

## **Where are they now? A tracer study of former Health Management students of Divine Word University**

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### **Abstract**

Health Managers are essential to the management and leadership of any health care system. Their training plays a critical role in effecting their duties and responsibilities in such a way as to achieve the health system's goals and objectives. In the Papua New Guinea Health Care System, various studies and national documents, point to a low number of trained health managers as one of the key impediments to achieving objectives of the Health Vision 2050. This tracer study of thirty (30), former Health Management (HM) students of Divine Word University (DWU), provides an insight into the workplace knowledge, practises and skills utilised by these recent graduates whether they be in the public or private health system. An online questionnaire was provided to former students through social media sites and emails. A significant finding was that there were HM graduates working in the public health system at the provincial and national levels of government. Another finding was that the top three personal skills by the graduates in the health system that reflected key HM core program content were i) *Leadership and Management skills*, ii) *Project Planning, Design, Monitoring and Evaluation* and iii) *Financial Management skills*. It was also found that 83% of respondents said that *Professional and Christian Ethics* was very much applicable to their work. Although limited by the small number of respondents, there is good evidence from this study to say that HM graduates are making a positive impact in the PNG Health System. There is a need by government, through the National Department of Health, to revisit the role that this undergraduate program has, in terms of meeting the required number of junior and middle management positions as required in the country's health system.

**Keywords:** Papua New Guinea, health management, health care system, health managers, undergraduate students, national health plan, national health service standards, health vision 2050, national health workforce 'enhancement plan' 2013-2016, PNG National Department of Health

### **Introduction**

As the Papua New Guinea health Care system goes past the half way mark in its implementation of the PNG National Health Plan 2011-2020, it continues to face a growing challenge of clinical, management and leadership issues. Asante

and Hall (2011) point that aside from the under-investment by government, weak management and leadership capacity coupled with an inadequate number of health personnel plays a crucial role in the poor performance of the health system. PNG is not an isolated case as public health initiatives in developing countries often fail not because of a lack of scientific knowledge but because of a lack of managerial competence (McEwan, Conway, Bull, & Malison, 2001). Reilly, Brown and Flower (2015) suggested that deeper changes to public service culture, popular attitudes and political leadership may be needed to improve health service delivery, however, they also indicated that inadequate leadership, management and even governance has been often been offered as part of the explanation of the poor service delivery in PNG.

Educating or training of health managers is an important and key strategy to improving health service delivery. Ramazani and Jergeas (2015) say that developing health managers' competencies should be, viewed as a multidimensional and complex. Divine Word University (DWU) has been addressing this area of health need by training and grooming health managers, majority of whom, are recent secondary school graduates, by enrolling them in a four-year fulltime undergraduate program. This program, called Health Management (HM), has been in existence over a ten-year period. This tracer study explores the impact and usefulness of the current Health Management training program in Divine Word University through information from its past students. Tracer studies are used by universities and/or departments largely to obtain feedback from graduates about what is happening in the job market, for curriculum development and improvement (Shongwe & Ocholla, 2011). The purpose of the study was to investigate former students' views on how the core competencies of the Health Management have influenced their current jobs. This study is useful for those who are involved in tertiary level training of students who will eventually work in the PNG Health Care System as health managers or administrators.

The findings from this study are essential to key policymakers, as they will highlight the significance of training health administrators and health managers to effectively, work in a decentralized health system that is embracing multi-level government reforms.

