Recommendations for Guidelines for the Rehabilitation Workforce: A Realist Synthesis

Commissioned with reference to WHO Guidelines on Health-Related Rehabilitation
Work Package No 4: Rehabilitation Workforce
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1. EXECUTIVE SUMMARY

The Community Based Rehabilitation (CBR) Guidelines put strong emphasis on the multi-sectorial nature of the rehabilitation, well-being, social inclusion and empowerment of people with disability. The United Nations Convention on the Rights of People with Disability (UNCRPD) and the World Report on Disability have outlined the rights of persons with disability and identified challenges associated with realizing these rights.

Such a perspective requires that each of the sectors involved should identify good practices for promoting effective interaction between their sector and CBR. This report is one in a series of reports commissioned by WHO to identify good practices and make recommendations for guidelines on the interaction between the health sector and CBR, particularly in less resourced settings and within the context of the Framework for Action for Strengthening Health Systems. This report focuses on the Human Resources component of the framework; and thus on the rehabilitation workforce within the health sector and within community initiatives related to rehabilitation.

Our approach to establishing good practices has been to undertake a systematic literature review, a realist interpretation of the literature and a Delphi sampling of expert opinion; and to synthesize these to answer questions posed in the commissioning of this research. The research question, identified through the realist review methodology was,

‘What are the work force features at the community level to enable quality rehabilitation services in less resourced settings?’

The systematic literature review incorporated 11 online data-bases, literature referred to us by our Advisory Panel, and by professional and stakeholder groups and associations active in CBR, including associations of people with disabilities; and our own searching of the websites of these stakeholders. Our searches, which were restricted to the period from 2003 to the present, identified 1231 publications – from both the so-called ‘grey’ literature and academic publications. Analysis by title, then abstract, then full paper, confirmed that 33 of these publications fully met our inclusion criteria.

It is recognized that there are very few studies that explore the efficacy of initiatives and interventions in CBR in a way that allows helpful conclusions to be drawn from Cochrane or Campbell style reviews, which seek to identify ‘what works’, in general. It is also clear that on a global scale the range of contexts and availability of resources in which CBR and other aspects of health-related rehabilitation is practiced, varies hugely. Having identified the relevant literature we then undertook a realist review asking ‘what work, for whom, and under what circumstances’; thus seeking to identify efficacious patterns and pathways from the contexts of the research; these being helpful to policy makers and practitioners seeking to develop services within such contexts. Using the Context-Mechanism-Outcome configuration formulation of realist review methodology, we identified good practices from the available literature.
The good practices identified were then used to provide preliminary answers to six questions that WHO had asked to be addressed by the review. These propositions were then circulated to 19 experts across three iterations of a Delphi procedure, which established the extent of support for each of the statements being a good response to the six questions. In rounds 2 and 3 the statements were, where necessary, reworded based on feedback from previous rounds. After the third round 29 statements we given a mean rating falling between the highest response option, Strongly Agree (5) and Agree (4); with the remaining 4 statements falling between Agree and the mid-range response option, Unsure (3), on a five point scale, 1-5. All but three items had a standard deviation less than 1.00, indicating a high level of inter-rater agreement, regarding how our research questions should be answered.

Below is a summary of the general findings in relation to the specific research questions asked in the Call. More detailed and comprehensive recommendations based on identified statements and an indepth analysis of these statements can be found in section 4.2.3 and 5.1.4, respectively.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the competencies needed to deliver and manage quality rehabilitation services?</td>
<td>A Coordinator/Focal Person Supportive Supervision Advocacy and Empowerment Skills Referral Skills and Accompanying services Multi-skilled Worker</td>
</tr>
<tr>
<td>Who should be trained to develop the competencies required for the delivery and management of rehabilitation services at each level of the health care system?</td>
<td>Persons with Disabilities Community Based Rehabilitation Workers – for both physical and mental health rehabilitation</td>
</tr>
<tr>
<td>What are the strategies which work to enable rehabilitation personnel to develop and maintain the competencies required for the delivery of rehabilitation services?</td>
<td>Clear Job Descriptions Rights Based Approach Training Supportive Supervision CBR Worker Self-efficacy Supportive Counselling Structures</td>
</tr>
<tr>
<td>What are the strategies which work to increase the supply and improve the distribution of rehabilitation personnel required for the delivery of rehabilitation services?</td>
<td>Integrated Tier System Task-shifting Resource Provision – for workers in form of compensation and materials</td>
</tr>
<tr>
<td>What are the minimum requirements (i.e. ratio and competencies) of rehabilitation personnel needed for the delivery of rehabilitation services?</td>
<td>Ratio evidence ranged from 1:15 – 1:500 persons Competencies: identification and awareness of disabilities, appropriate referral techniques, record keeping, case management and community advocacy and empowerment techniques CBR Matrix Knowledge</td>
</tr>
<tr>
<td>What characteristics of the rehabilitation workforce facilitate equitable access to rehabilitation services?</td>
<td>Community Based Rehabilitation workforce Community Ownership and Participation of Rehabilitation Programmes Mechanisms for feedback</td>
</tr>
</tbody>
</table>
The above propositions have been derived from our systematic review of the literature, our structured evaluation of this literature and supported by our empirical Delphi procedure. However, inevitably this broad literature still produces rather general statements. We also therefore provide three case studies to illustrate some of the above findings and to exemplify the identification of context-mechanism-outcomes configurations which feed into these. These case studies consider how to implement a tiered delivery of rehabilitation services in different contexts: Uganda, Kenya and Pakistan.

Rehabilitation is a contested and ill-defined concept and so its interaction with health services will continue to be complex and challenging. This dynamic also however offers opportunities to create innovative service delivery mechanisms. It is clear that the health-related aspects of rehabilitation do not, and should not, exist in isolation from broader aspects of the rights and well-being of people with disabilities. For health-related rehabilitation skills to ‘work’ requires that those applying them also have skills in at least some of the other areas of the CBR matrix. While skill mixes will vary in relation to case mixes and contexts, some of the key components that the health related workforce need to encompass include: the training of existing and new cadre in community level work, inter-sectoral competence, and interdisciplinarity; along with mechanism that promote supportive supervision, accountability, opportunities for professional development and retention.

It is of note that our review failed to identify specific clinical skills that could be considered core skills for health related rehabilitation. As a result of this, we are currently conducting an additional study of the skills that CBR workers report using in practice. While our review supports the use of alternative cadre and task-shifting, these cadre have been established primarily as gap-fillers for badly needed services. For any such cadre to work effectively will require a more sophisticated approach than has previously been used; in order to scientifically identify entry level qualifications, conduct job analysis, specify skill mix and determine necessary features of a supportive and motivating work environment.
2. INTRODUCTION

This Work Package (WP) seeks to identify best practice for the human resources for health-related rehabilitation within the overall context of health systems strengthening. It will have a particular focus on the integration and decentralization of the rehabilitation workforce within the health systems of less resourced settings.

2.1 Rational for Review

The Guidelines on health-related rehabilitation will support the implementation of the rehabilitation aspects of the Convention on the Rights of Persons with Disabilities. They will provide guidance to governments and other relevant actors on how to develop, expand and improve the quality of the rehabilitation workforce in less resourced settings in line with the recommendations in the World report on disability, notably the integration and decentralization of rehabilitation services within the health system. The purpose of this research was to support the development of the WHO Guidelines on health-related rehabilitation. This Work Package specifically addresses the human resource building block of the WHO “Framework for Action” for strengthening health systems.

2.2 Objectives and Focus of the Review

The objective of this Work Package is to provide the best available scientific evidence on the health-related rehabilitation workforce relevant to the organization and delivery of rehabilitation services to inform the Guidelines. This research has a particular emphasis on the rehabilitation workforce working at community level, and so our primary focus will be on this component.

Our research addresses the following 6 questions, which were slightly adapted based on the development of the research question:
Box 1. Initial Research Questions

I. What are the competencies needed to deliver and manage quality rehabilitation services?

II. Who should be trained to develop the competencies required for the delivery and management of rehabilitation services?

III. What are the strategies which work to enable rehabilitation personnel to develop and maintain the competencies required for the delivery of rehabilitation services?

IV. What are the strategies, which work to increase the supply and improve the distribution of rehabilitation personnel required for the delivery of rehabilitation services?

V. What is the minimum requirements (i.e. ratio and competencies) of rehabilitation personnel needed for the delivery of rehabilitation services?

VI. What characteristics of the rehabilitation workforce facilitate equitable access to rehabilitation services?

3. METHODS

3.1. Changes in the Review Process

As part of conducting a realist review, we conducted a systematic search of the literature following Cochrane Collaboration searching guidelines. The initial search terms (see Annex 1), which were developed with work package members, returned a total of 13,018 titles. As this number was beyond what the scope for this review due to time and monetary constraints, the search teams were modified to be more specific to the topic at hand as to produce a more manageable number.

In order for a search results to be more sensitive to the topic, we narrowed our search to include a filter for "less resourced setting" and included a publication date filter, which screened for articles from 2003 to present. This time filter was justified as it is consistent with the CRPD and CBR Guidelines and reflects the trend in publication of relevant literature, as seen in Figure 1.
3.2. Rational for Using Realist Synthesis

A realist review was chosen due to the complex nature of the interventions which the research aimed to address. Contrary to systematic reviews, realist reviews do not provide simple answers to complex questions. However, they do provide policy-makers with rich, detailed and practical information regarding complex health interventions, which may be highly valuable when planning and implementing programmes at the national, regional, or local level. In the spirit of a realist review, we therefore narrowed the literature used to inform the theory generated by this Work Package to ask not ‘what works?’ or ‘does this programme work?’, but rather, ‘what works, for whom, in what circumstances, and how?’

3.3. Scoping the Literature

In accordance with realist synthesis methodology, ‘Defining the Scope of the Review’ was undertaken before the development of the search strategy and subsequent searching of the evidence. During this stage, the “theory” to be explored was developed through a rigorous methodological process as per the steps in a realist synthesis (Rycroft-Malone et al., 2012) (R Pawson & Tilley, 2004) (R. Pawson, Greenhalgh, Harvey, & Walshe, 2005) (R. Pawson, Greenhalgh, Harvey, & Walshe, 2004). The theory – otherwise known as the research topic or question – was developed through an
ongoing iterative process that involved the consultation with various stakeholders and the investigation of relevant literature.

The process of theory identification was discussed during a realist synthesis workshop, lead by Dr. Greenhalgh of Leeds University, which she delivered at the Centre for Global Health, TCD. The Leeds group are top rated in the world for realist reviews and Leeds is rated number one in the United Kingdom for Policy Studies. This workshop was conducted to ensure that our understanding of and approach to realist review and synthesis was consistent with best practice in this methodology.

Throughout the workshop and subsequent discussion the technical sequence of conducting a realist review/synthesis was outlined and discussed. These components of the realist synthesis methodology require researchers to search sources of programme theories, including discussion papers and opinion pieces, policy documents and consultation with stakeholders. The purpose of this is (understanding that no review can explore every possible theory within the overall topic) is to, identify which theories (or questions) have the best potential power to provide the most comprehensive and explanatory information (Greenhalgh, 2013).

Following on this stage in the methodology, articulating the programme theories was done by searching relevant theories in the literature that can best provide a theoretically based evaluative framework for the overall question (Rycroft-Malone et al., 2012). This process is an ongoing task, which Pawson et al. (2004) advise, “that acknowledging its uncertain and iterative nature is critical to the success of the review process”.

For this review, an initial search of relevant literature was conducted and consultation and brainstorming with the Work Package 4 group members reveled initial theories that best test the overall question. The theory of community access to the rehabilitation workforce was developed through and supported by the literature (Mannan, MacLachlan, & McAuliffe, 2013) (MacLachlan, Mannan, & McAuliffe, 2011) (Kuipers & Cornielje, 2013), and reviewed by a realist synthesis expert for its acceptability within this methodology. It is believed that this theory has the best potential power to provide the most comprehensive and explanatory framework for the topic.

There are several benefits of taking this approach. It considers the lack of knowledge or clear definition of what is a rehabilitation worker (WHO, 2009), as well as the severe shortage of such workers in less resourced settings (Gupta, Castillo-Laborde, & Landry,
This approach will also help us consider the most vulnerable populations of people requiring health related rehabilitation; less resourced settings with the least amount of human resources; issues of decentralization and equity of access to services; issues of community involvement and ownership of rehabilitation programmes, and making the workforce more disability-sensitive (Tom, Lezzoni, & Grace, 2009) (WHO, 2011). These are all seen as important contexts, conditions and processes that influence the answer to our realist review question.

More broadly, focusing on human resources at the community level is advocated as a way of expanding and decentralizing service delivery while increasing the supply of or access to human resources for rehabilitation (WHO, 2011). Investing the communities by having an immediate and large increase in human resources at this level, including training of mid-level health workers, is recommended and advocated to address skill imbalances and for the scaling up of education and training of the health workforce (Alliance, 2008) (Chen et al., 2004) (Mannan & MacLachlan, 2010) (MacLachlan et al., 2011) (Mannan et al., 2013) (Kuipers & Cornielje, 2013).

Addressing the workforce at the community level also enables the theory to address the multilevel components of the health workforce as an operational unit, as opposed to looking at one cadre specifically and in isolation. Rehabilitation focusing on the community requires investments from multiple rehabilitation actors, with the systems of referral, supervision, training and support being integrated into the larger health system. As the community level is often the entry point for early identification and can influence the pathways that individuals take within the health systems, for example by having a correct diagnosis and receiving appropriate referrals, the community level has the greatest potential to influence successful rehabilitation.

The overarching question formulated for this Work Package was now therefore:

‘What are the workforce features at the community level to enable quality rehabilitation services in less resourced settings?’

3.4. Searching Processes

The literature search for this review used a systematic searching approach following the Cochrane Collaboration Guidelines for conducting a systematic review. This was to ensure inclusivity of the evidence relevant to the topic.
### 3.4.1 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria were set prior to search term development to guide the search and also provide reference during the article screening. As listed below.

#### Table 1. Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Publication Year</strong></td>
<td>2003 – present</td>
<td>Prior to 2003</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>No restriction. Searching will be conducted in English, with any non-English titles to be translated.</td>
<td>None</td>
</tr>
<tr>
<td><strong>Types of Research to be included</strong></td>
<td>Qualitative, Quantitative and mixed methods; intervention and descriptive Research and Development Studies Programme Evaluations Project Reports</td>
<td>Theoretical Protocols Testing measures Studies of low quality* Studies with insufficient information for interpretation*</td>
</tr>
<tr>
<td><strong>Types of documents to be included</strong></td>
<td>Primary and secondary (review) studies, including: Journal articles, book chapters, policy reports, technical reports, conference proceedings and reports if detailed, accessible dissertations</td>
<td>Commentaries/Editorials Book Reviews Abstracts Bibliographies</td>
</tr>
<tr>
<td><strong>Research Focus</strong></td>
<td>Addresses the following: Rehabilitation AND Workforce Low-income setting OR can be applied to a low-income setting</td>
<td>Rehabilitation services delivered by different sectors, i.e. Vocational rehabilitation Not applicable to a low-income setting Non-disability related services</td>
</tr>
</tbody>
</table>

### 3.4.2 Formulating the Search Terminology

A sensitive search strategy was initially developed to scope the literature (see Annex 1). Based on the number of documents returned from this search, the search strategy was subsequently refined to a more specific strategy (see section 3.1). This revised search strategy was devised and agreed in collaboration with our expert team and with the assistance of a search librarian (see Annex 2). It uses a combination of free-text terms using three sets of search filters for the themes of: workforce; rehabilitation; less resourced setting. The finalized search strategy was based on the EMBASE database and modified to fit with other identified databases’ nomenclature.
3.4.3 Bibliographic Databases

Our expert panel and a search librarian identified databases most relevant to disability and health-related rehabilitation. The majority of these were searched using our finalized search strategy. However, several (WHOLIS, Disability, CBR & Inclusive Development, AIM, CIRRIE and Rehabdata) used modified search strategies, as their systems were not designed for elaborate search strategies.

<table>
<thead>
<tr>
<th>Databases</th>
</tr>
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<tbody>
<tr>
<td>PubMed</td>
</tr>
<tr>
<td>WHOLIS</td>
</tr>
<tr>
<td>EMBASE</td>
</tr>
<tr>
<td>SCOPUS</td>
</tr>
<tr>
<td>CIRRIE</td>
</tr>
<tr>
<td>REHABDATA</td>
</tr>
</tbody>
</table>

3.4.4 Snowballing

Snowballing was performed by:

i) Searching references of systematic reviews and other reviews

ii) Searching references of all included texts

iii) Contacting our Team Members requesting relevant documents or list of organizations/individuals to contact

iv) Emailing organizations/individuals identified through team members and searching any websites related to organizations for documents

v) Searching websites and emailing all stakeholder organizations that were identified by searching through the "UN Document on NGOs and UN Agencies Assisting Persons with Disabilities". This document provides lists of organizations working in disability, broken down by region (Eguz, 2008). (http://www.refworld.org/docid/48297a4e2.html)
### Box 2: Stakeholder Organizations

<table>
<thead>
<tr>
<th>Organizations Emailed and Website Searched</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Confederation for Physical Therapy (WCPT)</td>
</tr>
<tr>
<td>World Confederation for Occupational Therapy</td>
</tr>
<tr>
<td>Association for Aid and Relief, Japan (AAR)</td>
</tr>
<tr>
<td>Action on Disability and Development (ADD)</td>
</tr>
<tr>
<td>Disabled People’s International (DPI)</td>
</tr>
<tr>
<td>Inclusion International</td>
</tr>
<tr>
<td>Handicap International (HI)</td>
</tr>
</tbody>
</table>

#### 3.4.5 Managing References

Upon completion of the bibliographic search, all references were added to Eppi-Reviewer 4, an online systematic review software that assists in managing references. Duplicates of documents were identified, and excluded from the review process. Records of the search strategies, search results, and retrieved references were saved for each database.

#### 3.5 Selection and Appraisal of Documents:

Selection of articles for inclusion in the realist review occurred in several stages and was performed by multiple reviewers at each stage:

**3.5.1 Title Screening:**

Title screening was performed by two reviewers independently (BG and JMV). Titles that both reviewers agreed on automatically went through to the abstract screening stage. Titles for which reviewers disagreed were discussed and any remaining discrepancies were resolved by a third reviewer independently (MML).

**3.5.2 Abstract Screening:**

Titles that progressed to the Abstract Screening Phase were reviewed by two reviewers independently (BG and MML). Any discrepancies were discussed between these reviewers, and those that were not agreed were assessed by a third reviewer (JMV).
3.5.3 Full Text Screening:

Abstracts that were put forward to the Full Text Screening Stage were assessed by two reviewers (BG and HM). Discrepancies of opinion between these two reviewers in relation to progressing these articles to full inclusion in the review were decided by a third reviewer (MML).

3.6 Data Extraction

In order to identify key elements of importance to the rehabilitation workforce at the community level in a certain context using a realist perspective, information was collected on the intervention, the context and the actual “working of the intervention” or the mechanisms. As we intended to discuss the strength of the evidence and the usefulness of the application of realist principles to already published studies, we developed a process of data analysis that was comprehensive and as objective and transparent as possible. This involved the design of a Data Extraction Template (see Annex 3) that was used by two reviewers. The reviewers (BG and SC) independently reviewed all included articles and identified Context, Mechanisms and Outcome Patterns. They then developed CMOCs, based on these context, mechanisms and outcomes, and when appropriate adapted them to fit within the specific questions of the call (Box. 1)

3.7 Analysis and Synthesis Process

CMOCs-extraction from included articles was undertaken by two reviewers independently in order to ensure inter-rater reliability (BG and SC), and the extraction process was regularly shared and discussed within the review team to ensure validity and consistency in the inferences made. The primary reviewer (BG) synthesized the findings from both reviewers’ CMOCs-extraction of articles and used a data analysis matrix (see Annex 4), which was adapted from WHO (Dieleman, Kane, Zwanikken, & Gerretsen, 2011), to synthesis the evidence. Prominent recurrent patterns of CMOCs in the data were identified through coding using content and thematic analysis of the CMOCs. These recurrent, common, patterns found through the realist review were used to inform statements for the Delphi study.
3.8 Delphi Study

3.8.1 Background to Delphi Study

The methodology for the second phase was an international web-based Delphi method. A Delphi method is a consensus finding tool that is being used more commonly in health and social science research (Hasson, Kenney, & McKenna, 2000). It is a group facilitation technique, with an iterative multistage process, designed to transform opinion into group consensus (Hasson et al., 2000). It is a technique that aids in decision-making based on the opinions of experts, (Landeta, Barrutia, & Lertxundi, 2011) by overcoming the weaknesses implicit when relying on a single opinion or viewpoint. As a Delphi method can be carried out via emails and a web-based survey this allows the recruitment of participants (Meyrick, 2003), from geographically dispersed locations. Essentially it is a type of long distance focus group or panel discussion as the opinion of participants can be collected effectively without having to gather experts to one place (Clayton, 1997). It also allows participants to give their opinion without undue pressure as well as revise or clarify their opinions based on alternative perspectives (Clayton, 1997) (Schmidt, 1997). The Delphi method is also flexible, needing only an agreed deadline allowing participants to complete the survey in their own time and gaining consensus on a large scale.

The Delphi method used was a ranking type Delphi, designed to elicit the opinions of an expert panel through iterative controlled feedback. This involved distributing a series of surveys to participants allowing them to give their opinions anonymously and change their opinions if desired in the next round. Fundamental to the choice of the Delphi method is that it maintains anonymity and is inherently confidential, has iteration, controlled feedback and allows statistical aggregation of group scores (Meyrick, 2003; Rowe & Wright, 1999) (Meyrick, 2003). Typically the Delphi method runs iterations until consensus is reached among the panel of experts. A panel of experts was recruited based on their experience and expertise, which could provide insight into the workforce for health related rehabilitation/leadership and governance.

3.8.2 Delphi Data Extraction

Participants provided demographic information, which is reported in section 4.4.1. Participants were asked to rank their level of agreement with statements derived from the Realist Review. Statements were ranked on a Likert scale from 1-5 ranging from Strongly Disagree to Strongly Agree. After each statement, participants were also provided with a space to provide further thoughts/reflections regarding each of these statements.
3.8.3 Delphi Data Analysis

As guided by a previous Delphi Study on health policy (Nimhurchadha, Gallagher, MacLachlan, & Wegener, 2013), predefined cutoff points were selected to assess level of agreement of statements among participants. A statement was deemed to have achieved agreement if it achieved an average rating of 4 or above. If a statement achieved an average rating of 4 or above and a standard deviation of less than 1 it was accepted as having achieved a high level of agreement with little variation among participants. If a statement achieved an average rating of fewer than 4 it was deemed not to have achieved agreement. If a statement achieved a standard deviation of 1 or higher it was deemed not to have achieved a high level of agreement, regardless of the average rating. Participants’ comments were used to make further adjustments/improvements on the statements.

3.8.4 Participants

In a Delphi method a sample size of 10-18 has been recommended although there is no set size. A minimum of 10 participants and a maximum of 25 participants were selected for this Delphi.

The initial contact list for possible participants was created by the research team and the team of expert advisors of the first phase of the work package. Experts were contacted through snowballing based on the networks of the members of the expert group until sufficient coverage of the different categories of experts are filled. These categories are further elaborated in the attached Stakeholder Inclusion List (Table 2).

Table 2: Delphi Participant Inclusion/Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert in their field</td>
<td>Already participating in another Delphi study</td>
</tr>
<tr>
<td>Previous experience working in a less resourced context</td>
<td>No experience/expertise in areas mentioned in inclusion criteria</td>
</tr>
<tr>
<td>Previous experience/expertise in the area of the rehabilitation workforce</td>
<td>Not able to commit to complete all iterations of the survey</td>
</tr>
<tr>
<td>Availability and willingness to participate</td>
<td></td>
</tr>
</tbody>
</table>
3.8.5 Delphi Sampling

The sampling strategy was a snowballing strategy. All possible participants identified in the initial list were contacted and if they could not participate they were asked to suggest other possible participants that fit the criteria. The operational members and expert advisors on the research team were also included as possible participants in the Delphi as they were considered to be experts. The Delphi group size depends on group dynamics for arriving at consensus among the experts. The available literature recommends 10-18 experts on a Delphi panel (Okoli & Pawlowski, 2004).

3.8.6 Ethics

Ethical approval was obtained from Trinity College Dublin through the school of medicine. Health Policy and Management- Centre for Global Health Research ethics Committee.

4. RESULTS

4.1 Search Results

A total of 1,231 articles were identified from the databases search (Table 3). An additional 54 articles were identified through the snowballing process, which was sent through to the full-text review phase of the search strategy.

Table 3: Search Log

<table>
<thead>
<tr>
<th>Database</th>
<th>Date Searched</th>
<th>Returned articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embase</td>
<td>October 17, 2013</td>
<td>276</td>
</tr>
<tr>
<td>Scopus</td>
<td>October 17, 2013</td>
<td>169</td>
</tr>
<tr>
<td>PsychINFO</td>
<td>October 22, 2013</td>
<td>23</td>
</tr>
<tr>
<td>CIRRIE</td>
<td>October 22, 2013</td>
<td>9</td>
</tr>
<tr>
<td>Rehabdata</td>
<td>October 22, 2013</td>
<td>15</td>
</tr>
<tr>
<td>WHOLIS</td>
<td>October 22, 2013</td>
<td>11</td>
</tr>
<tr>
<td>AIM</td>
<td>October 22, 2013</td>
<td>5</td>
</tr>
<tr>
<td>PubMed</td>
<td>October 23, 2013</td>
<td>167</td>
</tr>
<tr>
<td>LILACS</td>
<td>October 23, 2012</td>
<td>44</td>
</tr>
<tr>
<td>Pacific</td>
<td>October 23, 2013</td>
<td>22</td>
</tr>
<tr>
<td>SCIE</td>
<td>November 6, 2013</td>
<td>490</td>
</tr>
</tbody>
</table>
4.1.1 Screening Results

During the title screening, BG and JMV agreed on 184 titles to be put through to abstract screening. There was difference on 65 titles, of which 43 were subsequently put through after a discussion. The 22 undecided titles were then given to a third reviewer (MML) who put through 5 to abstract phase, totaling 232 articles to be assessed during this phase of the screening.

During the abstract screening, BG and JMV agreed on 48 to be put through to full-text review, they disagreed on 15, which were then assessed by MML. Of those 15, 11 were put through to the full-text review.

Articles that were identified though snowballing were also reviewed in the full text phase, totaling 113 articles for full-text review. The reviewers screened these articles against the inclusion and exclusion criteria, with 33 being identified for inclusion in the review. Please see Figure 2 below for a synthesis of this process.

Figure 2: Document Flow Diagram
4.2 Document Characteristics

4.2.1 Location

More than thirty countries were represented in the included articles, with several articles reporting from more than one country. Sub-Saharan Africa had the highest representation, with 18 articles, listed as follows:

Somalia (Deepak, 2011); Eritrea ((Grut, 2004); (Sharma, 2003)); Burundi (Magallona & Datangel, 2012); Sudan (Magallona & Datangel, 2012); Uganda ((Magallona & Datangel, 2012); (Penny, Zulianello, Dreise, & Steenbeek, 2007); (Claussen, 2005)); Zambia (Magallona & Datangel, 2012); Lesotho (Mendis, 2009); Tanzania (Magallona & Datangel, 2012); Kenya ((Hartley, 2003); (Lund et al., 2013)); Democratic Republic of the Congo (Bass et al., 2013); Ghana (Jadin, 2005); Benin (Jadin, 2005); and South Africa ((Rule, 2013); (ChapPELL, 2009); (Dawad & Jobson, 2011))

South Asia had the second highest representation, with 16 articles:
India ((Deepak, 2011); (Balaji et al., 2012); (Sharma, 2003); (Chatterjee, 2003); (Johnson, 2004); (Armstrong et al., 2011)); Pakistan ((Deepak, 2011); (Atif Rahman, Malik, Sikander, Roberts, & Creed, 2008); (Sharma, 2003); (A. Rahman, 2007)); Bangladesh (Adams et al., 2012); Afghanistan (Ayoughi, Missmahl, Weierstall, & Elbert, 2012); Nepal ((Children, 2010); (Magallona & Datangel, 2012); (Raja, 2012)); Sri Lanka (Murray et al., 2011).

Fourteen articles reported on evidence from countries in East Asia and the Pacific, including: Mongolia ((Deepak, 2011); (Como & Batdulam, 2012); (Sharma, 2003)); China (Ng et al., 2009); Hong Kong (Ng et al., 2009); Philippines (Magallona & Datangel, 2012); Papua New Guinea (Sharma, 2003); Cambodia (Magallona & Datangel, 2012); Thailand (Magallona & Datangel, 2012); Vietnam (Mijnarends, Pham, Swaans, Van Brakel, & Wright, 2011); (Sharma, 2003); (Deepak, 2010); and Indonesia (Deepak, 2011); (Magallona & Datangel, 2012).

Two countries in North Africa, Liberia (Deepak, 2011) and Egypt (Sharma, 2003), were included as well as two countries from The Middle East, Palestine ((Eide, 2006); (Nilsson, 2005)) and Iraq (Magallona & Datangel, 2012) having evidence from three countries.

One paper (Llewellyn, Gargett, & Short, 2012) discussed information from all countries in The Pacific Islands, one (Finkenflügel & Rule, 2008) reported on the workforce from a
global perspective, and one article (Ng et al., 2009) included information from Australia.

