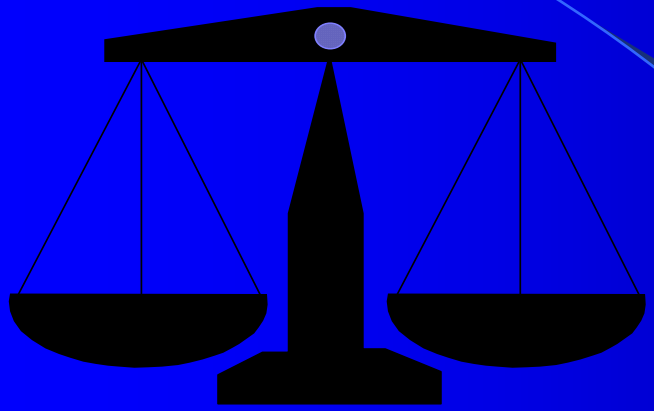
Managing Clinical Content: Balancing the Tensions Between Generalization and Localization



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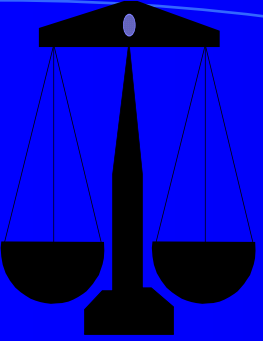
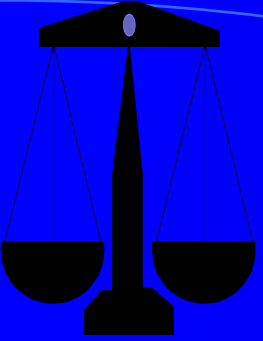
Survey

- Involved in authoring of clinical content?
- Involved in direct care delivery?
- Currently have >3 people on their content team?
- Currently have >30 people on their content team?
- Committed to using SNOMED?
- Have struggled with generalization/localization issues in your Epic work?



The Fundamental Tension

- **The Dogmatic View:**
  The ONLY way we can deploy EBM and optimize care and resource utilization is if everyone uses the same content.
- **The Parochial View:**
  Things are really different in my clinic and the way we do it is the ONLY way to do it.



The Debate Within KP

- Perennial tensions for over ten years with numerous systems prior to Epic
- Snowboarding connection
- Drivers for Generalization/Standardization
- Drivers for Localization
- Principles for managing the tensions
- Implications for sharing content:
  - Among KP regions
  - Among Epic colleagues

Kaiser Permanente Context

- 8 million members
- 11,000 physicians
- >30,000 allied health professionals
- 7 regions: SCAL, NCAL, NW, Hawaii, Colorado, MAS, Georgia
- Content experience: 100s of content authors, many with significant prior experience: Oceania, IBM, now Epic
- IRCCT
- >$3 billion committed to Epic project

Unique Epic Client

- **Care Everywhere**
  Federated database model to support scalability.
- **Collaborative Build:**
  Each instance of the database shares the common master files, BUT has localizations both within masterfiles, and has specific files that are wholly localized, e.g. facilities files.
- **Implication**:
  Much higher overhead to content development and maintenance.
  Much more challenging for sharing content between instances.

KP HealthConnect Context

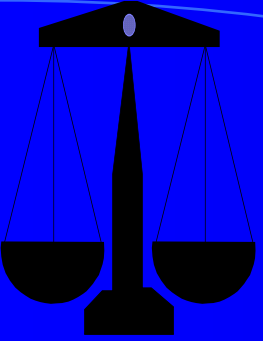
- Over 1,000 legacy applications, variable compliance with standards: ICD, CPT, SNOMED, LOINC, etc
- Different regions implementing different sets of Epic Applications
- Southern California Example:
  Epicare Outpatient, Epicare Inpatient, Inpatient Pharmacy, ED, My Chart, Scheduling, Registration, Billing, Tapestry, OpTime, HIM, Home Health, ?Call Center

KP HealthConnect Context

- Convergent Medical Terminology (CMT) team:
  Manages all terminologies and mappings

  Copies of CMT team paper available and online at MedInfo 2004 proceedings

- InterRegional Clinical Content Team (IRCCT):
  -Manages Guidelines and Principles for authoring clinical content
  -Manages all smart stuff



Key Principles for Maximizing Incorporation of EBM

1. Facilitate the documentation process: create smart stuff that is at least as easy to use as free text and thereby enhance the care experience for both provider and patient
2. Facilitate the care delivery process, e.g. make order entry faster
3. Contain recommendations that are highly relevant to the clinical context of an encounter
4. Aid in the capture of discrete coded data for both real-time decision support and analytic purposes

Key Principles for Maximizing Incorporation of EBM

5) **Support the consistent implementation of evidence-based clinical practice and care delivery processes.**

6) **Creation of coherent, comprehensive, searchable, and usable libraries of clinical content that are coordinated with the objective of reducing the overhead for maintaining those libraries.**

NB: These six objectives are not always complementary, and often lead to direct conflicts. A common example of such a conflict is that capturing key discrete data for analysis is sometimes less efficient that entering free text.

