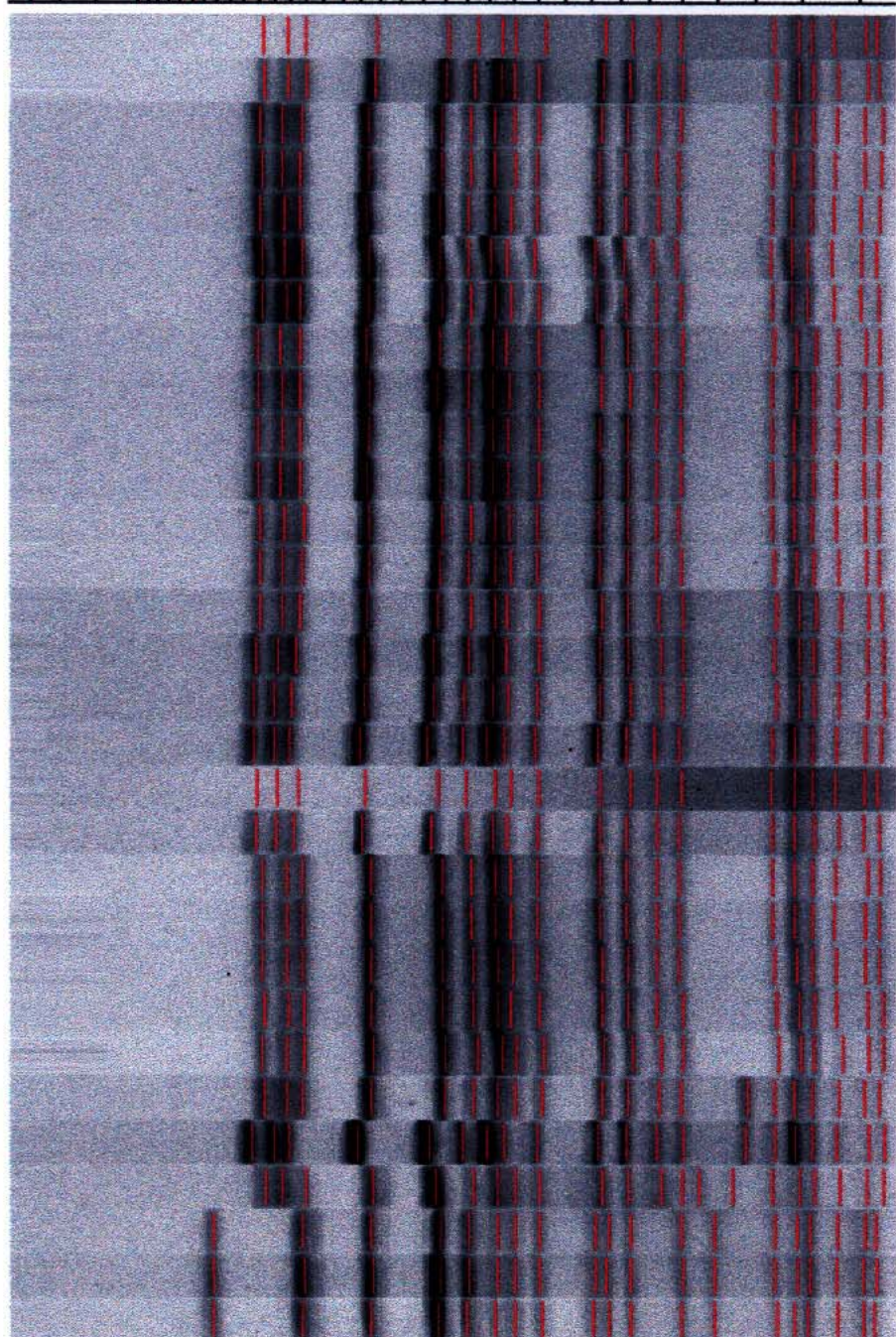
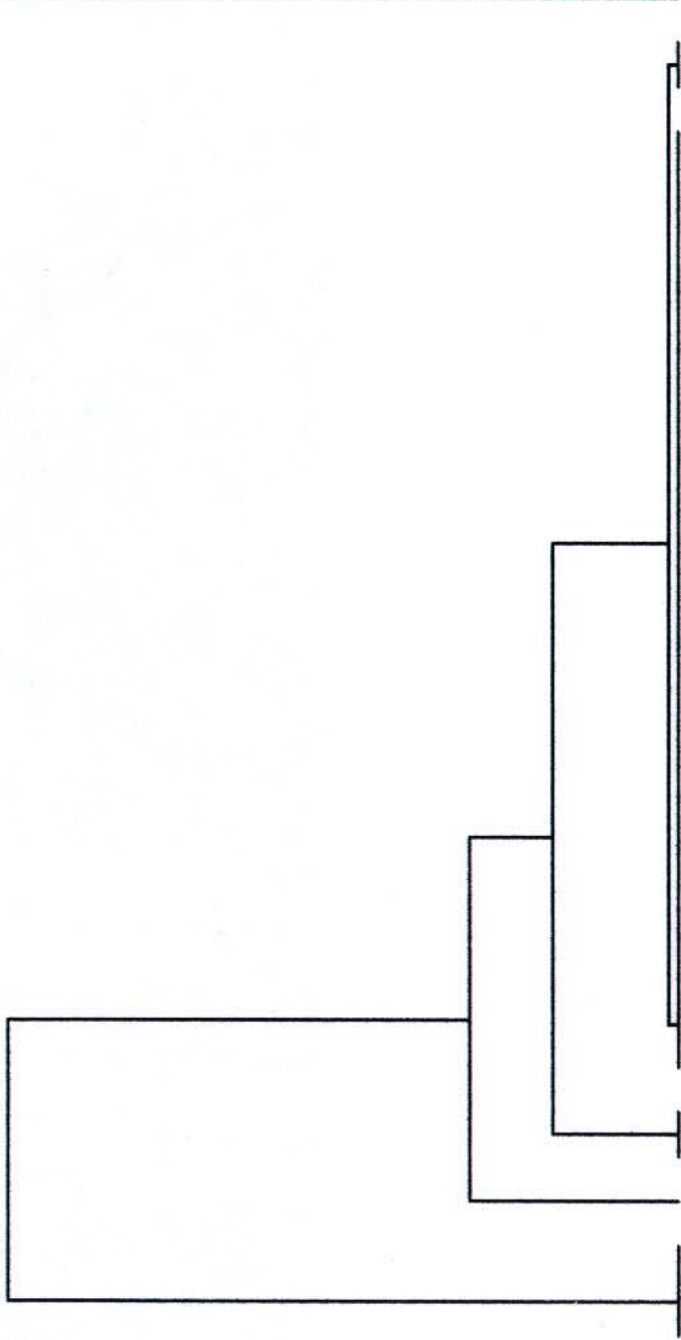
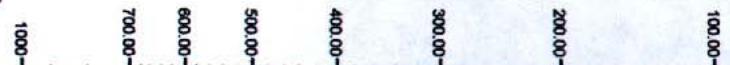
Population Health Dimension