4.2.2. Methodology

The majority (14) of the included articles that collected data used mixed methods and are listed as follows: (Deepak, 2011); (Mijnarends et al., 2011); (Magallona & Datangel, 2012); (Eide, 2006); (Ng et al., 2009); (Chatterjee, 2003); (Adams et al., 2012); (Claussen, 2005); (Johnson, 2004); (Bass et al., 2013); (A. Rahman, 2007); (Armstrong et al., 2011); (Raja, 2012) and (Hartley, 2003). Ten articles used a qualitative approach: (Rule, 2013); (Balaji et al., 2012); (Como & Batdulam, 2012); (Mendis, 2009); (Chappell, 2009); (Children, 2010); (Jadin, 2005); (Dawad & Jobson, 2011); (Grut, 2004); (Nilsson, 2005) and 5 used quantitative methodology (Atif Rahman et al., 2008); (Ayoughi et al., 2012); (Sharma, 2003); (Penny et al., 2007); (Lund et al., 2013) and (Deepak, 2010).

4.2.3 Document Type

There was a balanced mix of reports/programme evaluations, empirical studies and descriptive studies within the included articles. The majority of the reports or programme evaluations were grey literature and all are listed as follows: (Grut, 2004); (Eide, 2006); (Mendis, 2009); (Claussen, 2005); (Children, 2010); (Nilsson, 2005) (Ng et al., 2009) and (Deepak, 2010).

There were 11 empirical studies: (Deepak, 2011); (Atif Rahman et al., 2008); (Mijnarends et al., 2011); (Ayoughi et al., 2012); (Magallona & Datangel, 2012); (Chatterjee, 2003); (Adams et al., 2012); (Johnson, 2004); (Bass et al., 2013); (Armstrong et al., 2011); (Lund et al., 2013) and 14 descriptive studies: (Rule, 2013); (Balaji et al., 2012); (Jadin, 2005); (Finkenflügel & Rule, 2008); (Como & Batdulam, 2012); (Chappell, 2009); (Dawad & Jobson, 2011); (Magallona & Datangel, 2012); (Llewellyn et al., 2012); (Sharma, 2003); (Penny et al., 2007); (Rahman, 2007); (Raja, 2012); and (Hartley, 2003).

4.2.4 Year Published

Within the included search timeframe, 2012 had the highest number of published included texts with 5. The year breakdown for included articles is as follows: 2003 (Sharma, 2003), (Chatterjee, 2003), (Hartley, 2003), 2004 (Grut, 2004), (Johnson, 2004); 2005 (Claussen, 2005), (Jadin, 2005), (Nilsson, 2005); 2006 (Eide, 2006); 2007 (Penny et al., 2007), (A. Rahman, 2007); 2008 (Atif Rahman et al., 2008) (Finkenflügel &
4.2.5 Disability Addressed

There were 17 articles that reported on the workforce in relation to physical rehabilitation: (Deepak, 2011); (Mendis, 2009); (Mijnarends et al., 2011); (Rule, 2013); (Como & Batdulam, 2012); (Chappell, 2009); (Children, 2010); (Finkenflügel & Rule, 2008); (Dawad & Jobson, 2011); (Magallona & Datangel, 2012); (Sharma, 2003); (Penny et al., 2007); (Jadin, 2005); (Adams et al., 2012); (Claussen, 2005); (Johnson, 2004); (Hartley, 2003).

Twelve articles reported on the workforce in relation to mental disability: (Atif Rahman et al., 2008); (Ayoughi et al., 2012); (Balaji et al., 2012); (Magallona & Datangel, 2012); (Ng et al., 2009); (Chatterjee, 2003); (Bass et al., 2013; Murray et al., 2011); (Rahman, 2007); (Armstrong et al., 2011); (Raja, 2012); (Lund et al., 2013).

In five articles, (Eide, 2006); (Llewellyn et al., 2012); (Grut, 2004); (Nilsson, 2005); and (Deepak, 2010), the rehabilitation workforce discussed either worked with persons with both physical and mental disabilities, or the distinction was unclear.

4.2.6 Quality Rating

All 33 articles were quality appraised using the Mixed Methods Appraisal Tool (MMAT) (Pluye et al., 2011) – a tool designed for the appraisal stage of complex systematic literature reviews that include qualitative, quantitative and mixed methods studies. Using the MMAT template (see Annex 4: Mixed Methods Appraisal Tool (MMAT) criteria & one-page template), each article was assigned a score by the researcher (BG) between 1 and 4 based on MMAT guidelines (where 1=25%, 2=50%, 3=75% and 4=100%). A score of ‘N/A’ was assigned to articles that could not be assessed as a qualitative, quantitative or mixed methods study. Quality appraisal scores for each article are included in their data extraction table of Annex 6, under the Misc. heading. Below is summary of the quality ratings across the 33 articles.
Table 4: Quality Assessment for Included Articles

<table>
<thead>
<tr>
<th>Score</th>
<th>Reference</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Johnson &amp; Latha, 2004;</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Deepak, 2006*; Nilsson et al. 2005*; Save the Children, 2010; Adams et al. 2011*; Chatterjee et al. 2003*; Eide, 2006; Magallona &amp; Datangel, 2011; Como &amp; Batdulam, 2012;</td>
<td>4*</td>
</tr>
<tr>
<td>4</td>
<td>Rahman, 2008; Ayoughi et al. 2012; Rule, 2013.</td>
<td>3</td>
</tr>
</tbody>
</table>

*Study rated as 2.5

As shown by the table, a large number of the rated articles had high (between 3-4) quality ratings. There were, however, 10 articles whose quality could not be assessed as they did not fit the methodological criteria for assessment. This was not unexpected, as realist syntheses permit and encourage the inclusion of a variety of documents, not just primary studies.

4.3 Workforce Characteristics

The table below includes characteristics of the rehabilitation workforce found in the included articles.

Table 5: Workforce Characteristics for Included Articles

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadres</td>
<td></td>
</tr>
<tr>
<td>Lay Health Workers</td>
<td>(Mijnarends et al., 2011); (Atif Rahman et al., 2008); (Como &amp; Batdulam, 2012); (A. Rahman, 2007); (Armstrong et al., 2011); (Raja, 2012); (Lund et al., 2013); (Ayoughi et al., 2012); (Balaji et al., 2012); (Murray et al., 2011); (Chatterjee, 2003); (Claussen, 2005); (Johnson, 2004); (Llewellyn et al., 2012)</td>
</tr>
<tr>
<td>Community Based Rehabilitation Workers</td>
<td>(Mijnarends et al., 2011); (Grut, 2004) (Magallona &amp; Datangel, 2012); (Sharma, 2003); (Penny et al., 2007); (Eide, 2006); (Nilsson, 2005); (Deepak, 2010); (Rule, 2013); (Deepak, 2011); (Jadin, 2005); (Children, 2010); (Mendis, 2009); (Llewellyn et al., 2012)</td>
</tr>
<tr>
<td>Mid-level Rehabilitation Workers</td>
<td>(Rule, 2013); (Chappell, 2009); (Llewellyn et al., 2012); (Dawad &amp; Jobson, 2011); (Finkenflügel &amp; Rule, 2008)</td>
</tr>
<tr>
<td>Paraprosfessionals</td>
<td>(Bass et al, 2013); (Llewellyn et al., 2012)</td>
</tr>
<tr>
<td>Nurses</td>
<td>(Mijnarends et al., 2011); (Lund et al, 2013)</td>
</tr>
<tr>
<td><strong>Physicians</strong></td>
<td>(Mijnarends et al., 2011); (Ayoughi et al., 2012) (Penny et al., 2007); (Ng et al., 2009); (Chatterjee, 2003); (Raja, 2012); (Llewellyn et al., 2012)</td>
</tr>
<tr>
<td><strong>Occupational / Physiotherapists</strong></td>
<td>(Penny et al., 2007); (Llewellyn et al., 2012); (Ng et al., 2009); (Adams et al., 2012); (Finkenflügel &amp; Rule, 2008)</td>
</tr>
<tr>
<td><strong>Community Groups</strong></td>
<td>(Hartley, 2003); (Deepak, 2010)</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>(Chatterjee, 2003); (Raja, 2012); (Adams et al., 2012); (Ng et al., 2009); (Llewellyn et al., 2012)</td>
</tr>
</tbody>
</table>

| **Requirements** |
| **4 years post-primary** | (Bass et al., 2013) |
| **Secondary School** | (Atif Rahman et al., 2008); (Murray et al., 2011); (A. Rahman, 2007) |
| **10 years of school** | (Balaji et al., 2012) |
| **From communities** | (Atif Rahman et al., 2008); (Balaji et al., 2012); (Penny et al., 2007); (Chatterjee, 2003); (Claussen, 2005); (Jadin, 2005) (Bass et al., 2013); (A. Rahman, 2007); (Lund et al., 2013) |
| **Literate** | (Lund et al., 2013) |
| **Min. 1 year experience** | (Bass et al., 2013) |

| **Training** |
| **6 Sessions** | (Adams et al., 2012) |
| **2 days** | (A. Rahman, 2007) |
| **3 Days** | (Ng et al., 2009) |
| **4 Days** | (Armstrong et al., 2011) |
| **5 Days** | (Lund et al., 2013) |
| **10 Days** | (Como & Batdulam, 2012) |
| **1 Week** | (Ng et al., 2009) |
| **2 Weeks** | (Claussen, 2005); (Bass et al., 2013) |
| **6 Weeks** | (Claussen, 2005); (Bass et al., 2013) |
| **40-50 Days** | (Balaji et al., 2012) |
| **60 Days** | (Chatterjee, 2003) |
| **100 Days** | (Children, 2010) |
| **3.5 Months** | (Ayoughi et al., 2012) |
| **2 Years** | (Rule, 2013); (Ayoughi et al., 2012); (Chappell, 2009); (Dawad & Jobson, 2011) |
| **3 month post training (Refresher)** | (A. Rahman, 2007) |
| **Yearly (Refresher)** | (Grut, 2004) |

| **Supervision** |
| **1:10 group ratio** | (A. Rahman, 2007) |
| **1:23 supervisor ratio** | (Atif Rahman et al., 2008) |
| **Weekly** | (Magallona & Datangel, 2012) |
| **Monthly** | (Balaji et al., 2012) |
| **2 months** | (Grut, 2004) |
| **Quarterly reviews** | (Balaji et al., 2012) |

| **Ratio** |
| **1:20 Households** | (Lund et al., 2013); (Deepak, 2010) |
| **1:100 HH** | (Atif Rahman et al., 2008) |
| **1:15-25** | (Balaji et al., 2012) |
| **1:25-30** | (Chatterjee, 2003) |
| **1:100 (avg)** | (Claussen, 2005) |
| **1:500** | (Lund et al., 2013) |
| **1:20** | (Hartley, 2003) |
| **1:24** | (Bass et al., 2013) |
4.4 Delphi Results

This Delphi protocol used a maximum of 3 iterations with each survey consisting of the statements formulated in the first phase. In each round the final list of participants was emailed with the link to the online survey.

At each stage the list of 20 participants were contacted to participate. In the first round 13 participants responded fully. 7 participants did not complete the survey at this round. In the second round 17 participants completed the survey and 3 did not. In the third and final round 18 participants completed the survey and 2 did not.

4.4.1 Participant Demographics

Over the three rounds of the Delphi method there were 9 female and 10 male (Figure 4) participants with experience in a variety of regions across the world (Figure 3). Persons with disabilities were represented in the Delphi method, 5% of participants identifying themselves as persons with disabilities (Figure 5).

Figure 3: Participant's Region of Work
Participant’s had a range of backgrounds, expertise and years of work in their field. The participants were also grouped by age range. There were 2 participants in the 25-34 age group, 5 in the 35-44 age group, 3 in the 45-54 group and 8 participants in the 55-64 age group. The years of experience the experts had in their relevant fields ranged from 5 to 40 years with an average of 21.3 years of experience. Table 6 reports on the years of experience, regions or work and country of origin for all included participants. Table 7 reports on the category of experts that were recruited and subsequently participated in the study.

**Table 6: Participant’s Experience and Country of Origin**

<table>
<thead>
<tr>
<th>Participant’s Area of Work</th>
<th>Work Classification/Participant*</th>
<th>Years of Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapy</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Physiotherapy (specialising in acute and community rehabilitation)</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Physiotherapy Indigenous knowledge systems, Disability and Rehabilitation Studies</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>Physiotherapy Public Health</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Physiotherapy Public Health</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Research Economy</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Work/Development Psychology. Poverty Reduction – Research and Practice</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Advocacy</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>Health and Rehabilitation systems research and management</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
Participants were also asked to provide their primary discipline/training. A total of 12 different disciplines were reported, as listed below:

Occupational Therapy, Public Health, Physiotherapy, Disability and Rehabilitation Studies, Indigenous Knowledge Systems, Global Health, Work
Table 7: Stakeholders’ field of experience

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Participants who received surveys</th>
<th>Participants completed surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Users</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPOs – physical and mental</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Persons with disabilities –</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>physical and mental</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Service Providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical rehabilitation</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>specialists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Rehabilitation</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>specialists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBR Programme Manager/Coordinator</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Supervisors-programme/clinic</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Policy/Decision makers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGOs</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>CBR Expert</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>HRH Expert</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Participants</strong></td>
<td>20</td>
<td>18</td>
</tr>
</tbody>
</table>

4.4.2 Delphi Responses

In the first iteration of the Delphi survey, participants were asked to rank their level of agreement for a total of 30 statements. Of these, 22 were ranked with ‘high acceptance’, with 8 not being accepted. Guided by participant’s comments on the statements, adjustments were made, including the addition of 2 more statements to best address participant’s views. In the second round, 23 of the 32 statements were had high acceptability, with 9 needing adjustment for the next round. In the final round, 33 statements were ranked, with 29 of those having high acceptability amongst participants (Table 8). A list of the statements and their averages and standard deviation for the final round of the survey, round three, is listed in Figure 6. Statements that had an average of 4 or over, and a standard deviation of less than 1 were considered “accepted” statements that had either or both a SD greater than 1 and an average less than 4 were considered “not accepted”. It is important to note however, that all four statements that after the third round were considered “not accepted” still had high a high average between unsure-agree, with no statements being reported as ‘disagree’.
Table 8: Results of Delphi Survey Per Round

<table>
<thead>
<tr>
<th>Round</th>
<th>Statements achieved agreement</th>
<th>Statements did not achieve agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 1</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Round 2</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Round 3</td>
<td>29</td>
<td>4</td>
</tr>
</tbody>
</table>
Figure 6: Level of Agreement and Standard Deviation for Statements

1. What are the competencies needed to deliver and manage quality rehabilitation services?
2. Who should be trained to develop the competencies required for the delivery and management of
3. What are the strategies which work to enable rehabilitation personnel to develop and maintain the
4. What are the strategies which work to increase the supply and improve the distribution of rehabilitation
5. What are the minimum requirements (i.e. ratio and competencies) of rehabilitation personnel needed for
6. What are the characteristics of the rehabilitation workforce that facilitate equitable access to rehabilitation
4.2.3 Finalized Statements

The main over-arching research question that guided the statements is:

‘What are the workforce features at the community level to enable quality rehabilitation services in less resourced settings?’

The statements for recommendations for the workforce for health-related rehabilitation were developed through the realist review and the subsequent Delphi surveys. They were generated from the best available evidence as well as by a range of experts in the field of human resources and/or rehabilitation. The finalized statements that were developed throughout the research process are listed in Table 9. Table 10 includes several of the Delphi participant’s comments from the last round, which helped to inform the finalized statements.

4.5 Main findings

The findings from the realist review can be found in Annex 5. The CMOCs recorded in the Data Evidence Table were used to help generate the statements for the Delphi survey (Annex 7). A list of the finalized statements developed through the process of the Delphi survey can be found below in Table 9. Their average and standard deviation ranking are reported in Figure 6.

4.5.1 Evidence Consensus

To evaluate the consensus of the evidence for the statements, the average and standard deviation from the Delphi survey were used. As well, the evidence for the development of the statements is reported by citing each evidence source that assisted in the development of the statement. These findings are reported in Annex 6: Summary of Evidence and Evidence Consensus.
Table 9: Statement Results

1. **What are the competencies needed to deliver and manage quality rehabilitation services?**

   1.1 Within the delivery of rehabilitation services, there should be the designation of a specific rehabilitation coordinator/focal person who oversees the process.

   1.2 Multidisciplinary supervision should be available to support the implementation of rehabilitation practices at all levels.

   1.3 All cadres of rehabilitation workers should receive specific training on advocacy and empowerment and be able to undertake endeavors that promote these within their communities to complement the work of DPOs.

   1.4 Experience and educational requirements for rehabilitation workers will be set depending on context and cadre; however, all workers, especially those at the community level, should have: strong social skills, sensitivity to others’ views and a commitment to working with persons with disabilities.

   1.5 Rehabilitation services (including the additional training and supervision specific to rehabilitation), should be incorporated into all generic community health workers’ current service provision role.

   1.6 Community-based rehabilitation workers should be multi-skilled and supported to take a holistic problem-based approach, with appropriate referral mechanisms to other more specialized service providers.

   **Skill-Set Mix**

   1.7 In some situations, a community rehabilitation cadre should be trained with a broad range of generic rehabilitation skills (rehabilitation skills that are applicable to a large number of service users) and comprehensive knowledge on disability.

   1.8 In some situations, a community rehabilitation cadre should be trained with specialized context specific rehabilitation skills.

   1.9 In some situations, a community rehabilitation cadre should be trained with generic rehabilitation skills (rehabilitation skills that are applicable to a large number of service users) as well as one specialized area of rehabilitation.

2. **Who should be trained to develop the competencies required for the delivery and management of rehabilitation services at each level of the health care system?**

   2.1 Persons with disabilities (including different types of disabilities) should be encouraged and supported to train as rehabilitation workers so that the service reflects the communities they serve.

   2.2 Different workforce mixes are going to be required in different contexts, and service providers should be open to a combination of: specialists, generic community rehabilitation cadres, and a cadre combining some specialist and some generic skills.

   2.3 While generic community health workers should be aware of the rehabilitation needs of persons with disabilities and be able to make appropriate referrals, it is not realistic to expect them to provide these services in addition to their current service provision role.

   2.4 Community-based rehabilitation workers are an effective means of identifying and targeting persons with disabilities.

   2.5 With appropriate training and availability of referral supports, community-based rehabilitation workers can provide services to persons with both physical and mental disabilities.

3. **What are the strategies which work to enable rehabilitation personnel to develop and maintain the competencies required for the delivery of rehabilitation services?**

   3.1 Clear job descriptions and expectations for all rehabilitation cadres should be developed collaboratively with the workforce, managers/implementers and government bodies.

   3.2 Training of the rehabilitation workforce should involve persons with disabilities (including different types of disabilities), in the planning and delivery of the training courses.

   3.3 Training of rehabilitation workers should use a context sensitive, rights-based approach and encourage problem-based learning and discussions.

   3.4 Supervision of the rehabilitation workforce should be supportive and involve frequent practice observation and meetings that adopt collaborative problem-
3.5 The self-efficacy of rehabilitation workers, specifically those in lower level cadres, is important for job commitment, satisfaction and subsequently retention and motivation of workers.

3.6 Community rehabilitation workers require respect and recognition as professionals, which includes certification and acknowledgement of their decision-making abilities, opportunities for further training and career advancement and where feasible, should be financially compensated for their work.

3.7 The area of rehabilitation is a delicate and stressful area and requires self-awareness on the part of the health worker and requires the provision of time and spaces for consistent reflection and supportive debriefing for healthcare workers.

4 What are the strategies which work to increase the supply and improve the distribution of rehabilitation personnel required for the delivery of rehabilitation services?

4.1 The rehabilitation workforce should be structured through an integrated tiered system, from community work to facility-based services with appropriate supervision at each level.

4.2 Community rehabilitation services can be effectively provided by shifting some rehabilitation tasks from conventionally trained rehabilitation professionals to cadres with a shorter length of training.

4.3 Transport, compensation, and material resources should be targeted in order to provide a working environment that will be able to retain rehabilitation workers.

4.4 Persons with disabilities should be involved in the selection of community-based rehabilitation workers.

5 What are the minimum requirements (i.e. ratio and competencies) of rehabilitation personnel needed for the delivery of rehabilitation services?

5.1 Where a generic community health workforce exists, they should be trained in disability identification and awareness, rehabilitation referral, and basic service provision for persons with disabilities.

5.2 Community based workers should have a minimum generalist skill-set with specialized services being offered at the facility-based level.

5.3 All rehabilitation workers should be trained on case management, social protection, the CBR Matrix, monitoring and record-keeping.

5.4 All rehabilitation health workers should be trained on the CBR Matrix and the contextual challenges and practical opportunities for applying it in their area.

5.5 As rehabilitation workers often emotionally support persons with disabilities and their families, they should have basic counselling skills and an understanding of appropriate referral pathways and of their limits and when to refer.

5.6 Supervisors should be equally competent in the process skills of supervision and the technical skills of rehabilitation interventions.

6 What are the characteristics of the rehabilitation workforce that facilitate equitable access to rehabilitation services?

6.1 The rehabilitation workforce configuration should be guided by community needs assessments targeting the characteristics of the workforce that will make it more acceptable and accessible to persons with disabilities and their families.

6.2 Community-based rehabilitation services should be accountable to the communities in which they work and these communities should have mechanisms to contribute feedback regarding the services they receive.
Table 10: Example of Delphi Participant’s Comments

<table>
<thead>
<tr>
<th>Statement</th>
<th>Participant’s Comments</th>
</tr>
</thead>
</table>
| Community-based rehabilitation workers are an effective means of identifying and targeting persons with disabilities.                          | - Families and community service centers are best for that role  
- But need to link with community health workers and non-CBR actors to ensure EARLY identification  
- It depends where the rehabilitation workers are located or at which level because it is difficult to reach to the community if they are located at county or higher level because of scattered population and access to transportation.  
- A majority of persons with disabilities are found in their homes and as the CBR worker is also based in the community and have knowledge of the people of that community it is easy and possible for a CBR worker to identify persons with disabilities.                                                                 |
| Within the delivery of rehabilitation services, there should be the designation of a specific rehabilitation coordinator/focal person            | - And who links into the wider health sector  
- Coordinator/focal person should not necessarily be of higher status than the CBR worker. Do you think it is possible to have a more horizontal responsibility rather than the often seen hierarchical model? With the CBR worker at the centre with the others being supports?  
- This will help to keep the follow up and impact to the person with disability, build trust and relationship with them  
- To pull things together and prevent aspects from falling between the cracks.                                                                 |
| Transport, compensation, and material resources should be targeted in order to provide a working environment that will be able to retain rehabilitation workers. | - But also respect, recognition and appropriate support are vital in supporting retention  
- The compensation can take different forms but should be relevant to the CBR workers needs. It should enable them to do their CBR work without having to compromise their ability to provide services to all or detract from looking after their own families  
- Lack of transportation and compensation reduces the motivation of rehabilitation worker and cannot get to the field even though they have a big wish. So to keep them motivated and happy with their work, facilities are important.  
- This is critical and will serve as a motivation factor.                                                                                                                                                                                                                     |
| Supervisors should be equally competent in the process skills of supervision and the technical skills of rehabilitation interventions.         | - And provided with support/supervision themselves  
- Supervision suggests hierarchy to me, I prefer the concept of support so you as a support person help me to provide the services. I think too often, the CBR worker does most of the work in the toughest circumstances and the supervisor comes in and criticizes what has been done/not done.  
- This is more important in the scattered places as it is difficult to get to the field. If the person has both the above competencies then it will save the resources and helps to receive the right services or techniques on time.  
- As this will ensure that rehab. Workers are supported and guided.                                                                                                                                                                                                                       |
| All rehabilitation workers should be trained on case management, social protection, CBR Matrix, monitoring and record-keeping.                | - They don’t necessarily have to be the case manager or provide the social protection in all situations but the minimum would be to be aware of what is needed and ensure it happens.  
- Please consider CRPD  
- These aspects are critical in the work they will be doing at community level with persons with disabilities.                                                                                                                                                                                                                      |
| Where a generic community health workforce exists, they should be trained in disability identification and awareness, rehabilitation referral, and basic service provision for persons with disabilities. | - But needs to be in line with their existing priorities and areas of focus (if applicable)  
- In less setting resources and scattered area it is important that health workers should have the above mentioned skills because it will avoid delay of getting services on time. It is more convenient for the families as they don’t need to travel.  
- Indeed                                                                                                                                                                                                                                                                       |
| Community Rehabilitation workers require respect and recognition as professionals, which includes certification and acknowledgement of their decision-making abilities, opportunities for further training and career advancement and where feasible should be financially compensated. | - Again, different models may apply and voluntarism should not be entirely discarded  
- The financial compensation can take different forms, may be a salary, may be a livelihood loan/gift to enable CBR worker to have an income etc.  
- "Community-based rehabilitation workers should be recognized as integral members of healthcare teams, which includes certification and acknowledgement of their decision-making abilities, as well as opportunities for further training and career advancement."  
- I have reservations on this one. I strongly feel that we should stop encouraging volunteers. I understand that resources may be challenging but if we always rely on volunteers, how can we make the government accountable for their duties and responsibilities.  
- Should be financially compensated compulsorily                                                                                                                                         |
| Community rehab services can be effectively provided by shifting some rehab tasks from conventionally trained rehab professionals to those with a shorter length of training. | - All these aspects will motivate them  
- With a view to working on a building block approach to comprehensive training.  
- Provided the back up support services are available in by phone/internet and persons  
- Especially in less resource setting |
| The rehabilitation workforce should be structured through an integrated tiered system, from community work to facility-based services with appropriate supervision at each level. | - Depends somewhat on the context  
- Yes, but define facility based as both rehab specific facilities e.g. P&O centres and health facilities containing rehab services e.g., hospital wards.  
- I have a problem with tiered systems and hierarchy. There is a tendency for the CBR worker to be seen as being at the bottom of the pyramid with the experts advising them. I would like to see a structure where the CBR worker is seen as the lynch pin with the experts supporting them to do their work.  
- I don’t like the word supervision. Would prefer the word support, quality assurance checks etc. |
| Community-based rehabilitation workers should be multi-skilled and supported to take a holistic problem approach, with appropriate referral mechanisms to other more specialized service providers. | - Can build their skills over time, furthermore with appropriate training, recognition and CPD.  
- Accepting that some may chose to specialise in certain areas like vocational training, social mobilisation, mental health, physical disability, intellectual disability, and inclusive education….  
- I am worried about the expectations we have on them… then, we want them to be volunteers. Our experience, if they are volunteers and they are good, they may leave the job because of financial reasons. And those who want to do volunteer job or low-compensation job may not be as good as those who demand for proper compensation. This is our experience with volunteer or low-wage personal assistants. |
| Rehabilitation services (including the additional training and supervision specific rehabilitation) should be incorporated into all generic community health workers’ current service provision role. | - I tend to agree on this, but it does not imply that separate rehab programs at community level should be abandoned  
- I think it is fully appropriate to incorporate rehab into some generic community health workers roles, but need to be aware of their own capacities and constraints. Identification, awareness of services and referral may be the limit for some.  
- I have reservation. This may be too much burden for them. Community health workers in our country are already burdened with a lot of work related to preventing diseases amongst others.  
- In some less setting resources, there are no specific rehabilitation workers to provide rehabilitation services to person with disability. So only rely on health workers and other community actors. |
| While generic community health workers should be aware of the rehabilitation needs of persons with disability and be able to make appropriate referrals, it is not realist to expect them to provide these services in addition to their current service provision role. | - Depends on context and resources  
- Depends on what their current service provision role is in the community they live in.  
- This is what is observed often in under-paid, understaffed primary health care levels in low resource settings. The perception that "saving lives" is priority on the quality of life of persons with disabilities can be very strong. So it is safer to say that we should expect them to understand impairment and facilitate the access to the services they need (and not deny them the access to regular health services), and do not ask them systematically to provide more interventions (might be possible in countries like Thailand, Indonesia where there is enough and capillary PHC staff, less possible in Nepal where certain areas do not even have nurse)  
- This depends how rehab. Is introduced to community health workers - it is also perceived as detrimental not to support community health workers with rehab. skills. |
| In some situations, a community rehabilitation cadre should be trained with specialized rehabilitation skills. | - For strategic purposes and to compliment other programmes or to task shift for facility based services, e.g. swallowing assessment/support to assist with a community nutrition programme where SLT supervision can be provided. Need to ensure an even skill mix across an area.  
- Recommend to formulate "in some situations" with a qualifier, e.g. "depending on community or population health needs"  
- For example in an area contaminated with UXO/ERW and there is a high prevalence of people with amputation  
- Yes, if these specialised services don’t exist e.g. in the training and management of children with CP |
| Please add any further comments you may have on the topic. | - Just emphasis of really connecting the health sector and the community to identify needs. The health services may demonstrate a different challenge to what the community perceives in terms of rehab needs (and vice versa) and we need to be reactive (and accountable) to both  
- Consider proper compensation to get better people to do the work. Also, for making them stay to the job. Also, ensure participation of persons with disabilities and their families in all activities (planning, implementation, monitoring and evaluation). Most importantly, CRPD should guide all this (the CBR matrix, etc.). |
4.6 Case Studies

Three case studies were chosen to highlight some of the main findings of the realist review and Delphi study. The case studies chosen represent different contexts in which the workforce engages with the community for rehabilitation services. The case studies are followed by a model (presented in Discussion) developed through the review and based on predominant themes that arose, which assists in highlighting both the case studies and the other findings.

