

Classifications in health care

Health interventios

- What has been done with the patient
- Collected everywhere but non-standard

Health Problem

- Reason and main features of the contact
- Routine collection
 - Causes of death
 - Hospital data

Functioning and disability

- Effects of disaese and therapy
- Scientific developmental projects

WHO-FIC

Laboratory investigations

- Necessary for exchange of information
- Routinely used but non-standard

"Terminological Systems"

Equipment

- Equipment to deliver care
- Technical aids

Pharmacological substances

- Key element in treatment
- Records on sales exist, but not on usage

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Diagnostic Classifications

ICD

- Developed and maintained by WHO
 - ICD-10 / ICD-9
- National versions
 - ICD-9-CM, ICD-10-CM
 - USA, many other countries
 - ICD-10-AM
 - Australia
 - ICD-10-CA
 - Canada
 - German version
 - Nordic versions

ICPC - International Classification of primary care

- WONCA
- WHO-FIC related classification

- Not too many standards
- Mappings are available or fairly easy to establish

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Goal of diagnosis information collection

- Reason of the health problem
- Main features of resulting condition
 - Disease / Disorder
 - Trauma
 - Intoxication
- External causes
 - ICD-10 / ICECI / NCECI
- Disease spectrum of the population
 - Statistical analysis of causes of death
 - Hospital statistics
- Correct diagnosis => Correct therapy
 - Evidence based medicine guidelines

- International comparisons
 - short lists necessary
- Existing common structure



Functioning and disability

- ICF - International Classification of Functioning Disability and Health
 - WHO Classification
 - Very complex, needs further development for the user interface
- Other classifications
 - Bartel, GAF, RUG/RAI, FIM

- No agreement on any standard
- No standard mapping

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Diagnoses do not indicate severity of illness – more information is needed

- Effects of disease
- Need of care
- Effects of therapeutic interventions
- Economical compensation
 - Currently evaluation is not based on facts

- Black hole of information systems
- International standard badly needed

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Laboratory investigations

- Different systems in different countries
 - IUPAC
 - INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY
 - LOINC (Logical Observation Identifiers Names and Codes)
 - Produced for US Federal Government by Regestrief Institute
 - Public, may be used unchanged both in commercial and non-commercial applications
 - Snomed
 - College of American Pathologists (CAP)
 - Early versions – not Snomed-CT
 - ICD-O version 3
 - WHO – loose connection with WHO-FIC work
 - Close relation to early versions of Snomed
 - CEN-TC251?
Local and national systems

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Exchange of information between clinical units and laboratories

- Ordering information
- Results
 - No modern health care system can work without basic laboratory data-system
- Measurements
 - All measurements should be covered
 - length, weight, blood pressure
- Investigations with written reports
 - borders with diagnostic radiology

- No international standard available
- No standard mapping
- National standards?

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Procedures performed to the patient

- CPM
 - Classification of Procedures in Medicine
 - WHO Classification
 - Never updated
 - Holland and Germany
- ACHI
 - Australian Classification of Health Interventions
- CCAM
 - Classification commune des actes médicaux
 - Based on CEN-TC251 standard
- NCSP
 - Nomesco: Classification of Surgical procedures
- ICD-9-CM CSP
- ICD-10-PCS
 - USA
 - Base of 3M DRG systems
- CCI
 - Canadian Classification of Health Interventions

- ICHI – International Classification of Health Intervention
 - WHO-FIC related classification
 - Developed from the Australian ACHI
 - Not in use yet

- No standard
- No mapping



What is done to the patients

- Procedures performed to patients
- Surgical procedures
 - What is surgery?
 - Endoscopy?
- Therapeutic and/or diagnostic procedures
 - Laparotomy – diagnostic or therapeutic
- Radiological procedures
 - Intravascular catheterisation with injection of contrast?
- Performed by
 - medical doctors
 - nurses
 - physiotherapists
 - Etc
- provider is registered separately

- Obvious need
- Coverage of the different systems varies
- Definite need for international standardisation

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Pharmacological substances

- No de facto standard
- ATC (Anatomical-Therapeutic Classification)
 - Used in Nordic countries, some other European countries, but not for example in the USA
 - Does not code each preparation and package
- Commercial coding systems
 - For pricing and storage

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Equipment to deliver care

- Hospital equipment
 - Patient specific use is currently not registered
 - Problems in use are not systematically available
- Tools for clinical laboratory and diagnostic radiology are registered through the procedures
 - No need for further registration?
- There is no standard registration for materials used during surgery
 - Complications related to materials cannot be systematically analysed

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Technical aids

- ISO-9999 Technical aids for persons with disabilities
 - WHO-FIC related classification
 - Classification and terminology
 - ISO-standard sold by standardisation bodies in each country