## **Background**

The challenges confronting the PNG healthcare system are well documented with many of these challenges stemmed directly from inadequate management capacity. Tordoff (1987) stated that at the time of decentralization (in 1977), this was particularly true of the health sector, where competent, experienced health managers were few in number and management training opportunities limited. This new change in the health system brought a need for new management skills, and it complicated administrative relationships between training institutions and the provinces (Riitta & Kolehmainen, 1992). Over the years, attempts have been made by various levels of government to improve the competence of health managers through trainings thought public and private training organisations (Asante & Hall, 2011, p. 14)

The National Department of Health (NDOH), with funding from AusAID sought a partnership with Divine Word University to begin training of health managers who would have tertiary level qualifications. In 1998, DWU began offering the Certificate in Health Administration. A majority of the initial intake were sponsored by NDOH and the others were grade 12 intakes. Then it progressed to a two-year Diploma in Health Administration and then in 2001 began the four-year Bachelor in Health Management Program. Over the years, the numbers of NDOH sponsored students have dropped significantly while the grade 12 intakes increased. From 2000 to 2015, there has been on average of 25 graduates per year most of these graduates are assumed to be self-employed or working in the private sector.

The Health Management program does not have a ‘residential program’ unlike graduates of the Bachelor of Medicine Bachelor of Surgery (MBBS) and Bachelor of Health Sciences (Rural Health) Rural Health Extension Officers (RHEO) who have a two year residency program as a pre-registration program that qualifies them to gain their full license for a safe professional health workforce to the community (PNG NDOH, 2013b, p. 34).

The HM program, like all training programs for health professionals conforms to the National Accreditation Framework of the Office of Higher Education (OHE), the National Qualifications Framework (NQF) and is in harmony with other national policies and statutory documents pertaining to Health Training and Education (Commission for Higher Education, 2010; PNGNDOH, 2013a).

### **Health workforce training**

Since the country gained Independence in 1975, followed by the Provincial Government system in 1976/77 and 1995 Provincial Governments and LLG Reforms, the Health Training programs remained under the responsibility of the National Government while the delivery of the health services came under the Provincial Administration and the Rural Hospitals (PNGNDOH, 2013a). The responsibility for the Training and Development, is a National Department of Health function historically until in the 1990s when the responsibility became a shared one with the Office of Higher Education (PNGNDOH, 2013b, p. 32). The NDOH recognizes that there is a situation where health professionals, complete their training in PNG, but are considered, as ineligible to practice their specialties in PNG. They called this situation ‘an avoidable waste of scarce public resources’. To compound this, to date the health sector does not have access to basic data on the number, qualifications and distribution of health workers within the sector – both in the public and private sectors (PNGNDOH, 2013a).

The NDOH’s Health Sector Human Resource Policy acknowledges that the lack of coordination between training institutions as producers of health professionals, the NDOH and provinces as the major employers of health workers and professional bodies as regulators who are responsible for defining curricula, certification criteria and practice standards needed to be resolved

urgently (PNGNDOH, 2013a, p. 7) . An example of the outcome of this is that 30% of skilled health workers are in administrative roles in PNG while 40% of the health workforce is either over the retirement age, in the retirement age and/or reaching retirement age (PNGNDOH, 2013a, p. 2).

### **National health plan 2011-2020**

The National Health Plan (NHP) 2011-2020 outlines the need to build capacity in terms of training health workers by higher education institutions in PNG. This need is further elaborated in the Health Sector Human Resource Policy (2013) which states the need for the coordination of training programs for Health professionals by higher education training institutions with the [Office of Higher Education] now the Department of Higher Education Research Science and Technology by developing a uniform academic and professional accreditation standard. Both the NHP 2011-2020 and the Human Resource Policy 2013, as overarching policies of the NDOH do outline strategic objectives of training competent and skilled health managers but to a very lesser degree than the cadre of health workers such as community health workers, nurses, Health Extension Officers (HEOs) and Medical Officers.

Moreover, the Human Response Branch of NDOH (probably in 2009) indicated that over 30% of skilled health professionals were occupying administrative and management jobs (NDOH, 2010). The position of health managers alone is also a question given the multi-skilled and multi-tasked nature of the role, however; a big gap remains as to whether health managers are actually meeting the overall objectives and strategies of the key result areas 1) Improve Service Delivery and 3) Strengthen Health Systems and Governance. Asante and Hall (2004) have clearly indicated that the low performance of district managers appears to reflect the overall weakness in public sector management. The review by Asante and Hall, conducted in 2011 pointed out that there is no concrete and up to date evidence that can inform both training and capacity building and policy directives, therefore the findings of this proposed study by the Health Management Department can help to bridge this information and decision making gap.