<table>
<thead>
<tr>
<th>Case Study 1: Cognitive Behaviour Therapy in Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This article describes a community based cognitive behaviour therapy programme for women with postnatal depression in rural Pakistan. Administered by Lady Health Workers the “Thinking Healthy Programme” aimed to deliver services to improve maternal and child health outcomes and assess the effectiveness of lay health workers in delivering psychosocial interventions in the community.</strong></td>
</tr>
<tr>
<td><strong>Workforce:</strong> LHWs – part of formal health system, identified by communities and trained over 15 months on maternal and child health. Had additional training for providing psychosocial therapy to women.</td>
</tr>
<tr>
<td><strong>Background:</strong> Previous studies suggest a mean prevalence of 33% depression in Pakistan, with 25% of women during pregnancy and 28% in the postnatal period experiencing depression in Pakistan. With a severe shortage of mental health professionals in Pakistan, task-shifting for delivery of services that are modeled after interventions from high-income countries are being used to bring services to those in need. At the time of the study, there were no specialist mental health services in the rural areas of Pakistan, and for the entire country of over 130 million, only around 350 psychiatrists in total. The programme described was developed based on principles of cognitive behaviour therapy, and ran in rural Gujar Khan and Kallar Syedan areas in Rawalpindi, Pakistan. Lady Health Workers (LHWs) are a specific cadre in Pakistan and are women who are responsible for maternal and child health and community education in their communities. They have completed secondary school, and were recommended by their communities. The cover approximately 100 households and receive salary of approx. $340. In Pakistan, they provide approximately 80% of coverage to rural areas. They are trained over a period of 15 months, with 3 of those being classroom based and 12 being practical ‘on-the-job’ training.</td>
</tr>
<tr>
<td><strong>Programme:</strong> Already working Lady Health Workers were recruited and trained on the “Thinking Healthy Programme” to provide individual psychosocial support to women experiencing postnatal depression. Participants were married women in their third trimester of pregnancy aged 16-45 years. 40 LHWs were trained for the intervention group to delivery 1 session per week in last month of pregnancy, 3 in first month postnatal and 1 per month for next 9 months. The comparison group received enhanced routine care. Regular monthly supervision of LHWs occurred with a ratio of 1 supervisor to 23 LHWs. As well as additional supervision for those running the programme occurred monthly by the research team with ongoing monitoring. The programme was integrated into working LHWs current routine practices.</td>
</tr>
<tr>
<td><strong>Outcomes:</strong> Women in the intervention arm had reduced depression at 6 months post partum, which was sustained at 12 months post partum. There were no differences in child weight-for-height between the two groups. There were however reduced diarrhoeal disease, increased immunization rates and use of contraception, and increased play-related activities between mother and child in the intervention group. There was high retention of mothers in both arms of intervention, highlighting that the programme and the LHWs had high acceptance. LHWs also stated that the additional training and intervention did not increase their workload.</td>
</tr>
</tbody>
</table>
# Case Study 2: Mental Health and Development Model in Kenya

This paper reports on a mental health and development (MHD) programme run by Basic Needs in rural Kenya on persons with a mental disorder or epilepsy with the aim to evaluate mental health, quality of life and economic outcomes in the programme participants.

## Workforce:

<table>
<thead>
<tr>
<th>CBWs – lay health workers trained in identification, referrals, basic counseling skills, community engagement and group facilitation, and medical management.</th>
<th>Background: Operating in rural Meru South and Nyeri North districts of Kenya from May-July 2009, Basic Needs Kenya ran a mental health and development programme in collaboration with the Ministry of Health. These locations have very limited mental health coverage with only one psychiatric nurse and no psychiatrists or psychologists at the district level. The wider regions had more health staff but specialized services were limited to private practice. Patients in need of inpatient care were referred to provincial (Nyeri) or district (Meru) hospitals, depending on the context. Some primary health care staff had received basic mental health training but due to the high demand for other services, most staff was unable to commit substantial time to such services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric Nurse – working in local clinics, diagnose, prescribe medication and follow-up for individuals with mental illness.</td>
<td>Programme: The programme worked through community engagement meetings to mobilize and raise awareness on mental health, as well as provide social support and poverty alleviation techniques. A tier system of service delivery, from community level, to local clinics to more specialized services was used for identification and treatment of persons with mental illness in the area. At local meetings, community members were encouraged to identify themselves or family members with a mental illness, and those 18 or older, meeting the inclusion criteria as identified by a psychiatric nurse at the clinic as having a severe mental or neurological disorder. It also involved using lay trained workers to assist in the programme. Community-based health workers, who are recognised by Kenya’s Essential Package for Health, and who’s qualification was set by the Division of Community Health within the Ministry of Health, were members of and identified by the communities in which they work. They must also be able to read and write, interested in volunteering, have previous experience in volunteer work, commit to a minimum of two days a month, and be recommended by and have support from the local administration. The programme recruited and facilitated the training of community-based health workers (CBWs) whose role was to identify symptoms of mental disorders, refer individuals to local primary care psychiatric clinics for assessment and medication management by a nurse, and facilitate user self-help groups. CBWs’ training consisted of: concepts of mental health and mental illness; debunking the misconceptions and myths on mental illness; signs and symptoms of mental illness; common mental health conditions; community animation and facilitation techniques; how to make referrals; basic counseling skills; home visit instructions; and motivating groups. In order for CBWs to pass training and begin working on the programme, they must have trained for 5 days, had practiced 3 sessions on group facilitation and mastered the 10 steps of self-help groups. The CBWs facilitated self-help groups, for persons with mental illness as well as carers, to share experiences and receive psychosocial support. These groups were the main support feature of the programme, and also facilitated the introduction to livelihood programmes in the area. These groups typically lasted between 90 minutes and 3 hours, and were held either once per week, twice per month, or once per month, with a maximum number of 25 participants. Outcomes: In total 203 participants were enrolled, and at a 24 month follow-up, had an attrition rate of 14.3%, with the majority of loss due to moving or deceased. Significant improvements were seen in general health, quality of life, functioning scores, monthly family income and engagement in income or productive work were seen. Significant reductions in participants receiving help at home from carers and the proportion of carers that left their jobs to care for individuals in the home, were reported. Referrals to clinics rose from baseline to endline from 15.8% to 45.1%; medication received rose from 65.2% to 99.4%; follow-up attendance from 6.4% to 88.4%; attendance at group meetings from 21.9% to 97.1% and diagnosis from 89.2% to 100%.</td>
</tr>
</tbody>
</table>

## Programme:

The programme worked through community engagement meetings to mobilize and raise awareness on mental health, as well as provide social support and poverty alleviation techniques. A tier system of service delivery, from community level, to local clinics to more specialized services was used for identification and treatment of persons with mental illness in the area. At local meetings, community members were encouraged to identify themselves or family members with a mental illness, and those 18 or older, meeting the inclusion criteria as identified by a psychiatric nurse at the clinic as having a severe mental or neurological disorder. It also involved using lay trained workers to assist in the programme. Community-based health workers, who are recognised by Kenya’s Essential Package for Health, and who’s qualification was set by the Division of Community Health within the Ministry of Health, were members of and identified by the communities in which they work. They must also be able to read and write, interested in volunteering, have previous experience in volunteer work, commit to a minimum of two days a month, and be recommended by and have support from the local administration.

The programme recruited and facilitated the training of community-based health workers (CBWs) whose role was to identify symptoms of mental disorders, refer individuals to local primary care psychiatric clinics for assessment and medication management by a nurse, and facilitate user self-help groups. CBWs’ training consisted of: concepts of mental health and mental illness; debunking the misconceptions and myths on mental illness; signs and symptoms of mental illness; common mental health conditions; community animation and facilitation techniques; how to make referrals; basic counseling skills; home visit instructions; and motivating groups. In order for CBWs to pass training and begin working on the programme, they must have trained for 5 days, had practiced 3 sessions on group facilitation and mastered the 10 steps of self-help groups.

The CBWs facilitated self-help groups, for persons with mental illness as well as carers, to share experiences and receive psychosocial support. These groups were the main support feature of the programme, and also facilitated the introduction to livelihood programmes in the area. These groups typically lasted between 90 minutes and 3 hours, and were held either once per week, twice per month, or once per month, with a maximum number of 25 participants.

**Outcomes:** In total 203 participants were enrolled, and at a 24 month follow-up, had an attrition rate of 14.3%, with the majority of loss due to moving or deceased. Significant improvements were seen in general health, quality of life, functioning scores, monthly family income and engagement in income or productive work were seen. Significant reductions in participants receiving help at home from carers and the proportion of carers that left their jobs to care for individuals in the home, were reported. Referrals to clinics rose from baseline to endline from 15.8% to 45.1%; medication received rose from 65.2% to 99.4%; follow-up attendance from 6.4% to 88.4%; attendance at group meetings from 21.9% to 97.1% and diagnosis from 89.2% to 100%. 


### Case Study 3: Rehabilitation and Orthopaedic Surgery in Uganda

This article describes a CBR and orthopaedic surgery programme in Uganda run in collaboration with multiple NGOs working in the field of CBR. Surgical centres were established and staffed for children who were referred through CBR and subsequent physiotherapist assessment. The programme was multifaceted, including CBR education and assessment, surgery and post-surgical care, training for medical staff and other rehabilitation workers.

#### Workforce:

<table>
<thead>
<tr>
<th>Workforce Category</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBRs</td>
<td>Referrals, home-based physiotherapy</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>Diagnosis, referrals, physiotherapy, post-surgical care, supervision and treatment plans</td>
</tr>
<tr>
<td>Orthopaedic Clinical Officers</td>
<td>Cadre specialized in primary orthopaedic care and assigned to health centres</td>
</tr>
<tr>
<td>Orthopaedic Surgeons</td>
<td>Specialized surgical care for children, training of orthopaedic surgeons</td>
</tr>
</tbody>
</table>

#### Background:

Due to the political instability and conflict, Uganda saw a decrease in immunizations and a rise in children with disabilities. The 6-year programme, Uganda Children’s Orthopaedic Rehabilitation Project, was established in 1996 with the aim to create awareness in communities on disability and treatment options. Within this project, a physical rehabilitation and orthopaedic reconstructive surgical service were incorporated into the community base rehabilitation initiative to provide comprehensive and integrated care. The project, established by CBR, was a cross-country network of 12 community-based rehabilitation projects involving several NGOs, government agencies, community groups and service providers. The orthopaedic surgery component was the linking factor between the projects and assisted in the coordinated efforts.

#### Programme:

This programme provided an integrated and comprehensive orthopaedic service for children with treatable chronic motor impairment. Community based rehabilitation (CBR) workers from the local community, who speak the local language, were trained to identify and refer children with motor disabilities to physiotherapists. These physiotherapists then gave a secondary assessment, and either referred to surgical care or provided advice to the CBR workers on appropriate rehabilitation within the community and follow-up work. Physiotherapists also provided treatment course and caregiver education, as well as post-surgical follow-up after children returned from rehabilitation centres. Orthopaedic surgeons, often expatriate especially in the early project stages, provided specialized surgical services and training of national surgeons, in collaboration with Ugandan healthcare training schools. Initially, surgical services were offered on rotation at 7 district hospitals to bring the services closer to communities. Post-surgical rehabilitation centres, consisting of a full-time professional local physiotherapist were established, and children were transferred for care after surgery, before returning to their home. Transport was provided for children to and from referral services to limited barriers of access.

#### Outcomes:

By 2001, 5004 children had participated in the community based rehabilitation programme, with 874 receiving surgery. The initial 7 rotating district surgical hospitals were consolidated to 3 sites, with one specialized centre in a major city, which acted as the link between the university and the programme, and provided the training of national surgeons. Surgical care provided as close to possible to local community, with 7 district hospitals on rotation. Throughout process however, this was consolidated to 3 sites, with one specialized surgical centre being established in the major city, linking with the University and providing training of national surgeons. This central surgery unit became a training centre of national and regional orthopaedic surgeons specialized on reconstructive surgery.

Capacity building of national staff occurred throughout all levels of project, with the main focus was on orthopaedic clinical officers. These officers were a cadre of health workers in Uganda who specialized in primary orthopaedic care and were assigned to health centres. Programme identified ‘recipe for success’ being: CBR, physiotherapy, orthopaedic surgery, rehabilitation hostels, appliance workshops, and transportation system.
5. DISCUSSION

5.1. Summary of findings

The purpose of this research has been to provide the best available scientific evidence on the health rehabilitation workforce relevant to the organization and delivery of rehabilitation services to inform the WHO guidelines on health related rehabilitation. This aim has been realized by conducting a systematic realist review of the literature to generate a list of ‘statements’ or recommendations, and subsequently implementing a Delphi survey to ascertain the level of agreement by a panel of experts in this field with the statements as answers to each of six research questions.

The realist review conducted identified 33 articles from a search of relevant databases and snowballing techniques; from these articles, 33 ‘statements’ were generated as proposed answers to the six research questions, which were then assessed for level of agreement by a panel of experts in a Delphi survey. A detailed summary of the main findings for each article identified during the realist review can be found in Annex 5.

5.1.1 Included Articles

The included articles were varied with regards to geographic location, methodology, document type, date of publication and intervention type. There is a large range of countries represented throughout the articles, however, the majority of these were from three continents or regions: Africa, South Asia and East Asia and the Pacific. There were no included articles from the Americas and Europe, which may be a result of the search strategy or could reflect a lack of data emerging from these regions. As well, the vast majority of the locations included were from low-income countries, with very little information from less resourced settings in either middle-or high-income countries. This is likely attributed to fewer rehabilitation programmes being implemented in the communities in such regions.

Interestingly, one third of articles included reported on interventions or programmes addressing rehabilitation for mental health problems specifically. These articles often reported extreme human resources for health constraints with regards to mental health specialists, highlighting a need for such services. However, with few resources for mental health available within the health sector, these community programmes relied heavily on the training of lay health workers. Several of these trained already existing lay health workers on aspects of mental health service provision (Armstrong et al.,
2011; A. Rahman, 2007; Atif Rahman et al., 2008), while others appeared to recruit and train a new cadre to specifically deal with mental health in the community (Ayoughi et al., 2012; Lund et al., 2013).

Three of the above papers were published between 2007-2009, eight were from 2011-2013, and only one was published in 2003. This may reflect an increasing trend in programmes for mental health rehabilitation in the community, and highlight the need for all health systems to plan for such programmes and a potentially new cadre of health worker.

The majority of articles did not have a specific focus on the rehabilitation workforce itself, but reported on interventions and programmes. Workforce information was then extrapolated from the articles or if too little information was included the reviewers attempted to gain more details from searching elsewhere or contacting authors. The same data on the workforce was therefore not collected for all articles and this combined with the differing nature of interventions and methodologies makes comparisons across articles very difficult and potentially misleading.

5.1.2 Rehabilitation Workforce

As displayed in summary form in Table 4, the characteristics of the workforce varied across the included articles. Cadres of the workforce involved in rehabilitation in the community ranged from lay health workers (those who have limited training and often work in primary care or health education); to mid-level rehabilitation workers and/or paraprofessionals; to specialists including cadres such as physiotherapists, psychiatrists and orthopaedic surgeons.

For studies that reported having a community based rehabilitation cadre, there was a mix between having a non-specialized rehabilitation cadre (many of which were already working as lay community health workers) who were trained on aspects of disability and rehabilitation, and having a cadre that was trained specifically and exclusively for rehabilitation, often titled “Community Based Rehabilitation Workers”. For both of these types of cadres, many were trained on a specific type of disability, or a range of disabilities that were identified as a priority. In all articles that had a more specialized cadre, these individuals had very little direct community work and functioned as a referral unit or for support in a tier delivery system.
The requirements for the workforce varied and depended on the cadre discussed. Cadres working directly in communities were often required to be from that specific community, and were nominated by their communities. Several community-based cadres were required to have a minimum of a secondary school education, though there was a noticeable lack of data on this issue.

Training for the rehabilitation workforce ranged from 2 days to 2 years, and was a reflection of the level of specialization and the intervention being used. For example, Community Rehabilitation Facilitators in South Africa, who are responsible for physical rehabilitation activities, enter into a 2 year training programme which enables them to provide a broad range of services to communities (Rule, 2013); (Dawad & Jobson, 2011). In contrast, already working Lady Health Workers in Pakistan underwent 2 days of training in order to provide psychosocial counseling to women with perinatal depression (A. Rahman, 2007).

It was interesting that many articles reported using a mix of theory and practical trainings. Several also reported having individuals with disabilities assist with training. There was a range of training techniques reported, including videos, group problem solving, multi-media visuals, and community visits. Many programmes required that trainers watch an individual conduct successful rehabilitation sessions before they can complete the course. The trainers themselves varied, from expatriate rehabilitation specialists, to in-country specialists, to authors or researchers and programme managers.

Though details on supervision was lacking, it appears that cadres in the community with less training, or those who were providing direct services, in comparison with those undertaking case identification and referral, were reported to have more supervision support. Supervision is often cited in the community health workforce literature as influencing the motivation and retention of workers (Haines et al., 2007). As it also assists in ensuring quality services the appropriate supervision of the rehabilitation workforce is essential. Programmes should be encouraged to provide more details on how they support their workforce, in order to gain a better understanding and encourage more evidence-based practice for future projects.

It is not possible to identify an optimum ratio of workforce personnel to persons requiring rehabilitation services, based on the literature available. A large range was reported; from one worker to 15-25 persons with disabilities, to one worker to 100-500 persons. These reflected the type of intervention as well as the cadre themselves. This
review has demonstrated that assigning a recommended ratio for the whole workforce without understanding the context and programme intervention is not realistic. Prior to programme implementation, a thorough situational analysis should be conducted, including, but not limited to: available rehabilitation staff, disability prevalence, types of disability, barriers to programme implementation and community perceptions, in conjunction with the specifics of the proposed intervention. This would assist in identifying the appropriate workforce skills sets required, and also what would also be most acceptable to communities.

5.1.3 Delphi Study

Statements that were derived from the Context-Mechanism-Outcome Configurations of the realist review were then used during the Delphi study. This study consisted of three iterations of a web-based survey, where experts in the area of this research were asked to rate their level of agreement or disagreement with the proposed statements, and to provide additional comments as appropriate. The results of ratings on each iteration, including participants’ open-response comments, were then used to modify the statements.

In total 19 individuals participated in the Delphi study. There was an equal gendered response (9 female and 10 male), as well as a large range of geographical regions of work. A range of disciplines was reported, including researchers, programme managers and a range of types of therapists. However, though we attempted to include as many service users as possible in this study, it was difficult to identify such individuals. As a result, there was only 1 service user included as a participant, which is recognised as a limitation.

The statements had a high level of agreement from the Delphi participants, with 30 of the 33 having an average rating above 4 (Agree), and the reminding 3 statements having an average score between 3.5 and 4. There is some variation in responses to the statements, with 4 statements not meeting our criteria for acceptance. However, it is important to note that these four statements still had a rating between “Unsure” and “Agree”, highlighting that they were not rejected overall.

Overall our statements generally received a high level of endorsement (29 statements of above 4; Agree) from the Delphi participants. However there was some variation in responses, particularly evident in the third iteration of the Delphi survey, in which 4 statements did not meet our criteria for acceptance.
Table 8 provides a list of several of the statements with accompanying comments from the participants. Throughout the three iterations participants were also able to provide open responses in relation to statements, which were then used to refine and make the statements more applicable to likely contexts. It should also be noted that very rarely did a participant “Disagree” with a statement, however they would often offer comments on how to improve the statements to make them more appropriate. Throughout the Delphi process, even if statements were rated as having a high level of agreement, modifications would still be made to reflect participant’s comments.

Several themes emerged from the participant’s comments that should be considered for future work on the statements:

1) Semantics: There were recurring comments that often pertained to the understanding of a term, or suggested using an alternative term or phrase.

2) Emphasis on linking with health sector and existing structures: Throughout the discussion on the workforce, their place within the larger health system and current structures must be continually evaluated.

3) Context: The workforce will vary depending on the context, and as such discussions or programmes should also be preceded by a detailed contextual analysis. This is especially important when addressing community-based cadres, regarding who is acceptable to the community, the structure of the workforce, the requirements of the workforce and issues related to compensation and volunteerism.

4) Complex statements: Some statements were seen as involving too many aspects of the workforce, and were recommended to be either divided into two separate statements or refined. This limits the sensitivity of these statements to complex situations but perhaps makes the statements more generalizable.

5) Workforce in line with CRPD and CBR Matrix: Recommendations on the rehabilitation workforce should also be considered in conjunction with the CRPD and the CBR Matrix in order to complement the existing resources.

6) Expectations of CBR workers: Participants often expressed a concern over the workload or expectations placed on community based cadres. This included increasing the workload of an existing community based worker by adding rehabilitation to their job scope, and expecting too much from these cadres in terms of time commitment and services to offer. These concerns may be especially relevant when cadre are not properly integrated into the health system and/or receive little to no compensation for their work.
5.1.4 Statements

A final list of the statements generated throughout the research can be found in Table 6 on page 29. The 6 research questions that were initially proposed, and then had minor subsequent modification to reflect the research direction of community rehabilitation services, are discussed below.

**What are the competencies needed to deliver and manage quality rehabilitation services?**

*A Coordinator* - A rehabilitation coordinator who coordinates activities at all levels of rehabilitation services.

*Supportive supervision* - Multidisciplinary supervision, often in the form of professionally trained rehabilitation professionals, working in secondary or tertiary facilities; who support community based rehabilitation cadre in their activities.

*Advocacy and Empowerment skills* – All community based rehabilitation workers should be trained in advocacy and empowerment skills, regardless of the type of rehabilitation they provide. It was very evident throughout the articles as well as the Delphi study that this skill is essential for community-based cadres, as they are in a unique position to increase awareness of disability and the potential of people with disabilities.

*Referral skills and accompanying services* – Community based workers must have strong referral skills. As well, it is important that services in secondary and tertiary level facilities be available to respond to an increase in demand from such referrals.

*Multi-skilled* – CBR workers should have strong social skills and be trained to take an inclusive development/holistic approach to rehabilitation.

No ideal skill-set mix was identified, but rather respondents were open to a range with many comments emphasizing that skill sets would be depending on context. There was agreement that several combinations could be appropriate, including a specialist rehabilitation cadre, a generalist rehabilitation cadre; and a cadre with generalist training but also having a specialist area.

**Who should be trained to develop the competencies required for the delivery and management of rehabilitation services?**

*Persons with disabilities* – Several articles highlighted that prioritizing people with disabilities for training as CBR workers can increase intervention acceptance and provide additional support for persons with disabilities. This
CBR Workers – Extremely clear throughout the articles as well as the Delphi study, was our finding that cadres at the community level should be developed or supported to offer rehabilitation services. These cadres were identified as being effective and accepted by communities, while addressing the severe human resources for health crisis. Typically, the CBR workers described fit under the definition of “Community Health Workers” proposed by WHO Study Group (1989) in terms of training and requirements:

“Community health workers should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers” (WHO 1989).

CBR workers should be developed for the rehabilitation of both physical and mental health disabilities in communities. However, there is some contention amongst articles and participants on whether to include rehabilitation services in existing community based health workers' roles.

What are the strategies which work to enable rehabilitation personnel to develop and maintain the competencies required for the delivery of rehabilitation services?

Clear job descriptions – All rehabilitation cadres require clear job descriptions that are known by the other relevant work cadres and the existing support structures. These should be developed collaboratively with managers and the workforce, with changes to their description to reflect the frequently changing role of the worker.

Training – Rights based approach that encourages problem-based learning, with a mix of theory and practical training. It should also involve people with disability in the planning and delivery of the training if possible.

Supportive supervision – This includes frequent practice and observation techniques, as well as collaborative problems solving and group meetings. Supervisors should also have specific training on supervision skills, and be knowledgeable on rehabilitation services.

CBR worker self-efficacy – Motivation and retention of community based health workers is often a major concern when developing programmes (Haines et al., 2007; Jaskiewicz & Tulenko, 2012; Strachan et al., 2012). Ensuring the self-efficacy of CBR workers was identified as critical to job commitment and satisfaction. Incentives such as opportunities for further training, recognition in the form of certifications, bicycles or
other forms of transport, as well as ensuring that workers are respected and recognised for their work, were all identified as being important for self-efficacy.

*Support structures* – CBR workers are tasked with very difficult jobs often under difficult situations. It is therefore important that programmes make available occupational support services that allow CBR workers to themselves seek counselling and personal support, where necessary, in order to ensure the health and good performance of these workers.

**What are the strategies which work to increase the supply and improve the distribution of rehabilitation personnel required for the delivery of rehabilitation services?**

*Integrated tier system* – Community based services should be organized as part of a tier system, with more general services being offered at the community level and more specialized services in referral centres, or where necessary, more institutionalized settings. Within this system, community based workers are able to have a more general skills set and act as a filter to more specialized services. This can help to manage case load and bottlenecks through the referral system. It also increases the likelihood that an individual with a disability will be assisted by a health worker, as a larger number of rehabilitation workers will be available and be at the community level to identify and assist people with disability.

*Task-shifting* – Defined as “the rational re-distribution of tasks among health workforce teams. Specific tasks are moved, where appropriate, from highly qualified health workers to health workers who have fewer qualification in order to make more efficient use of the available Human Resources for Health” (WHO, 2008), is recommended to increase access to a health worker at the community level. As evidenced by a large majority of articles, bringing services closer to the community by training individuals with less lengthy training, is an effective method to reach more people. Though this idea for rehabilitation is not new (Kakuma et al., 2011; World Health, 2010), this review provides further evidence towards its use as well as some recommendations for how this type of work should be positioned within the wider rehabilitation workforce, as well as some practical recommendations on who should be trained and how.

*Resource provision* – Although each country will have their own procedures on how community based work fits in with the wider health sector, and how such individuals will be compensated for their work, it was clear throughout the articles that CBR workers require supportive resources to enable job performance. Covering transport, whether monetary or through the provision of bicycles, as well as providing workers with the appropriate resources required was commonly cited as a means of retaining the workforce while also assisting in providing quality services. Results from the Delphi
survey suggest that CBR workers should be compensated financially for their work. Though often these cadres work on a voluntary basis, our experts suggest that context depending - this work deserves an official salary.

What are the minimum requirements (i.e. ratio and competencies) of rehabilitation personnel needed for the delivery of rehabilitation services?

*Ratio* – Though no set ratio can be recommended as it will depend on context, including current workforce situation, type of rehabilitation offered, disability prevalence and type, geography, and community acceptability are all important factors. Table 8 lists the different ratios found throughout the articles.

*Competencies* – All rehabilitation workers should be trained and knowledgeable on the identification and awareness of disabilities, appropriate referral techniques, record keeping, case managements and community advocacy and empowerment techniques.

*Basic counseling skills* – All rehabilitation workers, especially those operating in the community, should have training on basic counselling skills as well as appropriate referrals for individuals requiring further counselling. While for some CBR workers, counselling is not within their mandate; as they are usually the first point of contact for people with disability and build strong relationships with their clients, they can often be required to offer important emotional support to clients and their families.

*CBR Matrix* – All CBR workers should be knowledgeable on the CBR Matrix and its five pillars, as well as social protection and the contextual challenges in their area. It was found throughout the realist review that even when cadres are specifically offering health rehabilitation services, it is necessary that they be aware of the entire Matrix, as this increases their understanding of disability and enables them to better assist their clients.

What are the characteristics of the rehabilitation workforce that facilitate equitable access to rehabilitation services?

*CBR workforce* – As previously discussed, bringing rehabilitation services to the community is recognized throughout the literature, as well as through our realist review and subsequent Delphi study, as an effective method of facilitating equitable access to such services. Though the type of cadre may vary depending on context, typically this workforce is less specialized, offering more general services, and serves as a link between communities and the more institutional-based health workforce. There are several requirements of this workforce found throughout the review, which have been discussed in the preceding sections.

*Community Ownership and Participation* - Communities should recommend or select individuals form their area to be CBR workers, and these workers should be
accountable to the communities that they serve. This is consistent with findings from other community-based programmes (Rosato et al., 2008; Strachan et al., 2012) working in less resourced settings. This type of community involvement enables communities to be active participants in their own health care, and can also influence the motivation and retention of CBR workers as they may feel more invested in their communities and it acts as a form of important feedback on their performance.

Mechanisms for Feedback – These mechanisms should occur throughout rehabilitation programmes and levels of the workforce. Communities should have methods to provide their views, and health workers should also be able to discuss issues or concerns that arise on an ad hoc basis. The CBR Focal Person should monitor such mechanisms, so that there is consistency and to ensure that all voices are heard and able to influence programmes.

Needs Assessment – All CBR work should be preceded by a situational assessment or needs assessment of the area. In relation to this review, all our recommendations require detailed contextual consideration and only act as guides for the gearing of the rehabilitation workforce.

5.1.5 Workforce Configuration Model

Based on the Case Studies reported in section 4.6 as well as the statements developed throughout the realist review and Delphi study, a model that depicts a synthesis of the evidence was developed. This model attempts to display the relationships between a tiered system of rehabilitation service delivery, along with several predominant competencies.

When looking at the model, requirements for an effective CBR worker are highlighted on all four sides, and include: Training and Refreshers; Clinical Skills; Community Advocacy and Empowerment; and CBR Matrix Knowledge. These are considered essential for the entire rehabilitation workforce. The two triangles in the diagram represent Community Based Rehabilitation Workers, which could be any cadre that is specifically working in the community; along with Facility-Based Health Workers, who are generally more specialized service providers such as physicians, physiotherapists etc. The diagram is also divided horizontally into three sections, which represent different contexts. The top is a well-resourced and accessible health workforce with specialized professionals available in facilities. The middle context is a somewhat resourced rehabilitation health workforce OR facility services that are hard to access. The lower section represents the most poorly resourced rehabilitation workforce with facility-based services being very difficult or impossible to access. Tasks that are listed
in the horizontal sections and divided between facility and community-based services, operate in a cumulative manner, with those from each context adding to the others. For example, in the middle context for CBR, workers provide rehabilitation in the home, treatment adherence, follow-up and reminders, as well as referrals that are tasks in the top (best resourced) context.

