Organizational Track
Definitions, Assumptions and Issues

10a.m. – 11a.m. Use Case Specification

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About me...

- Kaiser Permanente Department of Internal Medicine; National Clinical Information Systems
- HL7 Board of Directors
- SNOMED Editorial Board

About Kaiser Permanente...

- 8.4 million members.
- 11,000 physicians.
- Tens of thousands of allied health professionals.
- Kaiser Permanente HealthConnect - a multi-year initiative focused on the national deployment of a highly sophisticated and integrated information management and delivery system.

Outline

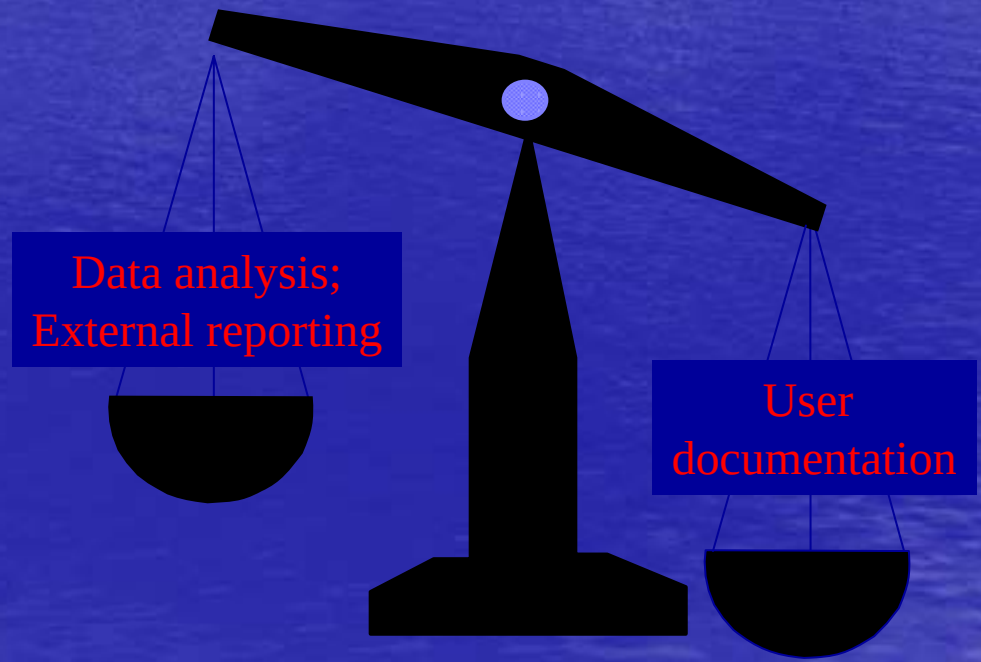
- KP HealthConnect Terminology Overview
- Mapping considerations

CMT is KP's central terminology resource

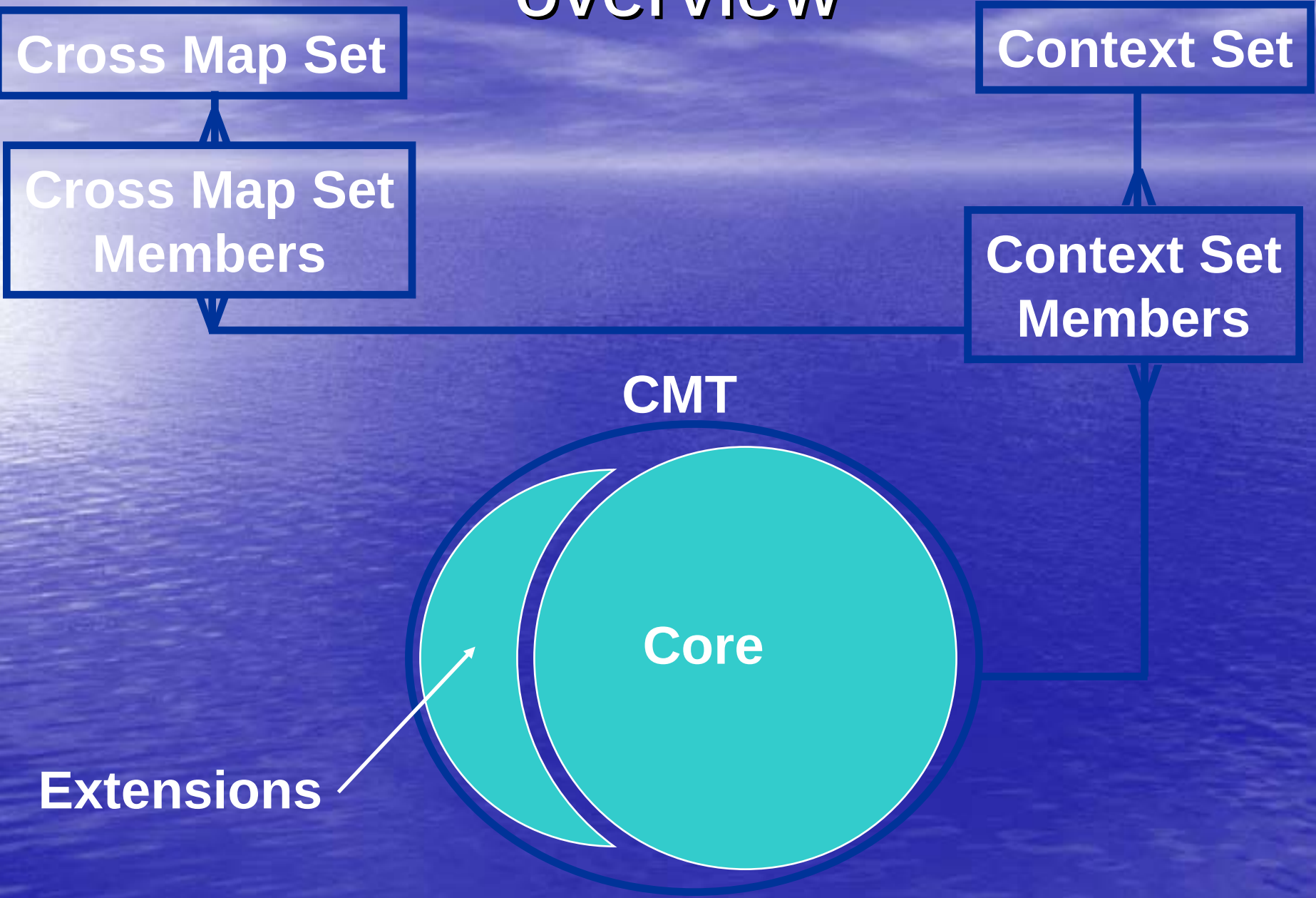
- CMT (Convergent Medical Terminology) is a foundational component of KP HealthConnect, serving as the primary source of medical terminology.
- CMT is mapped to regional diagnoses, lab, radiology, and other codes, and serves as KP's "lingua franca" of interoperability.
- CMT provides a unifying terminology model that allows us to track codes from various coding schemes in a consistent way.

