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Keynote abstract

Beyond classifications: entities of knowledge exchange

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Abstract

Introduction: WHO's reference classifications, ICD and ICF have traditionally served as standards for disease, health and disability related data. To meet the requirements of health (and disability) information systems in the 21st century WHO classifications need to represent the knowledge digitally in a coherent semantic structure. The knowledge representation in a classification requires that the information entities need to be identified with clear attributes and values and put into the context of an overall information model.

Aims: To identify how we can possibly build mechanisms for meaningful data exchange in health information systems and discuss the prospects and implications for digital systems for public health.

Results: Digitalization of health and disability information system is an emerging need around the world. The transition from an analogue (and usually unsystematic information compilations) to digital health information system is a common observed trend which is expected to gain dominance in forthcoming decades. The information communication technology (ICT) developments have created multiple work streams to this field which are usually summarized as e-health. Further to the digital technology, the need to define and provide the content standards is a shared responsibility of the both content and technology stakeholders: one needs to define the content in a analogue form first, then convert into a digital application. Each health information rubric should be operationally defined and then be digitally represented in computerized information systems. To achieve this aim ontology as a computer science provides the scientific discipline and practical tools to define entities with their attributes and values. Creating the ontological basis for classifications will enable to represent the underpinning knowledge structure in an operational way; describe the logical rules as to how they relate to each other, identify measurable properties and provide a basis to share information both digitally and among humans irrespective of linguistic differences. In this way, health and disability information can be harmonized and aggregated at both individual and population levels.

Conclusions: Formalized knowledge representation will allow for better construction of health and disability information, enable research and policy making by allowing meaningful exchange aggregation of data from multiple sources and enable science based decision-making.

Keywords

WHO classifications, ICF, knowledge representation, ontology

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