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The knowledge and insights of people attending Pacific CBR Forum were invaluable to the project team and largely shaped the report's conclusions

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The Pacific Rehabilitation Health Workforce

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The Pacific Rehabilitation Health Workforce

1. Background

Understanding workforce needs in rehabilitation is in its infancy in many countries. A recent contribution by Gupta et al. (2011) outlines the variable distribution of health-related rehabilitation services around the world, including in the Pacific Island Countries (PIC). Understanding the status of the Pacific rehabilitation workforce is a first step in working towards addressing the many challenges faced by PIC when providing disability and rehabilitation services to their people.

This paper reports on a project to develop a Pacific Rehabilitation Workforce Working Paper undertaken by Professor Gwynnyth Llewellyn, Alexandra Gargett and Professor Stephanie Short from the Faculty of Health Sciences, University of Sydney on behalf of Western Pacific Regional Office, WHO in consultation with Pauline Kleinitz, and Dr Gulin Gedik, WPRO and informed by a Steering Committee.

The purpose of the project was to develop a discussion paper providing an initial status exploration for the Pacific rehabilitation workforce. This paper, the product of the project, offers an overview of the rehabilitation workforce itself, including of whom it is comprised, where and in what number they are employed, what services they provide and the typical skill mix. It presents a deeper understanding of the issues and challenges experienced by the Pacific rehabilitation workforce and what they perceive the strengths, gaps and future needs to be. This paper also includes the perspective of people with disability from PICs, including what they see as the key health rehabilitation needs.

The project approach included a desk review of current rehabilitation workforce literature and relevant Pacific-focused literature, collection of data regarding rehabilitation services and workforce through AusAID mapping and national templates - Pacific Rehabilitation Health Workforce (PRHW) - completed by Pacific CBR Forum participants and interviews and focus groups with Pacific CBR Forum participants and key informants. A detailed description of the project approach is included in Appendix A.

2. Desk Review

With the publication of *World Report on Disability* there is a rapidly expanding literature on disability in low and middle income countries (Emerson, Yasamy & Saxena, 2011). There is however very little available on rehabilitation workforce worldwide. *Spotlight on Health Workforce Statistics*, the fact file from the Department of Human Resources and Health, WHO Geneva, Issue 7, July 2009, noted that ‘many national health sector plans and reviews or human resources for health (HRH) development strategies fail to mention human resources for rehabilitation’ (p.1). Part of the problem is that rehabilitation health personnel are not usually

counted in national health workforce statistics. Gupta et al. (2011), making the best use of available data, found that the rehabilitation workforce is unevenly distributed internationally with the deepest penetration in high income countries. MacLachlan and colleagues recently proposed a new model for training workers to provide services for people with disabilities (MacLachlan et al. 2011; Mannan et al, 2012). This approach requires rehabilitation workers to be trained according to the skills needed not as currently is the case in categories of rehabilitation health personnel such as physiotherapists, speech pathologists, podiatrists and orthotists and so on. It is yet to be seen whether this model is practical, efficient and cost-effective.

A literature search was conducted to identify publications which address the rehabilitation health workforce in the Pacific. This search used Medline, Scopus and Google Scholar with hand searching of regional journals, INGO, NGO and DPO websites and newsletter, and the repositories of regional and international UN agencies. This search strategy produced 40 relevant papers in the scientific literature from 1981 to 2012. It also located a total of 7 regional reports and 7 national reports.

Of the 37 papers located almost all focus primarily on rehabilitation services with issues of the rehabilitation health workforce and related training as secondary considerations. This small literature could be described as opportunistic. That is, most papers describe quite specific programs or approaches, and either in a country context or a regional context, which in the case of the United States United-States associated Micronesian region of the Pacific of the 1980's and 1990's no longer pertains today. For clarity the papers are grouped according to region, country, health conditions and lastly rehabilitation training.

Former United Nations Trust Territory of the Pacific Islands and related US interests: Fitzgerald & Barker, 1993; Hartung et al 1989; Kearns, 1983; Wilson, 1981.

Country specific with the first five on Papua New Guinea: Watters & Dyke, 1996; Watters et al., 2001; Powell, 2001, Shaw, 2004 and Byford & Veenstra, 2004; Vanuatu: Gregory, 1996; Solomon Islands: Wiley, 2009; Mines and Taloafiri, 2011. Fang & Yeung, 2002: editorial addressing rehabilitation services in the Asia-Pacific region.

Specific health conditions and their related rehabilitation workforce needs: Culverwell & Tapping, 2009; Karthikeyan & Ramalingam, 2012; Maharaj, 1996; Harding, 2005 and three papers addressing mental health: Roberts, Cruz & Puamau, 2007; Foster et al. 2009; Deva, D'Souza, Sundram, 2010. Training of rehabilitation workers: Cheng, 2010 on speech pathology across the region, and Nair et al., 2012 on Pacific Islander health graduates from a New Zealand University.

The remaining 15 papers could not be accessed electronically or in physical format in the time available. Appendix A contains the analysis of the 22 papers reviewed for this project. The bibliography – Appendix C - includes all papers located and reports cited.

Scientific Literature Summary Analysis

The geographical features of the Pacific region feature prominently in all studies. These are: a region with dispersed and sometimes very small populations, separated by great distances involving costly travel, varying language and cultural groups with different meanings accorded to deformity, illness, accident and trauma. Assistance from services may not be sought early or at all. This context underpins four common themes relevant to the rehabilitation workforce from this small literature.

- i. The need for culturally relevant training which ideally delivered by nationals and in-country. This is to ensure culturally sensitive rehabilitation health personnel, who are more likely to remain in their country, and are able to communicate with their rehabilitation clients.
- ii. The critical importance of an integrated rehabilitation model: from primary care to a tertiary institutional base for more complex interventions. This would allow dispersed populations locally available access to rehabilitation with referral as needed to district, regional or national level care.
- iii. The need to develop a technician/ para-professional rehabilitation health workforce model. This is to ensure that basic rehabilitation interventions and support, and in the case of people with physical disabilities, locally suitable aids and equipment, are readily available. As Gupta et al.(2011), MacLachlan and others have noted, educating the large number of rehabilitation personnel required internationally is not likely to happen in the foreseeable future and new models and approaches are required.
- iv. The advantage in instituting a regional approach to sharing specialist knowledge, facilities and training in countries which are geographically close and that already participate in inter-country networks and forums. There would be further advantage for rehabilitation workforce training to extending existing pan-Pacific collaboration to include higher education institutions in Australia and New Zealand.

We located 7 regional reports and 7 country reports of varying relevance to this project. Each of these provides some data on disability and/ or rehabilitation needs. This provides a context within which to consider the size, nature, skills offered and challenges of the rehabilitation health workforce in the Pacific. The regional reports are:

- *Mapping Human Resources for Health Profiles from 15 Pacific Island Countries*. The Human Resources for Health Knowledge Hub, University of New South Wales, 2009.
- *Road Safety in the Western Pacific Region: a call for action*. WPRO, 2009.
- *Pacific Children with Disabilities*. UNICEF, 2010.
- *Disability at a glance 2010: a profile of 36 countries and areas in Asia and the Pacific*. UNESCAP, 2011.
- *Women and health in the Western Pacific Region: an overview*. WPRO, 2011.
- *WPRO Country Health Information Profiles (CHIPS)*. WPRO, 2011

- *Improving Access to and Provision of Disability Services and Facilities for People with Disabilities in the Pacific*. AusAID and CBM Australia – Nossal Partnership for Disability-Inclusive Development , 2012

The country reports are:

- *Solomon Islands Nationwide Disability Survey 2005: A way forward to working with People with Disabilities in Solomon Islands 2006-2010* (Ministry of Health and Medical Services, Solomon Islands Government, 2006).
- *Kiribati National Disability Survey Report* (The Kiribati National Disability Survey Advisory Committee, 2005)
- *Tonga National Disability Identification Survey* (Tonga Red Cross Society and DACTION, the Tonga Disability Action Committee, 2006).
- *The Fiji Islands Health System Review*, World Health Organisation's Asia Pacific Observatory on Health Systems and Policies, 2011.
- Three feasibility studies on provision of mobility devices and support services for people with a disability conducted by Motivation Australia in Samoa (2011), Tonga (2011) and Vanuatu (2012).

In the Pacific, as evident in regional and national health profiles, data is rarely collected on rehabilitation personnel, or if it is, this may be from estimates from professional groups or reports from non-government organisations (as many are employees of NGO's and INGO's). In addition, the purposes, sampling and data collection methods vary across these reports. The services for people with a disability identified in *Improving Access to and Provision of Disability Services and Facilities for People with Disabilities in the Pacific* (Walji and Palmer, 2012) give some indication of the size and distribution of the rehabilitation workforce across 12 Pacific Island countries: Cook Islands, FSM, Fiji, Kiribati, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. There were 38 rehabilitation services identified with the most frequently found being physiotherapy (31%) and the least common being speech therapy (5%). The majority of services were concentrated at the national level (60%) with only 2% reported to be available at the household level. The report noted that many of the professionals were international volunteers on short term placements. The services were unevenly spread with more than one third of the reported services available in Fiji and Papua New Guinea.

Country Reports Summary Analysis

The findings from all the reports lead to the following conclusions. There is a **lack of reliable data on disability and associated need for rehabilitation health services** across the Pacific region. For example, the *Disability at a glance 2010: a profile of 36 countries and areas in Asia and the Pacific* presents data from a survey conducted with the focal point for disability in each country, international reports, government and other stakeholder websites. The population of people with disability is only included for Fiji, Kiribati, Solomon Islands and Tonga, pointing to data collection difficulties and the need for systematic and regular collection of disability statistics across the region, using internationally agreed standards.

Currently almost all reporting is only on mortality and does not include morbidity data. Collecting morbidity data would permit understanding of potential need for rehabilitation services

and associated rehabilitation health workforce. For example, the *Road Safety in the Western Pacific Region: a call for action* (WPRO, 2009) reports mortality only. Without data on morbidity, it is unclear the extent of disability resulting from motor, bicycle and pedestrian accidents and the rehabilitation need and workforce requirements from these causes in the region. A promising start on recognising morbidity and associated disability and potential rehabilitation needs has been made in *Women and health in the Western Pacific Region: an overview*. This report states the leading causes of DALY's for women in the region as unipolar depressive disorders, cerebrovascular disease, refractive errors, chronic obstructive pulmonary disease and ischaemic heart disease as the top five. This would suggest a particular combination of skills needed for a contextually relevant rehabilitation health workforce.