The larger the area of the horizontal division, the more the services are concentrated within that workforce segment. For example, in the top context, the majority of services are provided by facility-based health workers, whereas in the bottom context (lowest division), the CBR workers are responsible for most of the rehabilitation services. The need for supervision is of course present at all levels but increases with more community lead initiatives, as depicted by the dividing red line thickening as it moves from the top through the middle and into the bottom context. It is noted however, that this model does not reflect all of the skills and characteristics required at the different levels of a rehabilitation health system; however it aims to capture some of the most important themes emerging from our review and synthesis. We present this model as a schematic to help policy makers and managers think through the relative importance of different aspects of rehabilitation, depending on how resources are distributed across the health system.

Figure 7: Workforce Configuration Model (see next page)
Methodological considerations

The methodology of a realist review is one that allows researchers to address issues beyond effectiveness and to answer questions by drawing on literature that explain why, for whom, and under what circumstances a particular outcome occurs. This approach is more explanatory than judgmental and is suitable for reviews of complex social phenomena that involve human decisions and actions (R. Pawson et al., 2005). Accordingly, a realist review with a systematic literature search protocol was considered to be more appropriate than a narrowly focused review or Cochrane-style review; the former allowing us to more adequately answer the broad research
questions asked. Accordingly, a realist review and synthesis of the international literature was conducted in addition to the participatory research method of a Delphi survey.

It is important to recognize that the Delphi that was conducted ascertained a wide range of perspectives from a geographically varied group of participants with diverse experiences and expertise, operating in health systems with varied priorities and funding, which may account some of the variation in responses. A valuable aspect of this variation, however, was that Delphi participants provided a strong interdisciplinary perspective, spanning researchers and practitioners from service-users, service-providers, and policy/decision-makers from North and South. Furthermore, despite this variation among our participants, it is noteworthy how strongly they endorsed the vast majority of the propositions developed from our review; thus adding veracity to our findings.

This research has sought to provide broad recommendations for successful rehabilitation policy processes in less resourced settings, rather than to provide a prescriptive formula, which would undermine the diversity, complexity and nuances of particular national and community contexts. Indeed, the nature of the realist review methodology is one that is paradoxical, by which broad recommendations are developed from evidence derived from quite specific contexts. The Institute of Medicine (Washington D. C.), in the 2001 report ‘Crossing the Quality Chasm’, emphasized that health care systems are complex adaptive systems (CAS) (Best et al., 2012; Institute of Medicine; Committee on Quality of Health Care in America, 2001). As proposed by Best et al. in a realist review of large-system transformation in health care (Best et al., 2012), a CAS perspective focuses on the basic rules and principles of action of a system, and a realist perspective aims to explore mechanisms and how they interact with the context; policy recommendations that ensue therefore recognize the complexity of such systems and avoid complex checklists or specific instructions for change.

As emphasized by Best et al., “although CAS are complex and unpredictable, they are amenable to guided transformation by applying simple rules that are sufficiently flexible to allow for adaptation” (p. 423); findings are therefore expressed as broad principles of action and contingent approaches (‘in contexts such as X, try Y’) (Best et al., 2012). Accordingly, we have sought, through conducting this research, to enable ‘guided transformation’ of health-related rehabilitation policy processes as part of overall health care systems strengthening in less resourced settings by proposing ‘simple rules’
or broad recommendations from our findings, which require contextual adaptation due to variation in structures, systems, and resources.

5.3. Limitations

Our approach to answering the research questions posed by WHO have some important limitations:

1) The wide scope of the research topic required that we progressively narrow our overarching research question and our systematic search of the literature, in order to provide a meaningful and focused analysis to inform our recommendations.

2) Combining a robust systematic review protocol with a Critical Realist interpretative approach was challenging and stimulating. To strengthen the knowledge of our team regarding Realist Review methodology, we invited a Realist Review expert to give a day’s training to our core team. Whilst this training clearly built on our previous knowledge, it also necessarily presented a particular approach to realist review and synthesis.

3) Our limited knowledge of the approach being used by other Work Packages within the Call meant that we could not be sure how easily our own findings could be integrated with those from other Work Packages within the overall Call.

4) Several of the papers included in the review had a lack of detail on the rehabilitation workforce and this limited what could be learnt from the research.

5.3.1 Delphi Limitations

The Delphi method also has a number of specific limitations:

1) The panel of experts was chosen by the researchers and was dependent on their own networks and the willingness of people to participate.

2) Interactions between the researcher and participants are not face-to-face and this may have influenced the gathering of information.

3) The use of experts from different countries and different health systems that have diverse priorities and funding may have made arriving at consensus more difficult (Nimhurchadha et al., 2013). However, difficulty in reaching consensus should not be perceived as a major limitation of this research – as in fact significant consensus was achieved. Nonetheless, diversity does reflect the diversity of approaches in international health-related rehabilitation practice and related policy processes (Nimhurchadha et al., 2013).
4) Although considerable attempts were made to have a broad sample of participants, we consider it a limitation that there was only 1 participant who responded as a service user.

5.4 Future Research Directions

This review highlighted that while there are indeed programmes for rehabilitation in communities, little evidence is provided on the workforces that implement these services. Researchers and programme managers should disseminate more detailed evidence on the workforce. Ideally, this would take place in the form of articles specifically dedicated to the workforce, but in lieu of this, authors and researchers should be encouraged to provide more details on the workforce in their reports, including entry requirements, rehabilitation training and supervision, so that this body of literature can be expanded and others can learn from their experiences.

Though evidence on motivation and retention from other types of community-based workers exists, there is a dearth of evidence from the perspective of the rehabilitation workforce. As the longer term effectiveness of programmes depends on the retention of their workers, such investigations should be given priority in order to highlight areas of concern and provide more recommendations on how to reduce attrition and provide quality services for persons with disabilities in communities.

Comparison studies for task shifting of rehabilitation services should be conducted to provide evidence on the effectiveness of such interventions, including cost-effectiveness studies.

5.5. Conclusion and recommendations

We have conducted this research with the aim of enabling ‘guided transformation’ of health-related rehabilitation policy processes as part of overall health care systems strengthening in less resourced settings by proposing broad recommendations, which require contextual adaptation due to contextual variation. As reported in the OECD’s 2010 publication ‘Health care systems: Getting more value for money’, there is no one-size-fits-all approach to reforming health care systems; rather, policy makers can use principles of best practice to increase the effectiveness of health care spending and the efficiency of health care systems (OECD, 2010). The innate complexity and substantial diversity across health systems and broader socio-geo-political contexts necessitates more general and sufficiently flexible recommendations, which should be adapted to the particular context.
With the changing dynamics of health systems, from previous models of vertical programming, to more mainstreaming or integration into existing services and horizontal programming, the rehabilitation workforce requires different competencies which enable it to function effectively within current models (Finkenflügel & Rule, 2008). Throughout this review it was identified that there is not a ‘one size fits all’ description of the health workforce for rehabilitation, and that the skills of the rehabilitation worker should be emphasized over the type or description.

Though there are debates in the literature on whether a specific CBR cadre should be developed (Kuipers & Cornielje, 2013; MacLachlan et al., 2011; Mannan et al., 2013), this review has shown that programmes following such a model are effective in implementing rehabilitation services. Alternatively, interventions that relied on an already existing workforce without introducing a new cadre appeared to be as effective in implementing such services. It is cautioned however, that these studies were all generally small in nature. It may be to place rehabilitation responsibilities on the often already overworked current community health workforce, as highlighted in our Delphi study.

The distinction between physical and mental rehabilitation workers is also of some interest. This may become even more relevant in the future with what is predicted to be an increase in community based services for mental health problems. It is important that governments and agencies begin to develop their plan to work and coordinate between both types of workers, so as to reduce implementing parallel services. Though in some contexts it may not be suitable to have rehabilitation worker that provide both mental and physical rehabilitation services, it is important that these cadres are knowledgeable on each other’s activities and collaborate to identify and refer individuals as needed.

As already noted it is not appropriate to specify how the rehabilitation workforce should be geared across all settings. However, some general principles should be considered across different health systems in order to determine the optimal rehabilitation workforce configuration:

1. Community-based initiatives can promote decentralization and cost-effectiveness, and allow services to reach more vulnerable populations. However, motivation and retention need to be carefully addressed in more decentralized systems, as with other community health worker programmes.
2. The workforce providing rehabilitation in communities (whether specific CBR workers or other health workers) need supportive and structured supervision by rehabilitation professionals at the facility level.

3. While the specific rehabilitation skills required may vary, there are certain core standards of a community worker implementing rehabilitation which include aspects such as case management, social protection, monitoring and record keeping, counseling skills and mechanisms for referral.

4. The community must take ownership and leadership of the rehabilitation services and the rehabilitation workforce, but also the health system must define its needs in terms of rehabilitation requirements and workforce needs.

5. All rehabilitation workers in the community should be trained on the CBR Matrix, as well as skills on advocacy and empowerment for persons with disabilities.

6. A tiered/teamwork system of service delivery for rehabilitation should be implemented, with more general skills in the community and mechanisms for referrals to more specialized skills in facilities.

7. Training of community rehabilitation workers should take a rights-based approach and incorporate practical components, and if possible involve persons with disabilities, in the delivery and planning.

5.7. Funding

This study was funded by the World Health Organization under the Guideline Development Group and WHO Disability and Rehabilitation Team, as part of a call for research on WHO Guidelines on health-related rehabilitation.
Annex 1: Initial Search Terms

(workforce OR 'human resource' OR 'health personnel'/mj OR 'health personnel' OR 'health care provider'/mj OR 'health care provider' OR 'healthcare provider'/mj OR 'healthcare provider' OR ('health'/mj OR health AND adj2 AND (allied OR 'aide volunteer' OR 'personnel'/mj OR personnel OR helper))) OR 'health extension worker' OR 'community health worker'/mj OR 'community health worker' OR ('rehabilitation'/mj OR rehabilitation AND adj AND worker, AND facilitator) OR 'health professional'/mj OR 'health professional' OR (therapist AND adj AND (physical OR occupational OR 'speech'/mj OR speech OR respiratory OR recreational OR cognitive OR social)) OR psychiatrist OR psychologist OR counsellor OR 'community disability worker' OR 'community rehabilitation worker' OR provider AND adj AND ('community'/exp OR alternative OR lay OR village OR lady OR peripheral OR 'low level' OR 'mid level' OR 'non professional' OR professional OR 'family'/exp OR allied) OR 'practitioner'/exp AND adj AND ('community'/exp OR alternative OR lay OR village OR lady OR peripheral OR 'low level' OR 'mid level' OR 'non professional' OR professional OR 'family'/exp OR allied) OR 'health worker' OR 'health workers' OR 'health working' AND adj AND (community OR alternative OR lay OR village OR lady OR peripheral OR low AND level OR mid AND level OR tertiary OR mental OR 'non professional' OR professional OR family OR allied, OR volunteer OR aide) OR assistant AND adj AND ('community'/exp OR alternative OR lay OR village OR lady OR peripheral OR 'low level' OR 'mid level' OR 'non professional' OR professional OR 'family'/exp OR allied) OR 'health worker'/exp OR 'health workers' OR 'health working' AND adj AND ('community'/exp OR alternative OR lay OR village OR lady OR peripheral OR low AND level OR mid AND level OR tertiary OR mental OR 'non professional' OR professional OR 'family'/exp OR allied OR 'volunteer'/exp OR aide)) AND ('cbr' OR 'community based rehabilitation'/exp OR 'community rehabilitation' OR ('rehabilitation'/exp AND adj AND (services OR support OR care OR 'therapy'/exp)) OR habilitation OR ('therapy'/exp OR therapies AND adj AND (physical OR occupational OR cognitive OR complementary OR 'speech'/exp OR respiratory OR recreational OR social)) OR 'rehabilitation'/exp OR 'community approaches to handicap in development' OR 'cahd' OR 'community based inclusive development' OR 'ild' OR 'inclusive local development' OR 'participatory community development')
Annex 2: Finalized Search Terms

1. Workforce OR "Human Resource" OR "Health Personnel" OR "Health care provider" OR "healthcare provider" OR ('Health' adj2 (allied OR "aide volunteer" OR personnel OR helper)) OR "Health extension worker" OR “community health worker” OR ('Rehabilitation' adj (worker, facilitator)) OR “Health professional” (‘Therapist’ adj (physical OR occupational OR speech OR respiratory OR recreational OR cognitive OR social)) Or Psychiatrist OR Psychologist OR “community disability worker” OR “community rehabilitation worker” OR ("health worker" OR "health workers" OR "health working") adj (community OR alternative OR lay OR village OR lady OR peripheral OR low level OR mid level OR tertiary OR mental OR "non professional" OR professional OR family OR allied OR volunteer OR aide) OR Cadre adj (alternative OR lay OR village OR lady OR peripheral OR "low level" OR "mid level" OR "non professional" OR family OR aide agent, provider, practitioner, personnel, community, assistant) OR Provider adj (community OR alternative OR lay OR village OR lady OR peripheral OR "low level" OR "mid level" OR "non professional" OR professional OR family OR allied) OR Practitioner adj (community OR alternative OR lay OR village OR lady OR peripheral OR "low level" OR "mid level" OR "non professional" OR professional OR family OR allied) OR Assistant adj (community OR alternative OR lay OR village OR lady OR peripheral OR "low level" OR "mid level" OR "non professional" OR professional OR family OR allied)

2. "CBR" OR "Community based rehabilitation" OR "community rehabilitation" OR (rehabilitation adj (services OR support OR care OR therapy)) OR habilitation OR ((therapy OR therapies) adj (physical OR occupational OR cognitive OR complementary OR speech OR respiratory OR recreational OR social)) OR rehabilitation OR “community approaches to handicap in development” OR “CAHD” OR “community based inclusive development” OR “ILD” OR “inclusive local development” OR “participatory community development”

3. “third world” OR “less resourced” OR “less resource” OR “limited resourced” OR “limited resources” OR “LMIC” OR “LIC” OR “low income country” OR “low income countries” OR “low and middle income country” OR “low and middle income countries” OR Africa OR Caribbean OR “Central America” OR "Latin America" OR “south America” OR Asia OR “Eastern Europe” OR ((developing OR ‘less developed’ OR "least developed" OR ‘under developed’ OR poor) adj (countries or country or nation or nations or region or regions or area or areas))

1 AND 2 AND 3
Annex 3: Data Extraction Table

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CMOCs:

I. Competencies needed:

II. Who should be trained:

III. Strategies to develop and maintain the competencies:

IV. Strategies to increase the supply and improve the distribution of rehabilitation personnel:

V. Minimum requirements (i.e. ratio and competencies) of rehabilitation personnel:

VI. Characteristics which facilitate equitable access to rehabilitation services:

Extras:

Notes:
## Annex 4: Data Synthesis Matrix

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Annex 5: MMAT Quality Appraisal Tool

PART I. MMAT criteria & one-page template (to be included in appraisal forms)

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<th>Types of mixed methods study components or primary studies</th>
<th>Methodological quality criteria (see tutorial for definitions and examples)</th>
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<th>No</th>
<th>Can’t tell</th>
<th>Comments</th>
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| Screening questions (for all types)                      | • Are there clear qualitative and quantitative research questions (or objectives)*, or a clear mixed methods question (or objective)*?  
• Do the collected data allow address the research question (objective)? E.g., consider whether the follow-up period is long enough for the outcome to occur (for longitudinal studies or study components). | Further appraisal may be not feasible or appropriate when the answer is 'No' or 'Cannot tell' to one or both screening questions. |     |    |           |         |
| 1. Qualitative                                         | 1.1. Are the sources of qualitative data (archives, documents, informants, observations) relevant to address the research question (objective)?  
1.2. Is the process for analyzing qualitative data relevant to address the research question (objective)?  
1.3. Is appropriate consideration given to how findings relate to the context, e.g., the setting, in which the data were collected?  
1.4. Is appropriate consideration given to how findings relate to researchers’ influence, e.g., through their interactions with participants? |     |    |    |           |         |
| 2. Quantitative randomized controlled (trials)          | 2.1. Is there a clear description of the randomization (or an appropriate sequence generation)?  
2.2. Is there a clear description of the allocation concealment (or blinding when applicable)?  
2.3. Are there complete outcome data (80% or above)?  
2.4. Is there low withdrawal/drop-out (below 20%)? |     |    |    |           |         |
| 3. Quantitative non-randomized                          | 3.1. Are participants (organizations) recruited in a way that minimizes selection bias?  
3.2. Are measurements appropriate (clear origin, or validity known, or standard instrument; and absence of contamination between groups when appropriate) regarding the exposure/intervention and outcomes?  
3.3. In the groups being compared (exposed vs. non-exposed; with intervention vs. without; cases vs. controls), are the participants comparable, or do researchers take into account (control for) the difference between these groups?  
3.4. Are there complete outcome data (80% or above), and, when applicable, an acceptable response rate (60% or above), or an acceptable follow-up rate for cohort studies (depending on the duration of follow-up)? |     |    |    |           |         |
| 4. Quantitative descriptive                             | 4.1. Is the sampling strategy relevant to address the quantitative research question (quantitative aspect of the mixed methods question)?  
4.2. Is the sample representative of the population under study?  
4.3. Are measurements appropriate (clear origin, or validity known, or standard instrument)?  
4.4. Is there an acceptable response rate (60% or above)? |     |    |    |           |         |
| 5. Mixed methods                                       | 5.1. Is the mixed methods research design relevant to address the qualitative and quantitative research questions (or objectives), or the qualitative and quantitative aspects of the mixed methods question (or objective)?  
5.2. Is the integration of qualitative and quantitative data (or results) relevant to address the research question (objective)?  
5.3. Is appropriate consideration given to the limitations associated with this integration, e.g., the divergence of qualitative and quantitative data (or results) in a triangulation design? |     |    |    |           |         |

*Criteria for the qualitative component (1.1 to 1.4), and appropriate criteria for the quantitative component (2.1 to 2.4, or 3.1 to 3.4, or 4.1 to 4.4), must be also applied.

*These two items are not considered as double-barreled items since in mixed methods research, (1) there may be research questions (quantitative research) or research objectives (qualitative research), and (2) data may be integrated, and/or qualitative findings and quantitative results can be integrated.
### Title: CBR Matrix and Perceived Training Needs of CBR Workers: A Multi-country Study

**Authors:** Deepak, S., Kumar, J., Ortali, F. & Pupulin E.

**Year:** 2011

**Summary:** Community based rehabilitation workers across 13 projects in 7 countries completed survey identifying needs and working status.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Design/Method</th>
<th>Population</th>
<th>Intervention</th>
<th>Workforce Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guyana India, Karnataka India, Jharkhand India, Andhra Pradesh India, Karnataka India, Karnataka Indonesia, South Sulawesi Liberia, Monrovia Gardnersville Mongolia, National Pakistan, Peshawar Somalia, Somaliland, Karnataka India,</td>
<td>Cross-sectional</td>
<td>103 Community-based rehabilitation (CBR) workers with minimum 2 years experience</td>
<td>13 CBR projects across 7 countries, run by both NGOs and Ministry of Health, that all received some form of financial or technical support from Amici di Raoul Follereau (AIFO).</td>
<td>CBR workers</td>
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#### CMOCs

- **Context:** Mostly Indian setting managed by NGOs. CBR workers varied in experience, gender, age, education, and if paid or not. All projects involved had some activities in each of the 5 domains of CBR Matrix – with CBR workers multi-sectorial responsibilities. All workers reported that they worked across eight different groups of people with disabilities. Population split between under and over 30 years old, gender-balanced, high school education mainly; half salaried, half volunteers.

- **Mechanisms:**
  1. CBR workers knowledgeable about CBR Matrix, and how it aids in working with persons with disabilities.
  2. CBR workers understand shortfalls in their training and knowledge and how this impacts on their clients.
  3. CBR workers see their job as one of advocating for their client.
  4. CBR workers advocate and understand the importance of families in CBR work, and how to counsel them, and involve them.
  5. CBR workers recognize empowerment of persons with disabilities as a priority.

- **Outcomes:** Identification of learning needs for CBR workers. CBR Matrix useful framework to understand field-level activities. Indicated both technical and people skills important requirement.

- **CMOCs:**
  1. Disability related technical skills, including programme management, across all five CBR matrix categories. Technical skills may not be specific to disability, since all workers reported that they worked across eight different groups of people with disabilities.
  2. In terms of “global competencies” (i.e., non specific to disability type or circumstances), Advocacy and empowerment highly ranked.
  3. Evidence-based training needs analysis (TNA), in this case mainly in the domains of home-based health care (promoting autonomy), working with young children for education, vocational training skills in livelihood, “how to do advocacy” for social domain, and organization of self-help groups for advocacy.
  4. Empowerment for the CBR workers themselves, in deciding what their training needs may be.
**Title:** Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomized controlled trial  
**Authors:** Rahman, A., Malik, A., Sikander, S., Roberts, C. & Creed, F.  
**Year:** 2008

**Summary:** Lay level cadre in Pakistan using Cognitive Based Therapy during home visits for late pregnancy and 1 year postnatal women

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</thead>
<tbody>
<tr>
<td>Rural Gujar Khan and Kallar Syedan, areas in Rawalpindi, Pakistan</td>
<td>cRCT</td>
<td>903 married women in third trimester aged 16-45 years</td>
<td>&quot;Thinking Healthy Programme&quot; (THP) by LHWs, with 1 session/week in last month of pregnancy, 3 in first month postnatal and 1/month for next 9 months. Compared to enhanced routine care.</td>
<td>Lady Health Workers (LHWs)</td>
</tr>
</tbody>
</table>

**Context**

1. Possible reduction of stigma, since integrated into regular MCH programmes  
2. Integrating families into the programme and having them be active members, as well as having 'homework' for participants. Involving families not only may help mothers but also encourage more involvement in other aspects.  
3. Intervention for women, with only Lady Health Workers, could be more comfortable and more easily for both women and health worker to related and deal with sensitive subjects.  
4. Health worker integration and standardized training, support and country recognition. Likely well known and respected in community. Trusted to deliver such an intervention.  
5. LHWs already trained and working, integrated into Pakistan’s system, so just seen as an additional training or package.  
6. No difference in some child health outcomes, possibility of having LHWs focus be taken away from their usual jobs focusing more on Thinking Healthy Programme  
7. LHWs are strongly invested in the community, as being members of and chosen by, and also having this as their full-time job.  
8. LHWs treated as a professional in this way may be motivating.

**Mechanisms**

Reduced depression at 6 months post partum, sustained at 12 months. No difference in child weight-for-height. "High" acceptability rate if look at percent of mothers analyzed after 6 and 12 months (same in intervention vs. comparison). Reduced diarrhoeal disease. Increase in immunization and use of contraception. Increase in play-related activities. LHWs claimed the job size did not increase as a result of delivering this intervention.

**Outcomes**

1. Having a rehabilitation worker that you can better relate to (in this case women for women) may increase acceptability of intervention.  
2. Family involvement in intervention may increase acceptability of programme and have unintended outcomes.  
3. Utilizing an already trained and practicing workforce and adding an additional component of training may help reduce stigma of care, and also acceptability of intervention due to trust community has in their ability do to their pre-established role.  
4. Rehabilitation workers identified by the community are more acceptable and may have higher ownership and accountability to the community, which can increase retention.  
5. Rehabilitation workers formally integrated and supported by government systems, with prerequisites before being ‘hired’ and structured training/supervision, with financial incentives and having this as full-time job, impacting retention, and professional motivation.  
6. Government support (financially and integration into system) of this as full-time job, impacting retention.  
7. A clear referral systems with connections to more specialized rehabilitation workers.  
8. Strong and ongoing support for the health workers from supervisors, research team supervisors half-days monthly to help with stress management.

**CMOCs**

**Quality:** 3 MMAT cRCT
Title: Sustainability Criteria for CBR Programmes – Two Case Studies of Provincial Programmes in Vietnam
Authors: Mijnarends, DM., Pham, D., Swaans, K., Van Brakel, WH. & Wright EP.
Year: 2011
Summary: Human resource needs and challenges in as identified by stakeholders in two CBR programmes in Vietnam.

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<tbody>
<tr>
<td>Two Vietnamese provinces: Dak Lak and Vung Tau.</td>
<td>Cross-sectional. Questionnaires, interviews and focus groups (Interviews n=17, focus groups n=8, questionnaire n=182)</td>
<td>PWD, families of PWD, and CBR workers, programme managers.</td>
<td>Comprehensive following CBR Matrix CBR Programme (in Dak Lak) and medical CBR programme (in Vung Tau). Projects regulated at four levels: communal; district; provincial; national.</td>
<td>Cadres: CBR workforce including: Ministries, steering committee, CBR staff, nurses, doctors, village health workers, PWD and DPOs. Supervision: Regulated at four levels; communal, district, provincial and national. Stakeholder coordination for management, monitoring of programmes. Steering Committees plan, supervise and coordinate activities.</td>
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<th>Context</th>
<th>Mechanisms</th>
<th>Outcomes</th>
<th>CMOCs</th>
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<tr>
<td>CBR programmes as early as 1987 in Vietnam and integrated in MoH</td>
<td>1. Proposed by stakeholders: - training in managements skills and methodologies - improve manpower by giving incentives/supportive policies - One person (i.e. Secretariat) in charge of CBR - Train programme secretaries at district and community level and CHWs (planning, communication, rehabilitation) 2. Multi-stakeholder coordination (including DPOs, NGOs, and government) may lead to lack of clear job description or roles. 3. High staff turnover possibly due to lack of training and roles/responsibilities. 4. Raising awareness and changing others' attitudes towards the programme; and listening to community. 5. Strong leadership necessary for sustainable DPOs.</td>
<td>High staff turnover, knowledge transfers implications, lack of HR at community levels. Lack of clear job descriptions. Identified stable cadre with frequent training/updating of knowledge Comprehensive programmes identify more training in M&amp;E, economic assistance, training/teaching skills Collaboration with other sectors, especially the community, in planning, implementing and M&amp;E. Questions of sustainability, which is defined as sustainability in human resources, organizational setting, social/political environment, and in self-sustaining financial resources. Labour mobility a continual threat.</td>
<td>1. Skills to self-organize into DPOs, assisted as appropriate by CBR workers. 2. Competencies for sustainability: human resources (stability of a good labour pool), coordination skills, community involvement, and project financing. These are primarily systems-based competencies, as distinct from people-based ones, perhaps. 3. Systems rather than individuals – a stable cadre of CBR workers, with PD systems for continuing development. 4. Everyone in the system needs support and training, e.g., programme secretaries at district and communal level. 5. Appropriate work conditions for the CBR workers, e.g., steady living wages, tenure of employment, possibilities for advancement, and recognition of their intrinsic motivation and worth via non-financial incentives. 6. Improper management of finance for CBR work can negatively impact workers, for example through high turnover rates. 7. Lack of participation in decision-making can lower motivation. 8. Mechanisms for institutional memory/knowledge of CBR programmes required. 9. Focal CBR person and secretariat at specific levels to increase manpower and accountability mechanisms may aid in retention of staff. 10. Frequent and increased training of staff members to increase retention.</td>
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<tr>
<th>CMOCs</th>
<th>Training Supervision Misc.</th>
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<tbody>
<tr>
<td>Quality: 3 MMAT – MM study</td>
<td>Steering Committees. Lack of details on work of CBR workers.</td>
</tr>
</tbody>
</table>
Title: Training CBR Personnel in South Africa to contribute to the Empowerment of Persons with Disabilities
Authors: Rule, S.
Year: 2013
Summary: A critical exploration of the training of mid-level CRF workers in a South African non-governmental organization

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<tbody>
<tr>
<td>KwaZulu Natal, South Africa.</td>
<td>Action research - Three-year period, with one cycle of AR. Including IDI, document analysis, participatory rural appraisal and FGs.</td>
<td>Staff, students and past graduates from NGO that conducts mid-level CBR training. Clients of CBR, including family members of PWD.</td>
<td>CREATE (CBREducation and Training for Empowerment) NGO trains CRFs. Research conducted on staff, current students in 2 year training programme (n=7) and past students. First phase of AR identified needed changes to training, which were then observed for remainder of research.</td>
<td>Mid-level CBR workers: Community rehabilitation facilitators (CRFs)</td>
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<tr>
<th>Cadres</th>
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<th>Supervision</th>
<th>Misc.</th>
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<tr>
<td>CREATE (CBREducation and Training for Empowerment) NGO trains CRFs.</td>
<td>Community rehabilitation facilitators (CRFs)</td>
<td>Two-year course by NGO CREATE with class work covering theory, and practical work in student’s own rural or peri-urban community.</td>
<td>Not reported in detail.</td>
<td>Several CBR workers are PWD</td>
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</table>

Quality: 4 MMAT - qualitative

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<tr>
<th>Study done with CRFs previously trained in old model, which had little emphasis on social model/empowerment training. New model had more teaching on social model, including theoretical perspective, with a changed ethos to include more overt emphasis on empowerment and emancipatory approaches in CBR. Content of (new) training utilized Freire’s concepts of problematization and conscientization, which had course facilitators with disabilities running training workshops.</th>
<th>Context</th>
<th>Mechanisms</th>
<th>Outcomes</th>
<th>CMOCs</th>
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<tbody>
<tr>
<td>1.Usually culturally relevant themes to teach on social inclusion and empowerment, in this case Ubuntu, to better communicate teachings. 2. Theoretical teachings on social model can help CBR workers identify their techniques in empowerment and recognition of oppression. 3. Teaching social model and empowerment in training can help workers better relate to PLWD and work in more collaborative manner. 4. Training on empowerment and social model of CBR as well as health leaves students more articulate and aware of structural barriers PWD face. 5. More rural workers may face difficulties in executing work, especially group gatherings and collective action. 6. CBR workers engaged in social activities may face resistance from current social structures and political forces.</td>
<td>CRF workers identify oppressions persons with disabilities face, however increased awareness and identification of these when trained specifically on discrimination. Training resulted in CFR workers working with, not for, PWD, with potential reference to Ubuntu in this context. More teaching on social model, including theoretical perspective. Collective action and organizing PWD difficult in rural areas. Previously trained CRFs were less able to articulate how to empower than their later-trained counterparts.</td>
<td>1.CBR workers’ competency should include ability to recognize oppression PLWD have, from different levels. 2. Long (2 year) training courses that have components focused on empowerment and oppression, centered on the social model of disability and the CBR Matrix. 3. The cross-sectorial nature of CBR requires multi-skilled personnel and the careful planning of appropriate training. 4. CBR training that has a focus on social justice enable the workforce to recognize discrimination. Empowerment and advocacy skills provide tools for workers to make positive changes in relation to the discrimination. 5. Traditional values or culturally relevant teaching and themes to assist in development of competencies. 6. PWD as trainers for CBR and also CBR workers should be encouraged.</td>
<td>1.CBR workers’ competency should include ability to recognize oppression PLWD have, from different levels. 2. Long (2 year) training courses that have components focused on empowerment and oppression, centered on the social model of disability and the CBR Matrix. 3. The cross-sectorial nature of CBR requires multi-skilled personnel and the careful planning of appropriate training. 4. CBR training that has a focus on social justice enable the workforce to recognize discrimination. Empowerment and advocacy skills provide tools for workers to make positive changes in relation to the discrimination. 5. Traditional values or culturally relevant teaching and themes to assist in development of competencies. 6. PWD as trainers for CBR and also CBR workers should be encouraged.</td>
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</table>
Title: Provision of mental health services in resource-poor settings: a randomized trial comparing counseling with routine medical treatment in North Afghanistan (Mazar-e-Sharif)

Authors: Ayoughi, S., Missmahl, I., Weierstall, R. & Elbert, T.

