The Importance of Clinical Terminologies and Mapping

AHIMA Clinical Vocabulary Mapping Methods Institute
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Topics

- **Clinical Terminologies and the National Health Information Infrastructure (NHII)**

- **The Critical Importance of Mapping**

- **Accelerating Progress and Next Step Issues**

The National Committee on Vital and Health Statistics

- **Statutory public advisory committee to HHS**
  - **55 year history advising HHS on health data, statistics, privacy, and national health information policy**

- **Facilitates dialogue and collaboration between Federal Government and private sector**
  - **Public hearings on key health informatics issues**

- **18 members**
  - **16 appointed by Secretary of HHS, 2 by Congress**

NCVHS and HIPAA

- **NCVHS re-chartered by HIPAA**

- **In complying with (HIPAA)..., the Secretary shall rely on the recommendations of the NCVHS…**
  - **New standards**
  - **Changes and modifications to standards**

- **"Phase II" HIPAA (Clinical Data Standards)**

How the NCVHS has Helped Lay the Foundation for Interoperable HIT and the NHII

- **Strategic Vision/Strategy for Building the NHII, 2001**

  – Call for HHS leadership and coordination, and creation of an office reporting to the Secretary

- **Foundation for Consolidated Health Informatics Initiative (CHI)**

  – In 2000, developed strategy, framework and selection criteria for interoperable clinical data standards

  – Identified standards in 2002-3 which became the core of the CHI standards adopted by HHS

- **E-Prescribing Standards under MMA**

Towards a National Health Information Infrastructure for the United States

Selected U.S. Health Care Issues, 2005

- **An aging population**

- **Health care costs rapidly rising in the United States: 11% of GDP in 2001, 14% of GDP now, estimated to be 18.4% of GDP in 2013**
  - Increased sophistication (and cost) of medications and medical technologies
  - Increased pressure on both the clinical and administrative "sides" of healthcare for cost savings

- **Patient Safety**

- **Bioterrorism and the need for a more robust Public Health Information Infrastructure (Katrina)**