The regional health reports primarily address morbidity and/ or prevention. **Addressing the gap so that morbidity and disability are also included is a matter of some urgency** to understand the demand and need for a rehabilitation health workforce. This is particularly apparent in relation to NCDs. NCDs are increasing in the region and are a leading cause of morbidity for example with the complications of diabetes, sensory loss and amputation, and paralysis and loss of functioning after stroke. A second concern is that country prevalence figures on disability, where these exist, are well below 15% of population (*World Report on Disability*, World Bank and WHO, 2011). This may be due to (i) only easily observable disabilities such as mobility and sensory disabilities being identified; (ii) social stigma associated with disability may result in reluctance to nominate oneself or a family member as having a disability; (iii) low level of community awareness about disability may mean that some disabilities such as cognitive impairment and mental health conditions are not identified; and (iv) as communities become more urbanised, there is reduced community cohesion and therefore less knowledge of people living with disabilities.

There is also a **lack of health workforce data at the level of granularity to determine rehabilitation health workers** in regional country profile reports. *WPRO Country Health Information Profiles (CHIPS)* accounts for possible rehabilitation workers in two categories: paramedical staff and community health workers. However these are 'catch all' categories with for example paramedical staff including laboratory and radiography services, health promotion, environmental health and health information units. Similarly, the *Mapping Human Resources for Health Profiles from 15 Pacific Island Countries* includes physiotherapists, occupational therapists, and speech pathologists in "Other health workers" along with ten other occupations. The most recent country report which provides some data on rehabilitation services comes from Fiji. *The Fiji Islands Health System Review* has a section on rehabilitation care. This describes the 20 bed service that is Fiji's National Rehabilitation Medicine Hospital, and the 2008 data on admissions (98) of which the largest number was for amputations (42) and paraplegia (22). There is also a prosthetic laboratory for fabricating and fitting prosthetic aids. The report notes that rehabilitation care is provided by physiotherapists at the sub-divisional level. As well, there is a small cadre of community rehabilitation assistants working at this level. There are no figures or specific data in relation to these or other rehabilitation health workers.

There is a **lack of awareness of what rehabilitation services could offer**. The low proportion of requests for rehabilitation health disciplines such as speech therapy and occupational therapy

in earlier reports suggests lack of familiarity with the skills of these professions. This is not surprising given there are few rehabilitation professionals in the region. However, in the latest report on disability and human resource mapping (AusAID and CBM-Nossal Partnership, Walji & Palmer, 2012) respondents nominated occupational therapy and speech therapy for early intervention and for support after stroke as the most needed rehabilitation services.

3. Data collection method and findings

The project involved four data collection phases: (i) A national template based on ISCO categories sent to participants prior to the Pacific Islands Community Based Rehabilitation Forum; (ii) Interviews with key informants during the week of the Forum; (iii) A workshop during the Inaugural Dialogue on Human Resources for Health Rehabilitation in the Pacific; and (iv) Ranking priorities for rehabilitation health workforce after the workshop.

Method details can be found in Appendix A. Project materials are located in Appendix B. Great effort was expended by the team and all participants within a short time frame to provide the most reliable data possible. We adopted the International Standard Classification of Occupations (ISCO, 2008 revision) for standard data collection. This has at least three advantages: (i) it is an international standard for workforce data collection; (ii) it provides baseline data at a more granular level than currently available in the region; and (iii) it offers the opportunity for future collection and comparison within the region as well as comparison with rehabilitation health workforce in other regions.

3.1 Description of the Pacific Rehabilitation Workforce

There were a total of 50 rehabilitation personnel reported across the region with the majority being physiotherapists and physiotherapy assistants and technicians. Table 1 contains the regional data on core rehabilitation disciplines. ***The mix of professional disciplines*** represents those that are typically considered the core of rehabilitation services internationally. Prosthetics and orthotics is represented by prosthetic technicians. Podiatry is not represented.

There were also other personnel reported to be providing a rehabilitation service. These were: 32 specialist medical practitioners for example orthopaedic surgeon, paediatrician, and general surgeon; 43 community health workers for example community health nurse; and 123 community based rehabilitation workers. Key informants reported that there were very many, too many to count traditional/folk healers and herbal medicine practitioner and assistants. In Samoa, Tuvalu, Marshall Islands and Kiribati, traditional healers were reported to be the first and often the only port of call for people in villages and they were also preferred by some living in urban settings. This was the case for all conditions including hearing or vision loss, mobility restrictions, stroke, congenital deformities, cognitive impairment and epilepsy. The full list of other personnel providing a rehabilitation service is included in Appendix A.

Table 1. Rehabilitation health workers

ISCO code	Occupational category	Title	Number
2212	Specialist medical practitioners	Rehabilitation specialist	1
2264	Physiotherapist	Physiotherapist	17
2266	Audiologists and speech pathologists	Speech therapist/ pathologist	5
		General therapist in hearing, speech and language	9
2269	Health professionals not elsewhere classified	Occupational therapist	4
3214	Medical and dental prosthetic technicians	Prosthetic technicians	6
3255	Physiotherapy technicians and assistants	Physiotherapy technician/ assistant/ aide	8
Total			50

Key informants reported the ***mix of skills of rehabilitation personnel*** in various ways, depending on their familiarity or lack thereof with personnel in hospital or community health services providing a rehabilitation service. The data varies from specific information such as ‘gait rehabilitation’ or ‘fabricating prosthetic limbs’ to broad terms such as ‘treatment’ or ‘diagnosis’. Those with recognized qualifications from an internationally accredited course would be expected to exhibit the skills within that qualification. This would be the same for those gaining local diploma or certificate level qualifications such as the Diploma of Community Based Rehabilitation offered by the Solomon Islands College of Higher Education (SICHE). Others have completed local training courses or day workshops. A full understanding of the skills used by the rehabilitation health workforce in the Pacific requires a skill inventory approach beyond the scope of the project.

Key informants reported that ***predominant client and impairment types*** are amputations secondary to diabetes, stroke and cerebral palsy. Stroke was mentioned in eight countries; diabetes in 7; amputation in 7, cerebral palsy in 6 countries and intellectual disability in 4 countries. Country specific information on predominant clients and impairment types is located in The Pacific Rehabilitation Health Workforce, WHO Discussion Paper Series, Paper No. 1 SUPPLEMENT.

Data on ***training*** was variable with the exception of physiotherapy in which 11/17 of the physiotherapy professionals received their qualifications at Fiji School of Medicine, now the College of Medicine, Nursing and Health Sciences at Fiji National University, with the remaining 6 undertaking training outside the region. Data from Papua New Guinea is missing where there is a physiotherapy training course at the Divine Word University. All other professionals in the core rehabilitation disciplines were trained in either Australia or New Zealand. On the job training was most frequently reported for the professional assistant categories except for the prosthetic technicians whose training came from outside the region. Detailed information on training is included in Appendix A.

Data on ***employing agencies*** was either not forthcoming or not known by key informants with few exceptions such as the Ministry of Health in the Cook Islands. To understand exactly how many rehabilitation personnel exist and who employs them would require an in-depth census including employing bodies outside health departments, other government departments, NGOs,

INGOs, private practitioners and international volunteer agencies. Our data suggest 5 rehabilitation personnel are working in a private capacity so capturing private practitioners would also be essential to gain an accurate picture of the available rehabilitation personnel across the region.

Team work seems to be absent rather than present. There are very few instances where rehabilitation professionals are located with others from similar or related rehabilitation backgrounds. Key informants reported difficulties with coordinating and collaborating across hospital-based rehabilitation personnel and CBR workers located at district level; and with referral, collaboration and team work across existing health services such as the local village health worker and the district health post with the CBR worker and the institutional rehabilitation service located in the capital. Key informants from Marshall Islands, Nauru and Cook Islands reported proactive initiatives to promote interdisciplinary team work. For example, Nauru, home visits in collaboration with doctor; Cook Islands, regular communication/meetings within NGO staff; and Republic of Marshall Islands, formalised referral process with accessible computerised notes for all staff.

Only four countries reported using **clinical guidelines**. These include for example, Ministry of Health guidelines in the Cook Islands; hospital unit guidelines in the Republic of Marshall Islands; and individual therapists downloading clinical guidelines (standard operating procedures) from the web. The key informants from Samoa and Niue reported the usefulness of their respective tele-health systems through which professionals receive specialist support and advice by e-mail/phone/and skype systems. There is also follow up and additional consultations. This is effective because the specialists usually from New Zealand or Australia have already visited the country for short term service provision or clinics and become familiar with the local context.

In the Pacific Islands **rehabilitation services are mostly only available at the national level**. Papua New Guinea, the Solomon Islands and Fiji are exceptions, each with a more formal, structured system which also reaches to provincial, district and more local levels. The Cook Islands has disability centres on the outer islands which connect with services on the main island. Other countries such as Vanuatu and Papua New Guinea reported attempts, limited by available resources, to extend CBR services to outer areas (although not necessarily in a systematic manner or linked to public policy).

Effective access to rehabilitation services depends on a coordinated referral system through a long chain from the smallest community unit level, through to district, then province or regional level and from there to the national level. There are many barriers to achieving this currently in the Pacific Islands as noted for example by Culverwell and Tapping (2009), Shaw (2004) and others and by nearly all key informants in this study. An alternative referral pathway is from the public health system to NGO's providing services to people with disabilities and rehabilitation needs. This was noted in several countries, for example, Papua New Guinea and Samoa. When this referral pathway worked it was because an NGO had a longstanding presence in the country, stable personnel well-known to each other, and the outcomes from referral were regarded as positive by all involved.

Detailed country profiles are available in SUPPLEMENT to this paper (The Pacific Rehabilitation Health Workforce, WHO Discussion Paper Series, Paper No. 1 SUPPLEMENT).

3.2 Key issues identified by the rehabilitation health workforce

Strengths

The first strength is the presence in each country of **individuals committed to gaining more support for people with disabilities and their rehabilitation needs**. Frequently these individuals whether they are in government, NGO's or DPO's, have a long standing and visible presence. They are involved in regional meetings, national meetings and international events which broaden their networks and deepen their knowledge of possible rehabilitation interventions and service models. Many have strong relationships across and outside the region.

A second strength is the **good working relationships between government health service providers, NGO's and INGO's and with the DPO's**. The presence of a core group within each country and good working relationships between the various agencies mean that there is familiarity and a willingness to work together and share ideas across the region.

A third strength is the **presence of higher education institutions** in three of the countries providing training - at degree level in physiotherapy and diploma and certificate level for technical assistants and community-based rehabilitation workers. This situation contrasts strongly with the earlier literature where rehabilitation services and job training for assistants came mostly from expatriates and off-shore institutions.