Year: 2012

Summary: Psychosocial counseling intervention for persons with mental illness delivered by lay health workers trained by local physicians

<table>
<thead>
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<tbody>
<tr>
<td>Mazar-e-Sharif, Balkh province, Afghanistan</td>
<td>Randomised before and after.</td>
<td>66 mental health patients recruited from PHC, referred by independent physicians.</td>
<td>Medication group compared to psychosocial counseling group. Counseling in accordance with treatment guidelines of the manual “Professional Package for Psychosocial Counselors with in the BPHS in Afghanistan”. Five 45-60 minute sessions over 5 weeks, and up to 8 additional if supervisor agreed.</td>
<td>Local physicians, and lay mental health counselors. Local physicians trained as psychosocial counselors in 2-year programme for psychosocial counseling then trained lay mental health counselors (Afghan men and women). Lay mental health counselors took employment at local health centres and counseling centre. 3.5 months of intensive training (n=30) by previously trained local physicians, with examination for quality.</td>
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CMOCs

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<tr>
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<tr>
<td>Testing whether short-term training for medical doctors, to deliver counseling over medical treatment could make a difference to levels of depression and anxiety. Counseling patients were interviewed and counseled by individuals of the same sex. Diagnostic interviews were conducted by two experienced local counselors (1 male 1 female) and two international experts (both female).</td>
<td>1. Lay counselors from the community with specific training can be effective in delivering psychosocial interventions for individuals with depression, anxiety, and psychosocial issues. 2. Lay counselors that have a strong support and supervision mechanism, clear areas for referral and follow-up may be capable of providing psychosocial support. 3. Counselors of the same gender of their patients may assist in patients being more comfortable and acceptable of an intervention (for mental health interventions), especially in certain contexts. 4. Patients requiring frequent visits to a health centre may have a higher drop out rate due to time and expenses associated with travel depending on the distance.</td>
<td>In counseling, 8.8% dropped out compared to 6.3% in control (routine medical) group – with reasoning being not being able to afford the time to continuously visit the distantly located health centre. Counseling group showed significantly lower HSCL depression scores and anxiety compared to control group. Reduction in psychosocial stressors and an enhancement of coping strategies improved in counseling group but no improvements reported in control. The improvement was on both DVs, and there was even a mediation test, which indicated that the treatment may have worked in part (they were partial mediations between treatment and both DVs) because it alleviated psychosocial stressors like honour and shame issues.</td>
<td>1. Lay counselors from the community with specific training can be effective in delivering psychosocial interventions for individuals with depression, anxiety, and psychosocial issues. 2. Services should be brought as close to individuals as possible as location of treatment may influence uptake of services. 3. Psychosocial support competencies are implicated in an effective intervention for clients, which, involves building capacity and competency in a specially trained cadre or group. 4. The cultural context of rehabilitation work must be considered when preparing for the workforce, or assigning individual staff to a particular person.</td>
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The development of a lay health worker delivered collaborative community based intervention for schizophrenia is discussed with evidence for programme adjustment.

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<tr>
<td>Goa, India; Satara in western Maharashtr a, India; Kanchipuram in northeastern Tamil Nadu, India.</td>
<td>Formative case evaluation. IDIs with 32 people with schizophrenia and 38 primary caregivers.</td>
<td>People with schizophrenia and their caregivers. 30 individual received intervention.</td>
<td>Cadres Recruited locally, having minimum 10 years of schooling, with no prior training in mental health, commitment to helping people with mental illness. Working with 15-25 people with schizophrenia and their families.</td>
<td>Training 40-50 days of training with a team health specialists, with a variety of methods including: films, documentaries, quizzes, dramas, debates and games. Assessments were done at the end of each training module. Training varied from sites depending on the needs assessment from local area. Supervision protocols were developed which included on-site supervision; quarterly reviews; fortnightly review with the intervention team; monthly group meetings with CLHWs and the intervention coordinator.</td>
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<td>Four phases: identifying gaps; identifying intervention components; evaluating acceptability; piloting delivery of intervention. Intervention – (0-3mths engagement) weekly home sessions, (4-7mths stabilization) visits every 2-4 weeks; (8-12mths maintenance phase)</td>
<td>Comm unity level health worker s (CLHW s)</td>
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<td>CLHW expected to conduct an average of 22 home based sessions over 12 months.</td>
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**CMOCs**

- **Context**
  - Pre-intervention in all sites, treatment provided in health care facilities by mainly and exclusively psychiatrists – with primary focus being in symptom reduction through medication.
  - Intervention: 3-tiered teams (of CLHW, working with 15-25 people with schizophrenia and their caregivers); intervention coordinators (e.g., social workers); and leadership (by treating psychiatrists).
  - Evidence-based, improving awareness, promoting social inclusion and vocational rehabilitation, in collaboration with families, communities and psychiatrists.
  - Treating psychiatrist to provide necessary pharmacological treatment, development of intervention, clinical leadership and supervision.
  - Assist people with schizophrenia and their caregivers to acquire skills to plan for recovery. Delivery and selection of specific components of intervention guided by the unique needs of each individual and their families through needs assessment and flexible to change over time.

- **Mechanisms**
  - Initial needs assessment of potential user stakeholders to identify their requirements of a health worker.
  - Users may prioritize different aspects of health services (hence the need for a needs assessment) such as a worker of the same sex, or a worker with previous experience, whether work or personal.
  - Social skills training, referral training and using the CBR Matrix (specifically health and livelihoods) may influence individuals to recognize the importance of the work and intervention, as well as the acceptability of the CLHWs.
  - Fear of disclosure may inhibit the success of CBIs, especially for sensitive rehabilitation issues, and should be considered when designing an intervention and as a central component to training lay workers.

- **Outcomes**
  - Acceptability of the CBI, though patients also recognised medicines and essential. Patients had concern over the stigma that a CBI intervention could produce.
  - Characteristics of CLHWs were identified including: understanding; calm; friendly; polite; patient. CLHW’s education was seen as important, but more pressing was their knowledge and previous experience with the subject. Some patients identified the need of having a same sex counselor, which was context specific.
  - Concerns around religion, and previous experience with the subject. But more pressing was their knowledge and previous experience with the subject.
  - CLHW had difficulty with developing treatment plans, social skills training and addressing stigma experiences reported by participants.

- **CMOCs**
  - Supervision of CLHWs by intervention coordinators, who are mental health specialists, to support, train and monitor quality.
  - Treating psychiatrist to provide necessary pharmacological treatment, development of intervention, clinical leadership and supervision.
  - Initial needs assessment of potential user stakeholders to identify their requirements of a health worker.
  - An initial needs assessment, both of the context and the individual, can lead to produce recommendations for counseling that can enhance the intervention and make it more acceptable to the patients.
  - Local recruitment of community-based health workers may influence acceptability, and increase rapport with clients.
  - Supervision of community-based health workers should be done in a collaborative manner with specialists in the area as well as managers and peers.
Role of CHWs as CBR workers, including description of duties and challenges faced when implementing CBR.

**Setting:** Hentii, Dornod, Suhbataar in rural Eastern Mongolia.

**Design/Methods:** Qualitative and descriptive field study. Semi-structured interviews.

**Population:** 16 Feldshers (CHWs), Previously working CHWs (feldshers) were trained as CBR workers when programme initiated. Feldsher responsible for all PHC at community levels.

**Intervention:** Feldshers responsible for all PHC in community. They act as the connection between the community and local Governors and assist in connections and support of activities.

**Workforce Characteristics:**

<table>
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<tbody>
<tr>
<td>Feldshers</td>
<td>Responsible for all PHC in community. They act as the connection between the community and local Governors and assist in connections and support of activities.</td>
<td>10 day training, none of the feldshers had experience in supporting persons with disabilities beyond standard PHC.</td>
<td>Not discussed</td>
<td>Quality: 2.5 MMAT – Qualitative Data analysis information lacking</td>
</tr>
</tbody>
</table>

**Context:** Mongolia has had CBR programmes since the 1990s, supported by WHO and NGO AIFO. CBR introduced to the Eastern part of Mongolia in 2007 however. Feldsher responsible for all PHC at community levels; sometimes used for data collection; sometimes as a replacement for health staff at health facility or filing other feldshers vacancies. They act as the connection between the community and local Governors and assist in connections and support of activities; playing an important social role in communities. 15/16 feldshers were female; 15 had graduated from nursing school at least 10 years prior; 15 had at least 10 years experience as a feldshers.

**Mechanisms:**

1. Strong history of CBR and examples to following for the development of programme; support from the MoH for CBR.
2. CHWs that are integrated into health systems and are (highly) training and re acceptable to learning CBR work.
3. When tasking shifting CBR, without specific training on sensitivity/social aspects of disability including advocacy and disability prevention, workers may not be strong in these areas.
4. Task shifting of currently working health workers to provide disability rehabilitation is highly acceptable, however specific training on recognition, testing and rehabilitation must be incorporated.

**Outcomes:** Feldshers face problems of transportation, lack of equipment/materials/uniforms. They are required to make routine house visits ideally every 1-2 months; however due to transport, terrain and geographic constraints, these visits are usually short and occur only 2-3 times per year.

Feldshers rarely discussed their role as advocates for persons with disabilities and CBR, or the role of the community involvement and development in relation to CBR.

**CMOCs:**

1. Knowledge and skills in health, education, livelihood, social and empowerment. The later ones of these showed the most need to be trained.
2. Introducing CBR skills and CBR Matrix components into health workers training can impact positively on their views towards persons with disabilities.
3. Transportation for health workers, especially in rural areas, can be a factor that hinders access to workers and implementation of rehabilitation programmes.
4. Health workers can acquire relatively solid knowledge on physical disabilities and work with patients comfortably; however, they may be less comfortable with sensory and mental disabilities and not as confident with their rehabilitation knowledge.
### Title: The impact of community based rehabilitation as implemented by community rehabilitation facilitators on people with disabilities, their families and communities within South Africa

### Authors: Chappell, P. & Johannsmeier, C.

### Year: 2009

### Summary: Impact of rehabilitation by mid-level cadre of rehabilitation workers on persons with disabilities and their families

<table>
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<tbody>
<tr>
<td>6 provinces in urban and rural South Africa</td>
<td>Qualitative. Participatory including focus groups (n=9), individual interviews (n=18) and transects walks (n=7)</td>
<td>7-8 PWD or families of PWD in each province</td>
<td>Physical and social rehabilitation by CRFs in disadvantaged communities in South Africa. Approximately 200 CRFs working in 100 disadvantaged communities.</td>
<td>Cadres</td>
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<td>Community rehabilitation facilitators (CRFs).</td>
<td>Mid-level rehabilitation worker, working in communities to provide rehabilitation. Involved in physical and social rehabilitation, as well as advocacy, raising awareness of disability and lobbying for rights.</td>
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</tbody>
</table>

### Context

- National Disability Strategy
- White paper, forming the basis of the national rehabilitation strategy.
- CRF programme in South Africa is well established programme with mid-level CBR workers known as CRFs which function to directly provide rehabilitation to person and family and refer. Individual level, in the main, via home visits, exercises and assistive devices. }

### Mechanisms

- 1. A lack of clear job descriptions, and chain of service deliveries to PWD and their families may impact families’ opinion of their rehabilitation provider.
- 2. CRFs may address gaps in psychosocial support and counseling needs of PWDs – even when not within their mandate.
- 3. Interpersonal relationships and support by workers was highly valued with clients and this role can turn into providing additional support beyond the scope of physical rehabilitation.
- 4. Poor/ineffective supervision may result in lack of clear job description and professional mandate.
- 5. CRFs are seen as coming from the health facility and may be viewed as ‘health professionals’ according to PWD and not community issues.
- 6. If CBR workers are too distant from the community itself, i.e., not from inside it, they may have a more difficult job with connecting at the local level.

### Outcomes

- Participants identified most significant impact at the individual level, including; practical intervention like home visits, exercises and training on activities of daily living.
- Advise and counseling by CRF and their approach to working with PWD was seen as significant and positive.
- Counselling had impact on PWD self-awareness and assisted in building relationships between CRF and PWD.
- Strong relationships provided motivation and encouragement.
- Families identified that programme had gaps in service delivery – mostly identification of needs of PWD, social circumstances including community interventions. Though families were unsure if this work fell within the CRF remit of their work.
- Identified issues with CRFs being distant from the community.
- Gaps in service delivery were influenced by different factors in different provinces (for example, lack of transportation or poor supervision).

### CMOCs

<table>
<thead>
<tr>
<th>Context</th>
<th>Mechanisms</th>
<th>Outcomes</th>
<th>CMOCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Disability Strategy</td>
<td>1. A lack of clear job descriptions, and chain of service deliveries to PWD and their families may impact families’ opinion of their rehabilitation provider.</td>
<td>Participants identified most significant impact at the individual level, including; practical intervention like home visits, exercises and training on activities of daily living.</td>
<td>1. Family members of persons with disabilities need to be involved in the process of CBR.</td>
</tr>
<tr>
<td>White paper, forming the basis of the national rehabilitation strategy.</td>
<td>2. CRFs may address gaps in psychosocial support and counseling needs of PWDs – even when not within their mandate.</td>
<td>Advise and counseling by CRF and their approach to working with PWD was seen as significant and positive.</td>
<td>2. University training, by inculcating a culture of ‘professional,’ may actually put distance between CBR and communities, and to some extent thereby become counterproductive.</td>
</tr>
<tr>
<td>CRF programme in South Africa is well established programme with mid-level CBR workers known as CRFs which function to directly provide rehabilitation to person and family and refer. Individual level, in the main, via home visits, exercises and assistive devices.</td>
<td>3. Interpersonal relationships and support by workers was highly valued with clients and this role can turn into providing additional support beyond the scope of physical rehabilitation.</td>
<td>Counselling had impact on PWD self-awareness and assisted in building relationships between CRF and PWD.</td>
<td>3. Being a “known member of their communities” for enabling maximal performance in the role.</td>
</tr>
<tr>
<td>Individual level, in the main, via home visits, exercises and assistive devices.</td>
<td>4. Poor/ineffective supervision may result in lack of clear job description and professional mandate.</td>
<td>Strong relationships provided motivation and encouragement.</td>
<td>4. Being perceived as both “available” and “approachable” and able to visit the PWD at home, seem crucial.</td>
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<td></td>
<td>5. CRFs are seen as coming from the health facility and may be viewed as ‘health professionals’ according to PWD and not community issues.</td>
<td>Families identified that programme had gaps in service delivery – mostly identification of needs of PWD, social circumstances including community interventions. Though families were unsure if this work fell within the CRF remit of their work.</td>
<td>5. CBR workers need skills in social influence/advocacy to raise awareness and change negative attitudes towards PWD.</td>
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<td></td>
<td>6. If CBR workers are too distant from the community itself, i.e., not from inside it, they may have a more difficult job with connecting at the local level.</td>
<td>Identified issues with CRFs being distant from the community.</td>
<td>6. CBR workers should be multi-skilled in that they have training on helping with assistive devices, physical rehabilitation and exercises, counseling skills and stress reduction for PWD and their families.</td>
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<td></td>
<td>Gaps in service delivery were influenced by different factors in different provinces (for example, lack of transportation or poor supervision).</td>
<td>7. CBR workers should have skills in working with groups, for example leading group therapy.</td>
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<td>8. Clear job descriptions and ensuring rehabilitation workers and community members are knowledgeable of rehabilitation workers’ roles with appropriate expectations.</td>
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<td>9. Lack of understanding of roles of rehabilitation worker may negatively influence supervision.</td>
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<td>10. Needs assessment needs to be conducted at local levels to identify potential gaps that can influence service delivery or rehabilitation workers’ ability to preform.</td>
</tr>
</tbody>
</table>
### Title:
Community-based rehabilitation programme as a model for task-shifting

### Authors:
Dawad, S. & Jobson, G.

### Year:
2011

### Summary:
Describes mid-level cadre (CRF) and rehabilitation team providing community rehabilitation for persons living with HIV and their families

<table>
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<tr>
<th>Setting</th>
<th>Design/Methods</th>
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<th>Intervention</th>
<th>Workforce Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Kwa-Zulu Natal, Eastern South Africa</td>
<td>Qualitative, semi-structured interviews, focus group.</td>
<td>Beneficiaries of CBR programme, home and community-based carers (HCBCs), NGO managers and CRFs.</td>
<td>Community-based rehabilitation provided by CRF workers, thorough an established NGO (HEARD). CRFs primary rehabilitation providers, working with HCBCs at the community level. CRFs work in team of rehabilitation workers including: speech therapist, occupational therapist, physiotherapists and psychologist. Community health workers and HCBCs refer PWD to CRFs.</td>
<td>Community rehabilitatio facilitators (CRFs)</td>
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<td>2 year training course provided by NGO with strong practical component. (class of 13 would work with 300 PWD over training). Course focused on rehabilitation and community development with broad range.</td>
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</table>

### Context

NGO implementing CBR programme has worked in area implementing various projects including health and infrastructure, with the first rehabilitation service (a support group) being offered in the early 1990s.

CBR programme established in 2000, with training young people as CRFs by a training organisation. Rehabilitation centre established, employing: rehabilitation coordinator, occupational therapist, speech and language therapist, assistant and eleven CRFs.

Teams conduct in-depth assessment and design programmes for CRFs to implement. Household level service implemented by CRFs with more specialized service at NGO clinic.

### Mechanisms

1. Capacity of highly trained health workers to transfer skills to minimally trained primary health care workers.
2. Working in partnership with other lay health workers, but with clear roles - i.e. CRFs do rehabilitation.
3. NGOs strong track record and experience can lead community rehabilitation interventions operating in a tiered delivery model, from more general skills to more specialized in facilities.
4. Relationship and partnership between different health sector providers (HCBCs and CRFs, CRFs and NGO etc.), effective in providing rehabilitation service.
5. Referral system from primary health care community workers (CHWs and HCBCs) to rehabilitation team to identify PWD.
6. Assessment and specific rehabilitation programmes designed by more specialized services to be implemented by CRFs in community.

### Outcomes

1. Rehabilitation workers, especially those working in communities, require skill in basic counseling as they often provide emotional support to PWD and their families.
2. Training requires strong practical component, possibility with training-in-community, to best equip rehabilitation workers
3. Partnerships between one organization and another, e.g., NGO and government, can prevent PWD from being denied access
4. Rehabilitation workers should be knowledgeable and available to help PWD to access appropriate services including disability grants, medication and assistive devices.
5. Services offered in a team of rehabilitation workers, with general skills offered in the community and appropriate referral pathways for more specialized skills.
6. Rehabilitation services should be offered as a team approach
7. Rehabilitation in community can reduce stigma and negative attitudes towards PWD

### Qualitative:

66 MMAT: Qualitative
**Title**: "More of the same and try something new" Evaluation of the Community Based Rehabilitation Programme in Eritrea  
**Authors**: Grut, L., Hjort, P. & Eide, AH.  
**Year**: 2004

**Summary**: Evaluation of decentralized CBR programme in Eritrea organized by Ministry of Labour and Human Welfare using lay-health workers for implementation

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<tr>
<td>16 villages in 4 sub-regions of Eritrea.</td>
<td>Qualitative. Observations, interviews and focus groups. 77 interviews in total.</td>
<td>PWD (n=28), local supervisors (n=30), village administration (n=9) MLHW sub-regional heads (n=3), MLHW regional leaders/directors, (n=4), hospital staff (n=2), orthopaedic workshop (n=1)</td>
<td>Decentralized programme run by Ministry of Labour and Human Welfare (MLHW). MoH provide hospital services with MLHW providing (2) orthopaedic clinics. Implementation of CBR at regional level, with LS living in village and responsible for daily follow-up of PWD. Village rehabilitation committees established.</td>
<td>Local supervisors (LS) Village rehabilitation committees, local supervisors from the community. LS provide training, assistance and referrals for PWD in their communities. Voluntary and non-paid. Committees central to raising awareness and supporting LS. Communities suggest LS, and then community elects LS. Work according to CBR manual, make referrals, and focus on self-care, daily-living activities, and mobility. Work with physical and mental disabilities.</td>
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</table>

**Workforce Characteristics**  
6-week training course for local supervisors, with yearly refresher courses. Including knowledge on community mobilization and knowledge on different kinds of disability.  
Regular (every 2 months) sub-regional meeting with LS and staff from MLHW.  
Elder people and/or PWD encouraged to become LS.  
**Quality**: 3 MMAT - Qualitative

**CMOCs**

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| CBR programme began as pilot in 1995, by 2004 covered 40% of the country with Ministry of Labour and Human Welfare as implementing agent and NAD (Norwegian Association of Disabled) as external contributor. Approximately 25% of LS are female. MLHW work in conjunction with other Ministries, including Ministry of Health and Ministry of Education. Programme has LS survey all households in their village to identify PWD. LS provide support for mental, physical and communication disabilities. Village committee meetings held 2-3 times/year and important gatherings for LS to advocate for PWD. Local Supervisors visit PWDs and families, assess and register problems and needs, working from a field manual. Make referrals to hospitals and/or orthopaedic workshops. Writing letters of support for referrals. Identifying income-generating opportunities. Primary focus on the individual and his or her family at home in the household. LS mostly around identification, assessment, referral, social support and advocacy | 1. "Inactive rehabilitation" (advocacy, referral etc.) regarded as highly important for rehabilitation programmes, however the “active rehabilitation skills” cannot be neglected.  
2. Community identification and selection of rehabilitation workers may increase their acceptability, which can influence reception of messages especially around stigma and awareness raising.  
3. Expectations of CBR workers and programmes should be made clear to community, and equally important is the ability for the managing department to adhere to their commitments as to not negatively reflect on the programme and the workers themselves.  
4. The establishment of rehabilitation committees to help support LS and the programme implementation, as well as the social aspects of rehabilitation, important for community-based programmes.  
5. Minimally trained lay health workers’ skills/competencies may have variation resulting in inconsistent services. | Potential issues of identifying all PWD in village.  
Lack of resources, especially for LS, including transport allowance.  
Lack of competence in rehabilitation skills hindrance for more effective services.  
Strong advocacy for rights of PWD through all levels of rehabilitation.  
Increased access and opportunities for PWD including school.  
Decreased stigma towards PWD and increased mobilization.  
Increased expectations of CBR and CBR worker in community – problems with resources and also skill set of worker  
Challenge of meeting commitment to LS, like small budget for transport  
Lack of training on and active efforts to improve functional ability.  
Variation in personal /individual competencies among the LS. | 1. Integration of CBR into MLHW can assist in stability, equality and sustainability of programmes; however, lack of resources at this level may influence success.  
2.In contexts with very limited more specialized cadres of rehabilitation workers, CBR workers need to have strong skills in physical rehabilitation to improve functional ability – not enough to just assess, refer and provide "inactive rehabilitation"  
3. A lack of specialized services to refer to can impact on the perceptions of CBR by villagers and PWD  
4. The Local Supervisors themselves reported that their most important task, and thereby competency, was advocacy, especially during community gatherings.  
5. Short training of lay workers may not be sufficient to provide appropriate rehabilitation interventions in the community |
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<tr>
<td>Rural, municipali y of Rodriguez, Rizal</td>
<td>Mixed methods. Questionnaires, interviews, focus groups and review of secondary data.</td>
<td>Students and alumni of training programme, PWD, CBR workers, local leaders and stakeholders from agencies involved with training programme.</td>
<td>CBR trans-disciplinary training programme run by College of Allied Medical Professions of the University of the Philippines Manila (UMP-CAMP) as part of UP-Comprehensive Community Health Programme (UP-CCHP), with then implementation of CBR programme.</td>
<td>Community based rehabilitation workers and interns. Interns trained CBR workers, who work in a team approach. Training designed and lead by academic institution, (UMP-CAMP) and involved multiple cadres of rehabilitation professionals. Undergraduate students as part of allied health professional group. Trans-disciplinary approach, practical skills in the community. Once per week supervision by clinical supervisors. Supervision in multiple forms – from clinical, community, CBR workers and officials.</td>
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**Summary:** Impact of community based rehabilitation trans-disciplinary training programme and service delivery.

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<td>Training programme run in 1989 by UP CAMP with CBR programme running. UP CAMP has been working in CBR since 1974. Training of UPM-CAMP students in CBR using a Trans-disciplinary Approach, including the design, development and running of the programme. Training had the 'interns' living and working in the community for two months. Once per week supervision by clinical supervisors for training. Supervision in multiple forms – from clinical, community, CBR workers and officials.</td>
<td>1. Working as a team to train, supervise and implement CBR from various levels, including academic. 2. Lack of time CBR workers have for their own families or other commitment is a demotivating factor. 3. Training with a strong practical component (fieldwork) highly accepted and also may contribute to more positive attitudes and perceptions of workers to PWD. 4. Supervision from all levels (community, institution, health facility) – with 1/week with clinical supervisors. 5. Integrating CBR learning into an academic institution while providing opportunities for practical learning. 6. Better understanding and able to related by having either living with community</td>
<td>Perspectives and attitudes of PTs, OTs and SPs towards CBR improved significantly, especially on community involvement. “Interns” expressed need for more fieldwork as opposed to theory for training. Some being trained were satisfied with level of supervision, though some requested more frequent. CBR workers valued leaders who: knowledgeable, good interpersonal relationship, allows for participation, transparent, accountable, sharing and good listener. Demotivating factors: Some CBR workers expressed not having time for family or other activities/jobs. Demotivating factors: When officials failed to attend required clinics, or to meet their financial obligations. Identified leadership traits: supportive; proper training sessions; sincerity; coordination; relationships. Majority of CBR workers confident in their skills. CBR workers wanted more publicity of their work to that the community is aware of their skills.</td>
<td>1.Integrating CBR learning into an academic institution while providing opportunities for practical learning. 2. Undergraduate students studying community health programmes as part of allied health professional study programme. 3.Trans-disciplinary training to provide comprehensive understanding and support, while increasing positive attitudes towards PWD. 4. Extended field placements during training may increase positive attitudes towards and understanding of PWD. 5. Team approach to training, supervision and rehabilitation with clear links to specialized clinical skills. 6. Specialized processional as supervisors and frequent supervision. 7. Academic bodies can have key role in designing and running training programmes for rehabilitation if they are able to use their allied health networks. 8. Rehabilitation workers able to recommend skills they require from a training programme and supervisor, which can make services more acceptable if followed.</td>
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</table>
### Setting

- **Sri Lanka, Burundi, Indonesia, Sudan, Cambodia, Uganda, Zambia, Tanzania, Pakistan, Iraq, Nepal and Thailand.**

### Design/Methods

- **Case Study across 12 countries.**

### Population

- **Lay health workers trained for persons with mental disabilities.**

### Intervention

- **Lay health worker counseling interventions and their training and supervision models.**

### Workforce Characteristics

#### Cadres

- **Lay health workers (LHW):** Requirement and skills vary between countries, but majority are: minimum high school education, strong interpersonal skills, desire to assist persons with disabilities and selected by communities in which they work. Majority (but not all) are voluntary, and partners dependent on context.

#### Training

- Interactive and practical, with approximately 1:2 time spend on lecture style vs. practical learning or skill practice.

#### Supervision

- Supervisors also in referral chain and function as a tier system between LHW and more specialized services. Supervision used as form of post-training, with it being ongoing and supportive. Practice groups developed.

### Context

1. Strong supportive supervision, with decision-making interaction between counselors and supervisors, to provide context appropriate services.
2. Three-tier human resource model for community rehabilitation increases the amount of health staff available in contexts with little specialized capacity: counselor (community trained provider of intervention), supervisor (more experience than counselor with extra supervision training but also trained on intervention), and trainer (experts in the field who train supervisors/counselors).
3. Continual training and support mechanisms for both counselors and supervisors, including group sessions, case overview and practical supervision/training.
4. Learning ‘how’ to supervise is seen as key for sustainability of service and autonomous workforce development and capacity building.
5. Use of experiential and practical training methods and learning strategies.