Why Support Local Variation?

Support for local variation is often key to meeting documentation objectives and becomes a central factor in helping clinicians shift from unstructured free text, to the use of smart tools, which represent critical support for the delivery of Evidence Based Medicine.

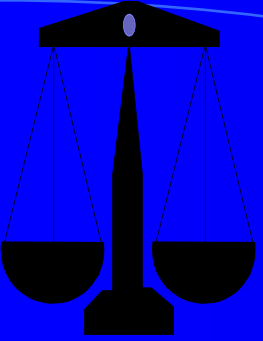
Scope of the Problem

Generalization vs. Localization across:

a) Different clinical specialties
b) Different caregiver roles
c) Different geographies
d) Different facilities
e) Different patient populations

Epic Evidence for Utility of Clinical Content

- When diabetic Smart Sets were used, the appropriate tracking of lipid disorders increased by a factor of 1.8
- Introduction of alerts to address usage of high-risk drugs in the elderly reduced usage by 45% in 2 months
- 50% success in substituting the preferred PPI within 2 months of a substitution alert
- 30% reduction in outpt visits for UTI after deployment of a UTI smartset for advice nurses



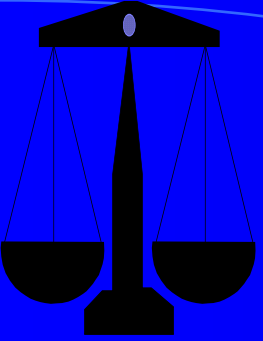
The Balancing Act

- Disciplined and systematic balancing of generalization vs. localization requires explicit principles that guide the processes of standardization vis-à-vis localization
- There are three key elements necessary to understand and manage the tension:

  1) The business drivers that warrant standardization at a national level

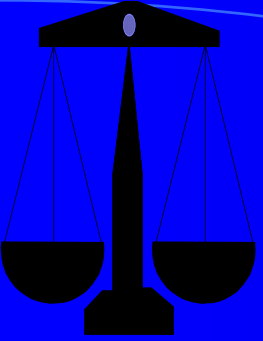
  2) The rationale and criteria for acceptable and appropriate local variations

  3) Principles for balancing these forces



Business Drivers for Standardizing Content

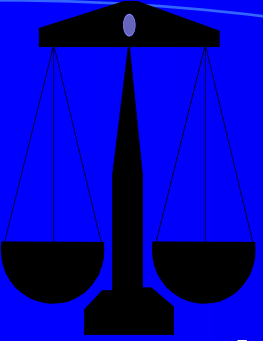
1) Support consistent definition and delivery of EBM across the entire enterprise.
2) Support reimbursement by CMS and 3rd party payors through consistent documentation.
3) Support analysis of outcomes
4) Reduce overhead for clinical content development and maintenance

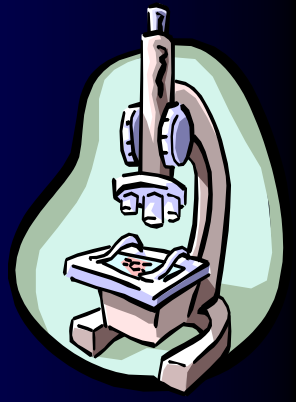


Business Drivers for Standardizing Content

5) Limit the total volume of clinical content
6) Enhance our capability to develop better evidence for best practices.
7) Accrediting agencies, regulatory bodies, and the public will force both a review and an explanation of any differences in both recommendations and practices across the enterprise.
8) Increase clarity around successful practices and decrease liability from care delivered using successful practices.

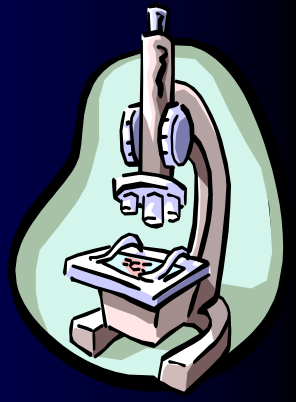
Business Drivers for Localization of Content





1) **Local variations in scope of practice**, e.g. clinical pharmacists prescribing in Hawaii, or "furnishing" privileges for physician assistants and NPs
2) **Local variations in the availability of orderable drugs and procedures** e.g. pharmacy formulary and locally available lab and radiology services vary widely
3) **Local variations in delivery system configurations**, e.g. variations in the provider mix within an individual care delivery team or larger operational unit naturally leads to different workflows
4) **Local variations in member populations (genetic pool variations).** e.g. sickle cell, asthma at WLA

Business Drivers for Localization of Content



5) Local variations in geographic environments (environmental variations). e.g. higher prevalence of coccidiomycosis in Southern California, histoplasmosis in Ohio, SARS in local outbreaks, etc.