- Supports the identification of health threats, assessment of population health status, focussing programs and services, research and evaluation
- Encompasses population-based health data and resources, statutorily authorized data in public health systems and the Health Care Provider Dimension, and other anonymous data

SNOW AND CHOLERA



- DATABASE ANALYSIS
- GIS SYSTEM



| Sample ID | Source |
|--------------|---------|
| Meat 3A | Food |
| 1306 | Patient |
| 13652 | Patient |
| 13651 | Patient |
| 13650 | Patient |
| 13649 | Patient |
| 13648 | Patient |
| 1326 | Patient |
| 1328 | Patient |
| 13698 | Patient |
| 2BF | Food |
| 1BF | Food |
| 4B1 | Food |
| 13647 | Patient |
| 13659 | Patient |
| 13658 | Patient |
| 13656 | Patient |
| 13655 | Patient |
| 13654 | Patient |
| Meat 3A | Food |
| Meat 5B | Food |
| Meat 3A2 | Food |
| Meat 2A | Food |
| 1324 | Patient |
| 13677 | Cow |
| 13657 | Patient |
| 13660 | Cow |
| E.coli G5244 | CONTROL |
| E.coli G5244 | CONTROL |
| E.coli G5244 | CONTROL |

ILLINOIS HEALTH NEWS

"THE GREATEST WEALTH OF THE COMMONWEALTH IS HEALTH"

STATE DEPARTMENT OF PUBLIC HEALTH
OFFICIAL MONTHLY BULLETIN

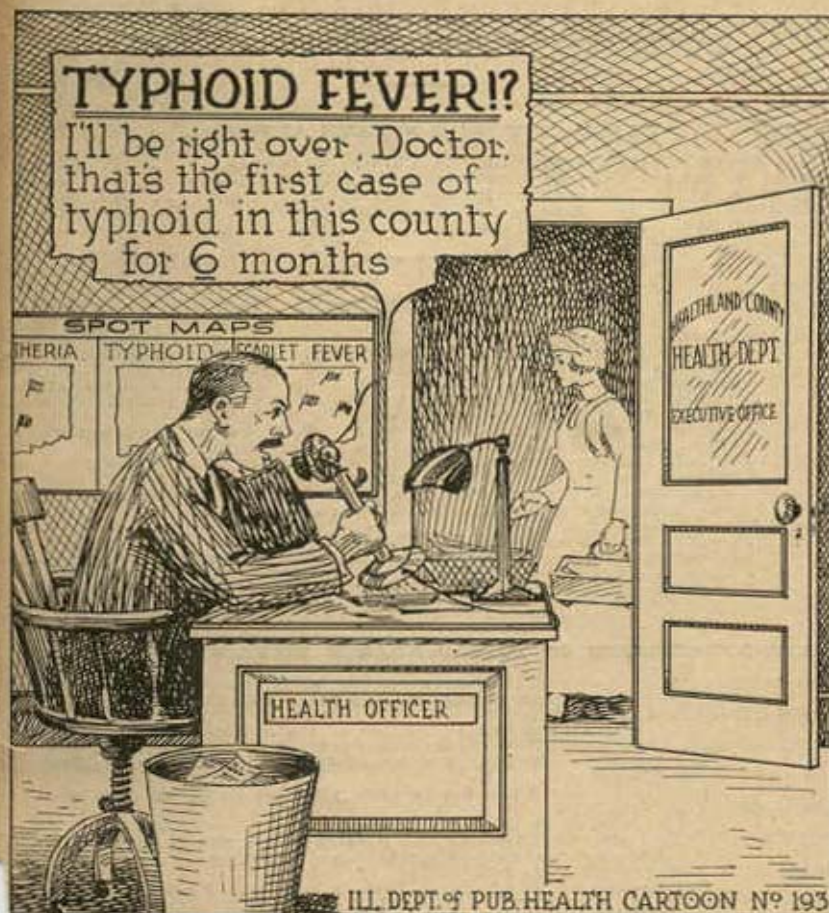
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Vol. IX, No. 12