### Mechanisms

- Cross-cultural nature of intervention and human resources should be considered throughout all steps.
- Supervisors monitor counselors’ fidelity by self-report and observation of sessions. Encouraging counselors to ‘objective’ report on counseling. If no supervisors with teaching experience available, often counselors that are excelling in training will be chosen.
- Supervisors continue to have training and support mechanisms including supervisor groups, close supervision of limited cases by local supervisor and trainer consultation. Supervisors and counselors work together on decisions of ‘flexibility and fidelity’ for the delivery of the intervention – balancing the core components of the intervention with the flexibility and the adaptation fit to the population.
- Challenges: Issues of supervisor and counselor attrition, limited ‘experienced’ capacity for handling clinical emergencies, time required, need for supervisors and trainers to speak same language.

### Outcomes

1. Supervision is key to the success of lay health worker programmes, and needs to be given of attention and resources.
2. Traditional supervision structures need to be enhanced, and include more group discussion and support, field-based, and experimental methods that fix within the local context.
3. Protect against subsequent attrition by creating support, monetary compensation where needed, adequate time allowances, and opportunities for career advancement, be prepared for counselors to move up to supervisors at all stages.
4. Supervision capacity is key to supply and distribution, via maintenance and support (versus loss and turnover), explicitly mentioned local supervisors rather than reliance on locally-based expatriates.
5. Lay health worker programmes delivered in a tier system from counselor, supervisor to more specialized service can provide rehabilitation to more vulnerable populations or be effective when human resources are limited.
Title: An Inter-country Study of Expectations Roles, Attitudes and Behaviours of Community-based Rehabilitation Volunteers

Authors: Sharma, M. & Deepak, S.

Year: 2003

Summary: Survey of lay community rehabilitation workers across 7 countries to investigate job satisfaction

Setting | Design/Methods | Population | Intervention | Workforce Characteristics
---|---|---|---|---
Eritrea, Egypt, India, Mongolia, Papua New Guinea, Pakistan, Vietnam. | Quantitative, cross-sectional design, correlational only. 60 item questionnaire | 176 Community based rehabilitation workers | Providing community based services with connection to NGO Associazione Italian Amici di Raoul Follereau (AIFO) | Volunteers defined as: local residents; involved in some CBR work; not employed regularly by organisation; payment either as token or not as regular duty. Demographics: - 74% education less than highschool - 25.7% former CBR workers - 83.7% non-disabled - 57% no family member living with disability - 56% no monetary compensation; 25.9% stipend; 18.5% other - reimbursement: none 18.5%; travel and/or meals 63.0%

Setting/Design/Methods | Population | Intervention | Cadres | Description | Training | Supervision | Misc.
---|---|---|---|---|---|---|---
Quantitative, cross-sectional design, correlational only. 60 item questionnaire | 176 Community based rehabilitation workers | Providing community based services with connection to NGO Associazione Italian Amici di Raoul Follereau (AIFO) | Volunteers defined as: local residents; involved in some CBR work; not employed regularly by organisation; payment either as token or not as regular duty. Demographics: - 74% education less than highschool - 25.7% former CBR workers - 83.7% non-disabled - 57% no family member living with disability - 56% no monetary compensation; 25.9% stipend; 18.5% other - reimbursement: none 18.5%; travel and/or meals 63.0% | Varying depending on context. | Not reported. | Qual: 3 MMAT: Quant4

CMOCs

Context | Mechanisms | Outcomes | CMOCs
---|---|---|---
Seven countries, differing contexts, though all supported by same INGO (AIFO) and had been running for minimum 5 years. 3 projects covered large areas and managed by government; 4 more restricted coverage and managed by NGOs. - incentives: community recognition 22.7%; awards 9.1%; multiple 68.2%. Experiences - 65.3% personal decision to become CBR; 30.6% community - 94.7% preform multiple CBR activities - only 28.2% perform no other non-CBR related activities. Former volunteers - 25.6% identified no time as reason for leaving work - 14.0% received permanent job - 18.6% identified multiple reasons | 1. CBR volunteers have varying demographic profiles, with the majority being involved in multiple CBR activities (multi-skilled workers) 2. Recognition of barriers CBR workers face in specific contexts (eg. Time, resource, knowledge) important to increase satisfaction and subsequently retention/motivation of health workers. 3. Personal decision/self efficacy big driver for individuals working in CBR, therefore strategies that aim to increase this are important to maintain workforce – ‘self-efficacy can be modified educationally by having credible role models, having observational and participatory learning activities, breaking down tasks into smaller steps and practicing these’. 4. Lack of time that CBR volunteers have work is factor. | Self-efficacy or behaviour specific confidence in one’s ability to perform CBR-related tasks found to be significant with satisfaction. Barriers had an inverse relationship with satisfaction. Barriers included time and resources and also knowledge and skills of CBR worker. Outcome expectations also had an inverse relationship with satisfaction. Some form of compensation, e.g. in the form of travel and meals, was a factor in staff retention and motivation. | 1. Decreasing barriers to CBR work can increase satisfaction of CBR workers 2. CBR workers who have more ambition, may become less satisfied if outcome expectations are not met. 3. Financial incentives, including regular salaries, for CBR workers may help to increase retention of workers and thus sustainability of programmes. 4. Self-efficacy may be pivotal for staff retention and performance, via other attitudinal variables like job satisfaction. 5. CBR volunteers should be both chosen by their communities and also choose to be involved in such work. 6. Incentives for volunteer work will vary between individuals and context; however, it is important to recognize the non-financial incentives, such as community recognition and certificates/awards, as extrinsic motivational factors. 7. CBR volunteers usually perform multiple CBR activities, which in each new rehabilitation context/programme should be investigated to see how such work impacts, either positively or negatively, on self-efficacy or barriers to performing job tasks.
Setting: Multifaceted CBR programme in Uganda work surgical care, medical rehabilitation and community rehabilitation with lay health workers.

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<tr>
<td>Multiple districts, Uganda</td>
<td>Quantitative. Survey, records of programme enrollment over a 6 year project.</td>
<td>Children with treatable chronic motor impairment</td>
<td>Uganda Children’s Orthopaedic Rehabilitation Project, established by CBM, began in 1996 after recognizing the high levels children with of physical disabilities To raise awareness in communities on the causes and potential treatments of disability. Programme offered reconstructive orthopaedic surgery and physical rehabilitation services as part of CBR project.</td>
<td>Community based rehabilitation (CBR) workers, physiotherapists, and orthopaedic surgeons.</td>
<td>CBR Workers from local community identified children with disabilities and provided home care after seen by professional. Physiotherapists gave secondary assessment and provided advice to the CBR workers on appropriate rehabilitation in the community, as well as follow-up work in the communities. Orthopaedic surgeons provided surgical services with more specialized (often expatriate) surgeons teaching national surgeons.</td>
<td>Not discussed for CBR workers. Training of surgeons. Programme helped train national orthopaedic staff including surgeons. Capacity building at all levels of project, including the formation of training centres. Collaborations with Ugandan healthcare training schools.</td>
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<td>Rehabilitation Project, established by international NGO, to treat children with disabilities, many of which were influenced by the countries political instability and resulting in vaccination campaigns. Programme was integrated and comprehensive. Project was a network of 12 CBR projects, with several NGOs, government agencies, service providers and community groups involved. The orthopaedic surgery component acted as the linking factor between all projects, and assisted with coordination of projects.CBR workers all from local communities and speak the local language.Referal assessment of motor impairments provided by national physiotherapist, who provided a specific diagnosis and provided a treatment course (for CBR to undertake within villages) and referral. Provided caregiver education, and follow-up after children returned from rehabilitation centres.If referred by physiotherapist, children requiring surgery were transported to appropriate hospital.As soon as possible post surgery, children were transferred to rehabilitation centres which full-time professional local staff with physiotherapy supervision ran.</td>
<td>1.Collaboration of organizations and different departments, e.g. Government, NGOs, community, teaching institutions. 2.Multi-tiered system with resources and plans at all levels. CBR workers from local community to identify and refer individuals to more specialized services while doing community awareness; Oversaw and training by consultants (expatriate). 3. Necessary systems pre-existing in place for type of work – transport, post surgical care, organisations and some health workforce capacity at more specialized level. 4. Capacity building of national staff throughout all levels of project. Orthopaedic clinical officers – a cadre of health worker in Uganda specialized in primary orthopaedic care and assigned to health centres. Central orthopaedic surgical unit and rehab center became the focal point around which coordination could be organized. 5. Continuum of care from village identification mobilization , treatment rehabilitation, appliance fitting, follow-up in the village.</td>
<td>By 2001, 5004 children were evaluated by participating CBR programme with 874 receiving surgery. Surgical care provided as close to possible to local community, with 7 district hospitals on rotation. Throughout process however, this was consolidated to 3 sites, with one specialized surgical centre being established in the major city, linking with the University and providing training of national surgeons.Capacity building of national staff occurred throughout all levels of project. Main focus was on orthopaedic clinical officers – a cadre of health worker in Uganda specialized in primary orthopaedic care and assigned to health centres. Central surgery unit became a training centre of national and regional orthopaedic surgeons specialized on reconstructive surgery. Programme identified ‘recipe for success’ being: CBR, physiotherapy, orthopaedic surgery, rehabilitation hosts, appliance workshops, and transportation system.</td>
<td>1.Multi-tiered system of rehabilitation, with resources, clear job descriptions and plans at all levels. 2.System of general skills in community, to more specialized skills with strong referral system and links. 3.Focal point or institution to coordinate activities. 4.Continuum of care from community to specialized services, including assisting in accessing these services (transportation) and follow-up. 5.CBR workers are key in community-based rehabilitation, awareness raising and liaison in the villages at the outset to identify kids with disabilities, and assisting to access health care systems. 6.Capacity building of national programmes, institutions and human resources should be conducted at all levels of implementation.</td>
</tr>
</tbody>
</table>
Title: Integrating community-based rehabilitation and leprosy rehabilitation services into an inclusive development approach  
Authors: Finkenflügel, H. & Rule, S.  
Year: 2008  
Summary: Discussion on a mid-level cadre for community based rehabilitation, specifically for persons with leprosy, including description and recommendations  

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<tbody>
<tr>
<td>N/A</td>
<td>Review and analysis</td>
<td>Persons with leprosy and disabilities resulting from leprosy</td>
<td>Leprosy rehabilitation services; community based rehabilitation for persons with disabilities from leprosy</td>
<td>Mid-level cadre for Community Based Rehabilitation</td>
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<th>CMOCs</th>
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<tbody>
<tr>
<td>Community based rehabilitation by mid-level cadres. CBR and livelihoods programmes embedded in persons with disabilities own communities. Current community based rehabilitation programmes part of community development and not vertical programmes. With development of mid-level cadres, professionals who were previously trainers have taken more managerial role in programmes. Support structures for community based rehabilitation workers crucial for programme effectiveness.</td>
<td>1. CBR workers competencies will differ depending on programme type (vertical or horizontal) – should be encouraging horizontal programming approaches. 2. Integration of services. 3. Lack of evidence on effectiveness of CBR programmes can influence support and prioritization of such services. 4. Rehabilitation professionals (physiotherapists etc.) acting as supervisors, trainers and programme managers can lead mid-level cadres to promote rehabilitation in the community activities.</td>
<td>Community based rehabilitation workers involved in activates in their communities such as advocacy and lobbying. CBR workers act as ‘change agents’ Mid-level cadres with additional referral skills positioned within human rights based approach. CBR workers in their new “role” working in inclusive development might require different skills from their trainers and supervisors – for instance consider including social workers and others knowledgeable on social development. Professionals’ role might move to more referral support and programme management. Professionals have less direct contact with people from the community in an inclusive development approach. CBR programmes face difficulties proving their worth due to lack of evidence. CBR workers working with leprosy should have leprosy specific expertise.</td>
<td>1. Persons with disabilities should be involved in the development of CBR programmes. 2. CBR Matrix activities – integrated and inclusive development programmes. 3. Social approach including raising awareness, advocacy programmes and empowering PWD and their families. 4. Increase evidence base for community based rehabilitation programmes. 5. Evidenced-based practice for community based rehabilitation workers. 6. CBR workers should have specific skills and knowledge on a disease of type of disability, while being knowledgeable on CBR as a whole and social development approach to rehabilitation. 7. CBR workers should be the link between communities and more specialized services, and be accountable to these communities. 8. Trainers and therapists should be trained as managers of mid-level rehabilitation cadres. 9. “Effective care-chains” should be created for rehabilitation services with personnel having a set of competencies driven by client’s needs, which interlink with other workers to provide comprehensive services. 10. More specialized rehabilitation cadres can act as trainers and/or supervisors. 11. Supervisors/trainers should be competent in both clinical skills and supervision/training skills. 12. Team work, with rehabilitation cadres operating together, is essential for effectiveness of community based rehabilitation programmes. 12. Changing job descriptions of community based rehabilitation workers with the development of CBR activities</td>
</tr>
</tbody>
</table>
**Title:** Impact of Community-Based Rehabilitation Programmes: The Case of Palestine  
**Authors:** Eide, AH.  
**Year:** 2006

**Summary:** Description and 10 year impact assessment of CBR programme using village-based community rehabilitation workers

<table>
<thead>
<tr>
<th>Setting</th>
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</thead>
</table>
| Palestine. Regional Committees in Nablus, Jenin, South Region, Central Region and Gaza. | Case study, using baseline study follow-up (questionnaire) and a record audit (structured interviews). | 1075 individuals having received CBR services (questionnaire) and 57 service users for structured interview. | Multi-level (nationally, regionally and community) multi-faceted CBR programme, coordinated by National Committee for Rehabilitation but implemented by NGOs across Palestine. | Community rehabilitation workers (CRWs)  
Work independently and usually in villages in which they live.  
Refer individuals to known, appropriate, existing structures of support. |

<table>
<thead>
<tr>
<th>Cadres</th>
<th>Description</th>
<th>Training</th>
<th>Supervision</th>
<th>Misc.</th>
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<td>Not discussed, however work with NGOs in district and in regional committees likely having varying training across sites. “Extensive initial training, followed by regular training periods”. Practical trainings focused on the principles of CBR.</td>
<td>CRWs supervised at village level.</td>
<td>Varying levels of support expected depending on area, including access to more specialized services.</td>
</tr>
</tbody>
</table>

**CMOCs**

**Context**
- CBR Programme established in 1989, coordinated by Central National Committee for Rehabilitation and 23 implementing NGO partners group in five Regional Committees.  
- Decentralized with autonomous programmes at regional levels.  
- Practical component designed around notions of CBR in the 1990s.  
- Community surveys at introduction of programme, with CRWs then using two-pronged approach in the communities, one at community level for change promotion and mobilization and one at individual level to bring about positive situational changes.  
- Programme covers approximately 50% of population in West Bank and 75% in Gaza.  
- Political instability, socio-cultural context and also great changes in context over the 10 years since beginning of programme.

**Mechanisms**
1. Good filing system for record keeping; however in this study may have faced issues when their recommended documenting system (by WHO) was modified after project already started.  
2. CBR workers are able to work independently in their communities with some supervision, at the local level.  
3. Service users of CBR identify CBR workers as positively contributing to improvements in their daily lives.  
4. CBR workers can work at both community and individual level to promote positive change for PWD

**Outcomes**
- Increase awareness on disability issues for communities.  
- Positive attitude change towards PWD in communities.  
- Positive view of impact of CBR by service users.  
- Activity of daily living (ADL) assessment showed considerable progress, as rated by service users.  
- Conclusion that many service users were given appropriate assessment, treatment, training, guidance and devices that positively contributed to their daily living due to the CBR programme and CRWs acting in the community.

**CMOCs**
1. Training should focus on practical components of implementing CBR in communities, after an extensive survey of the context and the disability situation, rehabilitation needs.  
2. Monitoring of initial context survey periodically.  
3. CBR workers should have strong referral skills, with knowledge on resources available for PWD.  
4. CBR workers should be from the same villages in which they work in order to have increased acceptability by communities and also understanding of barriers faced by PWD.  
5. Independence of CBR workers may be due to being from the villages in which they live.  
6. Ability to work independently may be especially important in areas with great contextual difference and support across regions/districts and political instability.  
7. CBR workers should be trained to work at both the individual level and community level, with differing skills depending on the needs in that context.
**Title:** China-Australia-Hong Kong tripartite community mental health training program  
*Authors:* Ng, CH, Ma, H., Yu, X, Chui, H., Fraser, J., Chan, S., Chui, E. & Jia, F.J.  
*Year:* 2009

**Summary:** Description of a collaborative training programme for community rehabilitation professionals across three settings

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</table>
| China, Hong Kong and Australia | Programme report | Mental health staff, mainly in China | Cross-cultural and country collaboration to build culturally competency health service systems and delivery, across 2 countries in 3 training sites. Largely University and professional body-driven, with community based care being clinic centered. | Cadres: Mental health professionals including: community psychiatrists, social workers, occupational therapists, clinical psychologists, nurses.  
Description: Work in Community Mental Health Teams, multidisciplinary, with case managers.  
Training: Varied between location. Focus on Training of Trainer (3days). Workshops, practical (on site) training, lecturing, management training for senior staff (1 week). Tripartite programme involved three modules (introduction, practical training, and management training).  
Supervision: Integrated throughout programmes, with Training of Trainer meant to ensure clinical supervision.  
Misc.: Teams multidisciplinary, work out of major psychiatric hospital and have catchment population of approximately 3 million.  
CMOCs: Descriptive report |

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| Asia-Australia Mental Health (AAMH) consortium established in 2003 between medical and academic institutions in Australia and Asialink. 686 Programme supported by AAMH, Ministry of Health China, and PKUIMH for mental health reform. Programme to build workforce capacity for community mental health. Training programme collaboratively planned with AAMH, PKUIMH, Chinese University of Hong Kong for multi-skilled case workers for mainland China. Idea to train case managers to deliver further training to peers on the mainland, under a Train the Trainer model. 3 sites had different training objectives and courses. Mainland China – Module One, including introductory 1-week training course. Hong Kong – TOT 3 day course; Module 2 for mental health clinicians with 3 days theory and 7 days practical. Melbourne: Management training for senior mental health staff for 1 week. | 1. Mental health professionals including psychiatrists, nurses and administrators participated in training of trainer course for community mental health, who then go and train other mental health professionals.  
2. External capacity for initial training in setting where internal capacity is limited, especially in diploma or university programmes.  
3. Significant is the adoption of training approaches that build in flexibility for different levels of expertise and skills of the mental health trainees  
4. Training programmes should emphasis partnership across sectors within government and NGO. | China: 500 mental health professionals from 80 districts in mainland China participated in the TOT workshops. Professionals included: psychiatrists, nurses and administrators selected by CUHK). 400 training sessions for health professionals and other stakeholders, totaling over 50,000 people. Hong Kong: 6 groups of 10 (n=60) mainland Chinese mental health clinicians underwent a clinical training placement with case management approach tailored to Chinese context. Management approach to facilitate the community rehabilitation workforce and stakeholders for collaborative work. Module had onsite participatory observation, fieldwork, seminars and practical workshops. Melbourne – POST (Postgraduate Overseas Specialists Training) facilitates individualized clinical training placements for mental health clinicians from Asia-Pacific for 2 weeks up to 1 year. 45 participants from Hong Kong and 6 from mainland China. | 1. Programmes and training must be relevant to the context in which they will work in, so designed with training experts from that region in consultation with international experts to insure that cultural needs as they are central for the success of the adaptation of any community health care models.  
2. Information/training, which has a strong practical component and works to exchange knowledge effective in training those who are inexperienced or in cross-setting exchanges. Management approach incorporated into training to facilitate collaborative work for human resources.  
3. Multi-skilled case workers should have: An understanding of community based mental health principles, e.g., case management; able to develop individual service plans for clients by exploring culturally appropriate ways to build partnerships with patients families and communities; skilled at working in multidisciplinary teams; have plans for implementation.  
4. Training of Trainer important to ensure consistency and standardization, as well as increase capacity.  
5. Training collaborations using academic partnerships and focusing on the needs of the staff depending on context of work to share knowledge across disciplines and resources. |
Title: Evaluation of a community-based rehabilitation model for chronic schizophrenia in rural India

Authors: Chatterjee, S., Patel, V., Chatterjee A. & Weiss, HA.

Year: 2003

Summary: Tier system using lay mental health workers to support individuals and communities in addition to clinical treatment.

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| District of Barwani, in the state of Madhya Pradesh, India. | Prospective, longitudinal study | 207 individuals with chronic schizophrenia. 127 in CBR group and 80 in out-patient care (OPC) group | Three tier model of care: outpatient care including drug treatment; mental health workers in community; third tier consist of family members or community who form village health groups acting as a forum for members and to raise awareness, plan for rehabilitation and reduce social exclusion. Common to both models are drug treatment, psycho-education, and family counseling | Cadres: Lay mental health workers, psychiatrist, psychologist, family groups, village groups.  
Description: Mental health workers from the community and family members and community members to form local village health groups.  
Training: Mental health workers trained for 60 days.  
Supervision: Not discussed, however tier system with specialized services could provide supervisory aspect and mechanisms for feedback.  
Misc.: Responsible for 25-30 patients |

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| Majority of the population are indigenous tribes people. Barwani is one of the poorest districts in India, with the indigenous population being the most sociologically disadvantaged. No medical mental health centre existed in district or neighbouring districts during time of study. Participants firstly diagnosed by Psychiatrist. Enrolled in CBR group if living in district, and assigned to OPC group if outside the study area. OPC consisted of services provided exclusively at a clinic, usually with one visit per month lasting 20-30 min. Seen by psychiatrist and/or psychologist, with ongoing drug treatments and family education on compliance and the illness, including rehabilitation strategies and psych education. 207 participants initially enrolled with 127 in CBR arm and 80 in OPC. CBR arm were significantly more disadvantaged in terms of literacy, caste system and poverty compared to OPC group, and had longer duration of illness and DAS behavioural scores. Content of CBR intervention was shaped (adapted) by consultation with patients and families and other key persons in the community. CBR also encouraged people to maintain links with traditional healers and general practitioners. | 1. Initial diagnoses and treatment plans should be designed by a specialist often referred to by CHW.  
2. Tier system allowing for treatment in the community with appropriate referral mechanisms to more specialized services may impact on patient's compliance with programmes.  
3. CBR workers that compliment other traditional healers can help increase effectiveness/acceptance of programmes.  
4. CBR workers need strong referral mechanisms and services in place  
5. CBR workers can target hard to reach populations and assist in continuation of care and compliance  
6. Clinical treatment with community treatment combined is more effective than clinical treatment alone in some outcome aspects | Cadres: Lay mental health workers, psychiatrist, psychologist, family groups, village groups.  
Description: Mental health workers from the community and family members and community members to form local village health groups.  
Training: Mental health workers trained for 60 days.  
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2. Community based services are more efficient and better at overcoming common barriers to health care such as – economic, cultural and geographical.  
3. Mental health workers evidently become involved in support for families so should be taught coping strategies.  
4. Programmes that engage and empower the families of PWD and their communities, and having them be partners in the design, implementation and monitoring of services are more culturally feasible and sustainable.  
5. Three-tier system supports the outpatient counseling of patients, better empowering them and their families while also addressing issues cultural and society.  
6. CBR workers should work within culturally appropriate health systems, for example with traditional healers.  
7. For vulnerable populations (location, high stigma, poverty), clinical treatment should be combined with community outreach and have community based workers compliment clinical work. | Compliance significantly higher in CBR group with 63% fully compliant compared to 46% in CBR vs. OPC, respectively. CBR more efficient in retaining patients and families compared to OPC. Intention-to-treat significantly higher in CBR group when using less conservative data analysis methods of LOCF. Disability outcomes for CBR group higher than OPC. Difference in disability outcomes for CBR group was greater for males than females | 1. CBR workers should be linked with the treating specialists so that they are aware of treatment plans and can emphasize the compliance with medicine/rehabilitation.  
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<td>Three slums in Dhaka, Bangladesh</td>
<td>Opportunistic sampling, before and after with questionnaire and observation methods.</td>
<td>37 caregivers of children (aged 1-11) with moderate-severe cerebral palsy.</td>
<td>Control group made by measuring outcomes of just advice prior to full training for 20 caregiver-child pairs.</td>
<td>NGO fieldworkers, generic therapists, and caregivers.</td>
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<td>NGO staff identified participants after workshop to inform study occurred, and screening occurred at health centres for inclusion. Enrolled caregiver-child pairs underwent training sessions on feeding children with cerebral palsy, which consisted appropriate foods, consistency, and utensils, as well as feeding methods.</td>
<td>Six fortnightly training sessions run at hospital in groups of 4-5, run by therapists trained in delivering programme. Traditional teaching, discussion, visual aids (including video drama), and participatory and experimental activities used for training.</td>
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### CMOCs

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<td>Estimated prevalence of CP in Bangladesh is 22/1000 in children aged 2-9 years. Identified pairs underwent initial training in groups of 4-5 pairs, consisting of 6 fortnightly sessions at the local hospital. Sessions run by generic therapist who received specific training and who was supervised by author. Training of mothers focused on: appropriate foods; appropriate food consistency; appropriate utensils; appropriate postural and physical support for positioning during feeding and sensitive/responsive manner. Training for caregivers in feedback practices, including some provision of basic implements like plastic spoons.</td>
<td>1. Training caregivers to perform daily tasks for children feasible for some disabilities 2. Caregivers’ who recognize decrease in their stress level which may act as incentive to continue training and programme. 3. Acknowledgement of programme working may be incentive for caregivers to continue with training and programme. 4. Training outside of the home should be offered close to home as to ensure attendance. 5. Practical training and demonstration, which incorporates feedback.</td>
<td>Significant improvements in children's: respiratory health, cooperation during mealtimes, overall mood when mothers had minimum of four sessions. Reductions in caregivers stress during feeding and length of mealtime. Carer who received advice and training had higher scores than those who just received advice. Minimum of 4 training sessions was found to be effective. Dropout of 13/37 during training because they could not get to the center, usually moving back to the village because of financial difficulties</td>
<td>1. Training of families and parents of PWD (especially children) on appropriate and feasible in-home care or rehabilitation techniques is feasible for some services. 2. Training of carers on simple health techniques can reduce stress and improve both health outcomes for PWD and the carer. 3. With little training (a workshop), already working field workers are capable of identifying persons with disabilities and direct to appropriate services. 4. Generic therapists can undergo short training of trainers and be effective teachers to caregivers in a specific field. 5. Training should be practical, and if possible involve the supervision of the intervention actively being done. 6. Training location must be sensitive to local context and conditions, especially in the case of multiple training sessions or follow-up.</td>
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## Summary
Community lay health workers and supervisors implementing CBR programme in Uganda

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<tbody>
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<td>Tororo District, Uganda.</td>
<td>External evaluation of CBR programme (mixed methods)</td>
<td>Persons with Disabilities and their communities.</td>
<td>Decentralized –subcounties, creating awareness and building capacity at the community level, using volunteers at community level. Next level the District Rehabilitation Office operates, which manages programme and M&amp;E. CBR Steering Committee at district manages, oversees and supervises all.</td>
<td>Cadres</td>
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<td>Volunteer community based workers, Community Development Officers/Assistants (CDO/As), Health Assistants (HAS), Special Needs Education Coordinators (SNECOs), DPOs.</td>
<td>Volunteers are selected by their communities and they work with CDOs, HAS, SNECOs, DPOs. Volunteers identify and assist PWD in communities and raise awareness. Volunteers provide home based activities and interventions, train parents and make simple assistive devices. PWD receive home visit from volunteer approx. once per month.</td>
</tr>
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### Context
CBR programme in implementation since 2002/2003 – prior to CBR programme there was national level and supply driven model. Inclusion of stakeholders (DPOs) in planning, execution and monitoring, CBR Steering committees at sub-county level to facilitate greater participation of local communities. Volunteers to receive bicycles and allowance for travel. Volunteers spend approximately 1 day per week on CBR activities, 70% of which are related to ADLs, managing disability and mobilization of PWD. One CBR workers is trained per parish. Local artisans trained to carry out minor repairs on assistive devices. DPOs assist in mobilization of communities and raising awareness.

### Mechanisms
1. Decentralized services which are brought to the community increases identification and assessment of PWD.  
2. Volunteers capable of working in communities to assist PWD.  
3. Training should be longer than two weeks to have properly functioning CBR workers.  
4. Lack of preparedness of health system of respond to increased demand due to programme and CBR workers can influence effectiveness  
5. Programmes inability to adhere to mandate/promises to CBR workers may influence motivation/retention

### Outcomes
Identification and assessment of over 6500 PWD – higher outreach as opposed to previous model, but still not reaching approx. 50% of PWD.  
PWD and families seeing themselves as partners in mobilization not only service users.  
Increase in awareness of disability and mobilization of communities in supporting PWD.  
Higher number of referrals.  
More mainstreaming of services.  
Not enough resources for appropriate number of刷新ers, low number of volunteers.  
Referral system not operating as efficiently as could or as intended, especially for assistive devices and surgery.  
Communities and institutions have difficulty with sensory impaired individuals, notably in schools.  
Limited number of volunteers have received their bicycles and allowance for home visits.  
Training too short to have volunteers be proficient CBR workers. Too little refresher training.  
Sign language seen has highly important by many stakeholders. Identified need for more practical training.  
Supervision possibly not coming down to the community level.

### CMOCs
1. Stakeholders need to be represented from all levels of service, including referral services.  
2. Stakeholders (PWD, DPOs, communities) should be involved in the planning, execution and monitoring of programmes and the workforce  
3. CBR workers (volunteers) should receive non-financial incentives  
4. Situational analysis should occur prior to training workforce and implementing programme  
5. Community based workers effective means of identifying PWDs in communities  
6. Monitoring of training activities and CBR workers proficiency essential  
7. Refresher courses essential for CBR worker's skills  
8. Supervision should be multi-tiered and throughout all programme levels  
9. Self-efficacy of CBR workers and supervisors essential for motivation and retention
**Title:** Needs Assessment of Programmes Integrating Community Based Rehabilitation into Health Activities  
**Authors:** Johnson, RS. & Latha, MP.  
**Year:** 2004

**Summary:** Study with NGOs and staff involved in health promotion on their resources for and acceptability to integrating community based rehabilitation into programmes.

