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The evolution of the Community Health Worker program in Papua New Guinea

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ABSTRACT

Papua New Guinea (PNG) has a special history in regard to the training of Community Health Workers (CHWs) and is currently preparing its frontline health workforce to serve the 85% of the total PNG population of 7.3 million people who live in rural and remote settings. This article identifies and explains the five major developmental stages in the current CHW training program, as well as the changes that have occurred over the past century. The developmental stages are: (1) traditional; (2) early contact; (3) innovation; (4) the 1980s; and (5) new millennium. These developmental stages are discussed in the context of the early literature and investigation by the primary author and examination of the lived experiences of early missionary health workers and local people. This paper documents the development of a CHW program in PNG from the colonisation period, which began in 1883, to the present day. As a developing nation, PNG has gone through many challenges and changes to its healthcare system and has gradually developed an effective program to train its frontline primary health care (PHC) workforce. This article contributes new information with regard to the past and current development of CHW programs in PNG as well as in other developing countries. The training of competent CHWs with the essential skills and knowledge may help deliver quality and cost-effective PHC services to the rural majority and the urban disadvantaged, thereby fulfilling the PNG government's National Health Plan for 2011–2020. Systematic evaluation of the effectiveness of the CHW program will provide guidance for continued development of this frontline health workforce. Improving and introducing a competency-based curriculum is an essential step towards building a healthier nation.

Key words: community health worker, curriculum development, Papua New Guinea, primary health care.

Background

A large proportion of Papua New Guinea's population live in mountainous, rural and remote settings cut off from basic services like health. Delivering health care to a population scattered throughout 600 small islands involves overcoming geographical, cultural and communication challenges. Approximately 700 languages are spoken by hundreds of di%uFB00erent tribes, some of which remain remote from the developments and attitudes of the modern world[1,2]. As a consequence, there has always been a need for accessible healthcare provision close to where the people live in isolated rural and remote communities[3,4]. However, even with the present Community Health Worker (CHW) program, most clients must travel by foot for some distance before they can reach a health facility or can access transport to a health facility[2,5].

Exacerbated by these geographical challenges, the health status of the Papua New Guinea (PNG) population is lower than neighbouring Pacific countries[2,3,5]. Significant health issues remain, with lower life expectancy, high infant mortality rate of 61/1000 live births and a serious maternal mortality problem[5,6]. Other leading health problems and major causes of morbidity and mortality in PNG include malaria, tuberculosis, an HIV epidemic and intestinal and acute respiratory diseases[7,8].

The WHO has advocated adopting a primary health care (PHC) model as a strategy to address and improve the health status of individuals, families and communities[9]. During the 1978 Alma-Ata conference on PHC, CHWs gained global recognition and support as playing a key role in the strategy to achieve the 1975 'Health for All by the year 2000'. Many programs for CHWs were established in the 1970s in low- and middle-income countries to implement these goals set by the WHO[10]. In line with the WHO recommendations, the National Department of Health in PNG has further developed a CHW program in which health workers are trained to deliver PHC to the rural majority as indicated by the National Health Plan for 2011–2020[3].

From 400 hospital orderlies and tul-tuls reported in 1939, today over 5000 CHWs operate on the frontline and comprise 50% of the health workforce in PNG[11]. The main role of CHWs is to prevent and protect the community through identifying health needs, delivering health education and applying preventive measures such as conducting immunisation programs right where people live, especially in the rural and remote areas. Although there is a health human resources crisis in PNG, CHWs have contributed to work that has resulted in an increase in life expectancy, from 48 years in the 1950s to 67 years today[12]. Furthermore, the Demographic and Health Surveys conducted over 15 years show a 43% reduction in infant mortality rate between 1990 and 2006. In particular, deaths from infectious diseases, including measles and diphtheria, have been dramatically reduced by the introduction of vaccines and immunisation programs[13].

The aim of this article is to present the stages of development for the CHW program in PNG. Figure 1 provides an overview of the stages of development.

Stage 1. Traditional

The traditional medical stage was a result of health knowledge and skills being passed orally from generation to generation and only those competent in these practices were allowed to attempt certain cures and rituals. For example, some women were recognised by the community as village midwives who had special knowledge and skills in child birthing and they were the only ones allowed to care for women in labour and childbirth. The people of PNG had their own traditional beliefs about causes of diseases and ways of treating them and these varied from province to province and even among districts within the same province[14-16].