- **"Lost in Translation"**

Increased Stress on the U.S. Health Care System

- **41 million+ uninsured in America**

- **Those covered paying more for their coverage and more out-of-pocket**

- **State budget crises threatening coverage**

- **Medicare Trust Fund financial problems loom**

- **Quality is not a given**

- **Public Health system is stressed**

- **Seeking health information major Internet task**

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
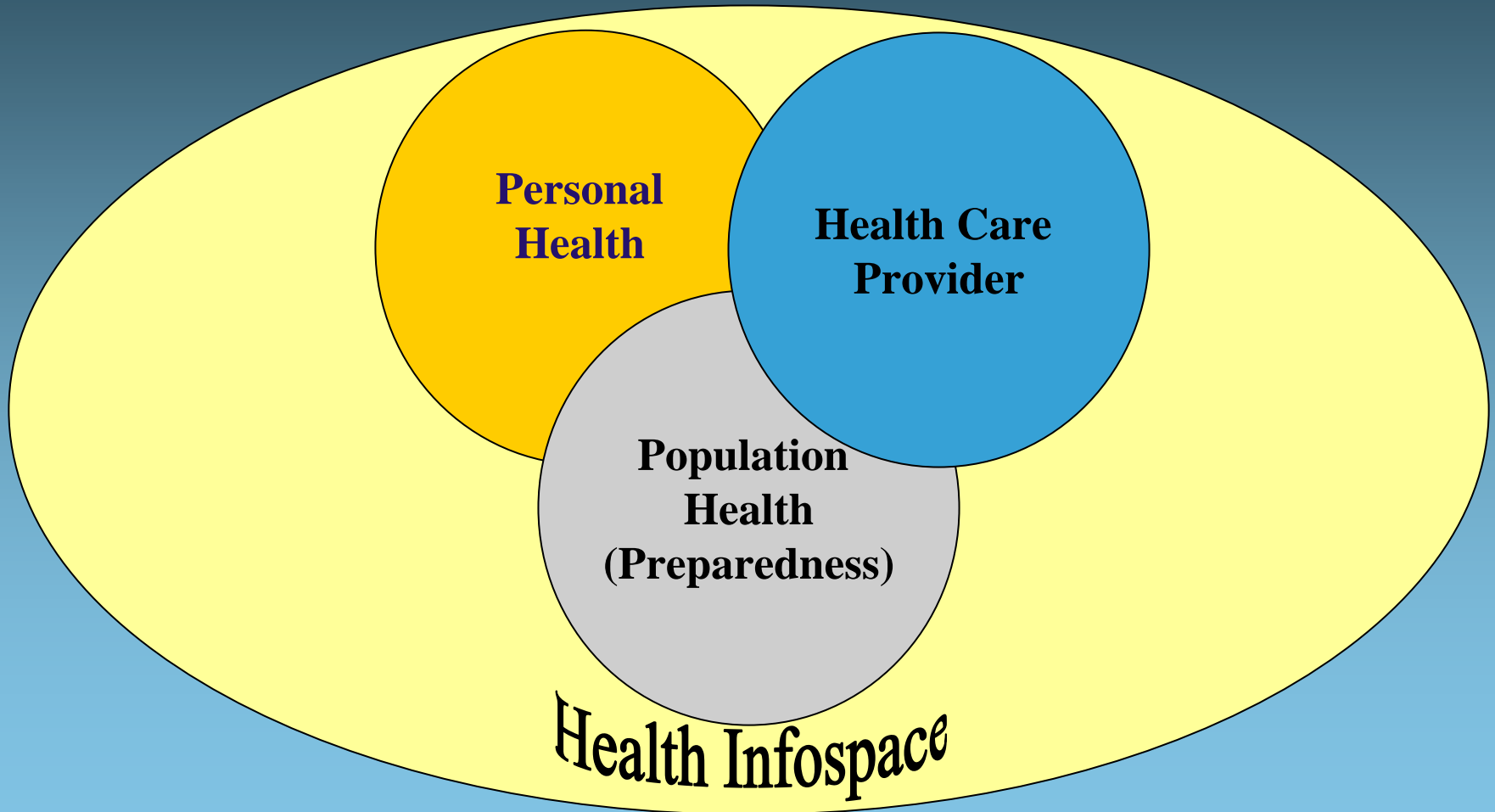
NHII

- **The goal is to push knowledge to the point of care**

  - **Expert systems**

  - **Decision support**

  - **Practice guidelines**

- **Increasing the efficiency of the health care system**

Privacy and Security

- **Respect individual privacy**

- **Assure confidentiality**

- **Engineered for security**

NHII

Personal Health

Health Care Provider

Population Health (Preparedness)

Health Infospace

Elements of Infrastructure

- **Values**
  - **Equable access**
  - **Privacy and confidentiality**
  - **Consumer control of personal health information**
  - **Respect for patient-caregiver relationship**
  - **Prudent use of resources to minimize overuse and underuse**