### **Emerging skills of health managers**

It is not an uncommon practice to promote “successful technical experts” to clinical administrator positions. Ill-prepared, rookie clinical administrators are often left struggling to manage an organization with little experience and training (Rizzo, 2005). Changes in technology and automation have begun to change the way services are produced and delivered and managers and executives in health care, compared to their counterparts in other industries, do not have the business knowledge and skills to fully utilize the available automation and technology (Crow, Hartman, & Henson, 2005). Health care systems, academic institutions, and the practitioners themselves would be well served to find ways to make formal leadership development accessible and part of the routine career evolution for emerging health care leaders (Sonnino, 2016).

Fonn (2011) suggested that Public Health schools in Africa needed to standardize public health training and also to define core competencies for their graduates. He gave an example where each public health graduate should have the requisite skills to run high quality monitoring and evaluation programs and to use the data for decision making at any level in the health service. Leadership is also a key health management tool for health managers. Transformational leadership means increasing the employees' commitment to the organizational goals and objectives and enabling the followers to achieve them. Transformational leadership has positive effects not only on the group and organizational performance, but also on the work outputs including employees' job satisfaction and motivation (Ravangard, Karimi, Farhadi, Sajjadnia, & Shokrpour, 2016). In countries such as America, historically, graduate programs in public health have been expensive and time-consuming with the major focus on health issues rather than administrative issues (Crow et al., 2005)

### **Decentralization**

There is a recognition from some countries implementing decentralization such as South Africa, that lower level managers and front- line health workers are important actors in the policy implementation process (McIntyre & Klugman, 2003). The PNG Health Care System is being implemented in a decentralized system of government. Since PNG's Independence, there have been three (3) major provincial government reforms (1977, 1995 and 2014) that have had an influence on health service delivery in the provinces. Even after the government reforms, health management was still a problem. For example, even when provinces like Western Highlands began decentralization in the early 1990, four years before the 1995 Organic Law on Provincial and Local Government still found that District Assistant Secretaries lacked appropriate qualifications to supervise health services in the Districts (Campos-Outcalt, Kewa, & Thomason, 1995).

The National Health Administration Act (1997) was passed by Parliament to support changes to health system under the OPLLG (1995) to rural health system. However, the Provincial Health Authorities Act (2007) has gone in the opposite direction to unite the two systems - rural health and the hospital. In many countries, Historically, advancement to leadership positions in medicine was based on the candidate's academic or clinical accomplishments, with no expectation of knowledge in the so-called differentiating competencies, such as finances, team building, communication skills, and emotional intelligence (Sonnino, 2016). Sonnino points out business and administrative acumen, once a foreign concept for a clinical leader of the past, is now a necessity.

Decentralization has occurred abruptly and without the benefit of planning for developing the management capacity of the local public workforce to assume their new roles and responsibilities (McEwan et al., 2001). As a general principle, under the decentralization policy, the National Government is responsible for policy and policy standards, resourcing, monitoring and

evaluation and pharmaceutical services. Provincial Governments are responsible for coordinating the implementing of these national policies, standards and programs while the Local –Level Governments are to ensure basic government services are delivered to the people in the Wards/Villages in their electorates.

### **Medical/clinical workers as managers**

Historically, advancement to leadership positions in medicine was based on the candidate's academic or clinical accomplishments, with no expectation of knowledge in the so-called differentiating competencies, such as finances, team building, communication skills, and emotional intelligence (Sonnino, 2016). Sonnino points out that business and administrative acumen, once a foreign concept for a clinical leader of the past, is now a necessity.

