

Requirements for Successful Statistical Data Collection from EMRs

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NCHS EMR Workshop



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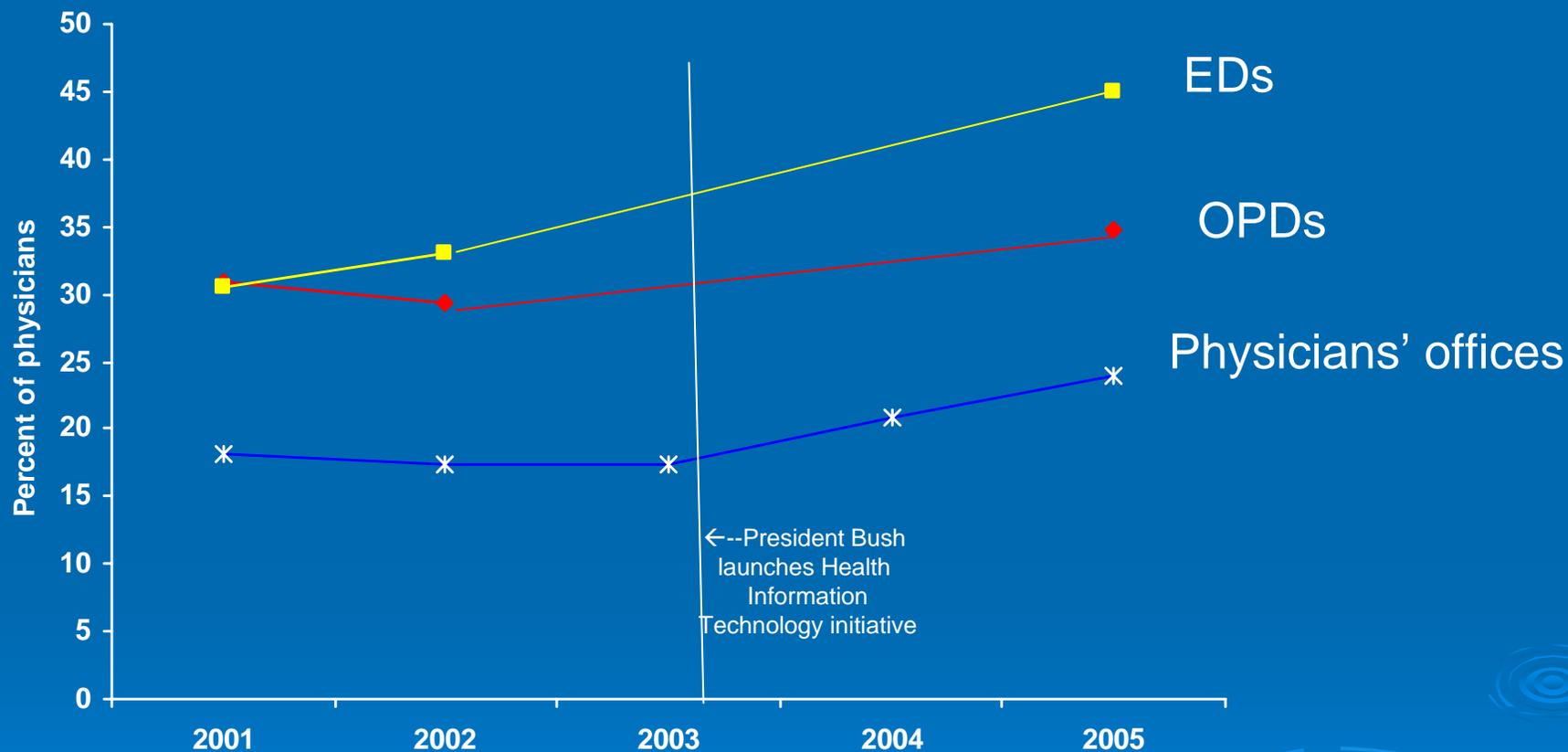
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Considerations

- What data elements are in EMRs?
- Who owns the data and how can we get it?
- What are the quality and consistency of data?
- What benefits may arise from using EMR data statistically?
- What privacy and confidentiality issues must be considered?

EMR adoption in ambulatory care



NOTES: Office-based physician and hospital emergency department trends are significant ($p < .05$). Office-based physicians include nonfederal, office-based physicians who see patients in an office setting. Excludes radiologists, anesthesiologists, and pathologists.