A fourth strength is that access to the **internet is reasonably well established** in main urban areas in some countries in the region. Samoa, Nauru, Niue, and the Cook Islands all reported using internet services which enabled relatively easy access to technical knowledge, clinical guidelines, disability advocacy, policy and legislation, and professional organisation websites. Primary communication with all participants in this project was via e-mail which permitted timely and relatively efficient sharing of information.

A fifth strength is the **strong recognition of the need for complementary institution based rehabilitation services and rehabilitation services based in the community**. This constitutes more than offering occasional clinics and outreach services. Rather it incorporates working towards an integrated system of hospital based and locally based (province or district depending on the size of the country) rehabilitation services with more specialist assistance available nationally when required. This model also takes into account the need to coordinate with CBR in the community and to have good collaborative relationships with front line primary health care nurses to ensure early and appropriate referrals.

Weaknesses

There is an ***evident need in the community for more locally based rehabilitation services***. Across the region, rehabilitation services remain primarily hospital based in the national capital or a large urban area. This means that rehabilitation services are very hard to access for people living in non-urban areas including those living quite close to urban centres due to poor transport including cost. There is also little opportunity to work with family members and carers at all and particularly in their own home or village as most of the rehabilitation professionals do not travel outside their urban location. Family members are not usually involved in rehabilitation interventions. This represents an opportunity lost. Another opportunity lost is being able to educate the community and reduce the stigma associated with some disabilities.

A second weakness is the strongly held view across the key informants that ***there are no strong champions in government or ministries to advance the status of people with disabilities***. The lack of funding and priority given to rehabilitation services and assistive aids and equipment was frequently identified as a major weakness across the region.

A third weakness is that ***many in the rehabilitation health workforce are working alone and isolated from professional colleagues*** in their own discipline or in related rehabilitation disciplines. This seems to lead to relatively traditional perspectives on rehabilitation service models. For example, frequently key informants talked about their ideal model as having separate (vertical) rehabilitation units with at least one of each discipline PT, OT and SP. There was almost no mention of inter-professional or trans-disciplinary approaches to maximize the scarce resources, which is not surprising given the thinly spread rehabilitation personnel. Some informants reported measures they had taken to fill the 'gaps'. For example, the physiotherapist taking on occupational therapy roles noted by key informants from both the Republic of Marshall Islands and the Solomon Islands however this was regarded as a problem – a last resort short term approach rather than a longer term solution to the resource shortage.

A fourth weakness is ***lack of understanding of doctors and nurses about disability and need for rehabilitation***. This effectively impedes referrals, maximum use of the rehabilitation services available, and advocacy for additional or more appropriately located rehabilitation services, for example at the district or community level.

3.3 Key challenges and rehabilitation health workforce needs

Key challenges and rehabilitation health workforce needs across the region are reported here. Country specific challenges and workforce needs are reported in the SUPPLEMENT.

Six major workforce needs were identified across the region. The first of these is ***ensuring a much better informed primary health care workforce of doctors and front line nurses*** about rehabilitation and its contribution to health, wellbeing, functioning and prevention of further disability. The lack of knowledge among other health professionals about the place of rehabilitation was seen to be a major impediment. It resulted in certain conditions such as cerebral palsy not being recognised with lack of diagnosis understanding about information and management techniques for family members. Key informants from DPO's stressed the need for health professionals to be much better informed about the broader societal and economic

issues facing people with disabilities, and to be aware of the person with a disability in their social and family context and not focused only on the health condition. Key informants from Nauru, Fiji, Vanuatu, and Tonga all spoke about the need for better informed workers at the community level. This would mean for example village health workers having an understanding of frequently seen disabilities and the benefits to be gained from rehabilitation intervention. It would also mean that community level workers were given the mandate to work beyond acute health conditions. This requires a policy and associated practice response such that public health nurses could broaden their scope of practice to include people with chronic conditions such as diabetes.

Second, there is a ***lack of secure employment for all rehabilitation personnel***. This is due to the number of government posts being controlled centrally (in most countries) and not all locally trained graduates finding a government post. Positions with NGO's and INGOs are dependent on donor funding and usually involve short term contracts. This militates against a secure career path. There are also employment challenges for para-professionals. One example is Community Rehabilitation Assistants in Fiji. Positions were thought to be guaranteed for students undertaking the training program, only to find that government cut backs had removed the dedicated positions. According to key informants there are rehabilitation professionals and rehabilitation assistants across the region working as volunteers in the hope of securing a paid position in the future.

Third, ***certain skills are in short supply***. Occupational therapy, speech therapy and podiatry were most frequently mentioned, perhaps not surprisingly as these services came primarily from non-resident or short term resident rehabilitation health professionals. In Kiribati, ISPO have assisted in establishing a prosthetics centre thus there was real recognition of the role that podiatrists can play in foot wound care and prescribing appropriate foot wear to reduce the likelihood of further damage for people with diabetes. Occupational therapists and speech pathologists were regarded as critical to reducing ongoing disability after stroke and for children identified with learning, motor and speech difficulties. The key informant from Tonga in particular identified a need for occupational therapy for their mental health services. There is a dominant presence of expatriate rehabilitation health professionals either in person or via occasional in country visits or tele-health. This results in the following:

- Most on the job training of local rehabilitation assistants and carers is carried out by non-local rehabilitation health professionals. A relevant example comes from Kiribati where the presence of expatriates has helped establish a service with trained para-professionals in the prosthetics and orthotics unit at the rehabilitation hospital.
- Donor organisations expect that rehabilitation health staff will come from a non-Pacific Island country resulting in it being less likely that a regionally trained person would be employed in a donor funded program.
- Some professional support and resource sharing is occurring across the region. For example, the physiotherapist from the Republic of Marshall Islands travels occasionally to Palau to provide whatever support he can and on the job training.
- Local high school students are not aware of the rehabilitation professions as career options. It is unlikely that people they know or their families know have become a rehabilitation health professional or assistant.

A fourth major workforce need was for rehabilitation personnel ***to be active in the community, contributing to health promotion and health prevention initiatives***. In this way, they could influence individuals and family members, provide early intervention to prevent and minimise the impact of disability, and improve access to appropriate equipment and accessible environments.

A fifth major workforce need was to ***develop further training opportunities in the region with education and outreach to young people considering careers*** so that becoming a rehabilitation professional takes its place alongside considering medicine, nursing, teaching or law. This was because in every country there was a strong preference for rehabilitation health professionals who were locals and understood the society, the culture and the local community. Key informants talked about lack of familiarity with the rehabilitation professions in the community generally such that it would be most unlikely that young people applying for a scholarship to study in Australia or New Zealand for example would include a rehabilitation discipline in their application.

The sixth and final major workforce issue raised was the ***lack of opportunity in the Pacific Island region for rehabilitation professionals to upgrade their qualifications***. There was also concern that other health professionals were not able to develop new skills and gain specialist qualifications in rehabilitation professions or in related specialities that would assist rehabilitation services. For example the key informants from Samoa reported the lack of opportunities for the local doctor to become an ENT specialist which would be extremely useful for the existing rehabilitation services. For some this meant undertaking further studies to gain specialist skills after graduation relevant to the particular health and disability conditions they were likely to encounter. For others it meant gaining new specialist skills to begin working in areas where there were serious workforce shortages such as in mental health. To gain further specialist knowledge usually meant leaving a permanent position and moving to Australia or New Zealand and this not being a desirable choice to move away from employment and family responsibilities.

3.4 Perspective of people with a disability on the rehabilitation health workforce

Responses by people with disabilities and their representative organisations include all countries except where DPO representatives were unable to be interviewed at the Forum or afterwards. These were the Cook Islands, Kiribati, PNG, and Vanuatu.

Of primary concern to the DPO key informants was ***the need to advocate to government to understand the importance of rehabilitation and the benefit in providing rehabilitation health services to people with disabilities***. In some instances, for example, Nauru, the Solomon Islands and Samoa, the DPO key informants were actively involved in advocating for data collection about the needs of people with disabilities including their rehabilitation health needs. There was a strong focus for some key informants on developing policies that would underpin and sustain the provision of rehabilitation services. Across the region, key informants identified the need for governments to recognise and prioritise the rehabilitation needs of people with disabilities. Several difficulties were reported in relation to this. For example in FSM there was a lack of personnel with the appropriate qualifications and training in government to identify needs and develop programs. Within the community there was also a lack of funding to help

DPO's to prepare evidence and advocate to government about their needs. For respondents from Tuvalu, Tonga, and the Solomon Islands, ratifying the UN Convention on the Rights of Persons with Disabilities was seen as an important first step to government recognition of responsibility towards people with disabilities. DPO's recommended a champion or focal point for disability and rehabilitation within the appropriate ministry or within cross ministerial working parties or senior officers meetings – this need for a “place” in government was expressed strongly by key informants from Tonga, the Solomon Islands, Palau and the Republic of Marshall Islands.

Key DPO informants spoke about ***specific skill sets rather than particular rehabilitation health disciplines***. So for example the need for assistive aids and equipment appropriate to local conditions was frequently mentioned without mention of the disciplines typically involved in prescribing such as occupational therapy and prosthetics and orthotics. In one or two instances, for example, Samoa, where there is a very active NGO working with people with hearing impairments, audiologists were much sought after.

A strong theme in the DPO key informant group (at the workshop) was ***inequitable access to services***. In some countries, particularly the larger ones, there were gaps in knowledge – or inaccurate knowledge- about what each service provided, for whom it was relevant, and how to access the service. It was apparent that although there is a rehabilitation workforce to some extent in all countries, only those who know about or are told about the services offered actually access these. Other impediments to accessing rehabilitation services were also reported. A consistent concern for 9 of the 14 countries with geographically dispersed islands and/ or remote areas - Vanuatu, Tuvalu, Tonga, Solomon Islands, Palau, Samoa, Republic of Marshall Islands, the Cook Islands, and Fiji of the 14 countries - was the logistics and cost of travel. This cost occurred in two ways: First, for travel to an urban area for rehabilitation - usually this cost was too prohibitive for an individual to pay. Those requiring rehabilitation were often only transported when there were enough people to make the cost of diesel for sea travel worthwhile. Second, the prohibitive cost of providing rehabilitation services in outlying areas. With little or no budget for governments to support CBR assistants for example to visit outlying areas, these workers could only go to more remote areas if they could manage a ride with another person or walk between villages.

A related theme was the ***growing demand for prostheses for amputations secondary to amputation***. Currently few countries have prosthetic services; in some instances for example in Vanuatu an NGO tries from a very limited supply of donated equipment to meet the referral demand from the hospital physiotherapists. In other instances for example Tuvalu the DPOs sources assistive devices however it cannot meet the demand. Individuals also use their own networks either within the country or the region to try to source appropriate assistive equipment. Some individuals travel to other countries to get a prosthesis, for example from Palau to the Philippines, from Niue and the Cook Islands to New Zealand, where there is a free association agreement which permits this to happen.