Matthews, Collins, Collins, and McKinnies (2013) declared that there were two types of managers - professionally trained managers or managers who are professionally trained. They stated that professionally trained managers are individuals who have been trained to manage: the process, product, or service they manage is irrelevant. On the other hand, managers who are professionally (technically) trained have an intimate knowledge of the process, product, or service they manage: they lack mobility to transition to other managerial roles if the process, product, or service is different (Matthews et al., 2013). Clinicians who have worked in outpatient and inpatient areas of healthcare, have an advantage in that they have rich and deep understanding of health care delivery issues (Bender, 2005). Often, in the hospital setting, their work with patients helps them develop strong interpersonal skills as well as flexibility and creativity in problem solving.

Hunter (1992) pointed out that, unlike managers, doctors retained tremendous respect and support from the public and because of this, they continue to remain as powerful stakeholders in defining and controlling 'shape and range' of health services available. Hunter also noted that their continued presence in management could lead to strengthening of their position. Recent studies show evidence that there is a strong positive association between the ranked quality of a hospital and whether the CEO is a physician or not (Goodall, 2011). One hundred and sixty-eight CEOs of hospitals in the United States surveyed in 2007, pointed out that entry level positions for hospital administration for bachelor degrees however, progress to the top hierarchy of a hospital administration required graduate degrees (Matthews et al., 2013). Historically, advancement to leadership positions in medicine was based on the candidate's academic or clinical accomplishments, with no expectation of knowledge in the so-called differentiating competencies, such as finances, team building, communication skills, and emotional intelligence (Sonnino, 2016). Sonnino points out business and administrative acumen, once a foreign concept for a clinical leader of the past, is now a necessity.

## **Research methods**

The target population for this research is former health management students of DWU who have graduated over the last ten years with a Bachelor, Diploma or Certificate in Health Management. The source population were former students who undertook the course as fulltime students.

The key research question was: ***Where are the health management students of DWU?***

Sub-questions included:

1. *What sectors of industry are they currently employed in?*
2. *What content knowledge and skills have they been able to use and apply in their current position of employment?*
3. *What was the contribution of the HM program to their personal skills*
4. *What did they see themselves doing in five years' time?*

An online questionnaire was created and then posted on social media sites on the internet to reach graduates throughout the country. It was assumed that many would have social media accounts. The aim was to reach students who had graduated from the Health Management Department over the past ten years. Unfortunately, the department does not keep a database of former students so this lead to the online survey. The questionnaire had structured questions, which were to be self-administered by the participants. The survey was open online for six months on various pages such as 'PNG News Page' (over 46,000 members) and 'Health Managers' (200 members). However, there was low response rate. This was assumed that students did not know their identification number or felt some data such as 'salary range' was too sensitive. This was then decided that they be traced through personal contact or electronic mail. This was done through snowball sampling as was the case in other student tracer studies (Shongwe & Ocholla, 2011). The researchers visited former students work locations and even sent messages through social media sites. A total of thirty (30) participants filled in the questionnaire and then content analysis were used to analyse the data and descriptive statistics produced. The Faculty of Medicine & Health Sciences Research Committee (FMHSRC) approved the study (application dated 28 July 2015) and with approval number FRC/FS/01-15.

## **Results**

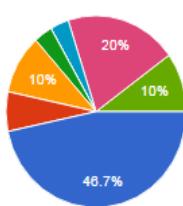
The results of this study were analysed from responses of thirty (30) former Health Management students from across the country. The results are divided into five key areas: 1) Industry Employment 2) Key content knowledge used in current employment 3) personal skills improvement and 4) proposed content 5) the future

### ***Industry employment***

One hundred percent (100%) of respondents had completed their Bachelor program. Of those who participated, 53.3% were males while 46.7% were

females. The majority of the respondents (67%) were in the age range of 25-30 years old while 20% were aged 31-35 so this meant that the majority were recent graduates.