Sources: National Ambulatory Medical Care Survey and National Hospital Ambulatory Care Survey, 2001-2005

NHCS background

- Family of provider-based surveys of health care delivery
- Physician offices, hospital inpatient and outpatient settings, long-term care facilities
- Manual record abstraction or administrative record files
- Patient demographics, encounter characteristics, disposition

Example Challenge for ED collection

- National Hospital Ambulatory Medical Care Survey (NHAMCS) – ED component
- Manually abstracts set of ~ 150 patient and visit characteristics
 - Patient demographics
 - Encounter dates and times
 - Diagnoses, procedures, medications
 - Disposition
- Can the data be transmitted electronically from EMRs directly to NCHS?

Transmission study

- To compare the NHAMCS-ED data elements with the messaging standards to determine:
 - Which elements are covered?
 - Which are not covered?
 - What other elements may be standard that could be added to the survey because they are easily obtainable?
- To suggest coordination activities that may close the gap for the elements not covered by standards.

Selecting a standard

HIPAA Transaction and Code Set Regulations

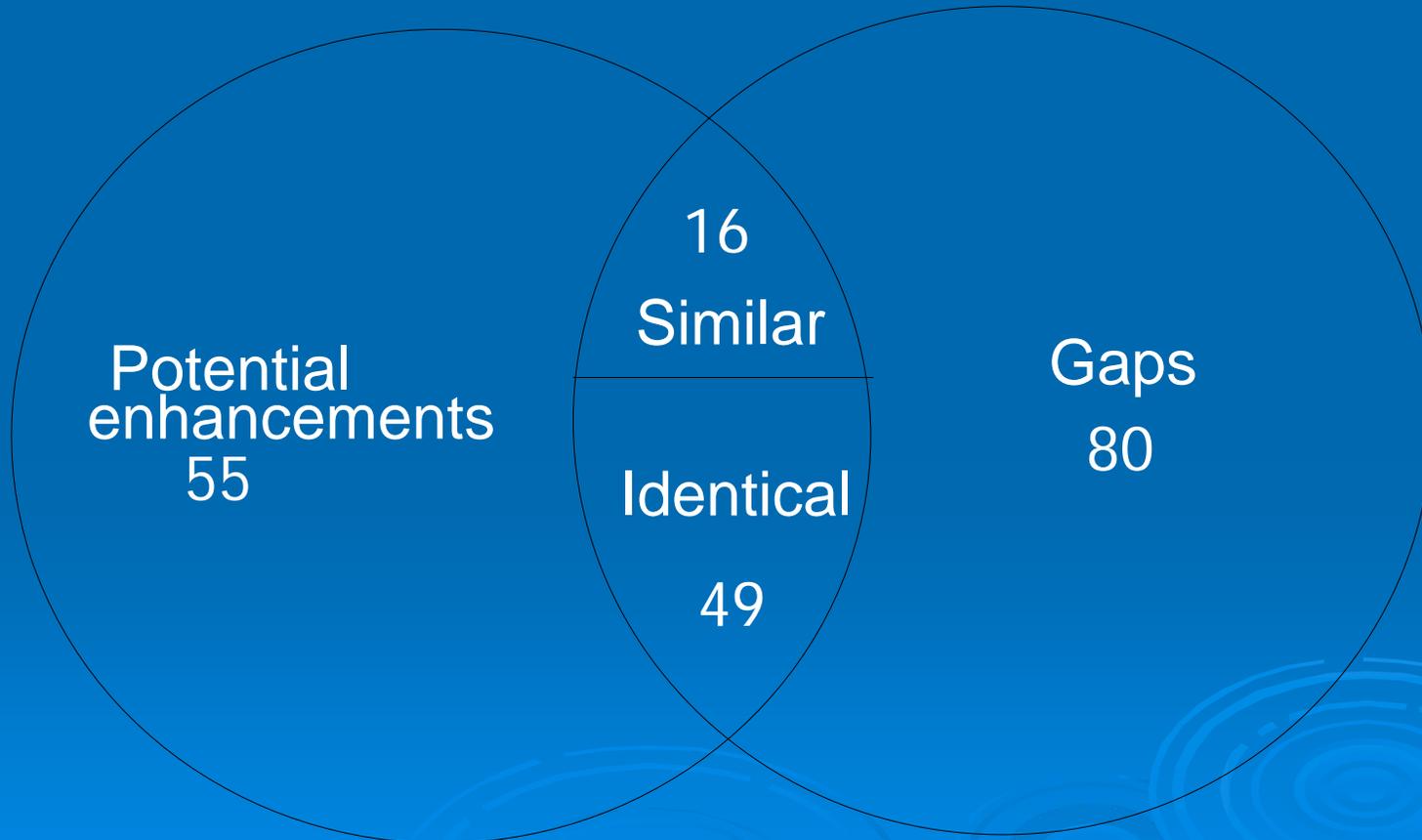
Health care organizations that submit electronic transactions must use the **ANSI ASC X12 837** implementation guides.