3.5 Preliminary exploration of rehabilitation health workforce training institutions, courses and capacity development options (located in the Pacific)

There are two university level courses in physiotherapy available in the region. One offered by the Fiji National University, College of Medicine, Nursing and Health Sciences (formerly Fiji School of Medicine) as a 3 year Bachelor in Physiotherapy undergraduate program. The other, a 3 year Bachelor of Physiotherapy undergraduate program is offered by the Divine Word University (DWU), Faculty of Health Sciences in Papua New Guinea. This program opened at DWU in 2003. To date there have been 43 graduates. The Department of Physiotherapy also hosts the Physiotherapy Research and Rehab Centre which operates as a teaching, research and treatment centre. www.dwu.ac.pg/faculties/fhs/facultyofhs.html .

There are three courses in Community Based Rehabilitation in the region, two offered by institutions of higher education and one offered by an NGO. The Fiji National University, College of Medicine, Nursing and Health Sciences (formerly Fiji School of Medicine) offers the Certificate level CAL Program in conjunction with the Cerebral Palsy Alliance in Australia. The CAL Program consists of 30 weeks face to face training and 52 weeks of clinic and fieldwork. Between 2006 and 2011, 24 local Fijians have graduated with this recognised certificate. FSM now delivers a one year full time Certificate in Community Disability and Rehabilitation based on the CAL Program. FSM is recognising the previous CAL program participants with a FSM certificate. The second program is a 2 year Diploma of Community Based Rehabilitation through the School of Nursing and Health Studies, the Solomon Islands Institute of Higher Education (SICHE). www.siche.edu.sb/SNHS/SNHS_DCBR.html accessed 16th May 2012. A third CBR training course was offered by Callan Services, in Papua New Guinea. The AusAID-CBM Nossal Partnership report (Walji & Palmer, 2012) states that this program has ceased recently due to lack of funding.

Of these programs, the SICHE course in Community Based Rehabilitation and the Certificate in Community Disability and Rehabilitation at Fiji National University are the two most recent. Both courses were designed and implemented prior to the release of the WHO CBR Matrix and Guidelines in 2010 and focus primarily on the health component. With the introduction of the CBR Guidelines and Matrix with five components of which health is only one, there is a question about the ongoing focus of skills based training in CBR and skills based training in health rehabilitation.

3.6 Additional features of rehabilitation services relevant to the Pacific Rehabilitation Health Workforce

This section presents additional features of rehabilitation services relevant to consideration of the Pacific Rehabilitation Health Workforce. These features are derived from the desk review, data collected during the project and our observations in interviewing key informants, holding focus groups and conducting the Inaugural Dialogue.

First, there is ***an apparent lack of awareness in the community about rehabilitation and its benefits***. This could be associated with no knowledge about rehabilitation unless individuals had travelled to other countries where these services exist. This was particularly relevant in

countries with many outlying islands. So for example in Tuvalu, Federated States of Micronesia, Republic of Marshall Islands, Palau, and Kiribati where limited rehabilitation services are available only on the main island, how could someone on the outer islands know about rehabilitation and its benefits? Lack of awareness about rehabilitation could also be associated with shame and stigma about disability such that no one would seek help or assistance. This was reported to be particularly common for people with a mental health condition. Key informants from Nauru, Fiji and Tonga all reported people being ashamed to identify (and similarly their family members) as having a mental health problem. In Fiji it was reported there is a strong stigma attached to accessing services at St. Giles, the country's only psychiatric hospital then returning home to the village. A third reason for lack of awareness was that many in the population believed that there was nowhere to go or if they did go to the hospital there would be no one there to help them or they could only offer one type of help. So for example, reports from Tonga, Kiribati, and the Solomon Islands all mentioned individuals coming forward to request basic assistive devices but not knowing about therapeutic interventions that might be of more assistance. An associated lack of understanding was about the importance of early assistance. Examples were given about people in village settings not seeking help from the district post until a situation became dire, for example, severe ulceration associated with diabetes. When hospitalisation finally occurred the result would most likely be amputation resulting in a belief spreading in the community that seeking hospital care only resulted in extreme consequences and thus dissuading others from seeking assistance.

The benefits of rehabilitation were becoming spread little by little - in some countries. For example in Samoa, a noticeable change was reported with NGOs providing services to people with disabilities and their family members and community starting to see the benefits of these services. In Vanuatu, key informants reported that the majority of referrals were received through word of mouth where family members had 'heard about someone else who was helped' and were therefore willing to seek help as well as steadily increasing referrals from community nurses and health workers. Informants from a number of countries also reported engaging in community awareness activities about disability and rehabilitation. Examples include the use of radio in Tonga, community education sessions in Vanuatu, and the DPO promoting disability rights in Fiji.

Second, there is **a notable lack of rehabilitation services in the community** with the service model across the Pacific best described as primarily institutional based. Staff at hospital based rehabilitation services or units provide some level of outreach or community clinics. In some countries there is also CBR. Typically community services provided by hospital staff are restricted to a circumscribed distance from the hospital and dependent on staff availability and time. These are not necessarily regular, systematic or given top priority.

In a few countries, NGO's provide some community rehabilitation support often to people with specific conditions such as visual or hearing impairments. Technical expertise varies with the majority of personnel trained on the job. There are also volunteers involved. Examples include Tonga, Vanuatu, Cook Islands, Samoa, and Tuvalu. In Samoa and the Cook Islands there are also some rehabilitation professionals available in the community (some in private employment).

There are three countries where there are government funded and managed CBR programs. To the best of our knowledge this is only Papua New Guinea, the Solomon Islands and Fiji.

Where more than one system operates, for example, Tonga, Papua New Guinea and Vanuatu, knowledge of or collaboration between services appears to be minimal. In Tonga, according to key informants the services at the hospital and NGO services in community all operate independently of each other. Key informants from Vanuatu described an unsystematic and inconsistent referral system with people finding out about community services by word of mouth or from the smaller number of health providers who are aware and supportive of rehabilitation services. Key informants from the Cook Islands describe NGO and hospital based services trying to work together however referrals from the hospital to community services are not regular and reliable. In Papua New Guinea, there appeared to be very little coordination of programs between the government ministry, hospital services and Callan Services, the longstanding NGO in that country. Similarly lack of knowledge about services within a country was most notable with key informants from Fiji.

Alongside institutional, community and NGO services, traditional healers and traditional health care practices are a key force across the 14 Pacific Island countries, with at least 5 countries reporting the population accessing traditional healers before accessing formal health services. These countries were Samoa, Kiribati, Fiji, Republic of Marshall Islands and the Federated States of Micronesia. In Tonga, Solomon Islands, Tuvalu, and the Cook Islands key informants reported that people choose to use both the formal and traditional health systems at the same time indicating that they do not view the two systems as mutually exclusive. Therefore rehabilitation services, where they are present, exist and operate in the context of traditional healing practices and interaction between the two systems is inevitable.

A third factor, related to the DPO recommendation of a champion or key focal point on disability within national governments was the **concern about the priority being given to prevention campaigns rather than to intervention and rehabilitation programs for those already affected**. This was most strongly felt in relation to non-communicable diseases. Key informants expressed their concerns about the funding priority given to health promotion and community education programs on non-communicable diseases (NCDs). Some of the prevention and education programs were thought to be not very effective. This was because they consisted mainly of talk and posters and what appeared to be very little by way of outcomes. In contrast they supported introducing more effective intervention programs to prevent disability or lessen the likelihood of further disability for people affected by NCDs. Two specific examples came from Vanuatu where an informant reported “a very active but not effective NCDs program” and a mental health program recently established focusing on ‘community attitudes and encouraging participation in sport’ rather than providing intervention/rehabilitation. The key informants from the three northern Pacific countries – Republic of Marshall Islands, Federated States of Micronesia and Palau – all expressed their concern about substance abuse and mental health programs focussing on community awareness and education rather than intervention/rehabilitation.

Appendices

1. Literature search

1.1 Scientific literature

1.1.1 Database Search

The databases Medline, Scopus and Google Scholar were searched with terms for rehabilitation workers and the Pacific Islands, including the names of the 14 member of the Pacific Islands Forum Secretariat included in this study. (See table 2 for the terms used). The selection of professional titles came from Gupta et al (2011) and Walji & Palmer (2012). Medicine and nursing related professions were not included as search terms. Including the search term 'rehabilitation' allows for the detection of papers that address medical or nursing practitioners with specialist rehabilitation training.

Table 2. Search Terms used in Literature Search

Rehabilitation Workers	Pacific Islands
<ul style="list-style-type: none"> • allied health occupations • allied health personnel • occupational therapy • orthotist • physiotherapy • prosthesis design • prosthetist • rehabilitation • rehabilitation centers • rehabilitation of hearing impaired • speech pathology • speech-language pathology 	<ul style="list-style-type: none"> • cook islands • federated states of micronesia • Fiji • Kiribati • independent state of samoa • kiribati • marshall islands • melanesia • micronesia • nauru • niue • pacific islands • pacific states • palau • papua new guinea • polynesia • samoa • solomon islands • tonga • tuvalu • vanuatu

A total of 164 studies were located using this search strategy. After review of the title and abstracts 129 studies were excluded due to: the research was about a country that was not a member country of the Pacific Island Forum Secretariat (PIFS) (21); the paper discussed a health service or issue that did not include rehabilitation or disability (70); or the paper discussed a rehabilitation program or research that was not health rehabilitation such as agriculture rehabilitation or community rehabilitation post disaster (38). The *Asia Pacific Disability and Rehabilitation Journal* and the *Development Bulletin* were hand searched and 2 papers meeting the inclusion criteria were located. . This left a total of 35 papers for analysis. A number of these papers were from journals that are not widely available and could not be accessed electronically. With the time frame for the project it was not possible to access these papers (15). The papers are referenced in section 1.2 of the bibliography. Twenty two papers were reviewed.

1.1.2 Findings

Of the 37 papers located almost all focus primarily on rehabilitation services with issues of the rehabilitation health workforce and related training as secondary considerations. This small literature could be described as opportunistic. That is, most papers describe quite specific programs or approaches, and either in a country context or a regional context, which in the case of the United States United-States associated Micronesia region of the Pacific of the 1980's and 1990's no longer pertains today. For clarity the papers are grouped according to region, country, health conditions and lastly rehabilitation training.

Former United Nations Trust Territory of the Pacific Islands and related US interests: Fitzgerald & Barker, 1993; Hartung et al 1989; Kearns, 1983; Wilson, 1981.