DECEMBER, 1923

New Series



FULL-TIME COUNTY MEDICAL HEALTH SERVICE PREVENTS DISEASE.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

REPORT OF A COMMUNICABLE DISEASE

| | | | | |
|------------------------------|---|-------------------------------|---------------|---------------------------------|
| DISEASE OR SUSPECTED DISEASE | <input type="checkbox"/> OUTBREAK RELATED | <input type="checkbox"/> CASE | DATE OF ONSET | <input type="checkbox"/> MALE |
| | <input type="checkbox"/> CARRIER | | | <input type="checkbox"/> FEMALE |

| | | | |
|---------------------------------|-------------------------------|--|-------------------------------|
| PATIENT'S LAST NAME, FIRST NAME | AGE | <input type="checkbox"/> NATIVE AMERICAN | HISPANIC |
| | <input type="checkbox"/> MOS. | <input type="checkbox"/> ASIAN OR PACIFIC ISL. | <input type="checkbox"/> YES |
| | <input type="checkbox"/> YRS. | <input type="checkbox"/> BLACK | <input type="checkbox"/> NO |
| | | <input type="checkbox"/> WHITE | <input type="checkbox"/> UNK. |

| | | | |
|--------------------------|---------------------|--------|-----------|
| PATIENT'S STREET ADDRESS | CITY OR POST OFFICE | COUNTY | TELEPHONE |
|--------------------------|---------------------|--------|-----------|

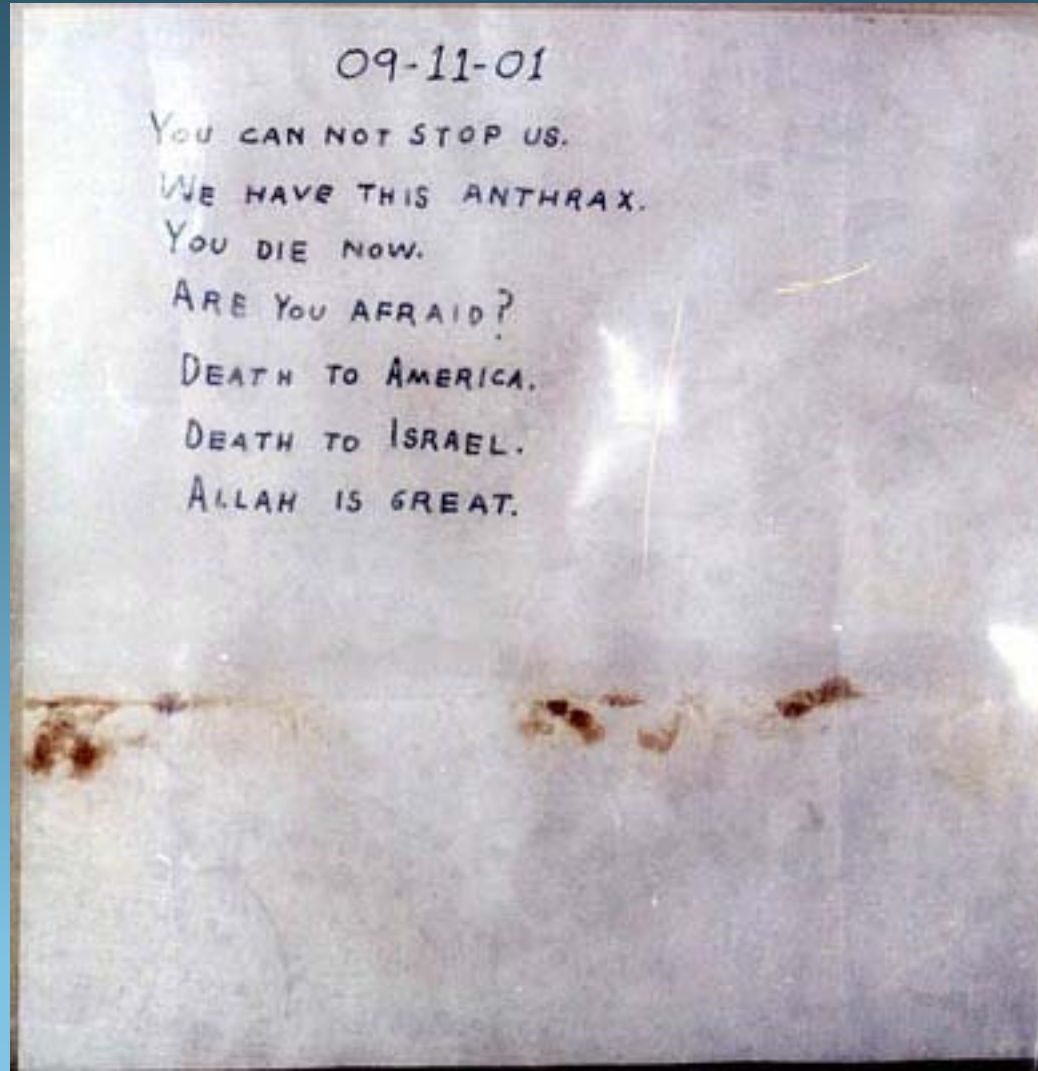
| | |
|--|------------------------------|
| <input type="checkbox"/> OUT-PATIENT | NAME AND ADDRESS OF HOSPITAL |
| <input type="checkbox"/> IN-PATIENT | |
| <input type="checkbox"/> NOT TREATED IN HOSPITAL | |