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<td>Tamil Nadu, India.</td>
<td>Mixed-method: survey, interviews, focus groups and field observations.</td>
<td>176 voluntary, non-governmental organizations (NGOs) for questionnaires. 107 CHWs in focus groups, and 30 chief functionaries had in depth interviews.</td>
<td>To assess need and demand among NGOs promoting health to incorporate CBR into their practices, and to identify resources available for working with PWD.</td>
<td>Community Health Workers (CHWs), chief functionaries</td>
</tr>
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**Context** | **Mechanisms** | **Outcomes** | **CMOCs** |
|------------|----------------|-------------|-----------|
| 176 responded NGOs. 5 Focus groups with CHWs from varying organisations totaling 107 participants, and in-depth interviews with 30 chief functionaries of voluntary organisations. Most respondents were community-based organisations, with only 14% from hospitals and 4% from dispensaries. Low level of awareness of legal context, specifically Persons with Disability Act 1995, in the local region. Aware of strategies like educational and vocational training. Chief functionaries ‘highly’ educated. All chief functionaries had participated in training programmes on issues relating to disability. | 1. NGOs and individuals working in communities are open and accepting to the concept of CBR and want more knowledge on how to implement and work with PWD in their communities, however there is limited knowledge on this topic.  
2. A holistic approach to CBR, following the CBR Matrix and including prevention, and access to programmes/government schemes and establishment of services including schools etc. important to potential CBR workers.  
3. NGOs working in health promotion recognize the importance of disability education and community-based rehabilitation, and require further training to increase knowledge.  
4. Community-based rehabilitation knowledge concentrated in managerial positions, or with people with higher education. | 28/176 involved in rehabilitation; 116 interested in CBR; 29 interested in rehabilitation; 3 not interested Areas of interest identified by community health workers are components of CBR, prevention of disability, establishment of schools/homes, early intervention. Concept of community based rehabilitation new to 90% of community health workers interviewed. Training needs identified by CHWs interested in integrating CBR into programmes: basic understanding of disability, early identification and intervention, CBR implementation strategies, and procedures to access government schemes. Chief functionaries identified need for further rehabilitation information and continuous improvement of knowledge. Very limited knowledge on Acts for PWD (less than 1% of CHWs). High (80%) amount of workers interested in learning how to integrated CBR into existing programmes and high (74%) amount of chief functionaries interested in training/orientation for CBR. 95% of them reported a willingness to depute 2-3 staff to CBR service of some kind (including training) | 1. Currently working CHWs and other staff in NGOs can be trained to incorporate CBR into their current work.  
2. NGOs working in health promotion should be trained on resources for persons with disabilities, including but not limited to the policy and legal frameworks working with PWD.  
3. CBR workers should be trained on the CBR Matrix, including how PWD can access important rights like employment and education.  
4. CBR workers need training on community engagement.  
5. As many in more managerial positions are aware of CBR, this knowledge should be shared with community based workers (CHWs), as a means of increasing awareness and knowledge sharing within organizations. |
Title: Controlled Trial of Psychotherapy for Congolese Survivors of Sexual Violence  
Authors: Bass, JK, Annan, J., McIvor Murray, S., Kaysen, D., Griffiths, S., Cetinoglu, T., Wachter, K., Murray, LK. & Bolton, PA.  
Year: 2013  

Summary: Evaluation of adaption of group cognitive processing therapy by community based paraprofessionals.

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<td>14 villages in South Kivu province, 2 villages in North Kivu Province, Democratic Republic of the Congo.</td>
<td>Mixed-methods</td>
<td>Female sexual-violence survivors with high levels of PTSD symptoms and combined depression and anxiety symptoms.</td>
<td>16 villages randomly assigned to either cognitive processing therapy (1 individual session and 11 group sessions, n=157) or individual support (n=248) to female sexual-violence survivors</td>
<td>Psychosocial assistants</td>
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</tbody>
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| Quality: 3 |

MMAT - Qualitative

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<td>40% of women in area have experiences some form of sexual violence. Psychosocial assistants were given quizzes and observed, if competency was questioned they were not included. 15 villages (7 provided therapy and 8 provided individual support), with a psychosocial assistant in each one. Assistants recruited up to 24 participants, and a maximum of 8 women per treatment group. In villages with individuals support, no limits on participants were given. Intervention lasted around 4 months. Follow-up data collected within 1 month of treatment completion and at 6-month follow-up. Cognitive therapy – 1 individual session lasting 1 hour, and 11 sessions with 6-8 women lasting 2 hours. Participants had access to assistant outside of group. Supervised by psychosocial staff at an NGO, and expat clinical experts. Topics for training include: case management, counseling, mediation, stress management, prevention of HIV and other STIs and clinical care.</td>
<td>1. Lay trained psychosocial assistants (min 9 years experience and 4 years post-primary schooling) can assist in medication adherence, group therapy and individual therapy. 2. Lay trained (with experience) psychosocial assistants effective in improving anxiety, depression, and functional-impairment. 3. Training by experts (including international in this case) in an additional 2-week psychosocial therapy (on top of additional 5-6 days). 4. Strong supportive and training mechanisms (both internal and external) combined with lay health workers from the villages in which they work. 5. Adding of “cognitive processing therapy” compared to benefits of services offered by workers trained only in case management and individual supportive counseling. 6. Relateability of women to her counselor (due to being from same village), may have assisted in acceptance of intervention.</td>
<td>Participants in Individual and Cognitive Group Therapy had significant improvements during treatment (end of treatment assessment) that was maintained at 6 months. Group therapy had significant improvements over individual therapy at end of treatment and 6mth follow up, with all treatment effect sizes greater than 1.0 for: HSCL-25 score for combined depression and anxiety; PTSD Checklist scores: Functional-impairment scores: Probable depression or anxiety (no/total no for %); Probably PTSD (no/total no for %). One psychosocial assistant who underwent training was not used as her competency to delivery service was in question (due to quizzes and observation).</td>
<td>Participants in Individual and Cognitive Group Therapy had significant improvements during treatment (end of treatment assessment) that was maintained at 6 months. Group therapy had significant improvements over individual therapy at end of treatment and 6mth follow up, with all treatment effect sizes greater than 1.0 for: HSCL-25 score for combined depression and anxiety; PTSD Checklist scores: Functional-impairment scores: Probable depression or anxiety (no/total no for %); Probably PTSD (no/total no for %). One psychosocial assistant who underwent training was not used as her competency to delivery service was in question (due to quizzes and observation).</td>
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</tbody>
</table>
### Summary
Describes CBR programme run by lay health workers in two countries will differing contexts

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<thead>
<tr>
<th>Setting</th>
<th>Design/Methods</th>
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<th>Intervention</th>
<th>Workforce Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana and Benin.</td>
<td>Experimental CBR programs Functional unit is the CBR district; rural or urban; population range of 50-100 000 inhabitants Ghana 20 CBR districts (19 rural and 1 urban) Benin 15 CBR districts (9 rural and 6 urban)</td>
<td><strong>Ghana</strong>: 200 000 across 20 CBR districts; no selection criteria for participants  <strong>Benin</strong>: 1 000 000 across 15 CBR districts; participants selected on the basis of age, type and severity of disability</td>
<td>CBR programs designed in line with WHO recommendations for CBR CBR district activities are coordinated at the national level. Local committees manage decentralized CBR districts. Local committees are composed of voluntary community members.</td>
<td><strong>Cadres</strong> 1.Intermediary level supervisors; 2. Local facilitators; 3. Family trainer <strong>Description</strong> Supervisors are appointed at the national level. Cadre 1 recruits cadre 2. Cadre 2 is voluntary. Cadre 1 acts a technical adviser to the local committee. Cadre 1 coordinates passage to referral services outside the remit of CBR. <strong>Training</strong> Cadre 1 trains cadre 2 in the techniques and principles of community based rehabilitation as developed by the WHO. Cadre 2 visits PH and trains a family member in CBR techniques and principles. No indication of time and quality of training. <strong>Supervision</strong> Cadre 1 supervises cadre 2. No indication on quality of supervision. <strong>Quality – NA</strong> Descriptive case studies report</td>
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<tr>
<th>Context</th>
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<th>Outcomes</th>
<th>CMOCs</th>
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<tbody>
<tr>
<td>Ghana</td>
<td>Lack of support from intermediary and national level; little fund-raising by local committees; inadequate supervision of local facilitators; local facilitators lack motivation; large amounts of funding allocated to cover costs of national coordination; little financial support for supervisors, facilitators and communities; little or no contact between intermediary level supervisors and national coordination; no financial compensation for local facilitators; no facilitation for referrals to specialized services</td>
<td>Quality of life of PWD from CBR worker and caregiver perspective. Sustainability of programme: Ghana lost programme in 20 districts, Benin expanded from 15-31 Better and easier access to referral services in Benin. CBR program in Benin more cost effective than in Ghana. Ghanaian program deemed ineffective and inefficient in comparison to program in Benin. Higher proportion of successful intervention in eyes of CBR worker and caregiver in Benin. Central control had CBR workers feeling less supportive and demotivated.</td>
<td>1. Systemic, decentralization and empowerment at the local community level. 2. Motivated CBR workers, who must feel supported by and through supervision and by central government with resources when and as needed. 3. Community supported at district level, community meetings and forums to address discrimination and self-mobilization. 4. Decentralized workforce more sustainable than centralized workforce 5. Supportive supervision of community based workers essential for motivation and retention of workers 6. CBR workers and supervisors require financial compensation and or expenses covered for retention 7. CBR workers require clear pathways and appropriate training for referrals to more specialized services</td>
</tr>
<tr>
<td>Benin</td>
<td>Better support from intermediary and national level; higher levels of fund-raising by local committees; better communication between the three action levels; better allocation of funds between various action levels; financial support for supervisors, facilitators and communities; monthly financial compensation for local facilitators; better facilitation for referrals to specialized services</td>
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<tr>
<td>Setting</td>
<td>Design/Methods</td>
<td>Population</td>
<td>Intervention</td>
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<tr>
<td>District of Rawalpindi, Pakistan.</td>
<td>Mixed-methods, formative research. In-depth interviews.</td>
<td>Perinatal depressed mothers with low socioeconomic status, and Focus groups with a total of 24 LHWs exploring their experience providing health care to women and difficulties they face. This was used to explore how the intervention would fit within the primary and traditional health care system.</td>
<td>Women diagnosed by trained psychiatrists. LHWs visit women in their areas provide cognitive based therapy. This study is from feedback from LHWs on the training and intervention.</td>
</tr>
</tbody>
</table>

**Outcomes**
- Intervention needs to include families as well as mothers.
- Some women felt stigmatized; as well some did not recognize depression as a problem.

**CMOCs**
- LHWs relatable to women and families and mothers may be more accepting.
- Family members should be involved in programme. Services worked in a multi-level, where specialized clinicians diagnosed participants, and then community-based workers ran interventions. Community based workers already integrated into currently health care system (in this case LHWs) are highly accepting to additional work that CBR would include.

**Training**
- Initial 2-day workshop, and a 1-day refresher three months after the initial training. Training includes video with actors conducting sessions, discussions and role-plays. Emphasis on active-listening, additional training on dealing with difficult situations and use of visuals to address literacy.

**Supervision**
- LHWs supervised monthly in groups of 10 by a public health expert and mental health professional. Supervision includes discussion of problems, and collaborative problem-solving, and sharing experiences.

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<tbody>
<tr>
<td>Basic Health Units have one doctor, midwife, vaccinator and between 15-20 Lady Health Workers. In the district, there are no psychologists in the public sector and 3 psychiatrists, based only in Rawalpindi city. Vast majority of depressions remain undetected and untreated in the local community. High stigma surrounding mental illness and low levels of awareness. Majority of mental illness goes undiagnosed. 42 LHWs trained to deliver adapted CBT programme to women in their respective home areas. Intervention focused on mother and all family/household, and was adapted to be culturally sensitive. Family members given 'homework' to help practice more healthy thinking.</td>
<td>1.LHWs relatable to women and families and mothers may be more accepting. 2.Family members should be involved in programme. Services worked in a multi-level, where specialized clinicians diagnosed participants, and then community-based workers ran interventions. Community based workers already integrated into currently health care system (in this case LHWs) are highly accepting to additional work that CBR would include.</td>
<td>1.Community based workers, especially when dealing with sensitive topics such as mental health, should be relatable to their clients (i.e. women working with women). 2.Community based workers should have training to help reduce stigma of certain health issues, within individuals, families and communities. 3.Rehabilitation services should be integrated into a worker’s current role and not be run as parallel services, as many already have heavy burden of workload. 4.Mechanisms for training feedback from community based health workers should be implemented into programmes. 5.Pre-existing community-based workers can be trained on rehabilitation techniques to incorporate into their pre-existing job description.</td>
<td>1.COMOCs</td>
</tr>
</tbody>
</table>
# Final Evaluation of a Community Based Rehabilitation Program: A Report

**Authors:** Save the Children  
**Year:** 2010

**Summary:** Final evaluation report of a partnership programme in Nepal using CBR Matrix activities

<table>
<thead>
<tr>
<th>Setting</th>
<th>Design/Methods</th>
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<th>Workforce Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal, 7 Municipalities in Eastern and Central</td>
<td>Key informant interviews, focus groups, field observations. Final Programme Evaluation</td>
<td>Child and youth with disabilities and their families</td>
<td>Focus on partnership, for integrated programme involving advocacy and empowerment, capacity development of organizations, increased access to appropriate services. Includes educational, livelihoods, health</td>
<td>Village rehabilitation facilitators, CBR coordinators, therapists</td>
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<tr>
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<td></td>
<td>CBR capacity development training (100 days) for community workers and therapists. Disability specific on intellectual disability, Portage training, CP training, disability awareness, physiotherapy training, organizational management training, basic Nepali Sign Language</td>
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<table>
<thead>
<tr>
<th>Cadres</th>
<th>Description</th>
<th>Training</th>
<th>Supervision</th>
<th>Misc.</th>
<th>Quality: 2 MMAT – Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDR Cs recognized as committees ensuring rights of PWD</td>
<td>Increased involvement of deaf children and those with intellectual disabilities in school in several districts. Disability scholarships and allowance. Reduced stigma by community and increased social awareness towards disability. Reports of improved mobility and access to therapy services. Increased participation in organizations and clubs. More supportive attitudes from families towards PWD. 35000 children increased functional capabilities; 10000 children with disabilities in education; 50000 benefited from prevention and early detection activities. Home visits most popular programme and stakeholders identify its sustainable impact on children. Lack of refresher training, more training for referral and early identification.</td>
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</table>

**CMOCs**

1. Inclusive rehabilitation activities may increase acceptability of families towards programmes  
2. Community ownership important for reducing stigma and increasing acceptability of persons with disabilities  
3. Bringing services to the home important for ensuring access  
4. CBR workers should be trained on CBR Matrix activities  
5. Home visits (community work) increases awareness towards disability and acceptance by community and families  
6. CBR workers should have comprehensive training, including management skills  
7. CBR workers should be training on advocacy and empowerment activities to increase awareness of persons with disabilities  
8. Training should focus on referrals and identification of disability  
9. Community ownership of programmes may increase acceptability and involvement
Title: A mental health training program for community health workers in India: impact on knowledge and attitudes

Authors: Armstrong, G., Kermode, M., Raja, S., Suja S., Chandra, P. & Jorm, A.

Year: 2011

Summary: Lay health workers for mental health services including increasing recognition and providing support to communities

<table>
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<tbody>
<tr>
<td>Doddaballapur Taluk, Bangalore Rural District, Karnataka, India.</td>
<td>Evaluating using pre-test post-test design.</td>
<td>Cadre of Community Health Workers (n=70)</td>
<td>An &quot;Introduction to mental health for uninitiated community health workers&quot;. Training course aiming to increase recognition of mental illness, enhance appropriate response and referral, support individuals with mental disorders and their families, improve mental health promotion in their area.</td>
<td>Community Health Workers (CHWs), including: Junior Health Assistants, Village Rehabilitation Workers, and ASHA workers. CHWs sourced through Gramina Abrudaya Seva Samsth (GASS), an NGO in the area. All government funded cadres.</td>
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<tbody>
<tr>
<td>Karnataka, India.</td>
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<td>In three separate groups of 23-24 participants, with 2 facilitators. Local facilitators only had 'moderate' understanding of community mental health to reflect real world scenario. 4 day course</td>
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<tr>
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<tr>
<td>Community health workers identified from an NGO operating in the area, all government funded, and working Junior Health Assistants, Village Rehabilitation Workers or ASHA workers. Low levels of mental health literacy at baseline (9.1% could identify psychosis, 22% depression). High levels of individuals advocating for inappropriate treatment for mental illness. Also assessed perceived outcomes and attitudes towards people with mental disorders.</td>
<td>Poor perceptions of PWD even after training. Could be due to training did not integrate people with mental illness. 2. Trainers only had moderate experience, so though it reflects the most likely scenario in these situations, could be detrimental to have trainers who are not specifically trained. 3. Training that does not incorporate persons with disabilities may not be as effective in increasing awareness or reducing stigma. 4. With little training (4 days) already working health workers can improve healthy behaviours towards individuals with disability, specifically in areas of pharmacological interventions and ability to recognize depression and psychosis.</td>
<td>Participant’s ability to recognize mental disorders (depression and psychosis) was improved, with a significantly significant increase in identification after training, with a drop after 3 months. However, still remained significant (22.7% to 50.0% to 43.9% for depression) and 9.1% to 27.3% to 34.8% for psychosis. Sustained decrease in the percentage of participants endorsing potentially useless pharmacological interventions for both depression and psychosis. No clear difference in the use of non-pharmacological interventions. Significant difference in participants endorsing hospital admission for a person with depression and reduction in participants endorsing marriage as a helpful intervention for psychosis. The training had little effect on participant’s perceived outcomes for persons with mental illnesses, except that are significant reduction was seen in the percentage of participants identifying full recover or no further problems for individuals with psychosis if appropriate help was received. There was little change in participant’s attitude towards individuals with mental illness after training. Changes were seen however in: it is best to avoid people (with depression) from 21.2% to 6.1% to 4.5%, and that depression is a sign of weakness (84.8% to 89.4% to 62.1%). However, no changes were seen in: people with this problem can snap out of it (64.6% to 53.0%); This problem is not a real medical illness (54.5% to 59.1%); people with this problem are dangerous (30.8% to 33.3%); people with this problem are erratic (77.3% to 80.3%); I would not vote for a person with this problem (64.6% to 53.0%).</td>
<td>Community-based workers need to acquire relevant knowledge and skills to recognize, refer and support individuals experiencing mental disorders. Task-shifting, having already working CHWs and training them specifically, may help to meet the need to increase human resources for mental health. Persons with disabilities should be included in the training sessions. Training for health workers should include social aspects of disability, especially mental illness. The perceptions that health workers have on persons with disabilities, especially mental health, should be considered and assessed prior to intervention with the appropriate training to follow findings. Trainers with only moderate experience in mental health should undergo further training as well as training of trainers before training others. Training alone is not enough to be effective, proper training that meets the needs of populations as well as the workers themselves, with adequate trainers.</td>
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</table>
### Summary
This paper reports on a Case Study from an NGO (Basic Needs) working with a community-based integrated Mental Health and Development (MHD) programme in Nepal.

### Workforce Characteristics

<table>
<thead>
<tr>
<th>Cadres</th>
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<tbody>
<tr>
<td>VDCs (Village Development Committee) and Female Community Health Volunteers (FCHVs), Community Based Workers (CBWs), Auxiliary Health Workers, Health Assistant, and clinical staff.</td>
<td>Identification of PWD in villages, after coaching and supervision run follow-up clinics in villages.</td>
<td>Not discussed, though situational assessment conducted prior to programme.</td>
<td>Due to demand and services being brought to local clinics, CBW given cell phones to connect with chief psychiatrist.</td>
<td>Quali: NA Case study</td>
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</table>

### Intervention

- Programme: Treatment at mental health clinics (regional hospital), where government supplies space and staff. Mental health focal person (senior health assistant) coordinates the services, psychiatrist who diagnoses and prescribes medication, VDCs provide FCHVs to refer and assist in follow-up clinics. Follow-up clinics – have MH focal person and other trained staff to conduct telephone consultations with psychiatrist at regional hospital. Home visits – for monitoring and support, with FCHVs monitor medicines, support families and assist in livelihood activities. NGO community based workers compliment FCHVs.
- VDCs: (Village Development Committee) and Female Community Health Volunteers (FCHVs) run follow-up clinics in villages.

### CMOCs

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<thead>
<tr>
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<th>CMOCs</th>
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<tbody>
<tr>
<td>1. Increasing awareness of community, acceptability of community, and knowledge of health workers. 2. Utilizing a multi-tiered treatment system, including facility based and community, involving government and NGO, can have positive impacts on individual’s health. 3. Bringing services to the community by increasing awareness on mental health and providing community workers may increase number of referrals due to decreased stigma and increased awareness. 4. Community based services can more efficiently identify individuals with mental illness and then refer. 5. Increasing training and skills of health workforce to respond to PWD/MI need to be done in consideration with other aspects of the health service.</td>
<td>311 patients registered between May 2010 and March 2011. 269/311 patients reported to show improvements. Increasing number of referrals from home visits and also self-referral. Reduction in out-of-pocket expenditure on medications and services. Increased number of individuals generating income based on livelihoods programme. Still struggle with the capacity of the health centre to respond to the demand for services. With key challenges being availability of qualified staff, and medicines. SIM cards provided to CBR workers to maintain contact for supervision and referrals with chief psychiatrist.</td>
<td>1. Focal person required, especially in a tiered-delivery system 2. Situational assessment of HR, demands, training etc. prior to intervention development for increased efficiency 3. Multi-faceted (CBR Matrix) programme at the community level 4. Tiered system including treatment services, follow-up and home based care. 5. Collaboration between NGOs, community, and MoH important for bringing services to communities. 6. Ability to system to respond to challenges creatively (SIM cards for supervision). 7. Skills in empowerment and community development for community based health workers 8. HR workers to work towards strengthening health systems and influencing policy 9. Planning for increasing demand in services with appropriate supply of HR. 10. CBW for referrals and follow-up home visits for PWD.</td>
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</table>
Title: Evaluating the impact of a community-based rehabilitation intervention  
Authors: Hartley, S.  
Year: 2001-2003

Summary: Brief report on project designed to increase knowledge on interventions for children with communication problems in Kenya, by evaluating the impact of using local women’s groups for community-based action.

<table>
<thead>
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<tbody>
<tr>
<td>Kilifi District, Kenya</td>
<td>Report, prospective.</td>
<td>334 Children with communication difficulties and their mothers.</td>
<td>Randomly selected 8 already existing women’s groups in the area. Series of workshops for each group to work out individual intervention plans for children (20 per group approx.), for community based action. Women’s groups develop individual intervention plans for children.</td>
<td>Local women’s groups</td>
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<td>Series of workshops for women’s groups to assist in development of individual intervention plans for children.</td>
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<td></td>
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<td>Not discussed.</td>
<td>Approximately 20 children per group.</td>
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Quality – NA  
Descriptive report

CMOCs

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<tbody>
<tr>
<td>Half of all disabled children in LICs have communication difficulties.</td>
<td>1.Dividing children depending on disability might not be an effective tool or culturally acceptable in community work. Speculating that a wider ambit and inclusiveness may be more culturally appropriate and acceptable. 2.Already existing social groups (i.e. women’s groups) can be effective in providing support to PWD and their families, and lead to increased community awareness and advocacy. 3. Working groups can assist in the development of intervention plans for children with communication difficulties.</td>
<td>Women’s groups were enthusiastic about the project, indicating to the authors that they may be effective CBR workers to recruit. Women’s group enthusiastic about incorporating mothers of disabled children and representing other disabled people in their groups. Some have started their own activities for persons with disabilities outside the project. Women’s groups have difficult discerning between disabilities in children and include all children with disabilities.</td>
<td>1.Rehabilitation should be inclusive and not segregate by type of disability or rehabilitation service needed. 2.Rehabilitation workers should be knowledgeable of all types of disability and have appropriate training to be able to discern between types of disability. 3. Community groups should be trained in identification and rehabilitation of persons with disabilities 4.Training of lay community rehabilitation workers needs to focus on appropriate identification of persons with disability. 5. Community groups/lay workers accepted by parents for rehabilitation for children interventions.</td>
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### Setting

| Author(s) | Year | Summary:
<table>
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<tbody>
<tr>
<td>Nilsson, A. &amp; Qutteina, M.</td>
<td>2005</td>
<td>Evaluation of the CBR programme in Palestine – from the perspective of persons with disabilities themselves</td>
</tr>
</tbody>
</table>

#### Population

- Palestine, 5 regions: Jenin, Nablus, Sough, Central and Gaza.
- 25 PWDs, 90 PWDs of 5-7 focus groups, DPOs and other CBR staff of all five regions, finally by observations during visits to homes, communities, and schools.

#### Intervention

- Tiered based CBR programme using outreach services with CBR workers, immediate services including therapies, and specialized services with CBR implemented by NGOs.
- Community based rehabilitatio n (CBR) workers.

#### Workforce Characteristics

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Role and training focusing on social counseling, skills training and referrals.</td>
<td>Focused on social counseling, skills training for PWD and referrals to more specialized services.</td>
<td>Not mentioned specifically, however CBR workers work with, or are employed by NGOs in their region.</td>
<td>CBR workers have 50-70 active cases on average.</td>
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</table>

### Context

- CBRP programme has been running since 1990 in Palestine, with NAD assistance, through technical support to 17 partnering NGOs. Active in more than 200 areas, and covers 60% of West Bank and Gaza, reaching over 35,000 persons with disabilities. Network of NGOs have organized themselves into 5 regional committees, responsible for planning and implementing the programme.

#### Gaza and central region of Palestine more urban and have access to more specialized medical care. More implementing NGO partners working on programme.

#### Other regions of Palestine more rural and have less access to formal care, also work with fewer NGOs implementing programme. Services for PWD organized at 3 levels: primary, secondary, and tertiary. Primary is outreach and CBR by NGOs. CBR workers have 50-70 active cases. CBR workers engage individuals in their house to provide support, and work with communities. Secondary level offers immediate services including therapies and assistive devices, which are organized by both governmental and NGOs, though the minority (13/114) are under the supervision of the government. Most of these are concentrated in the urban cities. Tertiary – medical centers that provide specialized services for PWD, and there are only 4 mostly located in urban areas. Most individuals cannot access secondary or tertiary centres. CBR workers main source of care for individuals, though role and training focusing on social counseling, skills training and referrals.

### Mechanisms

1. In contexts with use of devices CBR workers needs more training on devices and physical rehabilitation, or how to properly manage and implement or where to refer.
2. CBR workers impact on PWD self-esteem and relationships, especially in areas with more specialized services lacking.
3. Having PWD as the community health workforce can increase respect for workers.
4. Rural based areas with limited access to specialized services rely on CBR work.
5. Even if not trained specifically for, CBR workers often act as counselors or peer-supporters for PWD.
6. CBR workers often assist PWD in social aspects of disability and rehabilitation.
7. In tier systems of delivery, important for all levels to be strengthened and reflect demand for service.
8. More rural areas with lack of access to specialized services heavily rely on CBR services and might lack health rehabilitation.

### Outcomes

- CBR programme found to have a large impact of individual self-esteem and emotional well-being, especially: interpersonal relations; social inclusion; personal development. With users often attributing CBR workers. Moral support identified by all (except Gaza participants) as the most useful intervention. Limited impact on physical well being, especially in areas other than Gaza and Central region where there is access to more secondary and tertiary care. Level of satisfaction dependent on access to services. Limited impact on individual's rights, self-determination, and influence in community. No self-help groups organized, very little political agenda. Though parents expressed wanting to deal with issues within families. Respect and strong influence when PWD were CBR workers, however rare for PWD to become CBR workers or decision makers. CBR workers often assisted with areas other than disability. Home visits effective way to build relationships, and people requested more of them, and more CBR workers. Referral system in Gaza and central region of CBR to secondary considered important. CBR workers in region also more specialized (nurses) and more men. Some individuals with disability (especially severe and deaf persons) were either left out or not receiving appropriate care, as workers unsure of services to provide. Some CBR workers identified that it is emotionally difficult with some cases.

### CMOCs

<table>
<thead>
<tr>
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<th>Context</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. PWD should be given priority to be trained as CBR workers.</td>
<td>2. All CBR workers should have training on basic psychosocial counseling skills.</td>
<td>3. CBR workers should have their own counseling sessions and systems in place for seeking support, to allow for coping and debriefing of difficulties of job.</td>
<td>4. Access to and HR allocation, especially in rural areas, can limit the health related rehabilitation of PWD.</td>
</tr>
</tbody>
</table>
**Title:** Evaluation of Support to CBR Programme in Lesotho  
**Authors:** Mendis, P., Kachingwe, A. & Khabele, M.I.  
**Year:** 2009  
**Summary:** Evaluation to provide recommendations to strengthen CBR programme run by voluntary lay health workers.