6) Local variations in interpretations of evidence where sufficient evidence does not exist. Different locales continue to apply different "standards of evidence" to evaluate the evidence base for a given practice.

7) Supports analysis of two acceptable variations for a given practice with insufficient evidence to distinguish the two practices. This approach allows for systematic models to analyze outcomes and determine if one of these practices is superior to the other.

8) Supports localization required to address resource availability and constraints: Colonoscopies and threshold HbA1c screening.

Principles for Managing the Tradeoff of Standardization Vs. Localization

1. There is a need for enterprise-wide consensus regarding the key business drivers guiding clinical content creation.
2. All else equal, we strive for program wide consistency and standardization.
3. When there is good evidence, the clinical content should be determined by and consistent with that evidence.
4. When the evidence is considered insufficient to support a definitive recommendation, the content should generally take a conservative approach. E.g. screening.

Principles for Managing the Tradeoff of Standardization Vs. Localization

5) Where a local variation is thought to be necessary, the justification for the local variation should be described.

6) It is inescapable and in many cases desirable that content will be developed and tested locally before it is identified as a good candidate for "promotion" to national content status.

7) Processes and tools should be built that facilitate the adherence to these principles at both the national and local levels. These tools need to enable localized content to be updated as changes to national content occur.

8) Local bodies responsible for localization of national content need to recognize and adhere to these principles.

Principles for Managing the Tradeoff of Standardization Vs. Localization

9) A periodic review of these principles should be conducted.

10) It will be important to identify areas of local variation that appear not to be supported by available evidence and highlight these opportunities for standardization to the appropriate national entity.

11) It is essential that the content development process support distributed development opportunities within locales.

12) Clinical content will use discrete coded data elements in every instance where it either supports or does not impede the workflow and documentation process. In some exceptional cases where capture of discrete data is critical, policy decisions will support the use of discrete data despite some modest additional overhead for documentation.

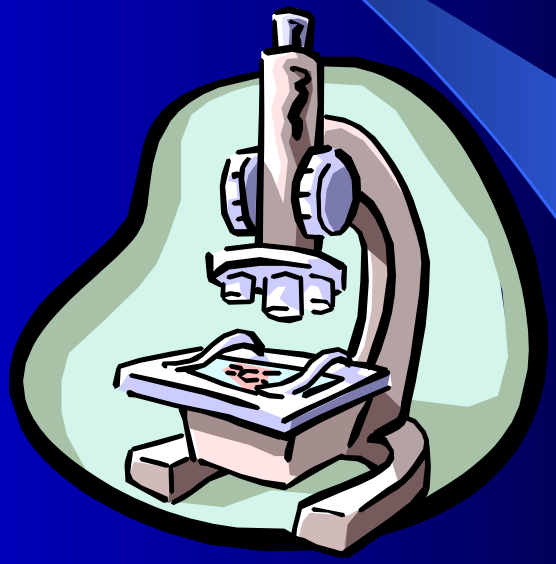
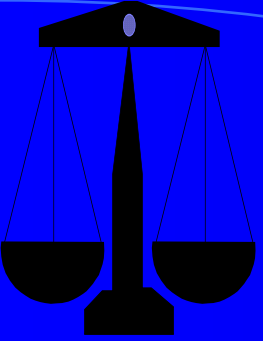
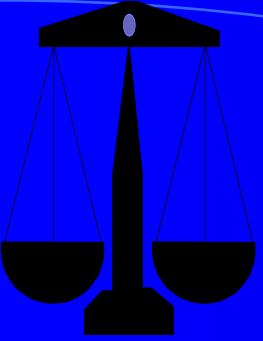
Implications for Sharing Content

- **For KP regions:**
  KP style guidelines and principles to assist in shareability of content.
  Enhanced utilities for managing and searching content.
  Metadata about context of use to aid searching and sharing

- **For Epic clients:**
  Epic-wide style guidelines and principles to assist in shareability of content.
  Enhanced utilities for managing and searching content.
  Metadata about context of use to aid searching and sharing

"Shareability"

Shareability **refers to the extent to which information is shareable. Information has high shareability if it is easy to share between different individuals without loss of fidelity. Shareability theory (Freyd 1983, 1990, 1993) proposes that internal (e.g. perceptual, emotional, imagistic) information often is qualitatively different from external (e.g. spoken, written) information, and that such internal information is often not particularly shareable. The theory further proposes that the communication process has predictable and systematic effects on the nature of the information representation such that sharing information over time causes knowledge to be re-organized into more consciously available, categorical, and discrete forms of representation, which are more shareable.**

Translation: Smaller chunks, evidence based, with discrete elements, i.e. SNOMED will enable more global shareability of "local" content.

Questions?