| | | | |
|------------------|---------|--------------|-----------|
| PHYSICIAN'S NAME | ADDRESS | CITY OR TOWN | TELEPHONE |
|------------------|---------|--------------|-----------|

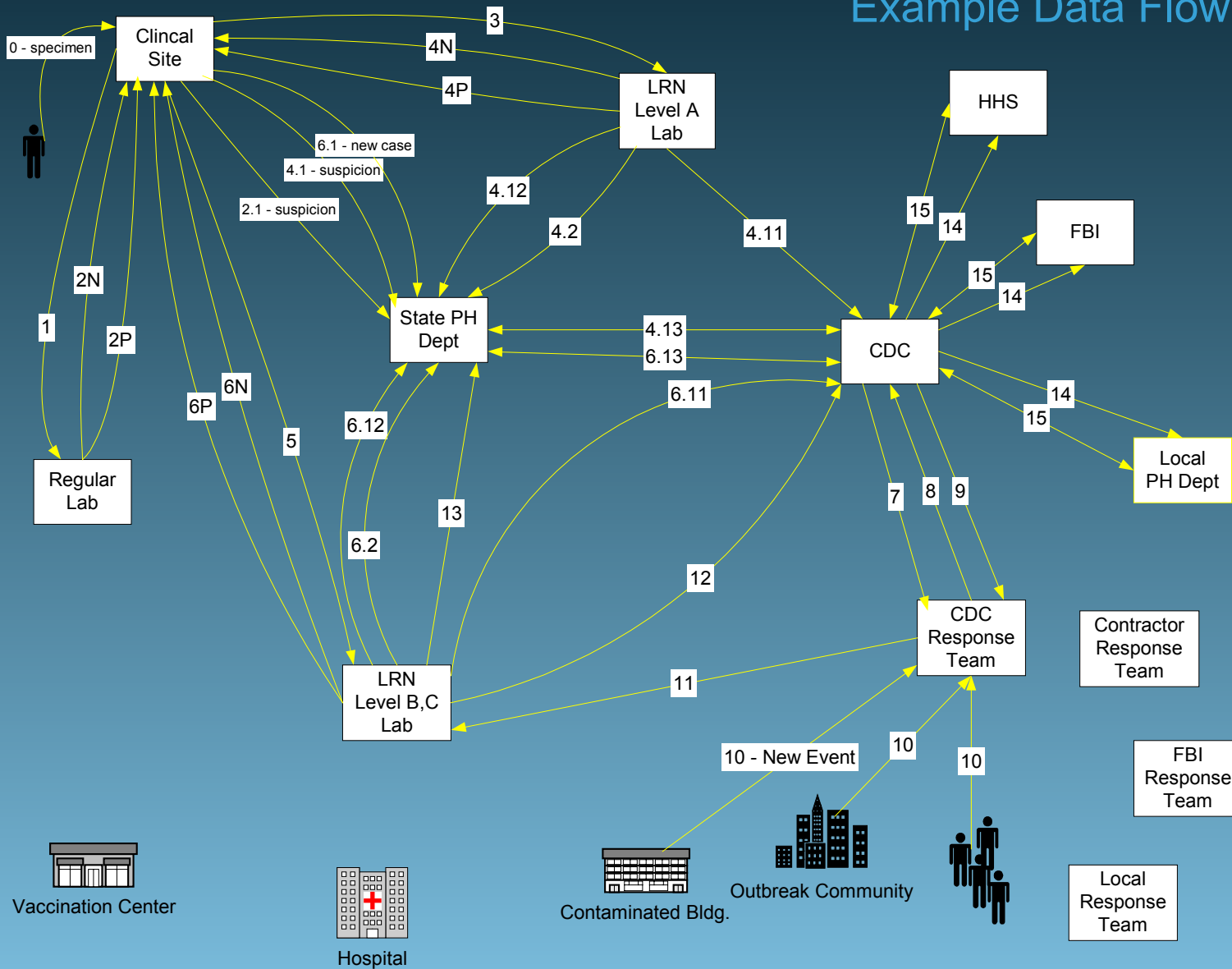
| | | | | | | |
|----------------|--|-----|-------|-----------|-----------|---------------------|
| DATE OF REPORT | REPORTED BY (PLEASE CIRCLE) | | | | | HEALTH JURISDICTION |
| | STATE LAB | ICP | HOSP. | PHYSICIAN | HOSP. LAB | |
| | OTHER | | | | | |
| | Printed by Authority of the State of Illinois P.O. #511552 50M 11/00 | | | | | IL482-0818 |



