

## AN ICF BASED ELECTRONIC MEDICAL RECORD (EMR): LOOKING AT “BIG-DATA” IN REHABILITATION Poster

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There is now widespread recognition of the powerful potential of electronic medical record (EMR) systems to improve the health-care delivery system, adherence to clinical guidelines and ultimately quality of patient care. Specifically in rehabilitation there is a urgent need to develop system that allow the storage of big amount of data to facilitate clinical management and to produce solid scientific evidence. The systematic, iterative process employed to develop and implement an ICF based EMR system for the storage of clinical and rehabilitative data, is detailed.

A series of technical and clinical meetings was conducted to determine features and specifications of the electronic record. Multiple pre-testing sessions assessed patient flow, question clarity, information sequencing, and verified compliance to national guidelines.

Final components of the EMR system were modeled on the basis of best practice of care for persons with disabilities involved in rehabilitation and include: patient demographics, clinical history; anthropometric measurements; laboratory samples and results, clinical examinations and results, drugs. With regard to the rehabilitative data, to avoid peculiar conventions, the International Classification of Functioning, Disability, and Health (ICF) was adopted as it provides a framework and standard language for describing health and health-related states; moreover for each health profession it is possible to insert clinical findings, tests and measurements as well as details about rehabilitative procedures. The individual rehabilitative project can be entered into the EMR, and subsequently updated. Among the features of the system to be highlighted: a) data flow controlled at all stages (limitation to proceed when previous stages are not completed); b) control of the integrity of the data; c) reports from critical steps (related to clinical decision), with alerts and reminders. Finally, the EMR will register patient data and track functional outcomes, allowing providers to demonstrate the impact of their services and advance the standard of care. Moreover, on-site technical support providing reassurance and problem-solving during the testing period should facilitate a successful outcome of the project.

Technology has the potential to enable a dramatic transformation in the delivery of health care, making it safer, more effective, and more efficient. EMR systems represent repository of patient data in digital form, stored and exchanged securely, that allow clinicians to see a larger number of patients through better access to comprehensive patient histories that include clinical data. In our opinion EMR systems offer an opportunity for creating large and inclusive datasets that can advance rehabilitation practice and research by enabling big data sharing and reuse, also permitting cost analysis of the care pathways in order to demonstrate the impact of the services to health funders and payers. As further development, the creation of a platform that can be accessed and shared by different institutions could represent relevant opportunities to enhance this kind of research resource further, achieving both volume and depth of data.

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