Country specific with the first five on Papua New Guinea: Watters & Dyke, 1996; Watters et al., 2001; Powell, 2001, Shaw, 2004 and Byford & Veenstra, 2004; Vanuatu: Gregory, 1996; Solomon Islands: Wiley, 2009; Mines and Taloafiri, 2011. Fang & Yeung, 2002: editorial addressing rehabilitation services in the Asia-Pacific region.

Specific health conditions and their related rehabilitation workforce needs: Culverwell & Tapping, 2009; Karthikeyan & Ramalingam, 2012; Maharaj, 1996; Harding, 2005 and three papers addressing mental health: Roberts, Cruz & Puamau, 2007; Foster et al. 2009; Deva, D'Souza, Sundram, 2010. Training of rehabilitation workers: Cheng, 2010 on speech pathology across the region, and Nair et al., 2012 on Pacific Islander health graduates from a New Zealand University.

The remaining 15 papers could not be accessed electronically or in physical format in the time available. The bibliography – Appendix C - includes all papers located and reports cited.

US Affiliated Micronesia Countries

The trust territory included what is now known as the Commonwealth of the Northern Mariana Islands (CNMI) which is currently in political union with the US and the Federated States of Micronesia (FSM) the Republic of the Marshall Islands (RMI) and the Republic of Palau all of which are now independent states in free association with the United States of America. Of relevance here are FSM, RMI and Palau which are all members of the Pacific Islands Forum Secretariat (PIFS).

In the earliest paper, Wilson (1981) describes a para-professional training program established in the Trust territory to develop a local workforce of mental health personnel on each of the six main islands to liaise with the psychiatrist and psychologist located in the capital, Saipan. Six local people, one from each island, were hired as “district mental health coordinators”. Each had at least high school education and additional experience in health services. Following 3 months training focused on teaching them to be effective assistants to local physicians and the professional staff in Saipan. Their work primarily involved follow up and support to chronic patients, including travel to their homes on outer islands or villages. They engaged in some basic counselling activities and education of family members regarding medication. Although evaluation of effectiveness of this approach was not undertaken, the author notes three critical elements for success: practical training relevant to the local context; absolute necessity of an alliance with a local doctor; and frequent on-island supervision from the psychiatrist and psychologist based in the capital.

In similar vein, Hartung, Keely and Okamoto (1989) describe a para-professional training program conducted by the Pacific Rehabilitation Research and Training Centre at the University of Hawaii. This program was for indigenous medical rehabilitation personnel for Micronesia and American Samoa, and called rehabilitation technicians to differentiate their responsibilities from physical and occupational therapists. Ten rehabilitation technicians in two groups of 5 were trained in a 17 week curriculum. Of these, 8 worked in this role at hospital based clinics in American Samoa; one in each of the two urban centres of the Marshall Islands, one in each of the four states of FSM and one in Palau. The training and later service delivery focused on spinal cord injuries, stroke and amputations including locally fabricated special equipment such as bamboo splints. Difficulties identified included some technicians also working in other positions, and lack of referral for their services. The authors note their concern that these positions and future training may no longer be possible following the transition to nation states. A subsequent paper by described the above work of the Pacific Rehabilitation Research and Training Centre in particular from a culturally relevant perspective, however this paper was descriptive only.

Kearns (1983) presents an overview of the challenges associated with providing rehabilitation services to Micronesia through US mainland and Hawaii based facilities. Of most interest are the cost comparisons which include costs associated with travel to and from the island states and the 'Western-technology' considered quite inappropriate for island use. He concludes that a more cost contained and effective approach would be to utilize the rehabilitation services, then well advanced, in the neighbouring countries of Taiwan, Japan & the Philippines rather than mainland US services. A telling example is the lower cost (US\$372 cheaper) of sending a person from Ponape in FSM for rehabilitation services to Tokyo rather than the West Coast and with 6.5 hours less travel time and 3,562 less air miles.

Unsurprisingly given the governance arrangements at the time, the four papers addressing this region focus on US based and 'western-type' rehabilitation services and developing para-professional workforce approaches to meet the geographic and socio-cultural features of the region and in the case of Kearns (1983) promoting more effective utilization of resources available within the Asia-Pacific region. With these islands now either as nation states or less closely allied with the US, their resource base is significantly different. That said the papers provide useful insights into developing culturally relevant para-professional rehabilitation training for particular purposes in Pacific island locations.

Rehabilitation services in specific countries

Watters and Dyke (1996), Watters et al (2001), Powell (2001), and Shaw (2004) highlight the lack of rehabilitation services in Papua New Guinea. The earliest paper is on trauma as a significant health problem with road traffic accidents, domestic violence and tribal fights in Papua New Guinea. Five years later, Watters and colleagues in writing about general surgery with little by way of specialty note the need for rehabilitation and better long term support and management of burns, spinal injuries and paraplegia. Around this same time, Powell (2001) analysed the impact of a physiotherapy service she was providing in a provincial hospital in Papua New Guinea. Patients who received physiotherapy were in the following diagnostic categories: neurological problems in adults (including strokes, spinal and head injuries), patients requiring orthopaedic rehabilitation, children with neurological problems (mainly cerebral palsy), and those with burns and arthritic problems. In 2004 Shaw reported on a survey of rehabilitation services in Papua New Guinea. Out of 145 questionnaires to health services and coordinators across the country, 63 were returned reporting that most services were primarily urban based in hospital settings with some home or outreach services, and mainly to people with physical disabilities. Physiotherapists in these services were employed by the Ministry of Health; CBR was primarily undertaken by NGO's. Shaw (2004) argues for more training of personnel and funding for CBR and for improved communication and collaboration between the existing services

Byford and Veenstra (2004) in an effort to understand the cultural influences on people with disability conducted a survey of people with disability and their families in the Middle Ramu region of Papua New Guinea. The results indicated that most often the cause for disability was attributed to supernatural reasons and there was very little biomedical understanding of disability. The authors suggest that those implementing CBR programs must understand the cultural beliefs if they are to be successful in decreasing the impact and preventing disability in a community.

Specific health conditions and related rehabilitation

A number of studies focus on specific physical conditions. Culverwell and Tapping (2009) present a retrospective case analysis of congenital talipes equinovarus (CTEV) cases with birthdates between 2001 and 2003 treated at hospital in a remote region of Papua New Guinea. They found an incidence of CTEV at 2.7 per 1000 live births per year suggesting however this is an underestimate given many families do not seek treatment. For just over one third of the patients undergoing surgical procedures outcomes could not be determined as they did not return for their review appointment. A survey conducted with parents and health workers indicated several difficulties identified in seeking and following through on treatment including distance to travel (also identified previously by Shaw (2004), and stigma associated with deformity. Based on this the authors suggest an alternative approach which would involve the development of outreach services with physiotherapists using an evidence based serial casting method based in rural locations and/or training up local community health workers. More recently Karthikeyan and Ramalingam (2012) discussed the need for using rehabilitation services for children with meningitis in Papua New Guinea. The paper includes a very brief literature review of the problem of meningitis in Papua New Guinean children and associated neurological complication and referral to rehabilitation services. The paper also provides a very brief

description of the rehabilitation services in Papua New Guinea (CBR through NGOs and physiotherapy services from the approximately 20 graduates from the one course available in Papua New Guinea). The authors call on health professionals to use rehabilitation services for children with meningitis.

Harding (2005) conducted a study to identify the incidence of major lower limb amputations in the Marshall Islands, the proportion of amputees who were deemed appropriate for prosthetic fitting and determine the survival rates and usage of the fitted prostheses. Surgical records of the national hospital were searched to identify the number of major lower limb amputations over a one year period (2002-2003). A retrospective analysis of the hospital's rehabilitation service identified which of these patients were successfully fitted with a prosthetic device. The follow up aspect of the study contacted all patients who had been fitted with a prosthetic device during the study period which included a number who had their amputations prior to the study period. Harding identified a total of 45 patients who underwent a major lower limb amputation all of which were related to diabetes. This is an incidence of 79.5/100,000 population however adjustments to allow for standardized comparison against European populations resulted in an adjusted incidence of 370/100,000. Of the 45 approximately half (23) were successfully fitted with prosthetic devices. A total of 15 patients participated in the follow up study and overall the outcome of the provision of a prosthetic device had been successful - 13 were using the device daily all of which reported they were able to walk independently within their home. The two who were not using their device had received an above knee amputation and the author discusses the increased technical skill and likelihood of more advanced disease in these cases that may have influenced this. The author also noted that travel to the rehabilitation centre for follow up appointments was very difficult for those on the outer islands yet many of them appeared to be managing well with the prosthesis and that the findings overall support the provision of prosthetic services to populations in the Pacific. In an earlier paper presented a retrospective case analysis 1985-1994 of spinal cord paralysis patients seen at the Medical Rehabilitation Unit (MRU) at the National Hospital in Suva, Fiji. He reported an incidence of 8.7/million/year suggesting however that this was likely to underestimate the total group as not all were admitted to rehabilitation. His findings support the view that young Fijian males are most prone to sustaining traumatic spinal cord paralysis with a high incidence of preventable secondary complications. Maharaj (1996) observes the 'well developed infrastructure, incorporating primary health care, for the delivery of health care services and a national MRU supporting both the hospital and primary health care systems" (p. 558). Thus he argues strongly that "the medical rehabilitation of person with disabilities should be integrated with the primary health care delivery services as community based programs providing quality care with specialized support and coordination, at national level, from the MRU" (p. 558).

Wilson (1981) described a para-professional training program for mental health coordinators in the Trust territory. Over twenty years later, mental health training remains a focus in two papers by however this time the country was Fiji. Roberts, Cruz and Puamau (2007) describe the institutionalized nature of mental health services in Fiji and argue the case for alternatives to hospitalization. Their paper states that the services in Fiji at the time did not consider the rehabilitation and reintegration of people into society and that follow up services after discharge from the specialist psychiatric hospital are provided by health personnel in the community with no specialist training or skills in mental health. They conclude with a number of recommendations for mental health services in Fiji which focus on strategies to decentralize and mainstream services as well as investing in training programs for specialist skills in mental health. Two years later Foster, Usher, Gadai and Taukei (2009) describe a model for introducing this specialist training where an Australian university consultant worked with the Fiji School of Nursing to develop a post graduate certificate in mental health nursing to meet identified need and to provide much needed specialist qualifications in the home country. A welcomed feature of this model was the Ministry of Health selection of applicants from a range of health settings and geographical locations to achieve wider specialist coverage in mental health across the country.

Deva, Souza and Sundram (2010) also describe a mental health training program though this time in the Cook Islands and funded by NZAID. Key community workers (e.g. doctors, nurses, pastors, and teachers), primary health clinicians, leaders or decision makers (government officials) were provided targeted training in mental health, including basic psychiatric theory and counselling skills. The program also established a stress management and rehabilitation centre.

