

# Developing medicines supply competency in Pacific Island Countries: A needs-based approach to education

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## Abstract

**Context:** Limited human resources are a major impediment to achieving the health-related Millennium Development Goals in a number of Pacific Island Countries. A lack of education capacity to support competency development in medicine supply management is one of the main issues affecting workforce development in this region.

**Description of programme:** A new approach is proposed involving partnership between the United Nations Population Fund, the University of Canberra, Ministry of Health Officials and the health personnel within the Pacific region. The International Pharmacy Federation Pharmacy Education Taskforce 'needs based' approach to pharmacy education and a participatory action research methodology are used to form the framework for this new approach.

**Future plans:** The strategy has as its starting point the need to understand local culture and its impact on learning and teaching; the mapping of competency requirements and an understanding of currently available information and materials. Subsequently this information will be applied to develop and trial new pedagogical approaches to the training of health personnel involved in medicines supply.

**Keywords:** Essential medicine supply, competency, culture, education, Pacific Island Countries, participatory action research

## Context

### *The global context*

Following the introduction of the Millennium Development Goal (MDG) targets in 2010, the World Health Organisation (WHO) Health Report in 2006 and the Commission on Education of Health Professionals for the 21st Century in 2010, it has become clear that more attention needs to be given to the human resources required to maintain essential medicines distribution systems, and to the education requirements of these health personnel (UN, 2010, WHO, 2006, Frenk *et al.*, 2010).

Focusing on the human resources for health (HRH) crisis and how it relates to pharmacy, the International Pharmaceutical Federation (FIP) released the '2009 FIP Global Pharmacy Workforce Report' (FIP, 2009; Hawthorne and Anderson, 2009). The report demonstrates the absence of sufficient numbers of pharmacy staff within many of the world's developing countries. Any attempt to strengthen health systems (and thereby improve access to and use of medicines) will be undermined without tackling the pharmacy workforce crisis (Dayrit MM, 2006).

Twenty two independent island countries scattered over 30 million square kilometres of the Pacific Ocean, comprising of more than 7500 islands form the Pacific Islands (Figure 1).

**Figure 1: Map of Pacific Island Countries**



The Pacific Islands encompass a wide variety of ethnic, cultural and linguistic groupings that can be broadly divided into Melanesia, Micronesia and Polynesia.

The region has a population of approximately 9.6 million people distributed among a number of small island states with populations varying from 1170 in Tokelau, to more than 6,000,000 in Papua New Guinea (PNG) (UNFPA, 2012).

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*Pacific medicine supply*

Approximately 300 pharmacy personnel are distributed throughout the public sector of PICs (excluding the PNG estimate of 75) with more than 80% of these filled by pharmacy assistants or similar mid level cadres (UNSW-HRH, 2009, Brown, 2009b). A reliance on mid-level cadres is consistent with global trends and reflects the unavailability of more highly qualified pharmacists (Brown *et al.*, 2011; Fulton *et al.*, 2011).

Health care in PICs is delivered in rural environments where approximately 80% of the population reside (WHO-WPRO, 2007). The workforce responsible for maintaining the medicines supply system in PICs is made up of nurses, midwives, nurse aids and other health personnel at the primary health care level (Level 1), pharmacy supply health personnel at the provincial/regional level (Level 2) and pharmacists and stores managers at the national level (Level 3) (Brown, 2009b).

The Australian Agency for International Development, UNFPA and WHO report continued problems in maintaining the supply of essential medicines through to the clinics and aid posts of PICs (WHO, 2011, AusAID, 2008, AusAID, 2004, UNFPA, 2008, UNFPA, 2010, WHO-WPRO, 2005). WHO asserts that “many maternal and child health related deaths in the region may be prevented with readily available essential medicines provided by suitably trained health personnel” (WHO-WPRO, 2005).

As current essential medicines supply provision continues to fall short of WHO and UN targets, a new systematic needs based approach for essential medicines supply management (EMSM) education, is required in PICs.

**Description of programme**

Developing needs-based training for various cadres of the health workforce in PICs is well reported: Oral health personnel (Tuisuva *et al.*, 1999); primary health care workers (Keni, 2006); radiographers (Cowan *et al.*, 2007) and eye health professionals (Du Toit *et al.*, 2009). There has been no research undertaken to determine appropriate educational approaches for health personnel involved in EMSM in PICs.

Any new approach must consider the local context of pharmacy education, education as one component of HRH improvement, needs based pharmacy education, and an appropriate research framework.