#### Who is your current employer?

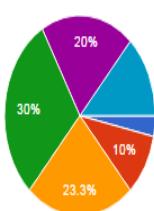


Government	<b>14</b>	46.7%
Corporate	<b>2</b>	6.7%
Non-Government Organisation	<b>3</b>	10%
Bilateral/Multilateral	<b>1</b>	3.3%
Statutory Bodies	<b>0</b>	0%
Self Employed	<b>1</b>	3.3%
Church Based/Faith Based Organisation	<b>6</b>	20%
Other	<b>3</b>	10%

**Figure 1: Distribution of current employers of the respondents**

The majority of the respondents (n=14) are employed by the PNG Government while the other significant majority are employed in the Church/Faith-based organizations as seen in Figure 1.

#### How much do you earn annually in your current position?



Below K10,000 per year	<b>1</b>	3.3%
Between K10,001 and K20,00	<b>3</b>	10%
Between K20,001 and K30,000	<b>7</b>	23.3%
Between K30,001 - K40,000	<b>9</b>	30%
Between K40,001 and K50,000	<b>6</b>	20%
Above K50,000	<b>4</b>	13.3%

**Figure 2: Range of annual income of the respondents**

The majority, around 30% of the respondents, earn between K30,000 – K40,000. It must be noted that this is not the starting salary but current salary for the current position that the respondents hold. It is interesting to note that 13% of respondents with an undergraduate degree earn less than K20,000 annually but yet 13% of them also earn over K50,000 annually.

**Table 1: Percentage of respondents who graduated in respective years.**

Year of Graduation	Graduated before 2010	2010	2011	2012	2013	2014	2015
Number of graduates	20%	23%	7%	17%	7%	13%	13%

While 80% of the respondents see themselves in a Junior Management position or Middle Management position, each holds a position that, in general, reflects

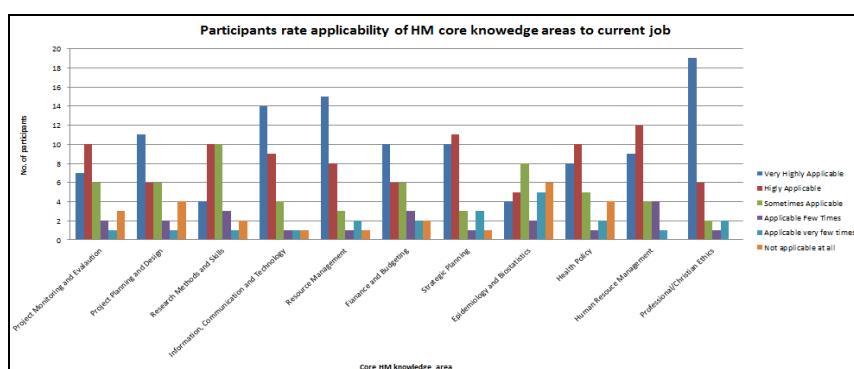
the varied roles HM graduates can occupy in the PNG workforce as indicated in Table 2.

**Table 2: Respective respondent's employee positions**

Team Leader Finance Admin	Administrative Assistant at Pharmacy department	Project Manager	Provincial level planner	Research Officer	Data/Disease Surveillance Technical Officer
Hospital Administrator	Assistant Secretary	Monitoring & Evaluation Officer	M&E Officer	Supervisor	Government and Donor Liaison Officer
Administrative Assistant	Management trainee at Tabubil Hospital	HSIP Assistant - Project & Finance (Casual)	Administration Assistant	Provincial Hospital Budget officer	District Health Manager
Tertiary Academic staff	Manager information System	Concept Payroll Data Clerk	Program Coordinator - Training	Program Officer	Hospital Administrator
Tertiary Academic Staff	Deputy Administrator	Nursing officer	Procurement Specialist	Advisor	casual consultant

### Key content knowledge used in current employment

In this section, we listed the key content knowledge areas that the students learnt over the four-year period in the HM program and asked them if they actually used these key content knowledge areas in their workplace. Generally, we can see that, on average, around 62% of responses show that all HM core knowledge areas are very highly applicable and highly applicable in their workplace setting. We can also see that eighty-three percent (83%) of respondents ( $n=25$ ) noted that Professional and Christian Ethics was a knowledge area that was very applicable in their everyday work (Figure 5).