The Need for Solutions is Urgent



Example Data Flow



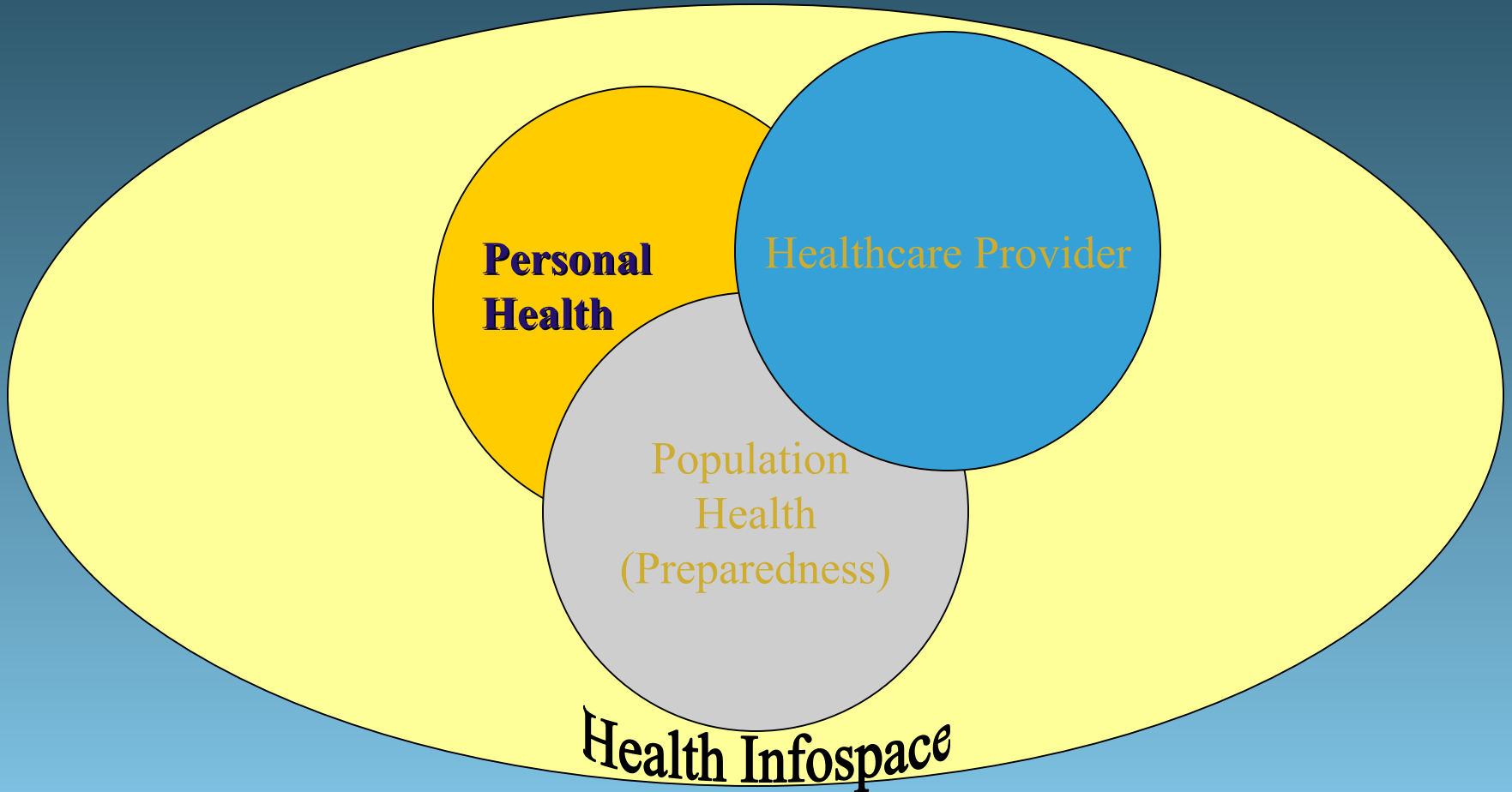
C. Broome - CDC

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

