

Table SI. Implementation action plan for the Clinical Quality Management System for Rehabilitation in Malaysia (CQM-R Malaysia)

Topic	Activity	Deliverable	Comment
2017			
Situation analysis	Analysis of rehabilitation service provision and use of existing data collection tools at the partner institutions University Malaya Medical Center (UMMC), Ministry of Health (MOH) and Social Security Organisation (SOCSCO)	Identification of a comprehensive set of actions required for the successful implementation of CQM-R	As reported in this publication
ICF training	ICF Train-the-trainer Workshop with future trainers from the 3 partner institutions and representing different rehabilitation professions	First cohort of trainers "ICF in CQM-R in Malaysia"	The leaders of the partner institutions are encouraged to attend and to contribute to the development of the first version of the training materials "ICF in CQM-R in Malaysia"
	Development of a joint training programme "ICF in CQM-R" by the partner institutions	First version of the training materials "ICF in CQM-R in Malaysia"	Yearly update of the training programme "ICF in CQM-R" under the auspices of the steering committee The training programme specifically addresses how to document functioning <ul style="list-style-type: none"> • With the ICF Clinical Tool in electronic information system at UMMC • Manually at MoH Cheras Rehabilitation Hospital (Cheras Rehab Hospital does not yet have an electronic information system) • With the Work questionnaire (WORQ) at SOCSCO The descriptions serve as proposals for the consensus conferences to be held in 2018
Description of rehabilitation services	Classification-based and narrative description of the different types of rehabilitation services along the continuum of care, as described in Table SII ¹	Publication of the comprehensive description of rehabilitation services in Malaysia applying ICSO-R (26, 27) (in cooperation with the ICSO-R development team)	
Development of data collection tools	Country modification of the ICF Clinical Tool (13, 15) for Malaysia	Consensus conference based on a process developed in China (15) and refined in Italy (13) Publication of the Bahasa Malaysia version of the ICF Clinical Tool (in cooperation with the ICF Research Branch)	
	Country modification of the ICF Core Set-based questionnaire for vocational rehabilitation WORQ (28) for Malaysia <ul style="list-style-type: none"> • Bahasa Malaysia language version of WORQ • Malaysian modification of the English and Mandarin versions of WORQ 	Publication of the Bahasa Malaysia and Malaysian Mandarin versions of WORQ (in cooperation with the ICF Research Branch and the lead developer of the WORQ)	
Implementation of ICF-based documentation forms in electronic health records	Integration of documentation forms for The ICF Clinical-6 Tool (for the ICF Generic-6 Set) and ICF Clinical-30 Tool (for the ICF Generic-30 Set) in the clinical information system at UMMC	Clinical information systems that includes the ICF-based documentation forms Presentation of the ICF Clinical Tool at future ICF workshops	If possible, the ICF Clinical-6 Tool and ICF-Clinical-30 Tool will be integrated in the content model of the new electronic health record system across MOH services
Implementation of ICF-based documentation forms in existing health records system	Integration of documentation forms for the ICF Clinical-6 Tool (for the ICF Generic-6 Set) and ICF Clinical-30 Tool (for the ICF Generic-30 Set) in the existing clinical information system at MOH Cheras Rehabilitation Hospital	ICF-based documentation forms Presentation of the ICF Clinical Tool at future ICF workshops	The documentation forms will be provided in paper form until the new electronic health records system across MOH services is put in place in MOH Cheras Rehabilitation Hospital.
2018			
National consensus for the description of rehabilitation services and respective clinical assessment schedules	Consensus conferences for each type of rehabilitation service as described in Table SII <ul style="list-style-type: none"> • Description of the rehabilitation service (starting point: descriptions developed in 2017) • Specification of categories for CLASs • (starting point: ICF Sets as presented in Table II) • Specification of time-points • Recommendation of data collection tools for specialized rehabilitation (starting point: linkage tables developed by the experts for specialized rehabilitation in cooperation with the ICF Research Branch) 	Publication of the results of the consensus conferences including Classification-based and narrative descriptions of rehabilitation services CLASs including ICF sets and recommended time-points for assessment Recommended data collection tools for the 7 post-acute and 8 specialized outpatient services	The results of the Malaysian consensus conferences can inform similar efforts in other countries (12)

Supplementary material to article by J. P. Engkasan et al. "Implementation of clinical quality management for rehabilitation in Malaysia"

Table SI cont.