Elements of Infrastructure

- **Practices and relationships**
- **Laws and regulations**
- **Privacy and Security**
- **Technology**
- **Systems and applications**
- **Standards: both administrative and clinical**
  - **Message Format Standards**
  - **Clinical and Administrative Terminologies**
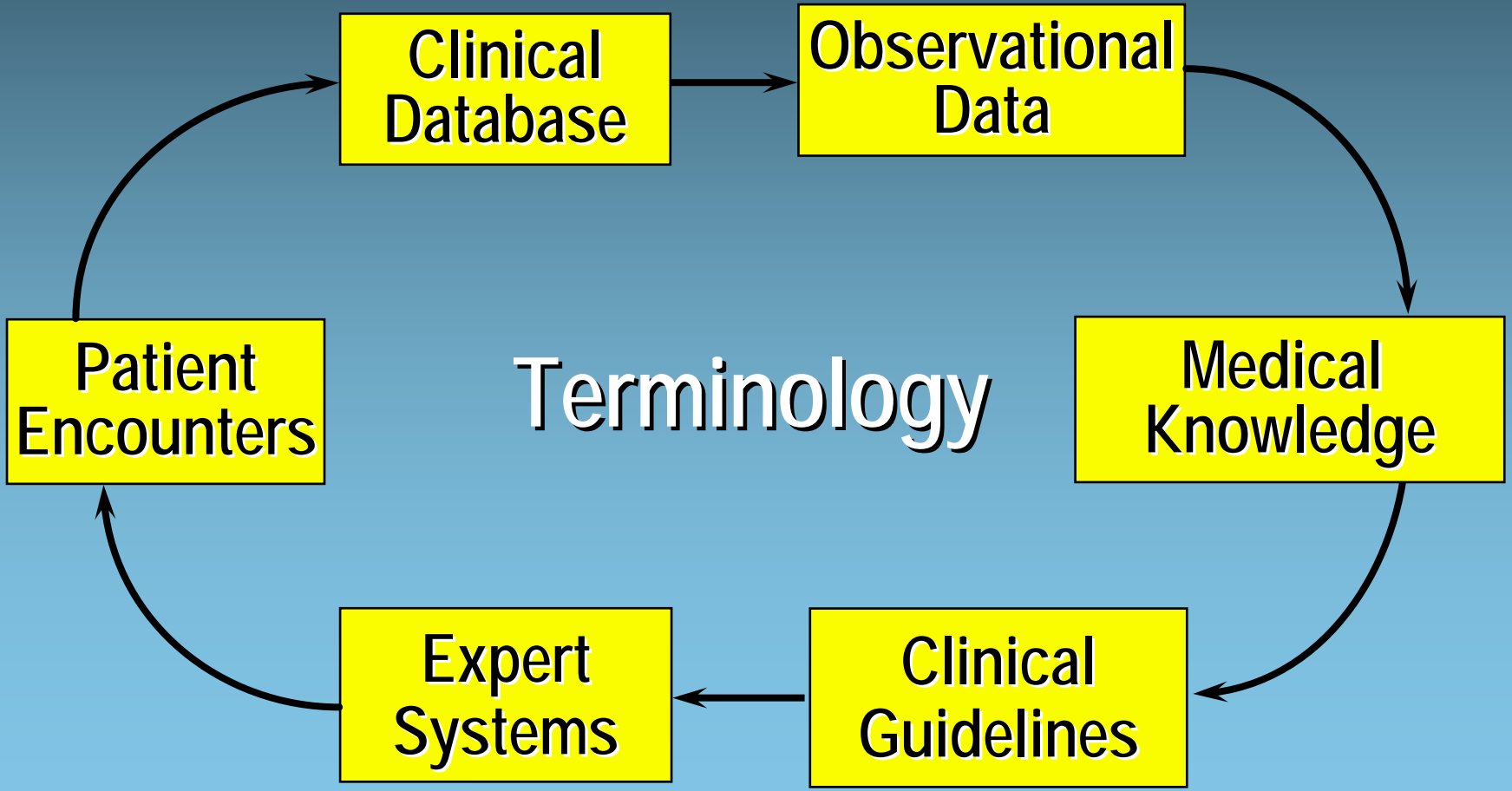
Standardized Clinical Terminology as a Critical Requirement

Without Terminology Standards...

- Health Data is *non*-comparable

- Health Systems *cannot* Interchange Data

- Secondary Uses (Research, Efficiency) are *not* possible

- Linkage to Decision Support Resources *not* Possible

- Connectivity beyond healthcare

The Business Case

- **NHII net savings — $121 billion per year**
- **Inpatient EHR — $8.5**
  - **Benefits to hospital**
- **Outpatient EHR $34.4 B**
  - **Benefits to payer**
- **Health Data Exchange — $78 B**
  - **Variable benefits**

Standards: "Phase II" HIPAA Recommendations for PMRI

- **HIPAA directed the NCVHS to:**

  - **Study issues related to adoption of uniform data standards for the Patient Medical Record Information (PMRI) and the electronic exchange of such information**

- **Report published in 2000 with additional key recommendations in 2002 and 2003**

Fundamental Premise

"Significant Quality and Cost Benefits can be achieved in health care if clinical specific data can be captured once at the point of care — and derivatives of these data can be made available for all legitimate purposes"

Recommendations

- **Address major foundational standards for the NHII to enable interoperability**

- **Federal Guidance recommended rather than regulation**

- **Federal Government should act as early adopter**

- **Funding and other incentives to accelerate development of emerging standards**

Recommendations

- **Selection of Message Format Standards**

- **Emphasis on the importance of clinical terminologies**
  - **Government wide licensure of key clinical terminologies**
  - **Core set of PMRI terminologies standards**
    - **SNOMED-CT**
    - **LOINC (laboratory subset)**
    - **Federal Drug Terminologies**