Some parts of the country believed that the spirits of deceased relatives caused serious illnesses, especially if they were not

reconciled before death. Others were convinced that sorcery and breaching of traditions and cultures led to diseases and deaths[14,15,17]. Illnesses were treated using local herbal remedies and by sacrifice of animals, as well as creating good relationships with spirits[16]. Today, these practices have been largely replaced by Christian beliefs and modern medicine[14], although some traditional practices still remain and may be used in combination with modern evidence-based practice[16-18]. Western health knowledge is acquired through formal training processes and based on accumulation of written history but traditional health knowledge and skills are passed on verbally and through observation and practice from generation to generation. When an elder, village midwife or a traditional healer dies, the knowledge and skill dies too if it has not been passed on by word of mouth.

Stage 2. Early contact

After the 1880s, the people of PNG had their first contact with people from Europe. European people included missionaries, explorers, blackbirders (people kidnapping natives for cheap labour), traders and public servants. Initially, missionaries were intent on bringing the 'word of God' to the people in unknown lands but were soon confronted with the health problems faced by the communities[19-21]. The interests of explorers, blackbirders, traders and public servants in PNG were mostly economic and political in nature, and these groups had little interest in the wellbeing of the indigenous population[20,21].

However, there is no doubt that many of the settlers, including Australian and British Kiaps (multi-functional administrative field officers in the colonial time), health workers, missionaries, school teachers and others undertook important work in health care and often in challenging environments[21,22]. Initially, health care was only provided to the foreign workers and PNG labourers who were used for commercial enterprises[20,21].

In time, health provision became vital for all settlers, who worked together to train local people in Western style health care in order to combat existing ill health and the increasing levels of imported diseases[20-23]. This involvement in the wellbeing of the PNG population also served to gain their confidence and support[23]. The PNG people accepted foreign health practices when they saw improved health and cures occurring as a result of Western medicine, but they always practised traditional cures before seeking Western medicine[2,14,20].

Western doctors from the missions and government became more closely involved in the health oflocal people and started a 3-month health training course for local men in 1903. These men gave intravenous injections as well as providing other primary health treatments, despite being unable to read and write[21]. These first CHWs were called medical 'tul-tuls', doctor boys or 'lik-lik' doctors by the Germans and became frontline health workers, working in villages and advocating for good hygiene, caring for skin conditions (such as tropical ulcers, scabies and fungus skin infection) and referring serious cases[20,21]. In 1908, plantations and goldfields developed rapidly and by 1910–12, diseases such as dysentery and pertussis brought more deaths to local labourers, villagers, children and Westerners[21]. The number of local male health workers increased in response to the epidemics and were placed in different places. In 1913, female health assistants were also appointed, primarily to promote the health of mothers and babies but their numbers were very limited[21].

In 1914, the Australian army took over German New Guinea and it became the Mandated Territory of New Guinea under the Department of the Prime Minister. During this period, Australian-trained health workers were centred around local hospitals, unlike the medical tul-tul program for the Germans, which trained medical tul-tuls to be in the village[21]. The CHWs were called hospital orderlies and were trained for 3–4 months. After training, orderlies were supplied with simple medicines, such as cough mixture, ointments for sores, bandages and Epsom salts, to treat any simple illnesses and provide first aid while patrolling the villages[21]. In 1939, the total number of CHWs (medical tul-tuls and hospital orderlies) had reached 400[21].