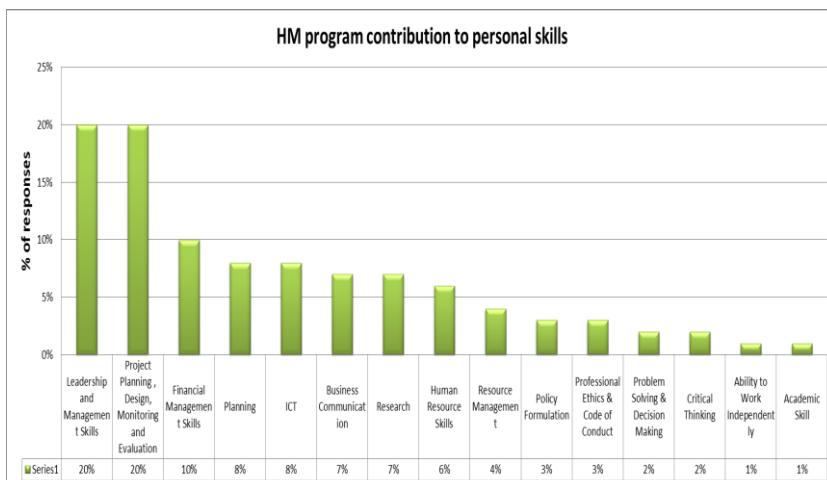


**Figure 3 Respondents rate the HM core knowledge areas and its applicability to their workplace setting.**

Furthermore, figure 3 show that 73% of respondents (n=22) also rated Strategic Planning and Human Resource Management as being very applicable in their work. On the other hand, we can also see that very few respondents say that Epidemiology & Biostatistics and Health Research Methods are applicable in their current jobs.

### **Personal skills improvement**

In this section, we asked the former HM students that once they graduated from DWU, how the HM program contribute to their personal and life skills. Twenty percent of the respondents said that the HM program have contributed to them gaining Leadership and Management skills (Figure 4). These skills included general management, time management, meeting, team building, managerial skills and technical skills.

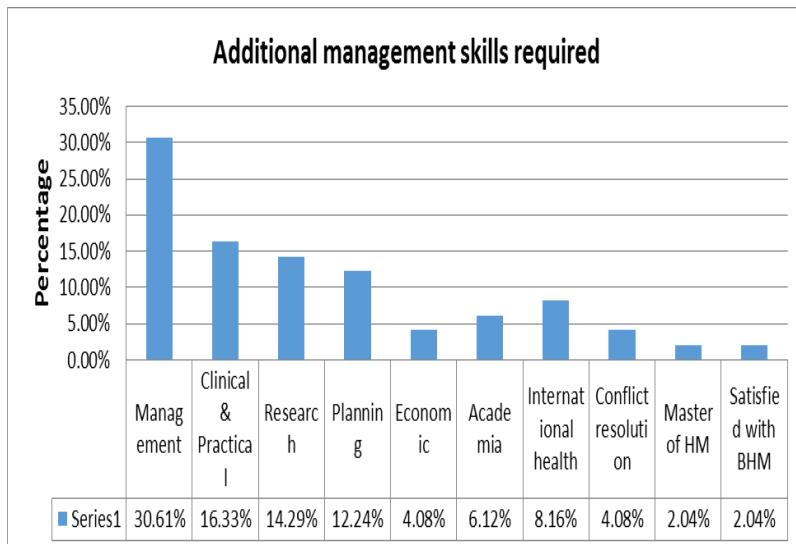


**Figure 4: Improved personal skills that the HM program has influenced**

Another 20% of the respondents also said that they had enhanced their project planning, design, monitoring and evaluation skills from the HM program. These specific skills include project management, planning and design, project development, project proposals and implementation.