*Pacific pharmacy education*

Training in EMSM has been conducted in the Pacific over the last several years by UNFPA, United Nations Children's Fund (UNICEF) and WHO (WHO-WPRO, 2010). To a large extent EMSM training in PICs has been fragmented and without a long term plan to sustain the competencies needed for continued availability of essential medicines. Each agency has promoted their framework and principles of EMSM, with limited reference to local competencies or cultural requirements for effective training (Brown, 2009b).

Generalised EMSM training has been used in the past and assumes all target audiences are the same. Within PICs there are different expected competencies for various health personnel, depending on their level of activity within the

medicines supply system (Brown, 2009b, Brown, 2009a). Any new training strategy should acknowledge this variation, and should ensure that the core competencies of medication selection, procurement, distribution, use, and management are addressed.

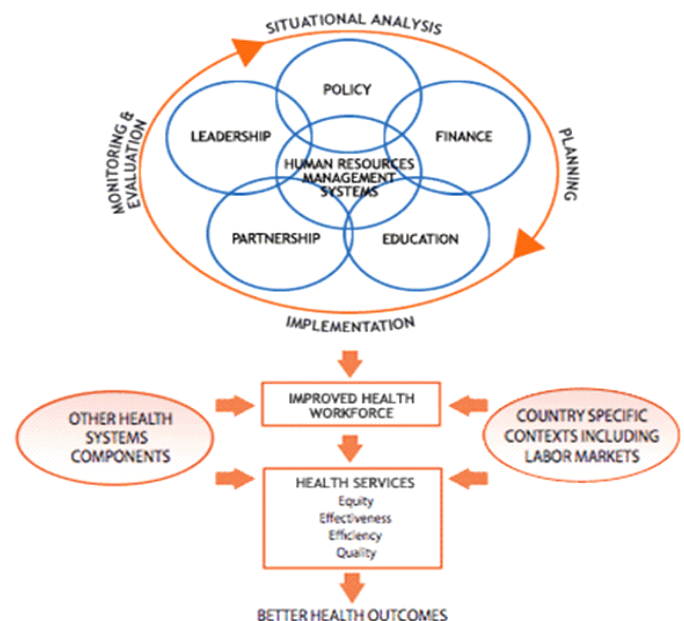
The Fiji National University (FNU) and the University of Papua New Guinea (UPNG) are the only universities in the region providing diploma and degree level pharmacy education, with most graduates going into the private sector. No formal certificate training is available for mid level cadres involved in EMSM, apart from semi structured localised training in the Solomon Islands and Tonga. FNU and UPNG initially ran pharmacy assistant courses before transitioning to their current program (Bailey *et al.*, 2006). With more than 80% of pharmacy staff posts filled by non-pharmacists with limited formal training, the need for a focus in this area is clear (Brown, 2009b).

Nursing schools throughout the region provide local training for various cadres of health personnel (nurses, nurse aids, midwives). Health personnel need to be competent in relevant aspects of EMSM in order to use their country supply systems effectively. This material is often missing from their pre-service curriculum, while skills in appropriate EMSM are often assumed. As a result, many health personnel lack the skills they require for this essential part of their day to day work (Brown, 2009b).

*Education only part of the solution*

It is important to note that education is only part of sustainable approach to HRH development. The ‘HRH Action Framework’ demonstrates the interrelationship between human resource management systems, leadership, partnership, finance, education and policy (Figure 2) (WHO-GHWA, 2012). The framework identifies that education should not be considered in isolation, but is one of six interrelated components that need to be addressed for sustained development in HRH to be achieved (WHO-GHWA, 2012). Any new approach to EMSM education must integrate into the overarching HRH plan for individual PICs.

**Figure 2: WHO GHWA Health Action Framework (HAF) (WHO-GHW), 2012**

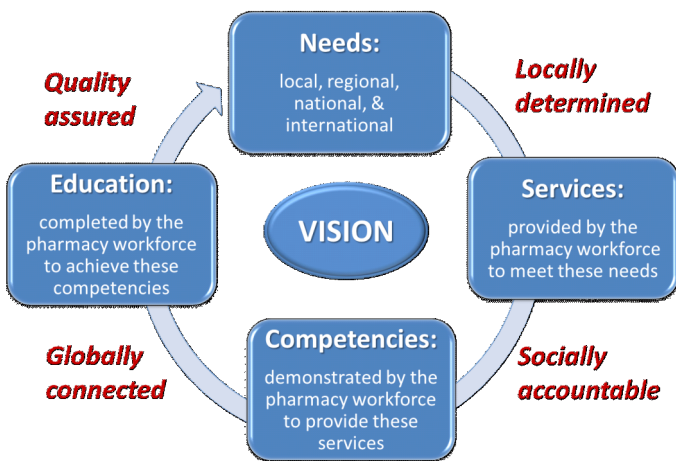


*Needs based pharmacy education*

Recognising the global deficiencies in pharmacy education FIP launched the Pharmacy Education Taskforce (PET) in 2007. The aim of the FIP-PET is to facilitate the development of pharmacy education and higher education capacity, to enable the sustainability of a pharmacy workforce relevant to needs, and appropriately prepared to provide pharmaceutical services (Anderson *et al.*, 2009).