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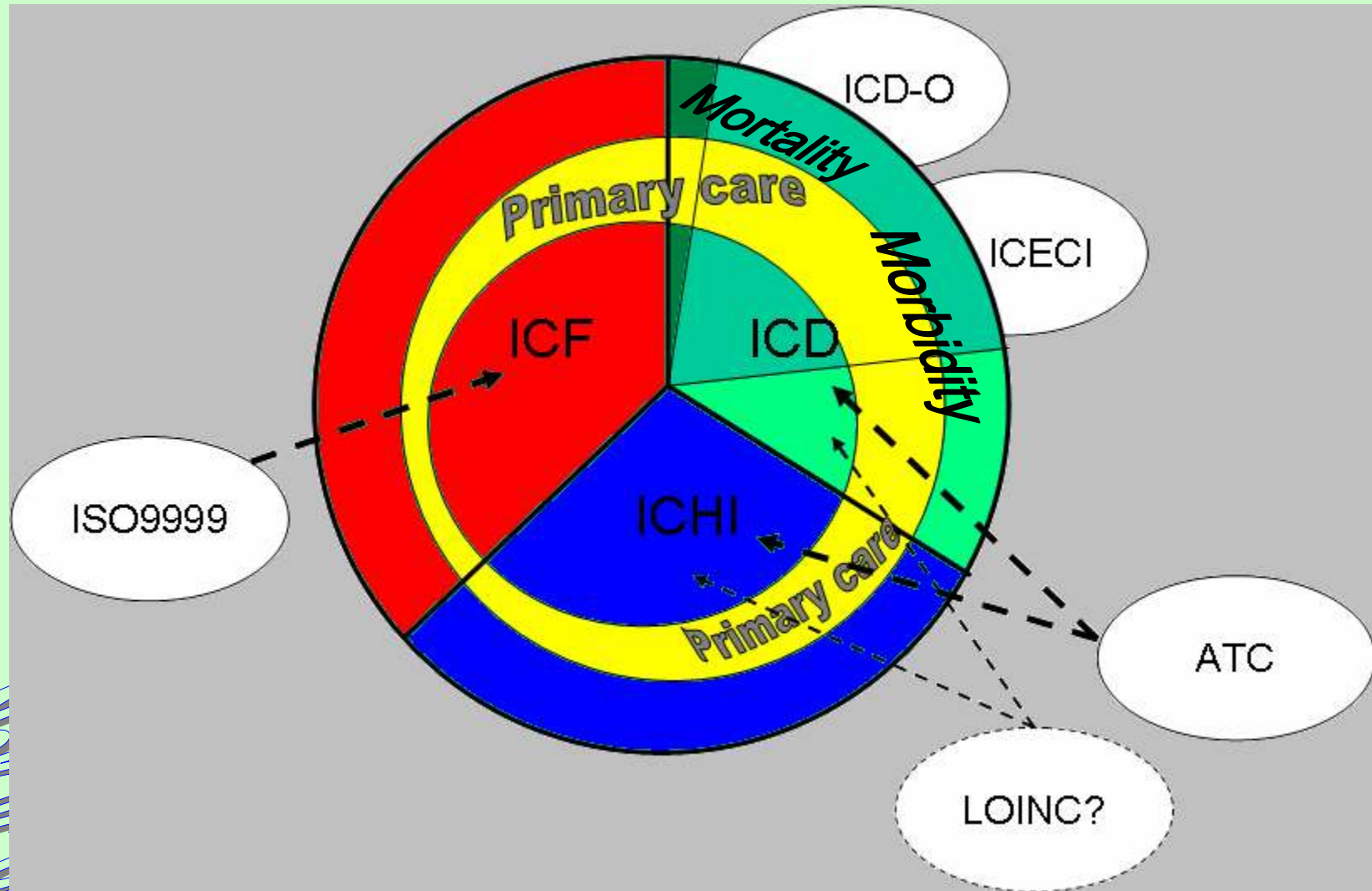
WHO-FIC Classifications

- Reference classifications
 - Health problems – ICD-10
 - International Classification of diseases ...
 - Functioning and Health – ICF
 - International Classification of Functioning, Disability and Health
 - Health interventions – ICHI
 - International Classification of Health Interventions
- Derived Classifications
 - Derived from reference classifications
 - Psychiatric ICD
 - ICD-10 NA (Neurological application)
 - ICD-10 DA (Dental application)
 - ICPC – Primary care
 - ICECI – External causes classification
- Related classification
 - Related areas classified with independent classifications
 - Medical substances – ATC – Anatomical Therapeutic Classification
 - ICD-O-3 – Oncological histology
 - ISO-9999 – Technical aid for persons with disability
- Missing area
 - Laboratory investigations – LOINC??

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ICPC within WHO-FIC



WHO-FIC



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- Secondary patient classification
- DRG
 - Clinically relevant, resource homogenic groups
 - Based on existing information
- Based on primary classifications
 - Diagnoses (ICD-10)
 - Procedures (NCSP)
 - Functioning (ICF?)

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Semantic structure

- Classifications are (or should be) based on semantic structure
- Aggregation of information for collection and exchange
- They should create natural links to Knowledge systems
- User-interphases for classification systems should be based on intellectual semantic vocabulary systems
 - Easy search and selection of correct term resulting in correct classification

- "Terminological systems"
 - Terminology consisting of terms is language specific
 - Terms cannot be translated
 - Detailed classification of concepts
 - Term(s) defines the concept
 - Translation of concepts is possible
 - Increase in details increases problems in translation
- Semantic links creating a network

- Possible systems
 - Read – past
 - Snomed – CT – commercial?
 - MESH / UMLS??
 - GALEN based systems??

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Terminological systems in relation to classifications

Classification use

- Search for correct code
- Multiaxiality created through mapping to terminological system and semantic links in it
- Increased possibilities to reporting

Classification development

- Classifications may remain in their original purpose
 - Statistical reporting
 - Casemix tool component
- Less complex classifications that are easier to implement
 - Developing countries

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