### **Proposed content**

In this section, we asked the respondents about what additional skills they would like to see in future HM programs. Thirty percent (n=14) of the respondents viewed Management as a key content area they still needed to be covered in future HM programs. In management, these includes topics like financial management, time management, resource management, change management, risk management, standard operating procedures and, policies, strategic planning and strategic management and project management.

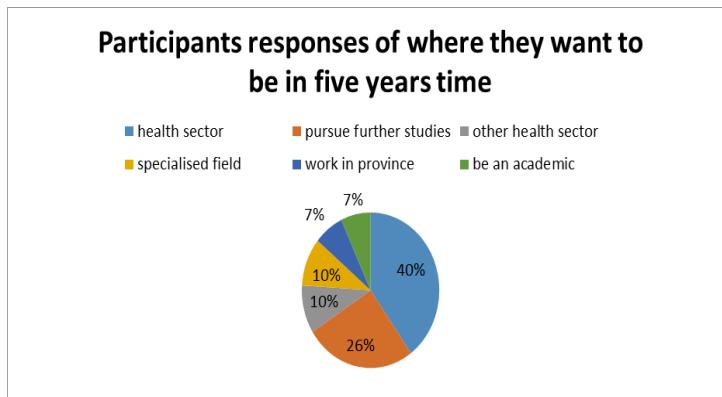


**Figure 5: Respondents suggestions for future topic to be included in next curriculum review**

It can also be seen that a further 16% (n=8) of the respondents indicated that clinical and practical be included in the Health Management program. The respondents felt that there should be more time for; field trips and practical (on the job experience) were needed, clinical topics to be included include use of medical terminologies and more assignments be given during the program. A participant suggested that students be taught to drive before leaving the university. Around 14% (n=7) of the respondents put forward that research methods and data analysis software should be taught at a deeper level. Respondents felt that epidemiology, data analysis and data interpretation should be taught and that the use of statistical software such as; Epi Infor, Stata or SPSS should be taught.

### The future

In this section, we asked the respondents, how they saw themselves in five years from now. Just over 40 % are aiming at a senior/very senior position within the health industry while 26% of the respondents wish to pursue further studies either at Masters or PhD level.



**Figure 6: Respondents suggestions of where they would be in five years' time**

In the next group of respondents containing 10% each, the first group saw that they would be in another health sector position such as multilateral/bilateral development work, government work or be in self-employment. The other 10% believed that they would become specialists in their current area of work such as Human Resource Management specialist or a Epidemiology specialist or Health Information System specialist. The last two categories with 7 % each respectively are the respondents who want to see themselves either working in the provinces or pursuing an academic career.

### Discussion

The current PNG National Health Plan 2011-2020, the health sector's single governing policy document, provides the framework necessary for improvement of health service delivery and also highlights the need to train human resources (PNGNDOH, 2010, p. 1). To attain minimum health service standards, the 2011 National Health Service Standards provide direction and guidance for safe, quality health care and health facility design and inform clients, communities and stakeholders of the health services which they can expect to be available at each of the various levels of service delivery (PNGNDOH, 2011, p. 8). This also includes staffing levels in health facilities.

The National Health Plan and the recently developed Health Sector Human Resource Policy acknowledges that there is need for better resources required to enhance in-service training and continuing education programs required to improve health workers skills, competencies and productivity. The Health Management (HM) program at DWU has been graduating health workers required to work in a health management or health administrative setting in PNG for over ten years. It is not a new program. Yet one of the many health worker training programs in the country that suffers from a health sector that has inadequate data, information to inform planning, and projection, a mismatch between supply and demand of health workers, an ageing work force and inequitable distribution of health workers between rural and urban areas

and across the administrative regions of the country (PNGNDOH, 2010, p. 108; 2013a, p. 1).

This tracer study, of thirty (30), former HM students, provides an insight into lives of recent graduates who enter the workforce and the different demands and challenges they face in the health system. It also provides the graduates' perspective on curriculum design, workplace knowledge needs, required competency skills and workplace roles in the current health workforce setting. As suggested by Lockhart and Backman (2009), by examining competencies at different management levels, we are able to gain insight into the different demands and challenges at the frontline, middle and senior levels of management.