CMT balances many objectives

- Support user documentation
- Support data analysis
- Support external reporting



CMT technical overview



CMT core is based on industry standard terminologies

- SNOMED CT + Laboratory LOINC form the core of CMT.
- A “classifier” organizes the CMT concepts into a poly-hierarchy, based on their logic-based definitions.

CMT core is based on industry standard terminologies

- Logic-based definitions allow a computer to compare various representations and determine whether or not they mean the same thing. For example, when querying for all patients that have had a “pituitary operation”, CMT enables you to retrieve those records where the provider entered codes for:
  - “hypophysectomy”
  - “partial excision of pituitary gland by transfrontal approach”
  - “brain excision” + “pituitary gland”
  - “brain incision” + ”pituitary posterior lobe”

CMT extensions are a necessary evil

- Extensions are those concepts that have not been integrated into the Core.
- Extensions are harder to query for, harder to maintain, and can overlap in meaning with Core concepts.
- Rationale for CMT extensions has included:
  - Concepts that don't fit in to the CMT logical core structure
  - "Transition" strategy / "temporary" holding tank
  - Small value sets controlled by other groups in the organization
  - Local innovation / experimentation

Context Sets - Swiss army knives of terminology

- Context sets are CMT subsets used within a particular context.
- They are used as a staging area, prior to uploading vocabulary files into the EHR.
- Context sets can contain properties that aren’t uploaded to the EHR.

Outline

- KP HealthConnect Terminology Overview
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CMT is KP's "lingua franca" of interoperability

- Mapping represents perhaps the biggest cost of enterprise-wide terminology deployment. There is a large initial investment as interfaces are built.
- Mappings are use case dependent. The type of mapping, and the scrutiny by which the mappings are QA'd, vary by use. Some mappings – such as those needed to support order entry and results reporting - have major clinical implications if incorrect, and require manual review by at least two domain experts.

Mapping considerations

- Scenarios
  - **Real-time interface:** e.g. clinician interacts with national display names for order entry and results reviewing. Same display names are used across the enterprise, and each region maps to their local lab/radiology order and result codes.
  - **Billing:** e.g. clinician selects an encounter diagnosis from a pre-defined list, and the mapped ICD9 codes are sent to a billing application.
  - **Data migration:** e.g. legacy encounter diagnosis data is used to prime the new application.
  - **Clinical:** e.g. clinician selects an allergy from a list, which is used in drug-allergy screening.
  - **Statistical:** e.g. raw data is run through a mapping to produce aggregate reporting.

Mapping Considerations

- Considerations
  - Extent of QA
  - How and where will the mapping be used?
    - Are separate inbound and outbound mappings needed?
    - What dependencies apply to the display names, allowable values?
    - Is the mapping payor specific?
    - Is the mapping dependent on the display name?
  - Mapping Steward
  - How will the mapping be updated?
  - Technical mapping issues
    - Where target is more specific than any source code.
    - Where target doesn't fit into the logical framework of the source terminology.
    - Where target terms are ambiguous.
  - **MUST WE MAP???**

Clinical Vocabulary Mapping Methods Institute
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