Training Rehabilitation Professionals

Cheng's paper (2010) although focused on speech pathology education in Asia and the Pacific includes only one Pacific Island, Guam. The relevance for the current paper comes from the model employed in Guam where a US mainland university joined forces with the University of Guam to add a 1 year masters in speech pathology to the existing undergraduate program at the University of Guam begun in 1999. Identified need for speech pathology services was one driver to introduce the new Masters course; the other the concern to provide on island education to lessen the impact of people leaving Guam for further study elsewhere and not returning.

The final paper comes from Nair, Mishra, Norris and Paul (2012) and investigated the retention rate in Pacific Island communities of ethnic Pacific Islander graduates from a university in New Zealand. They surveyed Pacific Islander graduates from medicine, dentistry, pharmacy, medical laboratory science and physiotherapy. Out of a total 128 eligible participants, 75 returned surveys, including 7 physiotherapists. Of these 7 physiotherapists, 1 reported they are currently working in the Pacific Islands, 3 in Pacific Island communities in New Zealand and 3 stated they were working 'elsewhere'. Across all the professions there was a total of 5 respondents who indicated they are working in the Pacific Islands, including the 1 physiotherapist. The respondents were also asked to indicate factors that would both influence and hinder a decision to work in the Pacific Islands. The top response in both categories was related to financial income and salary.

1.2 Reports and grey literature

The websites of organisations relevant to health workforce or disability in the Pacific region were searched as follows: WHO WPRO Publications (last 5 years); Human Resources for Health Hub at University of New South Wales; government, and when available, Ministry of Health Websites from the 14 members of the Pacific Islands Forum Secretariat (PIFS). Each of these resource banks were hand searched. Excluded publications included those that were not reports (e.g. guidelines); were about countries which are not PIFS members; were related to health finance, drug and alcohol issues; could not be downloaded; or not in English. A number of documents were also provided by Motivation Australia, WPRO staff or were identified from references in the literature. The reports and grey literature were grouped into three categories: 'broad health' and 'human resources for health' and 'disability and rehabilitation'. Keyword searches were conducted on all shortlisted publications for the first two categories using rehabilitation (and derivatives, disability (and derivatives) and non-communicable disease or NCD.

2. Data collection and outcomes

2.1 Phase 1: Template sent to key informants prior to the Pacific Community Based Rehabilitation (CBR) Forum

2.1.1 Data collection

The Pacific CBR Forum brought representatives from disability focal points in government departments, Disabled People's Organisations and disability service providers from the 14 Pacific Island countries of the Pacific Islands Forum Secretariat to Nadi in Fiji for *The First Pacific Islands Community Based Forum* (Forum from now on). Staff at the World Health Organization's Western Pacific Regional Office identified 47 of the participants at the Forum as key informants for this project.

The Pacific Rehabilitation Health Workforce Template (PRHW Template) was developed in consultation with the World Health Organization's Western Pacific Regional Office (WPRO) to gather information on the occupational categories that are relevant to rehabilitation services using the work of Gupta et al. (2011) as a framework.

Gupta and colleagues collected data from the *WHO Global Atlas of the Health Workforce* and mapped it to the latest version of International Standard Classification of Occupations (ISCO). In consultation with the Disability and Rehabilitation Unit at the World Health Organization nine categories that contained professions integral to comprehensive rehabilitation service were identified. These nine occupational categories were included in the Template. Traditional and complementary medicine professionals and traditional and complementary associate professionals were also included as they feature significantly in the health service usage of many Pacific Island countries. For the purposes of the current project, community based rehabilitation workers were included in the national template (PRHW). They are not included in the ISCO however as reported in Walji and Palmer (2012) they contribute significantly to the rehabilitation workforce in the region.

The PRHW Template asked for information about numbers of workers in each category, their employer, where they trained and the type of services they provide (see Appendix C - Documents). The PRHW Template was sent to all key informants 2 weeks before the Forum asking respondents to collaborate with other participants or colleagues to complete the Template and return or bring to the Forum where it was collected.

2.1.2 Outcomes

2.1.2.1 Sources of data in returned templates

Ten of the countries returned completed PRHW Templates before or during the Forum. One (Nauru) returned the completed survey after the time of the Forum on return to their country. The data supplied in the returned templates has a number of caveats. The first is that the data does not include comprehensive responses from Palau, Federated States of Micronesia and the Solomon Islands. The second is that in the case of Fiji and Papua New Guinea the data came from one source only – those present at the interviews held during the Pacific Islands Community Based Rehabilitation Forum without later verification. In the third instance, in the case of Kiribati and Nauru, data was only available from hospital staff and therefore may have failed to capture community based services.

Specifically, in the cases of Marshall Islands, Niue, Samoa, Vanuatu, key informants completed the information in consultation with official information sources; in Fiji, Kiribati, and Nauru the providers of public health services completed it based on their knowledge of the services. In the Cook Islands, Tonga and Tuvalu the key informants worked together to complete the Template based on their combined knowledge of services available and in Papua New Guinea the information was completed by one NGO service provider for their services only. Key informants from the remaining three (Palau, Federated States of Micronesia and Solomon Islands) made efforts to obtain this information but were not in a situation to provide it.

The table below is a summary of the returned Templates and the sources of the information.

Table 3. Summary of returned Pacific Rehabilitation Health Workforce (PRHW) Templates–

Country	Number returned	
Cook Islands	1	Service provider key informant in consultation with Government key informant
FSM	0	Have had several emails with Govt rep who has attempted to source info. No response yet.
Fiji	2	Service provider key informants – FSM & MOH CBR Co-ordinator
Kiribati	1	Service provider key informant -Staff from rehab unit at hospital
Nauru	1	Service provider key informant - Staff from rehab unit at hospital
Niue	1	Government key informant – has confirmed with Director
Palau	1	Government key informant –returned PRHW Template with no data & a comment that records are not kept about rehabilitation in Palau.
PNG	1	Service provider key informant – NGO – data supplied is accurate for NGO services only (Callan Services)
RMI	1	Service provider key informant – Director rehab unit at hospital in consultation with MOH statistics unit.
Samoa	1	Service provider key informant – Private PT in consultation with National Health Services.
Solomon Is.	0	CBR program staff provided data for CBR program but not broader health services.
Tonga	1	Government r/Service provider /DPO key informants completed together.
Tuvalu	1	Service provider rep –(NGO) in consultation with Government and DPO key informants
Vanuatu	1	Government official – in consultation with NGO service provider key informants and Ministry of Health.

2.1.2.2 Rehabilitation workers

In total, 50 personnel were across the 5 ISCO categories traditionally thought of as members of a rehabilitation team: 2212 Specialist medical practitioners: Rehabilitation specialist (1); 2264;Physiotherapist (17); 2266 Audiologists and speech pathologists: Speech therapist/pathologist (5), General therapist in hearing speech and language (9); 2269 Health professionals not elsewhere classified: Occupational Therapist (4); 3214 Medical and dental prosthetic technicians: Prosthetic technicians (6); 3255 Physiotherapy technicians and assistants: Physiotherapy technician/assistant/aide (8).

2.1.2.3 Other health workers providing rehabilitation health services

2212 Specialist medical practitioners: a total of 32 specialist medical practitioners were reported including orthopaedic surgeon (3), paediatrician (13), psychiatrist (2), mental health doctor (1), ophthalmologist (1), general surgeon (5), obstetrics and gynaecology (1), anaesthetist (1), internist (4).

2230 Traditional and complementary medicine professionals: the total is unknown. Key informants reported very many in the two sub-categories, traditional/folk healers and herbal medicine practitioner.

3230 Traditional and complementary medicine associate professionals: acupuncturist/acupuncture technician (3), herbal healers (not known, very many), herbalist (not known, very many), traditional/folk healers (not known, very many).

3253 Community health workers: a total of 43 were reported in this category with public health nurse (13), district health care worker (14), community rehabilitation assistant (16), and lay people who provide support to people who are unwell and people with disabilities such as staying at home so that the person is never alone – very many and number unknown.

3259 Health associate professional not elsewhere classified: a total of 13 were reported in this category with youth peer educator (8), HIV counselor (1), HIV counselor aide (2), TB and Leprosy Coordinator (1), Counsellor (1).

Community based rehabilitation worker (category not included in ISCO): a total of 123 personnel were reported in this category with the following titles (numbers in brackets) – rehabilitation volunteer, expat(3), community disability worker (20), CBR worker (62), field workers (15), NGO volunteers (4), home caregivers (10), community rehabilitation aide (7), CBR aide assistant (2). .

This data in relation to other categories reported as delivering rehabilitation health services needs to be treated with great caution. The data reported on 2212 specialist medical may more accurately reflect the specialists available rather than whether the service they provide is a rehabilitation intervention. On some national templates additional titles were nominated but no numerical data were provided. These are not included above in the other health workers data.

The data in category 2230 traditional and complementary medicine professionals should also be treated with caution. In both subsections of this category key informants reported very many, too many to count. In some instances such as in Samoa, Tuvalu, Marshall Islands and Kiribati, key informants noted that traditional healers were the first and often the only port of call for people in villages and they were also preferred by some living in urban settings. This was the case for all health conditions including impairments and illnesses such as hearing or vision loss, mobility restrictions, stroke, congenital deformities, cognitive impairment and epilepsy.

A third caution is in relation to CBR workers, a category not included in ISCO. Because CBR developed initially with a strong health focus, the expectation frequently continues that CBR workers will provide health rehabilitation services. This may have led to over reporting of CBR workers providing a rehabilitation health service.

2.1.2.4 Training

In most instances specific data was not available on training. The exception was physiotherapy in which 11/17 of the physiotherapy professionals received their qualifications at Fiji School of Medicine, now the College of Medicine, Nursing and Health Sciences at Fiji National University. Of the remaining 6, 4 undertook their physiotherapy training in the New Zealand and 2 in the Philippines. We were not able to gather relevant data for Papua New Guinea where there is a physiotherapy training course at the Divine Word University in the Faculty of Health Sciences. It is expected however that there are a number of physiotherapists in that country who are graduates of this institution as well as those who come from training courses in New Zealand and Australia.

In contrast to physiotherapy, all 4 occupational therapists and all 5 speech pathologists were trained in countries outside the Pacific Islands. Two of the occupational therapists were trained in New Zealand; no location data was available for the other 2 or for the 5 speech pathologists. The 1 Rehabilitation Specialist had undertaken training at Flinders University in Australia. In the professional assistants categories in physiotherapy and hearing, speech and language all except one had undergone on the job training. This is a total of 16 para-professionals in health rehabilitation with on the job training. One additional physiotherapy aide was reported as receiving training from the

Fiji School of Medicine. Training was outside the region for the 2 (Brazil and Cambodia) out of 5 prosthetic technicians for which data was available.