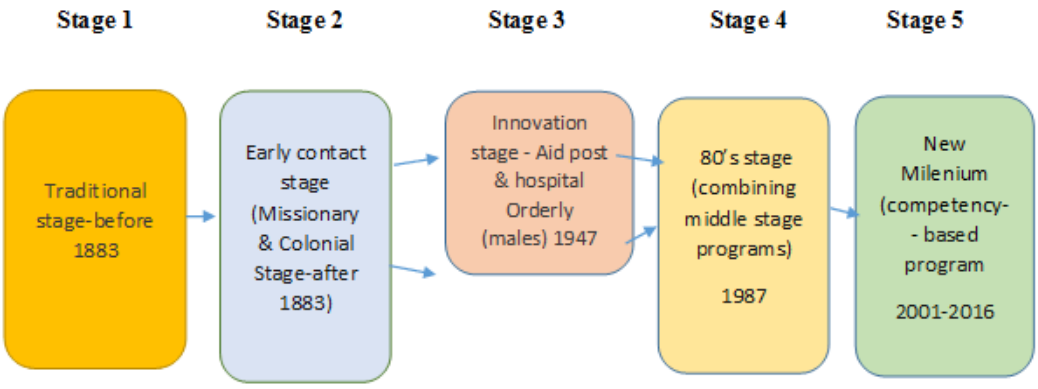

Figure 1: Stages of development for the Community Health Worker program in Papua New Guinea.

Stage 3. Innovation

The innovation stage of the CHW program started in 1942, when World War II involved PNG. The war was fought mainly in Europe and across the Pacific and Eastern Asia. PNG was then Mandated Territory of New Guinea, separate from Papua until 1949, when Australia established a joint administration over both territories called the Territory of Papua and New Guinea. PNG was in the midst of the fighting from 1942 to 1945, destroying infrastructure and leading to disorganisation and collapse of the health services .These factors contributed to an increased mortality rate, especially for mothers and children, from starvation and illness.[20].

In 1946, the government system was restructured under Commonwealth administration. In 1947, restructured government health training units established four First Aid Post Orderly schools in PNG. These schools led to the establishment of more Aid Posts situated in communities and increased the number of men who were trained as orderlies by recruiting recent school leavers (1–4 years primary education). Applicants were selected and accepted by the village in which the Aid Post was established; at this time, the CHWs were called Aid Post Orderlies (APOs)[20,21]. The Australian-trained CHWs were instructed for 2 years to conduct a small dispensary at the Aid Post and, most importantly, strengthen the communication system from the village to the government health services[21].

The APOs also delivered simple care (curative, preventive, administration and spiritual), in addition to referring serious cases to district-level health centres[2,14]. However, there were health problems that were considered inappropriate for men to deal with, especially issues relating to the care of mothers and children. Thus, an adjunct nurse aide program for females was started by mission schools, while government focused on training only males[21,24]. Nurse Aides (NAs) worked at health centres with nursing officers as assistants and went out to the villages with fully qualified Western and PNG Nurses to conduct mother and child health clinics and to provide immunisations against pig-bel (ie food poisoning from contaminated pork), polio, whooping cough, measles, tetanus, diphtheria, tuberculosis and leprosy[2,14]. In the 1960s, a young Australian medical cadet called Tim Murrell discovered a new disease in the Eastern Highlands and his research led to the pigbel vaccine that largely stopped the spread of this disease in PNG[25].

Aid Post hospital orderly training in government-run schools ceased between 1965 and 1969 due to poor monitoring and coordination, while the missions continued training until 1972, when the power was given to the people through the House of Assembly. At that time, the need for CHWs was noted and

training of APOs recommenced. Applicants with standard six education were selected to take up a full-time 1-year theory course followed by a supervised year at health centres for developing skills[21]. The medical tul-tuls of the former times and the APOs as their successors are described today as the backbone of PNG's medical service at village level[14,21].

Stage 4. The 1980s

In the late 1980s, the concept of CHWs gained global recognition. Initially, this was launched in 1978 at the Alma-Ata conference in the USSR (now Kazakhstan), which emphasised PHC as playing a key role in the strategy to achieve the WHO's goals of 'Health for All by the year 2000'. The concept of PHC was broadly accepted worldwide and each country built on this model to develop its own style of healthcare delivery, depending on the unique health needs and resources available to them. PNG recognised the importance of PHC and integrated it into its CHW program in 1987.

During this stage, the CHW program was reviewed by the PNG National Department of Health. This resulted in combining the roles of APOs and NAs, as neither individually was able to meet the demand of health needs of the rural population[8]; the frontline health workers were called CHWs at this stage. The CHW training institutions enrolled both males and females into the program. Participants were trained for 2 years in the theory and practice of PHC. CHWs were recognised as a vehicle for reducing communicable diseases and improving and empowering lives of individuals, families and communities by using resources locally available (such as growing local food and knowing how to prepare a balanced meal, building safe houses, proper rubbish disposal and latrines and safe water) through health education, promotion and prevention strategies[8]. After training, CHWs lived within the community they served and were selected by, and accountable to, the community[26].