<table>
<thead>
<tr>
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<th>Design/Methods</th>
<th>Population</th>
<th>Intervention</th>
<th>Workforce Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Local Supervisors (LS)</td>
<td>Voluntary, though health workers now paid stipend of M300. 37/45 LS are women.</td>
</tr>
</tbody>
</table>

**CMOCs**

<table>
<thead>
<tr>
<th>Context</th>
<th>Mechanisms</th>
<th>Outcomes</th>
<th>CMOCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government of Lesotho and Norwegian Association of the Disabled have worked together to develop CBR programme since 2003. Local supervisors work mostly in remote areas and individually. Monthly visits to households with persons with disabilities by Local Supervisors. Majority of disabilities are mobility impairments or visual impairments. Persons with mental impairments are typically referred to health centres by local supervisors. Persons with disabilities consulted on issues most pertinent to them for purposes of programme. Expensive health facility visits often barrier for persons to seek care.</td>
<td>1. Community based workers not trained in in empowerment skills. 2. Community based workers not training on advocacy and empowerment skills lack ability to mobilize communities 3. Lack of communications, and coordinated, clear job descriptions can result in inefficiency</td>
<td>Travel costs and other barriers often impeded or inhibit referrals. Visits from District Rehabilitation Officers are infrequent, leaving Local Supervisors to work independently with little supervision. Local Supervisors have taken initiative to meet in informal groups when possible to support each other. Local supervisors have low drop out rate (5/50 in approx. 4 years). Livelihoods recognized as being in urgent need of support due to depth of poverty. Ministry of Health considering having CHWs train as LS, however questions regarding workload are raised. Very limited community engagement, ownership and participation. Little coordination between organizations resulting in workforce duplication. Lack of community empowerment. Lack of monitoring skills of health workforce. Local supervisors face multiple barriers in providing services including difficulty with terrain and lack of support from supervisors.</td>
<td>1. Community based rehabilitation offered by workers who come to communities especially important for marginalized and vulnerable populations to decrease barriers to accessing services. 2. Community based works should be trained on Rights Based Approach and have skills in mobilization, advocacy and empowerment. 3. Rehabilitation workers require training on monitoring and ability to conduct group activities 4. Clear job descriptions including roles and responsibilities of different cadres should be established and communicated throughout health system and organizations working in rehabilitation. 5. Establishment of Steering Committees or focal person to coordinate rehabilitation activities.</td>
</tr>
</tbody>
</table>
Setting: Reports on a mental health and development (MHD) programme run by BasicNeeds in rural Kenya using lay health workers in an multifaceted tiered delivery system

**Summary:** Setting: BasicNeeds established NGO, running 16 programmes in 10 countries since 2000. MHD programme has been used in different contexts, and has 5 interlinked modules: capacity building, community mental health, sustainable livelihoods, research and management/administration. Rural Meru South and Nyeri North districts, with limited health coverage. One psychiatric nurse in each district and no public psychiatrists or psychologists. Some primary health care staff received mental health training but their services in primary care are in high demand. Intervention began with community meetings in collaboration with other local NGOs. Individuals with mental illness or family members invited to identify themselves to enroll in programme, and also created awareness and spread information on the self-help groups. Individuals with mental illness go to psychiatric nurse at health centre who diagnoses and treats. Trained and employed by the MoH. Community based health workers (CBWs) that are a formal part of health system and criteria set by MoH given opportunity to volunteer with BasicNeeds and undergo further training. Role is to work with community with purpose of assisting health professionals in MoH clinics. In MHD programme, role: identification of symptoms of mental disorders; refer to local primary care psychiatric clinics for assessment and medication management; facilitate support groups. Role advertised in local health facilities. Then underwent training: concepts of mental illness and management/administration.

### Table

<table>
<thead>
<tr>
<th>Setting</th>
<th>Design/Methods</th>
<th>Population</th>
<th>Intervention</th>
<th>Workforce Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Meru South and Nyeri North districts, Kenya</td>
<td>Single group cohort, with qualitative analysis.</td>
<td>Persons with severe mental or neurological disorder enrolled in BasicNeeds' Mental Health and Development Programme (n=203)</td>
<td>Mental Health and Development Programme – community engagement and mobilization, with diagnosis and treatment prescription by psychiatric nurse and follow-up by CBWs. CBWs lead group support groups.</td>
<td>Community based workers (CBWs), Psychiatric Nurse. CBWs are lay workers that operate under Kenyan MoH, must be literate, from community, and nominated by community. Role in programme to identify, refer, medication management, facilitate user and carer self-help groups (with 15-25 people). Nurses diagnose and prescribe medicine. 5 days minimum, covering introduction to mental illness and counseling skills. Must have attended training, had practiced 3 sessions of group facilitation and mastered the 10 steps of self-help groups before working.</td>
</tr>
</tbody>
</table>

### CMOCs

<table>
<thead>
<tr>
<th>Description</th>
<th>Context</th>
<th>Mechanisms</th>
<th>Outcomes</th>
<th>CMOCs</th>
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<tbody>
<tr>
<td>BasicNeeds established NGO, running 16 programmes in 10 countries since 2000. MHD programme has been used in different contexts, and has 5 interlinked modules: capacity building, community mental health, sustainable livelihoods, research and management/administration. Rural Meru South and Nyeri North districts, with limited health coverage. One psychiatric nurse in each district and no public psychiatrists or psychologists. Some primary health care staff received mental health training but their services in primary care are in high demand. Intervention began with community meetings in collaboration with other local NGOs. Individuals with mental illness or family members invited to identify themselves to enroll in programme, and also created awareness and spread information on the self-help groups. Individuals with mental illness go to psychiatric nurse at health centre who diagnoses and treats. Trained and employed by the MoH. Community based health workers (CBWs) that are a formal part of health system and criteria set by MoH given opportunity to volunteer with BasicNeeds and undergo further training. Role is to work with community with purpose of assisting health professionals in MoH clinics. In MHD programme, role: identification of symptoms of mental disorders; refer to local primary care psychiatric clinics for assessment and medication management; facilitate support groups. Role advertised in local health facilities. Then underwent training: concepts of mental illness and management/administration. 1.Reputation of NGO may have increased individuals' willingness to identify themselves and participate in programme 2. Reputation of CBWs, as already identified and from community, may have increased individuals willingness to participant 3. Involving families/carers in programmes may have increased acceptance by individuals 4. Tier system for delivery of services can assist in ensuring programme followed through by participants, with monitoring checks in communities 5. Programmes and the workforce they employ should work within the existing workforce and MoH priorities 6. CBHWS can have strong influence on referrals, medication use, follow-ups, increasing group meets and counseling sessions, and diagnoses. 203 participants enrolled at baseline, and at 24 month follow-up 174 (attrition rate of 14.3%, with majority of loss due to moving (10), deceased (8), cannot locate (8) and only 2 declined interview and 1 defaulted on treatment. Significant improvements in general health (GHQ-12); WHOQOL quality of life; proportion engaged in income or productive work; Global Assessment of Functioning (GAF) scores; median monthly family income. Significant reduction in: proportion of participants reporting receiving help from carers at home; and proportion of participants reporting that carers in home left their jobs to care for them. Referrals from baseline-endline rose 15.8% - 45.1%; meds received rom 65.2% to 99.4%; follow-up form 6.4% - 88.4%; group meetings from 21.9% - 97.1%; self help groups from 6.9% - 95.4%; counseling from 72.9% - 100%; diagnosis from 89.2% - 100%. 1.Further train already working lay health workers 2.Lay health workers should be integrated into formal health system and supported by NGOs 3. Carers should be involved in programmes for persons with mental illness, with specific support structures for them 4. Psychiatric nurses should diagnose and prescribe medication 5. CBWs should identify, refer and monitor medication management in communities. 6. CBWs should be trained on mobilization of communities 7. CBWs should be trained specifically on group therapy/management 8. Tier system of service delivery with general skills in community to more specialized skills in health centre 9. CBWs are effective in providing support for persons with mental illness in communities 10. Programmes and their workforce should be integrated into existing MoH initiatives</td>
<td>1. Further train already working lay health workers 2. Lay health workers should be integrated into formal health system and supported by NGOs 3. Carers should be involved in programmes for persons with mental illness, with specific support structures for them 4. Psychiatric nurses should diagnose and prescribe medication 5. CBWs should identify, refer and monitor medication management in communities. 6. CBWs should be trained on mobilization of communities 7. CBWs should be trained specifically on group therapy/management 8. Tier system of service delivery with general skills in community to more specialized skills in health centre 9. CBWs are effective in providing support for persons with mental illness in communities 10. Programmes and their workforce should be integrated into existing MoH initiatives</td>
<td>Not discussed</td>
<td>Serve 20 HH or 500 persons.</td>
<td>Quality: 3 MMAT Quant 4</td>
</tr>
</tbody>
</table>
## Summary
Midterm evaluation including assessment of CBR volunteer and supervisions perceptions of training, programme and impact of CBR programme

<table>
<thead>
<tr>
<th>Setting</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Hai Phong, Phu Tho provinces in North, and Thua Thien Hue, Nghe An, Da Nang and Binh Dinh provinces in central, Vietnam</td>
<td>Mid-term evaluation – questionnaires</td>
<td>Persons with disabilities</td>
<td>Follows CBR Matrix, mainstreamed in education and vocational activities involving networks with different governmental and NGO organizations.</td>
<td>CBR Volunteers; primary school teachers, self help groups, identified by community, and trained through the CBR programme. No income or in-kind compensation for their work. 2,340 CBR volunteers trained from Jan 2008-Dec 2009.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>For CBR supervisors, CBR volunteers in community level. Also training on other development activities (livelihoods, education etc.).</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>Rehabilitation Department of University of Hanoi. Supervisors are volunteers,</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Cover around 3-4 villages, and 20 persons with disability.</td>
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### Quality – 2

**MMAT - qualitative**

### CMOCs

<table>
<thead>
<tr>
<th>Context</th>
<th>Mechanisms</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Programme management is based in Hanoi, but the activities of individual provinces in partnership with differing institutions within that province. All projects co-funded by Italian Development Cooperation of Italian Foreign Ministry and coordinated by AIFO. Conception of programme in 2001, with first year 2008/09 and by 2010 covered 234 communities in 18 districts CBR volunteers are frontline but also involved are primary school teachers, vocational training centres, self-help groups etc. Questionnaires with CBR volunteers and CBR supervisors on training and work. Training courses for district level supervisors for training 200 persons; 47 training courses for CBR volunteers at community level, training 1410 persons.</td>
<td>1. Proposed mechanism for intra-programme, inter-project organizational learning is that groups meet to discuss differences in their mean scores in perception. 2. Individuals selected from and by their communities accepting of volunteering roles 3. Community programmes that integrate CBR Matrix activities, and focus on livelihoods, can have positive impact on PWD</td>
<td>Satisfaction with their roles was high amongst volunteers. Volunteers report high quality of CBR training. Volunteers report that communities have high level of consideration for PWD. Both workers and supervisors are positive about training and community appreciation of their work. 80 to 90% of schoolteachers confirm that they received information about disability issues. Among male volunteers, (32% of sample of volunteers, modal category was high school education 46.5% had it to this level. Among female volunteers, high school education was again the modal category (50%).</td>
<td>1. Inter-organizational and intra-organizational communication about differences in perceived levels of service. 2. Workforce volunteers should be selected from and by the communities in which they serve 3. Working within the CBR Matrix is essential for rehabilitation in the community 4. Integration and cooperation of varying organizations for the rehabilitation of PWD, under the guidance of the CBR Matrix</td>
</tr>
</tbody>
</table>
Title: Pacific Rehabilitation Health Workforce: WHO Discussion Paper Series, Paper No. 1
Authors: Llewellyn, G., Gargett, A. & Short, S. Year: 2012
Summary: Report on the Pacific Island countries rehabilitation workforce with evidence from literature and stakeholders

<table>
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<tbody>
<tr>
<td>Pacific Island Countries</td>
<td>Desk review, key informant interviews, workshop, and priorities ranking</td>
<td>Rehabilitation workforce in Pacific Island countries</td>
<td>Not discussed though varied between countries</td>
<td>Cadres: 38 services in rehabilitation identified (p. 4). Majority of services concentrated at the national level (60%) and only 2% were reported at the community/household level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Training: Country specific. Large variety with a many reports of Tertiary training in several countries;</td>
<td>Supervision: Country specific</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quality: NA Descriptive report</td>
<td>Misc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Mechanisms</th>
<th>Outcomes</th>
<th>CMOCs</th>
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</thead>
<tbody>
<tr>
<td>Varied depending on country and context. Lack of available rehabilitation workforce information and data kept at country level. Most literature focused on specific approaches. More than one third of the reports were focused on two countries, Fiji and Papua New Guinea. Most research papers and reports (as is the case more widely) don’t focus on the workforce; they focus on the interventions and services. Dispersed and often small populations. Costly travel, varying language and cultural groups with differing views of disabilities and appropriate services. Country reports primarily address mortality and/or prevention, with little information being provided on morbidity and disability.</td>
<td>Lack of information on the rehabilitation workforce, especially from less specialized cadres that were not trained in tertiary institutions, may bias estimates (numbers, cadres type etc.) of individuals working on rehabilitation. The majority of reports or publications focus on programmes and lack details on the workforce that are implementing such interventions. Lack of information from health officials and health workers on the benefits or scope of rehabilitation work could be a limiting factor due to lack of prioritization or commitment to such services.</td>
<td>Majority of services concentrated at the national level (60%) and only 2% were reported at the community/household level. 50 rehabilitation personnel reported, mostly physiotherapists and 38 services in rehabilitation identified - most often physiotherapy (31%) down to speech therapy (5%). Much of the reported health workforce was an international volunteer on short-term placements. Most services focused at national level, not at the level of households. Lack of reliable data on disability and needs for rehabilitation health services. Lack of health workforce data &quot;at the level of granularity to determine rehabilitation health workers&quot;. Lack of awareness of what rehabilitation services could potentially offer. Need for culturally relevant training delivered by host country nationals who will stay, and connect with their people as clients. Need for integrated services, from primary care to a tertiary institutional base for more complex referrals. Educating cadres internationally not likely in the foreseeable future, therefore require a localized, problem-focused mechanism. Regional approaches might afford some economy of scale and shared models based on shared assumptions, values etc. Only 4 countries reported using clinical guidelines, most services available only at national level. Teamwork and collaboration was reported to be lacking. Recognition that community based rehabilitation services are needed – including appropriate referrals, collaborative relationships and community involvement.</td>
<td>1. Need for an integrated rehabilitation model that links general (community) service to tertiary (specialized) services. 2. Rehabilitation workforce requires specific a cadre to support locally assessable and acceptable interventions. 3. International collaboration of training for specialized skills with locally relevant techniques and examples. 4. Stronger record keeping and data management of the workforce itself. 5. Dissemination activities of rehabilitation programmes should include more details on the workforce who implement such programmes. 6. Bringing rehabilitation services to the community is an effective technique to reach individuals who may have barriers to seeking more specialized or tertiary care. 7. Education on benefits of rehabilitation, especially for decisions makers, is important to increase its prioritization within the health sector.</td>
</tr>
</tbody>
</table>
Dear Expert,

Thank you for your participation in this Delphi study that aims to provide recommendations to the WHO on the health rehabilitation workforce in less resourced settings.

We have developed the below statements, which will be asking you to rate through the methodology of a realist review. This process used a systematic search of the literature, which involved an initial scanning of 1,231 articles that were then reduced to 33 articles that best-fitted our pre-established criteria; through title, abstract and full text screening. We subsequently used realist review methods to identify context-mechanism-outcome-configurations (CMOCs) to help identify 'what works, for whom, and under what circumstances'. Based on our identification of these CMOCs, we have derived the following statements of good practice for the rehabilitation workforce.

We recognize that no one set of recommendations will be ideal for every situation, but that some general statements may be applicable to most less resourced settings. The statements below therefore represent our interpretation of what the available evidence is suggesting. We greatly value your expert opinion to help further inform and strengthen these recommendations.

Thank you again for your participation!

Note:
The term ‘rehabilitation worker’ or ‘rehabilitation health worker’ refers to the health workforce working with people with both mental and physical disabilities, unless stated otherwise. It is not specific to any cadre of health worker, unless stated otherwise - for example, ‘community based rehabilitation worker’.
‘Persons with disabilities’ refers to all types of disabilities.
Annex 8: Initial Statements

1. The potential stress of rehabilitation work requires the provision of emotional and mental support services for workers to be incorporated into all programmes.

2. Where a generic community health workforce exists, they should be trained in rehabilitation and service provision for persons with disabilities.

3. Rehabilitation services (including the additional training and supervision specific to rehabilitation) should be incorporated into health workers' current role in an effort to limit increasing their work burden.

4. All rehabilitation health workers should be trained on the CBR Matrix and the contextual challenges and opportunities for applying it in their area.

5. Community-based rehabilitation workers are an effective means of identifying and targeting persons with disabilities.

6. Community-based rehabilitation workers should be multi-skilled, with a trans-disciplinary approach, with referral mechanisms to more specialized service providers.

7. Persons with disabilities should be given priority to be trained as rehabilitation workers.

8. As rehabilitation workers often emotionally support persons with disabilities and their families, they should have basic counseling skills and an understanding of appropriate referral pathways.

9. The self-efficacy of rehabilitation workers, specifically those in lower level cadres, is important for job commitment, satisfaction and subsequently retention and motivation of workers. Mid-level rehabilitation cadres require respect as professionals, with certification and acknowledgement of their decision-making abilities; as well as opportunities for further training and career advancement.

10. The rehabilitation workforce should be structured in an integrated three-tiered system, incorporating 1) community work, 2) supervision and 3) facility-based services.

11. Within the delivery of rehabilitation services, there should be the designation of a specific rehabilitation coordinator/focal person who oversees the process.

12. Community based workers should have generalist skill-sets with specialized skill-sets being offered at the facility-based level.
13. The rehabilitation workforce configuration should be guided by a community needs assessment targeting the characteristics of the workforce that will make it more acceptable to persons with disabilities and their families.

14. Experience and educational requirements for rehabilitation workers will be set depending on context and cadre; however, all workers, especially those at the community level, should have: strong social skills, sensitivity to others’ views and a commitment to working with persons with disabilities.

15. Transport, compensation, and material resources should be targeted in order to provide a working environment that will be able to retain rehabilitation workers.

16. Clear job descriptions and expectations for all rehabilitation cadres should be developed collaboratively with the workforce, managers/implementers and government bodies.

17. Persons within communities, specifically Disabled People's Organizations and persons with disabilities, should carry out the designation and identification of community-based rehabilitation workers.

18. Community-based rehabilitation workers should be accountable to the communities in which they work and these communities should contribute to the supervision process of the workers.

19. Supervision of the rehabilitation workforce should involve frequent practice observation and meetings that adopt a collaborative problem-solving approach.

20. Supervision steering-committees should be established to monitor and guide the supervision process.

21. Supervisors should be equally competent in the process skills of supervision and the technical skills of rehabilitation interventions.

22. All rehabilitation workers should be trained on case management, social protection, CBR Matrix, monitoring and record-keeping.

23. Rehabilitation workers should receive specific training on advocacy and empowerment and be encouraged to undertake endeavors that promote these within their communities.

24. Training of rehabilitation workers should use a rights-based approach and encourage problem-based learning and discussions.

25. Training of the rehabilitation workforce should involve persons with disabilities in the planning and delivery of the training courses.

26. Community-based rehabilitation workers can provide services to persons with both physical and mental disabilities.
27. A mid-level rehabilitation cadre should be trained with generic rehabilitation skills.

28. A mid-level rehabilitation cadre should be trained with specialized rehabilitation skills.

29. A mid-level rehabilitation cadre should be trained with generic skills with one specialized area of rehabilitation.
### Annex 9: Summary of Evidence and Evidence Consensus

<table>
<thead>
<tr>
<th>Statement</th>
<th>Evidence*</th>
<th>Average**</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What are the competencies needed to deliver and manage quality rehabilitation services?</strong></td>
<td>(Mijnarends et al., 2011); (Penny et al., 2007); (Raja, 2012); (Mendis, 2009); (Claussen, 2005)</td>
<td>4.33</td>
<td>0.77</td>
</tr>
<tr>
<td>Within the delivery of rehabilitation services, there should be the designation of a specific rehabilitation coordinator/focal person who oversees the process.</td>
<td>(Balaji et al., 2012; Atif Rahman et al., 2008); (Claussen, 2005); (Murray et al., 2011); (Bass et al., 2013); (Jadin, 2005)</td>
<td>4.17</td>
<td>0.86</td>
</tr>
<tr>
<td>Multidisciplinary supervision should be available to support the implementation of rehabilitation practices at all levels.</td>
<td>(Finkenflügel &amp; Rule, 2008); (Chappell, 2009; Como &amp; Batdulam, 2012; Deepak, 2011; Finkenflügel &amp; Rule, 2008; Rule, 2013); (Grut, 2004); (Penny et al., 2007); (Children, 2010); (A. Rahman, 2007); (Raja, 2012); (Lund et al., 2013); (Mendis, 2009)</td>
<td>4</td>
<td>0.91</td>
</tr>
<tr>
<td>All cadres of rehabilitation workers should receive specific training on advocacy and empowerment and be able to undertake endeavors that promote these within their communities to complement the work of DPOs.</td>
<td>(Finkenflügel &amp; Rule, 2008); (Como &amp; Batdulam, 2012)</td>
<td>4.56</td>
<td>0.78</td>
</tr>
<tr>
<td>Experience and educational requirements for rehabilitation workers will be set depending on context and cadre; however, all workers, especially those at the community level, should have: strong social skills, sensitivity to others’ views and a commitment to working with persons with disabilities.</td>
<td>(Atif Rahman et al., 2008)</td>
<td><strong>3.83</strong></td>
<td><strong>0.98</strong></td>
</tr>
<tr>
<td>Rehabilitation services (including the additional training and supervision specific to rehabilitation), should be incorporated into all generic community health workers' current service provision role.</td>
<td>(Children, 2010); (Deepak, 2011); (Mendis, 2009); (Chatterjee, 2003)</td>
<td>4.06</td>
<td>0.94</td>
</tr>
<tr>
<td><strong>Skill-Set Mix</strong></td>
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<tr>
<td>In some situations, a community rehabilitation cadre should be trained with a broad range of generic rehabilitation skills (rehabilitation skills that are applicable to a large number of service users) and comprehensive knowledge on disability.</td>
<td>(Chappell, 2009; Deepak, 2011; Rule, 2013); (Hartley, 2003)</td>
<td>4.39</td>
<td>0.5</td>
</tr>
<tr>
<td>In some situations, a community rehabilitation cadre should be trained with specialized context specific rehabilitation skills.</td>
<td>(Ayoughi et al., 2012)</td>
<td>4.06</td>
<td>0.87</td>
</tr>
<tr>
<td>In some situations, a community rehabilitation cadre should be trained with generic rehabilitation skills (rehabilitation skills that are applicable to a large number of service users) as well as one</td>
<td>(Finkenflügel &amp; Rule, 2008)</td>
<td>4.06</td>
<td>0.42</td>
</tr>
</tbody>
</table>
specialized area of rehabilitation.

**Who should be trained to develop the competencies required for the delivery and management of rehabilitation services at each level of the health care system?**

<table>
<thead>
<tr>
<th>Description</th>
<th>Source(s)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons with disabilities (including different types of disabilities) should be encouraged and supported to train as rehabilitation workers so that the service reflects the communities they serve.</td>
<td>(Rule, 2013); (Nilsson, 2005)</td>
<td>4.33</td>
</tr>
<tr>
<td>Different workforce mixes are going to be required in different contexts, and service providers should be open to a combination of: specialists, generic community rehabilitation cadres, and a cadre combining some specialist and some generic skills.</td>
<td>(Finkenflügel &amp; Rule, 2008): (Grut, 2004)</td>
<td>4.28</td>
</tr>
<tr>
<td>While generic community health workers should be aware of the rehabilitation needs of persons with disabilities and be able to make appropriate referrals, it is not realistic to expect them to provide these services in addition to their current service provision role.</td>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td>Community-based rehabilitation workers are an effective means of identifying and targeting persons with disabilities.</td>
<td>(Ayoughi et al., 2012; Chappell, 2009); (Chatterjee, 2003); (Children, 2010)(Claussen, 2005); (Finkenflügel &amp; Rule, 2008); (Adams et al., 2012); (A. Rahman, 2007)</td>
<td>4.78</td>
</tr>
<tr>
<td>With appropriate training and availability of referral supports, community-based rehabilitation workers can provide services to persons with both physical and mental disabilities.</td>
<td>(Ayoughi et al., 2012; Atif Rahman et al., 2008) (Rule, 2013); (Chatterjee, 2003); (Lund et al., 2013)</td>
<td>4.56</td>
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</table>

**What are the strategies which work to enable rehabilitation personnel to develop and maintain the competencies required for the delivery of rehabilitation services?**

<table>
<thead>
<tr>
<th>Description</th>
<th>Source(s)</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Clear job descriptions and expectations for all rehabilitation cadres should be developed collaboratively with the workforce, managers/implementers and government bodies.</td>
<td>(Mendis, 2009); (Chappell, 2009); (Finkenflügel &amp; Rule, 2008)</td>
<td>4.72</td>
</tr>
<tr>
<td>Training of the rehabilitation workforce should involve persons with disabilities (including different types of disabilities), in the planning and delivery of the training courses</td>
<td>(Rule, 2013); (Chatterjee, 2003); (Armstrong et al., 2011)</td>
<td>4.5</td>
</tr>
<tr>
<td>Training of rehabilitation workers should use a context sensitive, rights-based approach and encourage problem-based learning and discussions.</td>
<td>(Mendis, 2009); (Deepak, 2011); (Finkenflügel &amp; Rule, 2008);(Ng et al., 2009)</td>
<td>4.5</td>
</tr>
<tr>
<td>Supervision of the rehabilitation workforce should be supportive and involve frequent practice observation and meetings that adopt collaborative problem-solving approaches.</td>
<td>(Balaji et al., 2012; Mijnarends et al., 2011; Atif Rahman et al., 2008); (Claussen, 2005); (Bass et al., 2013)</td>
<td>4.67</td>
</tr>
<tr>
<td>The self-efficacy of rehabilitation workers, specifically those in lower level cadres, is important for job commitment, satisfaction and subsequently retention and motivation of workers.</td>
<td>(Mijnarends et al., 2011; Atif Rahman et al., 2008); (Claussen, 2005); (Magallona</td>
<td>4.28</td>
</tr>
</tbody>
</table>
Community rehabilitation workers require respect and recognition as professionals, which includes certification and acknowledgement of their decision-making abilities, opportunities for further training and career advancement and where feasible, should be financially compensated for their work.

The area of rehabilitation is a delicate and stressful area and requires self-awareness on the part of the health worker and requires the provision of time and spaces for consistent reflection and supportive debriefing for healthcare workers.

<table>
<thead>
<tr>
<th>What are the strategies which work to increase the supply and improve the distribution of rehabilitation personnel required for the delivery of rehabilitation services?</th>
</tr>
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<tbody>
<tr>
<td>The rehabilitation workforce should be structured through an integrated tiered system, from community work to facility-based services with appropriate supervision at each level.</td>
</tr>
<tr>
<td>Community rehabilitation services can be effectively provided by shifting some rehabilitation tasks from conventionally trained rehabilitation professionals to cadres with a shorter length of training</td>
</tr>
<tr>
<td>Transport, compensation, and material resources should be targeted in order to provide a working environment that will be able to retain rehabilitation workers.</td>
</tr>
<tr>
<td>Persons with disabilities should be involved in the selection of community-based rehabilitation workers.</td>
</tr>
<tr>
<td>What are the minimum requirements (i.e. ratio and competencies) of rehabilitation personnel needed for the delivery of rehabilitation services?</td>
</tr>
<tr>
<td>Where a generic community health workforce exists, they should be trained in disability identification and awareness, rehabilitation referral, and basic service provision for persons with disabilities.</td>
</tr>
<tr>
<td>Evidence</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Community based workers should have a minimum generalist skill-set with specialised services being offered at the facility-based level.</td>
</tr>
<tr>
<td>All rehabilitation workers should be trained on case management, social protection, the CBR Matrix, monitoring and record-keeping.</td>
</tr>
<tr>
<td>All rehabilitation health workers should be trained on the CBR Matrix and the contextual challenges and practical opportunities for applying it in their area.</td>
</tr>
<tr>
<td>As rehabilitation workers often emotionally support persons with disabilities and their families, they should have basic counselling skills and an understanding of appropriate referral pathways and of their limits and when to refer.</td>
</tr>
<tr>
<td>Supervisors should be equally competent in the process skills of supervision and the technical skills of rehabilitation interventions.</td>
</tr>
</tbody>
</table>

**What are the characteristics of the rehabilitation workforce that facilitate equitable access to rehabilitation services?**

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Reference</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The rehabilitation workforce configuration should be guided by community needs assessments targeting the characteristics of the workforce that will make it more acceptable and accessible to persons with disabilities and their families</td>
<td>(Ayoughi et al., 2012; Balaji et al., 2012; Chappell, 2009; Deepak, 2011; Rule, 2013);(Atif Rahman et al., 2008); (Ng et al., 2009); (Raja, 2012)</td>
<td>4.5</td>
<td>0.62</td>
</tr>
<tr>
<td>Community-based rehabilitation services should be accountable to the communities in which they work and these communities should have mechanisms to contribute feedback regarding the services they receive.</td>
<td>(Balaji et al., 2012; Deepak, 2011); (Sharma, 2003); (Chatterjee, 2003); (Bass et al., 2013); (Deepak, 2010)</td>
<td>4.39</td>
<td>0.7</td>
</tr>
</tbody>
</table>

*List of evidence from articles is not exclusive. Several statements were not derived from the CMOCs but were suggested by our team members or developed throughout the Delphi process.

**Average and standard deviation from the last iteration (round 3) of the Delphi Survey.*
References


Raja, S. U., Chris; Shrestha, Padam; Sunder, Uma; Mannarath, Saú; Kippen Wood, Sarah; Patel, Vikram. (2012). Integrating Mental Health and Development: A Case Study of the Basic Needs Model in Nepal. *PLoS Medicine, 9*(7). doi: 10.1371/journal.pmed.1001261.g001