2.1.2.5 Employers

Of the 50 rehabilitation personnel reported, the majority (27) were reported to be employed by government. Government employees were physiotherapists (14 out of 17 in total), 6 of the total of 8 physiotherapy technicians and assistants, the 1 rehabilitation specialist, and all the (6) prosthetic technicians. 12 personnel in total were employed by NGO's, 5 were in private practice, and the remaining 6 were volunteers.

2.2 Phase 2: Interviews with key informants conducted during the week of the Pacific CBR Forum

2.2.1 Design

Researchers met with the key informants in country groups during the Forum. The interview questions were designed to explore the broader issues surrounding rehabilitation workforce according to key question areas (see Appendix C) including the strengths, challenges and weaknesses. Each group was presented with three scenarios – a child with developmental problems, a person who experiences a stroke and a person who experiences a mental health problem. The key informants were asked to explain how the individual in this scenario would access the rehabilitation services in their country in both rural and urban settings. Information towards strengths, weaknesses and challenges that was mentioned during this process was explored further. Each key informant was also asked to describe their ideal scenario for the provision of rehabilitation services and associated workforce. To facilitate this we used a 'magic wand' question.

2.2.2 Interviews conducted

Due to other commitments during the Forum not all key informants were able to attend all interviews. A total of 39 people were interviewed. For seven of the countries all of the key informants were interviewed during the Forum (Cook Islands, Federated States of Micronesia, Niue, Samoa, Solomon Islands, Tonga, Tuvalu). Three of the interviews did not include service provider key informants (Federated States of Micronesia, Niue, Palau), five did not include government officials (Kiribati, Nauru, Palau, Papua New Guinea, and Marshall Islands) and four did not include DPO representatives (Cook Islands, Kiribati, Papua New Guinea, Tonga and Vanuatu). The Tongan DPO key informant was interviewed on a separate occasion during the Forum.

Table 4. Summary of Participants and Interviewees

Country	Total of key informants at Forum	Stakeholder key informants	Total key informants at interview	Stakeholder representation
Cook Islands	3	SP(2) / GO (1)	3	SP(2) / GO (1)
FSM	2	GO(1) / DPO (1)	2	GO(1)*DPO(1)
Fiji	8	GO(1) / SP(4) / DPO(3)	6	GO(1) / SP(4) / DPO(1)*
Kiribati	4	GO(1) / SP(1) / DPO(2)	1	SP(1)
Nauru	3	GO(1) / SP(1) / DPO(1)	2	SP(1) / DPO (1)
Niue	2	GO(1) / DPO (1)	2	GO(1) / DPO (1)
Palau	3	GO(1) / SP(1) / DPO(1)	1	DPO (1)
PNG	5	GO(1) / SP(3) / DPO(1)	2	SP(2)
RMI	2	SP(1) / DPO(1)	2	SP(1) / DPO (1)
Samoa	4	GO(1) / SP(2) / DPO(1)	4	GO(1) / SP(2) / DPO (1)
Solomon Is.	4	GO(1) / SP(2) / DPO(1)	4	GO (1) / SP (2) / DPO (1)
Tonga	3	GO(1) / SP(1) / DPO(1)	3	GO(1) / SP(1) / DPO(1)
Tuvalu	4	GO(1) / SP(1) / DPO (2)	4	GO(1) / SP(1) / DPO (2)
Vanuatu	4	GO(1) / SP(2) / DPO (1)	3	GO(1) / SP(2)
Total	50		39	

*Due to other commitments attended only part of country group interview

2.3 Phase 3 Workshop material from the Inaugural Dialogue on Human Resources for Health Rehabilitation in the Pacific

In the *Inaugural Dialogue on Human Resources for Rehabilitation in the Pacific* on the afternoon of Friday 15 June 2012 key informants were divided into stakeholder groups. The groups were as follows: one DPO group, one government representative group and, due to the large number of service providers present, two service provider groups. The DPO group consisted of key informants who were members of a Disabled Peoples Organisation in their country. The government stakeholder group included participants who were Ministry of Health, Ministry of Social Affairs (or equivalent in their country) or National Disability Committees and were representing the focal point for disability from their country. The service providers consisted of staff from NGO's providing services (Cook Islands, Papua New Guinea, Samoa, Tonga, Tuvalu, Solomon Islands & Vanuatu) staff from Ministry of Health services (Fiji, Kiribati, Nauru, & Marshall Islands) and two key informants from higher education institutions (Fiji, Solomon Islands). The rationale for these groupings was to ensure the perspectives of each key stakeholder group were obtained

without influence from other stakeholder groups. This grouping also provided the opportunity to gather a cross regional perspective to complement the individual country perspectives gathered during the interviews

2.3.1 Workshop activity 1 – Identify and rank the challenges to rehabilitation workforce in the Pacific

The stakeholder groups were given 20 minutes to brainstorm key challenges to rehabilitation workforce. Following this and in the next 20 minutes they chose the top five significant challenges from those recorded.

2.3.2 Outcomes

The five most significant challenges identified by each stakeholder groups are presented in Table 5. The top five challenges from the two service provider groups were similar and condensed into one set.

Table 5. Challenges to rehabilitation workforce identified by stakeholder groups during the workshop in the Inaugural Dialogue on Human Resources for Rehabilitation in the Pacific.

Rank	DPO	Government	Service Provider 1
1	Limited legislation and policies.	Issues that influence to resources: <ul style="list-style-type: none"> Lack of funding for rehabilitation Expensive referrals and services No rehabilitation facilities Economy and political crisis affects funding available for rehabilitation Countries are not prioritizing health issues 	Getting the government to recognise disability and the need for CBR.
2	Lack of involvement of people with disabilities in rehabilitation.	Issues specific to the Pacific Islands context: <ul style="list-style-type: none"> Lack of knowledge in community Misconceptions and ignorance in community regarding disability Rehabilitation is a foreign, not local concept Lack of database Lack of policies related to rehabilitation No support from leaders to strengthen support and understanding of people with a disability 	Sustaining the quality of services delivered by CBR workers in the health area. There are limited skills in current workers (and limited training in rehabilitation skills) and many unqualified personnel
3	Funding for rehabilitation services.	Issues specific to human resources: <ul style="list-style-type: none"> Lack of skilled personnel No adequate positions for rehabilitation services – eg. Doctors No ministry or office to coordinate or hold responsibility for rehabilitation Employment issues 	Sustaining projects that are set up by NGO/DPO and service providers Factors that influence this include lack of manpower (numbers of workers and geography and distance which make it difficult to expand services, implement CBR and train more locals.
4	Lack of education for both professionals/people with disabilities and independent living.		Lack of incentives, benefits and employment opportunities
5	Lack of information/awareness.		Limited support and awareness in the community. There is a need for more networking/collaboration between stakeholders including institution based services, community based services other health workers, community workers, people with disabilities, families and communities.

2.3.3 Workshop activity 2 – Identify and rank the solutions to the challenges identified in Workshop activity 1.

The stakeholder groups were given 20 minutes to brainstorm key challenges to rehabilitation workforce. Following this and in the next 20 minutes they chose the top five significant challenges from those recorded.

2.3.4 Outcomes

The five most significant challenges identified by each stakeholder groups are presented in Appendix C – Documents The top five challenges from the two service provider groups were similar and condensed into one set.

2.4 Phase 4 Review of data collected during Pacific CBR Forum

2.4.1 Summaries of interviews and workforce data collected

To ensure all perspectives were represented and to validate the information gathered during the CBR Forum we forwarded by email to all key informants summaries of the interview discussions after mapping these to the key question areas. Key informants were invited to review and provide comments, feedback or further information on the information in the summaries. Key question areas that had not been addressed during the discussion were highlighted and key informants were particularly asked to comment on these areas. Where key informants had not been able to attend the interview, all key informants from the stakeholder group in that country were specifically invited to provide comments.

2.4.2 Ranking exercise of solutions identified during Workshop activity 2

The most important five solutions, as ranked by the stakeholder groups during the *Inaugural Dialogue on Human Resources for Rehabilitation in the Pacific* were collated and presented in a ranking exercise format (see Appendix C -Documents) . This invited key informants to choose the three highest priority solutions (as nominated by DPO, government or service providers) in each ranked position (1-5). The rationale was to gain a whole of region perspective on the five highest priority solutions. The key informants were invited to return their responses to the ranking exercise within 10 working days, with a follow up email 10 days later.

2.4.3 Outcomes

By the due date 9 responses had been received. This is likely due to the tight turn-around time. The responses came from FSM (2), Samoa (2), Solomon Islands (1), PNG (1), Cook Islands (1) Niue (1) , Tuvalu (1) and Vanuatu(1). Responses were received from more service providers (5) than DPO members (2) or government officials (2). The selection of solutions by priority ranking was fairly evenly spread. This suggests that the 15 solutions as provided by key informants in the workshop all rate highly as priorities for implementation.

1. Pacific Rehabilitation Health Workforce Survey and Template

This survey uses the International Labour Organization's (ILO) International Standard Classification of Occupations (ISCO) to categorize health professionals.

Question 1. To get a picture of the health professionals in your country who provide rehabilitation services please fill in the blank fields in the attached MS Excel spreadsheet for each occupational category based on your existing knowledge. For some categories the answer might be zero (0) or not known (NK).

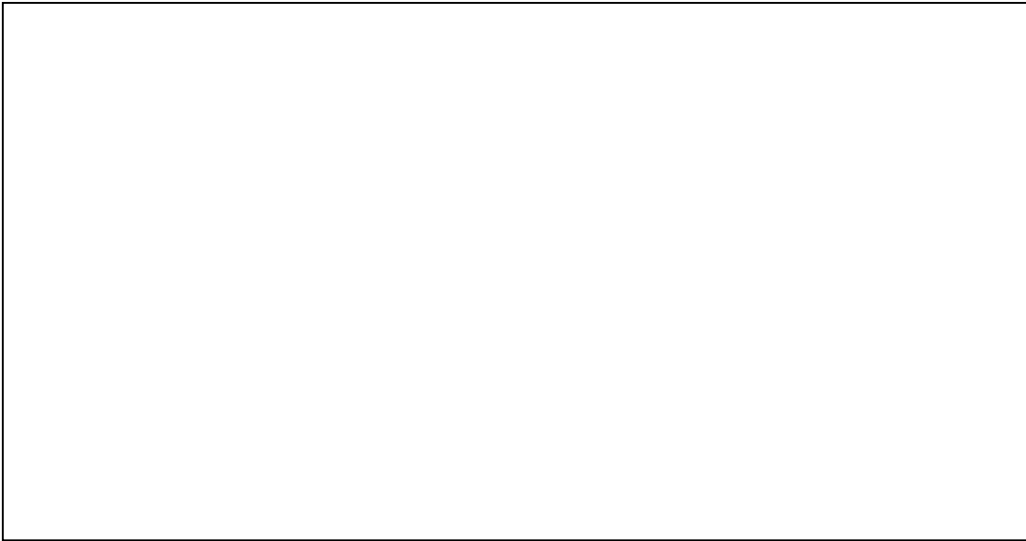
We have pre-populated the Generalist Medical Practitioners (2211) and the Nursing Professionals (2221) categories based on data from the *Mapping Human Resources for Health Profiles from 15 Pacific Island Countries* completed by the Human Resources for Health Knowledge Hub, Sydney in 2009. For these two categories no data is required from you at this stage.