- **NLM as central coordinating body to manage terminology resource and coordinate ongoing maintenance and distribution**

Consolidated Heatlh Informatics (CHI)

- **One of the U.S. eGovernment Initiatives (now FHA)**

- **PMRI recommendations have formed the basis for the set of standards accepted by the Federal Consolidated Health Informatics Initiative for new federal systems and major upgrades to systems**

- **Provides direction to the U.S. health care industry**

- **A foundation for the NHII**

- **A foundation for the next stage of the HHS HIT Strategy**

Objectives of PMRI/CHI Standards: Interoperability

- **More easily and accurately exchange PMRI between systems**

- **Better understand PMRI across systems**

NCVHS Recommendation: Mappings of Core Set to Important Related Terminologies

- **Priority 1: HIPAA Medical Codes Sets**
    - CPT and HCPCS level 2
    - CDT
    - ICD9-CM
    - NDC
- **Priority 2: Other clinical terminologies**
    - DSM-IV
    - MedDRA
    - Other enabling terminologies
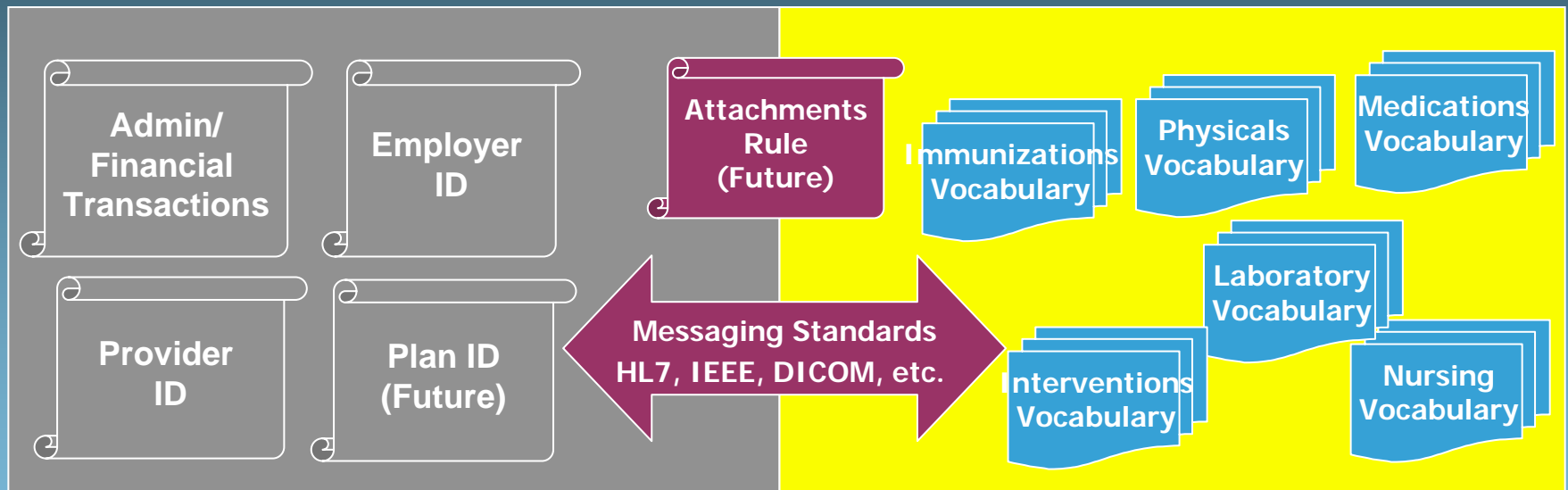
Importance of Mapping: Reuse of Data

- **More efficient and effective health care system**

- **High cost of administrative overhead and billing in health care**

  - **Est. @ 26 cents/health care dollar**

  - **Reduce costs associated with coding, billing, abstracting for quality and regulatory reports, etc.**

- **Data readily available for comparison to national and international benchmarks (which are usually based on administrative codes)**

- **Accelerate adoption of EHRs and adoption of PMRI Standards**

Multiple Stakeholders

- **Payers, including CMS**
- **Physicians, Hospitals, and other Providers**
- **Coders and Billers**
- **Regulators and Policy Makers**
- **Quality Monitoring and Reporting**
- **Fraud/Abuse**
- **Patients and Consumers**
- **Vendors**

Putting It All Together

Administrative ⟷ **Clinical**

Admin/Financial Transactions	Employer ID	
Provider ID	Plan ID (Future)	

Attachments Rule (Future)

Messaging Standards HL7, IEEE, DICOM, etc.