Stage 5. New millennium

The CHW program is regarded as advanced because it was reviewed and revised according to a competency-based program in 2001. This competency-based curriculum has 25 defined standards in place, setting the benchmark between CHWs in the earlier stages (tul-tuls, APOs and NAs), other health workers and the current CHWs[4,27]. These 2001 competency standards, which are currently used in 2017, bridge the essential knowledge and skills gaps that were lacking in previous programs. The necessary standards were identified by the National Department of Health and were in line with the National Health Plan 2001–2010 policy directives, which were a result of extensive and wide-spread consultations at various health levels[4].

As in the previous stage, the CHW curriculum adopted the PHC philosophy of the Alma-Ata Declaration and the approach recommended by the 1978 Ottawa Health Charter[4]. A wellness-to-illness concept was used to strengthen and encourage the use of community resources through reorientation of health services, unlike the previous programs that focused on illness-to-wellness[4,28]. The curriculum also incorporated policy of the National Health Plan 2001–2010 using a framework of four themes: healthy environment; community participation and education; individual education and counselling; and medical, curative and palliative interventions[4].

The curriculum provides an organisational structure that promotes the concept that the CHW is an essential member of the health team and: (i) is one of the most effective persons to provide PHC to the rural areas; (ii) is involved with promoting community action and participation in the health care of individuals, families and the community as a whole; and (iii) ensures that the high quality of the service is based on the knowledge and skills acquired during training and the subsequent supervision and support that is provided[4]. CHWs trained in PNG must complete a 2-year certificate program with access to clinical sites for their practical placements as well as acquire further practical skills after completing the theory. Furthermore, CHW students are required to demonstrate their skills in simulations and are observed by trainers from the institution before being exposed to real settings. This ensures that CHWs are ready for the many tasks they will encounter immediately upon graduation[4].

Currently, there are more than 5000 CHWs in PNG. They are recruited for training in many ways. The National Department of Health in PNG, with its main partner, the Christian Health Services, set entry criteria to recruit and train CHWs. Students must have completed a minimum of Grade 10 at entry level and a maximum of Grade 12, and must have a good community record and experience of supporting and living in the community for at least a year. Special consideration is given to students who are recommended by their community and committed to going back to serve their community. However, as identified through an audit report in 2012, CHW schools set an entry exam and only those who pass the entry exam go through the final process of selection, because institutions cannot cope with big numbers of intakes[29]. Some CHW schools have more than 500 applicants every year, but only a few make it through the selection process.

There are three CHW schools in the Highlands region (population 2 854 874), four in the Momase region (population 1 867 657), one in the Islands region (population 1 096 543) and five in the Southern region (population 1 456 250). After training, graduating students are employed to work in different settings such as hospitals and health centres, depending on need, but the main purpose is to train them to serve the rural and remote communities and operate in Aid Posts.

Graduating CHWs are employed by different organisations (including church, government, non-government organisations and the private sector) after being trained and registered with the Medical Board of PNG. They receive support, mentorship and salary through the different organisations that employ them. Most CHWs are employed by government and the church health services. As CHWS are registered and recognised with a license to practice, they have career paths in any area within the health sector if they meet the selection criteria.

Conclusions

This article documents the development of a CHW program in PNG from the colonisation period, which began in 1883, to the present. As a developing nation, PNG has gone through many challenges and changes to its healthcare system and has gradually developed an effective program to train its frontline PHC workforce. This important subject has not previously been researched and, thus, this article contributes new information with regard to the past and current development of CHW programs in PNG as well as in other developing countries. The training of competent CHWs with essential skills and knowledge may help deliver quality and cost-effective PHC health services to the rural majority and the urban disadvantaged, thereby fulfilling the PNG government's National Health Plan for 2011–2020. Systematic evaluation of the effectiveness of the CHW program will provide guidance for continued development of this frontline health workforce. Improving and introducing a competency-based curriculum is an essential step towards building a healthier nation.

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