FIP-PET have put forward a ‘needs-based’ education model that calls for an assessment of the needs of the community, and then development or adaptation of supporting educational systems accordingly (Anderson *et al.*, 2010). Engaging this educational model involves the progression through a Needs-Services-Competencies-Education cycle (Figure 3).

**Figure 3: International Pharmaceutical Federation Pharmacy Education Taskforce, Needs-Services-Competencies-Education Cycle**

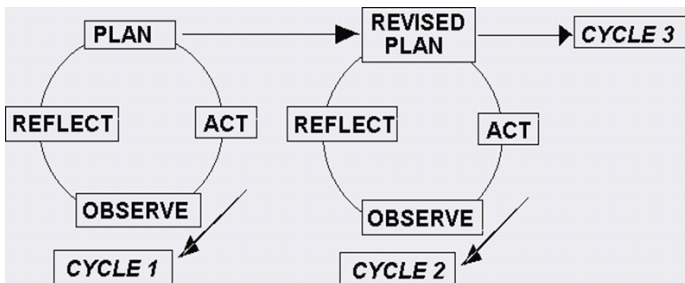


*Participatory action research as a tool*

In the health sector PAR is based on reflection, data collection and action that aims to improve health and reduce health inequities through involving health personnel who, in turn, take actions to improve their own circumstances (Reason and Bradbury, 2008). Any resultant action is then further researched, and an interactive reflective cycle perpetuates, data collection, reflection, and action (Figure 4).

Participatory action research (PAR) is an appropriate tool to use in the PIC context to generate new knowledge concerning EMSM competency development as its purpose is to enable change in a research context. Regionally PAR has been used in educating health extension officers on nutrition and within the primary health care programme in Fiji (Jabre, 1981, Asuzu *et al.*, 2004).

**Figure 4: Participatory action research cycles**



**Future plans**

As current essential medicines supply provision continues to fall short of WHO and UN targets, a new systematic needs-based approach is proposed for EMSM training in PICs. This new approach involves a partnership between UNFPA Suva, sub regional office, the University of Canberra, Ministry of Health Officials and the health personnel within identified PICs.

The FIP-PET ‘needs based’ approach to pharmacy education and a participatory action research methodology are used to form the framework for this project. This framework is consistent with local cultural norms and has the effect of meeting the expectations of donor organisations and local Ministries of Health by providing, immediate tangible benefits that can be presented to the global research community.

The strategy seeks to support the existing medical supply systems of the country and has as its starting point the need to understand local culture and its impact on learning and teaching; the mapping of competency requirements and an understanding of currently available information and materials. Subsequently this information will be applied to develop and trial new pedagogical approaches to the training of health personnel involved in EMSM (Table I).

**Table I: The eight sequential research questions driving essential medicine supply management education improvement in Pacific Island Countries.**

1. What information currently exists, addressing competencies and training requirements for health personnel in Pacific Island Countries involved in pharmaceutical services, with a specific emphasis on EMSM?
2. What culturally sensitive principles need to be considered when assessing the learning needs of pharmaceutical health personnel in PICs?
3. What are the EMSM services offered within PICs?
4. What are the competencies required by the various cadres of health personnel involved in pharmaceutical services in PICs?
5. What is the assessment of training materials currently used for health personnel in PICs involved in EMSM?
6. What effective pedagogical approaches can be developed that contribute to EMSM competency development for primary healthcare personnel in PICs?
7. Can these new pedagogical approaches be applied to a variety of PICs?
8. Can these new pedagogical approaches be transferred to local institutions of learning for sustained use?

It is envisaged that over the coming three years contextualised ‘needs based’ pharmacy education, focusing on EMSM, will emerge for the specific levels of service provision within pharmacy in PICs. Specifically, a country focused five day interactive workshop for Level 1 healthcare personnel, a ten month blended learning certificate course for Level 2 healthcare personnel in the region, and a regional ‘buddy’ program for Level 3 healthcare personnel. Together these education initiatives will contribute to the improved availability of medications in the region and ultimately to improved health outcomes for the people of PICs.

### Authors' contributions

AB was responsible for the original concept and design of the manuscript. GC, CM and NS contributed to the detailed development of the conclusion, while AB, GC, NS and CM have been involved in the drafting, revising and final approval of the manuscript.

### Conflict of interest

The authors declare that there are no financial or non-financial competing interests.

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