Immunizations Vocabulary

Physicals Vocabulary

Medications Vocabulary

Laboratory Vocabulary

Interventions Vocabulary

Nursing Vocabulary

Health Insurance Portability & Accountability Act

Consolidated Health Informatics

HIPAA Privacy and Security Rules

What We Need

- **High quality, accurate and well maintained Mappings**

- **Approved by CMS and other payers for use**

- **Approved by key regulators for use**

NLM Mapping Projects

- **Mapping projects are important to achieve the President's goal of an EHR for most Americans by 2014**

- **NLM's long range plan is to work with other agencies and organizations to support establishment, maintenance, testing and use of health data standards**

  – **Mapping projects support this effort**

- **Priority is mapping between core vocabularies and HIPAA code sets in order to facilitate automated generation of billing data from health care data recorded at the point of care**

- **~ $500,000 budgeted per year for mapping projects (courtesy of AHRQ)**

NLM Mapping Projects

CHI standards ⟶ HIPAA code sets

- **SNOMED CT ⟶ ICD-9-CM (disease codes)**
  - Key participants: CAP, NCHS/CDC, AHIMA, CMS
  - Creating draft map: CAP
  - Draft map available for testing via the UMLS Metathesaurus by early '06

- **SNOMED CT ⟶ CPT, HCPCS (procedure codes)**
  - Key participants: CAP, AMA, CMS, Kaiser Permanente, VA
  - Creating draft map: to be determined

- **LOINC ⟶ CPT (lab codes)**
  - Key participants: Regenstrief Institute, AMA, Intermountain Health Care
  - Creating draft map: Intermountain Health Care
  - Draft map available for testing via the UMLS Metathesaurus in early '06

NLM Mapping Projects

SNOMED CT ⟶ "other" vocabularies

- **International Classification of Primary Care (ICPC) (primary care physician documentation)**

- **ICD10**

- **NIC, NOC, NANDA (nursing vocabularies)**

- **Medical Dictionary for Regulatory Affairs (MedDRA) (adverse drug events)**

- **Medcin (physician documentation)**

- **Medical Subject Headings (MeSH®)**

NLM Mapping Approach

- **Where possible use existing maps as starting point (e.g., SNOMED CT ⟶ NIC, NOC, NANDA, ICPC)**

- **Requirements**

  – **Robust testing/validation by prospective users and recipients of the output**

  – **Alignment of update schedules to facilitate maintenance of the maps**

- **First draft maps available in the UMLS Metathesaurus for testing in early 2006**

Key NLM Expectations

- **Participants must include:**
  - Producers of vocabularies on both ends; prospective users and recipients of the output, e.g., health care providers, payers, as testers and validators

- **Mapping may/will prompt changes/corrections to content and adjustment to update schedules**

- **Mapping is a long-term commitment**
  - Must be updated every time either end is updated

- **Mappings will be distributed in the UMLS — Use will be governed by terms applicable to both ends**

- **Mapping is still an R & D problem — It will take multiple iterations to build highly functional maps**

Accelerating Progress Towards NHII Implementation and Interoperability

- **The President's Health Information Technology Plan, 2004**
    - A goal to assure that most Americans have electronic health records within the next 10 years

- **Secretary Leavitt and the next phase of the HHS HIT Strategy**
- **ONCHIT Office Formalized**
- **ONCHIT Contracts and RFPs**
- **AHIC**
- **E-Prescribing and MMA**

   Mapping will be key to insure usability and value

Future Vision and Questions

- **Routine use of standardized core clinical terminologies in EHRs**

- **High quality mappings between clinical and administrative terminologies**
  - **Routine acceptance and use by payors and providers**

- **Tighter integration between clinical and administrative aspects of HC and terminologies**
  - **What will ICD11 look like?**

- **Rules based engines to help insure reliability and reusability of data**

- **Given the need and importance, are we moving quickly enough?**
  - **Will we be an enabler or a barrier?**
  - **Are there sufficient resources being put on this task?**

Thank You for Your Attention

For more information: www.ncvhs.hhs.gov

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