Coding Medical Constructs

Creating Chaos Out of Order

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Assumptions

- Creating data structure for electronic use
- Codes themselves are not important
- How constructs are presented for use and how they are linked over time are key
The Primary Players

- International Classification of Disease
- International Classification of Primary Care
- Systematized Nomenclature of Medicine – Clinical Terms
- Medcin
- Current Procedural Terminology
- Logical Observation Identifiers Names and Codes
- RxNorm
Quick Thoughts

- **LOINC** – Initially developed as a standardize approach for transmitting laboratory results
  - Publicly available
  - Overly specific for most clinical users

- **RxNorm** – US National Library of Medicine developed system to classify medications
  - Not fully developed
  - Not incorporated into commercial medication systems
Quick Thoughts

- Current Procedural Terminology
  - Designed to transmit billing data
  - Groups or splits based on reimbursement issues – not clinically relevant issues
    - Chemistry test single component
  - Codes reused over time
  - Not designed to be a clinical system
Quick Thoughts

- Medcin
  - Commercial nomenclature (270,000 base codes)
  - Extensive “clinical hierarchies”
    - Unclear utility in primary care
    - Developed through “expert” review instead of use
  - Highly detailed – breast cancer returns 200+ options
  - Trying to deal with patient variation at the code level
Quick Thoughts

- SNOMED CT – granular system designed to codify all clinical data – 370,000 terms
  - Relationships are handled by a separate database – not through code hierarchies
  - Has incorporated and mapped to many other systems – LOINC, ICD, ICPC
  - A reasonably good nomenclature is not a data structure
Quick Thoughts

- ICPC – specifically designed to include items of reasonable frequency in primary care
- Organ system oriented
- Only system to specifically identify the reason an individual seeks care and requests for care
- Incorporates episodes of care (i.e. time)
A decade of debate over “coverage” of various systems related to “medical concepts” – SNOMED v Read

Ordering concepts initially linear – SNOMED, Read

Next generation of systems moved to relational approaches based on “clinical” considerations – SNOMED CT, Medcin
Crushing Rocks is not Sculpting

- Moving from tens of thousands of codes to hundreds of thousands of codes does not improve order
Still Holes

- Even with 370,000 codes there are areas not well covered by SNOMED CT –
  - Allergies
  - Patient preferences
  - Guideline exception tracking
  - Adverse event tracking
  - Medical decision making