To assist you with filling in the survey, in the third category called Specialist medical practitioners (2212) we have provided examples, highlighted in yellow, of information for each field.

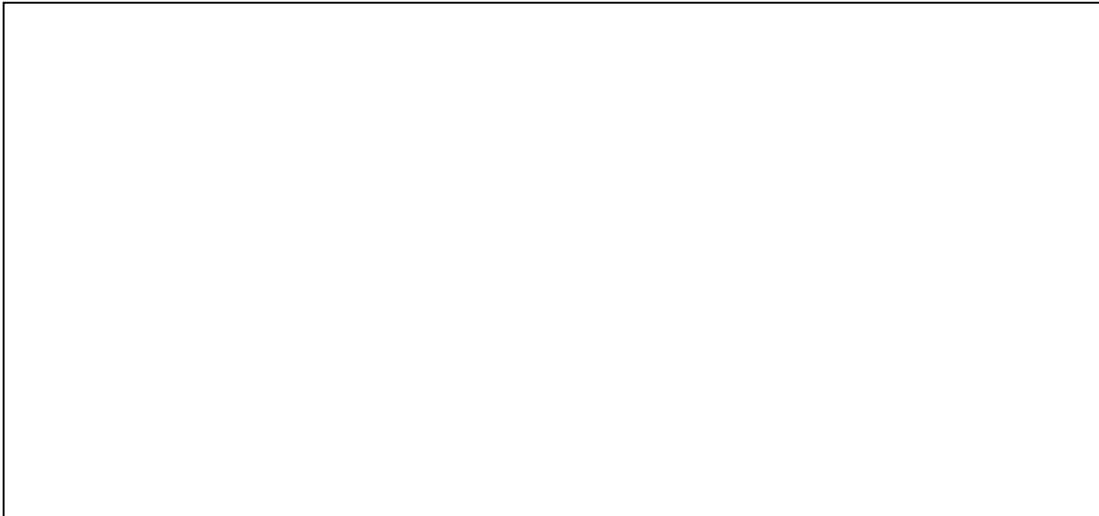
To help us collect this data please enter the information directly on to the spreadsheet, save with your country as the file name and return to Alexandra Gargett (Alexandra.gargett@sydney.edu.au). We appreciate that this may not be convenient for everybody. If this is the case could you print out the survey, fill it in by hand and we will collect it from you in Nadi.

Question 2. Have we missed any group of workers relevant to the rehabilitation health workforce in your country? If yes please describe.

Question 3. Are there volunteer workers who contribute to the rehabilitation health workforce in your country?



Question 4. Is there anything else you would like to tell us in the lead up to our discussions at the forum?



Question 5. Do you have details for people or organizations not attending the Forum who may also be able to assist us in collecting data about the rehabilitation health workforce in your country?

Name	Title	Email	Phone number

Thank you for taking the time to complete this survey.

Spreadsheet for Question 2

Occupational category	ISCO code	Examples of titles	Title used and number of people	Employer (Govt./NGO / Self employed)	Institution where trained	Rehabilitation services provided
Generalist medical practitioners	2211	General medical practitioners, family medical practitioner, primary health care physician	Cook Islands: 24			
			FSM: 64			
			Fiji: 372			
			Kiribati: 25			
			Nauru: 24			
			Niue: 3			
			Palau: 26			
			PNG: 333			
			RMI: 31			
			Samoa:85			
			Solomon Islands: 89			
			Tuvalu: 7			
			Tonga: 62			
			Vanuatu:26*			
Nursing professionals	2221	Professional nurse, specialist nurse, district nurse, public health nurse	Cook Islands: 116			
			FSM: 264			
			Fiji: 1957			
			Kiribati: 361			
			Nauru: 99			
			Niue: 14			
			Palau: 113			
			PNG: 2844			
			RMI: 177			
			Samoa:348			
			Solomon Islands: 694			
			Tuvalu: 60			
			Tonga: 357			
			Vanuatu:344*			
Specialist medical practitioners	2212	Specialist physician, specialist medical doctor in rehabilitative medicine, doctors in paediatrics, doctors in psychiatric specialties, specialist medical doctor in neurology	e.g. Rehabilitation specialist	e.g. NGO	e.g. University of Sydney	e.g. Diagnosis, assessment, treatment
			eg. Paediatrician	e.g. Govt	e.g. Fiji School of Medicine	e.g. diagnosis, assessment, referral for surgery
Traditional and complementary medicine professionals	2230	Herbal medicine practitioner, naturopath				
Physiotherapists	2264	Physiotherapist, orthopaedic physical therapist, paediatric physical therapist				
Audiologists and speech pathologists	2266	Audiologist, speech therapist, language therapist, speech				

Occupational category	ISCO code	Examples of titles	Title used and number of people	Employer (Govt./NGO / Self employed)	Institution where trained	Rehabilitation services provided
		pathologist				
Health professionals not elsewhere classified	2269	Podiatrist, occupational therapist				
Medical and dental prosthetic technicians	3214	Medical appliance technician, orthotist, prosthetist, prosthetic technician				
Traditional and complementary medicine associate professionals	3230	Acupuncture technician, herbalist, village healer				
Community health workers	3253	Community health worker, community health aide, village health worker				
Physiotherapy technicians and assistants	3255	Physiotherapy technician, hydrotherapist, massage therapist				
Health associate professionals not elsewhere classified	3259	HIV counselor, family planning counselor, osteopath				
Community-Based Rehabilitation Worker	Not included in ISCO codes	CBR Worker, community health worker providing rehabilitation				

* Data obtained from Human Resources for Health Knowledge Hub 2009 *Mapping human resources for health: Profiles from 15 Pacific-Island countries*, UNSW, Sydney.

2. Key question areas addressed during interviews at Pacific CBR Forum

Pacific Rehabilitation Workforce

- **Who belongs to the rehabilitation health workforce in the Pacific? Include typical rehabilitation personnel and also the personnel actually delivering rehabilitation (health) services, such as non rehab-specialized nurses and doctors.**
- **What is the mix of professional disciplines?**
- **What mix of skills do they have?**
- **What education and training have they received and from which institutions?**
- **How many are in each country in total and on a per capita basis?**
- **Who employs them?**
- **To what extent do they organize their work into teams, and how is this done?**
- **Do they have and follow clinical guidelines?**
- **How do the rehabilitation workforce and services link to health services?**

Key issues identified by the rehabilitation health workforce

- **What are the strengths within the services they offer?**
- **What are the weaknesses?**
- **What are the key challenges they experience? Include remuneration, workload and other workplace (support) issues**

Rehabilitation health workforce needs

- **Which clients and impairment types do they predominantly see?**
- **What does the current rehabilitation workforce perceive the workforce needs to be, including discipline and skill mix?**

Perspective of people with a disability on the rehabilitation health workforce

- **What do people with disabilities themselves and their representative organisations see as key rehabilitation workforce needs? Include skill and disciplines**

Preliminary exploration of rehabilitation health workforce training institutions, courses and capacity development options (located in the Pacific)

- List of current rehabilitation health institutions and courses
- Identification of most recent health rehabilitation skill based training undertaken in the Pacific

3. Suggested solutions for challenges to Rehabilitation Health Workforce in the Pacific

As a participant in the Inaugural Dialogue on Human Resources for Rehabilitation held on June 15th in Nadi, you will remember there were four groups who identified their top priorities during the afternoon session. These priorities were solutions to the challenges to the health rehabilitation workforce in the Pacific. The DPO nominated priorities are in column A, government nominated priorities in column B and service provider nominated priorities (two groups, grouped together) in column C.

You will also remember we said we would send these back to you so that you can now rank across the priorities which each group came up with to choose your own number one priority. So, the task now is to choose one from each of the five priority solutions (in the horizontal rows). Put A, B, or C in the fourth column to indicate your choice against each of the five priority solutions.

Our task is to then bring all your responses together to see how the 'voting' turns out! Thank you all again for your wonderful participation in the interviews, the Friday afternoon workshop, returning completed surveys and now DOING THIS ONE LAST TASK – could you return this completed form to us please by 30th July, 2012.

First Priority Solutions

Stakeholder Group			Nominate which of these solutions you think is the highest priority by entering A, B or C below
A (DPO)	B (Government)	C (Service Provider)	
Develop legislative policies in consultation with people with disabilities.	Establish a group of champions –a spearhead group in the Pacific to coordinate rehabilitation services	Use evidence and advocacy tools, such as the CRPD, to approach government for support of service provision	

Second Priority Solutions

Stakeholder Group			Nominate which of these solutions you think is the highest priority by entering A, B or C below
A (DPO)	B (Government)	C (Service Provider)	
Provision of training and scholarships for professionals and PWD's	Focal points in government to develop policies and procedures to guide work in rehabilitation services.	Government accountability to stakeholders	

Third Priority Solutions

Stakeholder Group			Nominate which of these solutions you think is the highest priority by entering A, B or C below
A (DPO)	B (Government)	C (Service Provider)	
Secure funding for DPO's to increase networking and strengthen policy.	Funding to support the implementation of policies and procedures.	Increase funding and base funding on programs instead of projects.	

Fourth Priority Solutions

Stakeholder Group			Nominate which of these solutions you think is the highest priority by entering A, B or C below
A (DPO)	B (Government)	C (Service Provider)	
Consider inclusive education and access to this.	Memorandum of understanding with relevant stakeholders and government departments.	Establish CBR centres or community services in remote areas and include more people with disabilities in service provision.	

Fifth Priority Solutions

Stakeholder Group			Nominate which of these solutions you think is the highest priority by entering A, B or C below
A (DPO)	B (Government)	C (Service Provider)	
Lobby and advocate for appropriate and affordable assistive devices.	Networking amongst countries to get technical assistance from donor and foreign countries	Provide opportunities for professional development including institutions and CBR training available.	

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