ASC X12 837 Health Care Service Data Reporting Guide (HCSDRG)

Gap analysis

Transmission standards

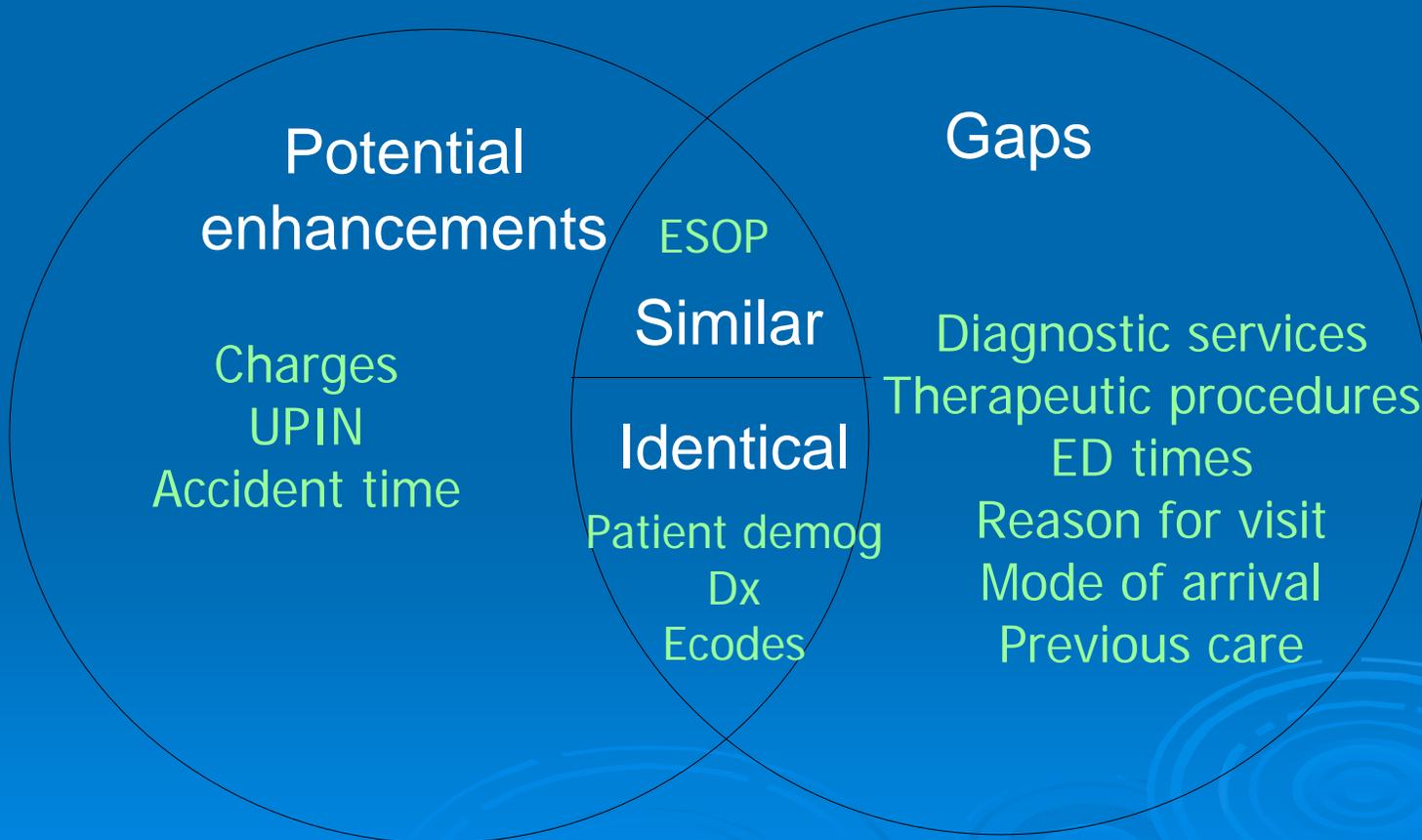
NHAMCS - ED data elements



Gap analysis

Transmission standards

NHAMCS - ED data elements



Quality and consistency of EMR data

- Accuracy
 - Completeness
 - Comprehensiveness
 - Timeliness
 - Consistency within and across providers
 - Cost of collection
- 

Potential enhancements for statistical data

- Clinical data
- Financial data
- Provider data
- IDs for linkage

Privacy and confidentiality

- HIPAA
- Safeguards
- Data use agreements
- Linkage constraints
- Disclosure risks

Other “statistical properties”

➤ Unbiased estimates

- What is the representativeness of EMRs among providers?
- What is consistency between responses from providers with and without EMRs?
- Are there response errors due to the way EMRs function (e.g., default entries)