NHII



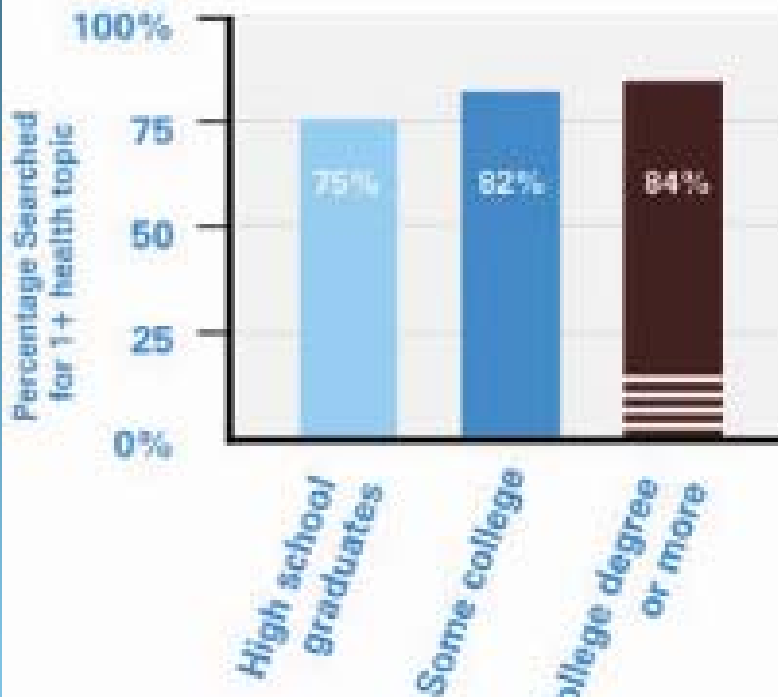
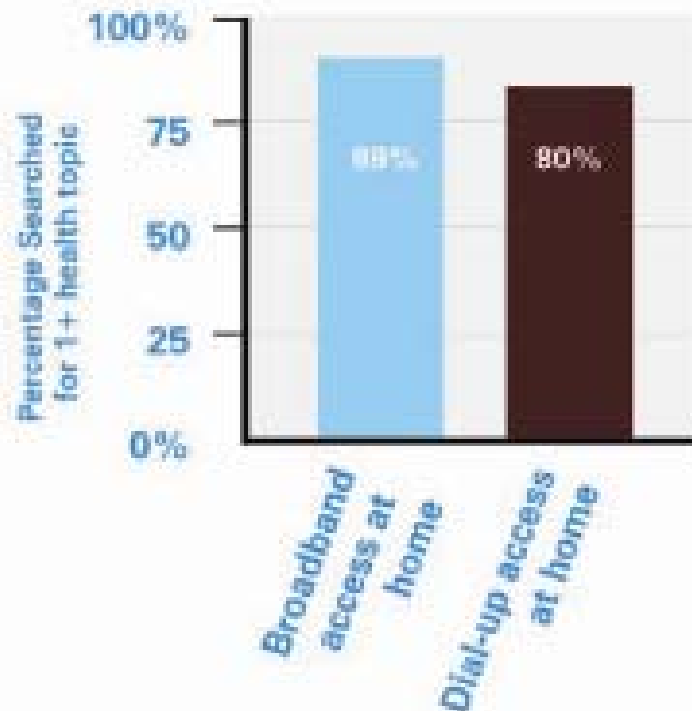
Internet users who have searched for at least one health topic