Topic	Activity	Deliverable	Comment
ICF training	ICF Training workshops at the partner institutions using the material "ICF in CQM-R in Malaysia" developed in 2017 and given by a multidisciplinary team of trainers	All rehabilitation professionals involved in patient care, quality management and research at the 3 partner organizations are trained in the ICF	The workshops are provided annually (preferably every 6 months) to allow for the training of new staff At UMMC and MoH special attention is given to the documentation of functioning using the ICF Clinical Tool At SOCSO special attention is given to the application and electronic documentation with the WORQ
Implementation of a standardized documentation for general rehabilitation along consecutive rehabilitation services (see Table III)	Standardized documentation according to CLASs along the continuum of <i>general rehabilitation care</i> (as specified in the consensus conferences for rehabilitation in acute care, general post-acute rehabilitation, general outpatient rehabilitation, vocational rehabilitation, rehabilitation in primary care) at UMMC and MOH	Publication on the standardized documentation based on CLASs and demonstration on how functioning information can support clinical decision-making in the assignment of patients to consecutive rehabilitation services and the monitoring of functioning outcomes	For patients in specialized rehabilitation services the same documentation as for general rehabilitation is used in this implementation step
Demonstration project for the standardized documentation in specialized rehabilitation along consecutive rehabilitation services	Standardized documentation according to CLAS for <i>specialized rehabilitation for SCI</i> along the continuum of rehabilitation care (as specified in consensus conferences for specialized post-acute rehabilitation for SCI and specialized outpatient rehabilitation for SCI) at UMMC, MOH and SOCSO	Publication on the demonstration project results, specifically on the standardized documentation based on CLASs for SCI and demonstration on how functioning information can support clinical decision-making in the assignment of SCI patients to specialized rehabilitation services and the monitoring of functioning outcomes	Data collected with the data collection tools recommended in the consensus conferences will be linked to the ICF using internationally established linking rules (29, 30) and quantitatively mapped by developing interval-based scoring algorithms (11). These scoring algorithms will be modified for Malaysia
Development of ICF-standards for documentation	Consensus conference to develop the ICF Core Set for lower limb amputation	Contribution to the publication reporting on the ICF Core Set for amputation resulting from the consensus conference	Cooperation with the International Society of Prosthetics and Orthotics (ISPO) and the ICF Research Branch for the preparation and conduct of the consensus conference and the publication of results
2019			
Implementation of standardized documentation for all specialized rehabilitation services	Standardized documentation according to CLASs for <i>specialized rehabilitation for SCI</i> along the continuum of rehabilitation care at UMMC, MOH and SOCSO	Publication of case studies illustrating the standardized documentation based on CLASs for the different specialized rehabilitation settings.	The implementation is informed by the demonstration project for SCI
Demonstration project for rehabilitation management	Demonstration project on how to devise and adjust a functioning-informed <i>rehabilitation plan</i> across consecutive rehabilitation services following the Rehab-Cycle® model and using the respective ICF documentation forms Realized by a multidisciplinary team using post-acute specialized rehabilitation and specialized outpatient rehabilitation for SCI as a case in point (see Table SIV)	Publication of a case study illustrating ICF-based rehabilitation management	The demonstration project can inform the implementation of rehabilitation management across the various post-acute and outpatient rehabilitation services
IT-solutions for data management and statistics	Testing and adjusting the internationally-developed transformation tables for Malaysia Development of functioning trajectories and item maps using the data collected in the context of the standardized documentation of the ICF Generic-6/7 Set and the ICF Generic-30 Set Development of a feedback system for functioning outcomes for individual rehabilitation services (yearly reports)		The IT solutions are fundamental for feedback systems for the envisioned continuous improvement of functioning outcomes at the level of individual patients and the level of an individual rehabilitation service
2020			
	System-wide implementation and continuous improvement of CQM-R Malaysia for individual patients and individual rehabilitation services Contribution to governmental efforts for benchmarking across Rehabilitation Service Programs if appropriate Scaling up of research including epidemiological studies on functioning outcomes, quasi-experimental studies on alternative intervention programs, and hypothesis-driven nested studies		Benchmarking can rely on a model currently in development in Switzerland under the auspices of the government and funded by the Swiss National Science Foundation ⁴

⁴Swiss National Science Foundation. NRP 74 "Smarter Health Care". Nr. 167412: "Enhancing continuous quality improvement and supported clinical decision making by standardized reporting of functioning".