85% Women



75% Men





[Images On/Off](#)

Product Name

Unit Price

Price

QTY



[Collard Greens](#)
by the bunch

\$1.29/EA

1 Ea



Welcome, John

[My Lists](#) [My Account](#)
[My Personal Market](#)

1 **Signed In**, click to [Sign Out](#)

2 **Schedule Delivery**

Schedule delivery time now for best availability.

3 **Shop and [Check Out](#)**

My Shopping Cart

Your Subtotal: \$4.80

QTY PRODUCT

1 [Smoked Salmon Roll; 12 pieces](#)



[Green Kale](#)
by the bunch

\$0.99/EA

1 Ea



[Mustard Greens](#)
Bunch

\$1.19/EA

1 Ea



[Rainbow Chard](#)
by the bunch

\$1.59/EA

1 Ea



[Red Swiss Chard](#)
by the bunch

\$1.59/EA

1 Ea



[Swiss Chard](#)
by the bunch

\$1.59/EA

1 Ea




[Turnip Greens](#)
1 lb

\$2.49/EA

1 Ea



- 
- [My Peapod](#)
- [Express Shop](#)
- [Find Item](#)
- [Browse Aisles](#)
- [Personal Lists](#)
- [Previous Orders](#)
-
- [Help](#)
- [Save & Exit](#)

Buy **Green Leaf Lettuce 1 Head**

Price: \$1.49
 Size: APRX EA
 On Sale



Nutrition Facts

Serving Size 1 1/2 CUPS SHREDDED
 Servings Per Container VARIES

| Amount Per Serving | |
|---------------------------------|---------------------|
| Calories 15 | Calories from Fat 0 |
| % Daily Value* | |
| Total Fat 0.0 g | 0% |
| Saturated Fat 0.0 g | 0% |
| Cholesterol 0.0 mg | 0% |
| Sodium 40.0 mg | 2% |
| Potassium 0.0 mg | 0% |
| Total Carbohydrate 3.0 g | 1% |
| Dietary Fiber 1.0 g | 4% |
| Sugars 2.0 g | |

Peapod

Cart View:

Your cart is currently empty.
 As you add items they will appear in your cart.

[Review Order](#) \$0.00

CHECKOUT

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

Consumer attitudes towards PHR

- Consumers are eager to obtain health information online and facilitate transactions
- Consumer concerns about Internet privacy are strong and well-documented
- Users will want to be able to control their PHR as much as possible
- **The more educated about PHR, and the more experience consumers have with it, the more open they are to the concept**

**“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

Arthur C. Clarke Laws

Third Law:

"Any sufficiently advanced technology is indistinguishable from magic."