The respondents in this study, though a small number, provide interesting statistics on what they are doing in the workplace. Before this study, it was assumed that many HM graduates worked in the private sector; however, almost half of the respondents, in this study, work in the public health system of PNG. Around 80% of these respondents consider themselves as junior managers or middle managers in their organizations and it is interesting to note that over 60% of respondents earn an average salary of over K30,000 per annum which is around PNG Public Service level 11 or 12 of the National Salary Scheme (NDPM, 2012). It must be noted this study could not ascertain that this is the actual annual salary level that the respondents get when they complete their qualification. It is assumed that many of these respondents have worked for a number of years before earning this salary level.

One of the interesting results from this study is that 83% of the respondents actively practiced Professional and Christian Ethics in the workplace. This may be a reflection of a holistic approach taken by DWU for its students especially in instilling its core values into students over the four-year period. The eight core values of DWU are *integrity, academic excellence, community engagement, respect, diversity, hospitality, learning for life and social responsibility*. This strategy is one of many, which should be necessary for management training that seeks to improve the health system delivery mechanism. Asante and Hall (2011, p. 4) point out that to strengthen management and leadership capacity, PNG must not focus only on building the competence of individual managers but also adopting an holistic approach that pays equal attention to systemic and structural issues affecting management performance.

The top three personal skills by the graduates that have improved because of the HM program's influence are i) *Leadership and Management skills*, ii) *Project Planning, Design, Monitoring and Evaluation and* iii) *Financial Management skills*. It is evident that formal training in the multifaceted components of leadership is now accepted as highly desirable for health care leaders. Despite natural leadership qualities, some core leadership competencies must be formally taught or refined (Sonnino, 2016) and this is no different for these students who have passed through the HM program. Strategic management concepts, including those of project design and

monitoring/evaluation are becoming essential tools for people who work in the health management and health care system (Swayne, Duncan, & Ginter, 2008). Sonnino (2016) also pointed out that business and administrative acumen, once a foreign concept for a clinical leader of the past; is now a necessity for health leaders. It can also be seen that these graduates still improved their management skills which included financial management, time management, resource management, change management, risk management, standard operating procedures and, policies, strategic planning and strategic management and project management. These key management skills are needed more than ever by those who currently manage health facilities or organizations in the public or private sector here in PNG.

However, in the public health system, these skills and knowledge may not be effectively utilized by the current skilled health professionals in PNG who are occupying administrative and management jobs (NDOH, 2010). This is reflected in the National Health Standards which states that Clinical Unit Managers, Health Extension Officers and Managers of Levels 5-7 Laboratories, Pharmacies, Medical Imaging and Oral Health Services may devote between 10%-20% of their productive working time to administration functions and remainder to provision of clinical care (PNGNDOH, 2011, p. 33). Bender (2005) pointed out that although skilled health professionals such as clinicians have an in-depth understanding of the issues involved in health service delivery; when making administrative decisions, allied health practitioners often lack expertise in two critical areas. Most clinicians have little academic preparation in business, regulatory policy, or financial matters. Even those who have remedied this lack by obtaining a business degree rarely have any mentored hands-on experience in administration (Bender, 2005).

So what does the future hold for the HM program and its graduates? The NDOH's Health Workforce 'Enhancement Plan' 2013-2016 has proposed that the PNG Government fund 320 management graduates at a cost of K2million by 2017 (PNGNDOH, 2013b, p. 50). While the government may have funded portions of this Plan over the past three years on various management trainings throughout PNG, the HM undergraduate program at DWU has not any direct funding from this Enhancement Plan. This research provides enough evidence to claim that the HM program is an effective training tool for future health managers as it already fulfills the National Accreditation Framework of the Office of Higher Education (OHE), the National Qualifications Framework (NQF). To make further inroads to health management training for its mostly young students, it must put its graduates through a government sponsored residential program after completion of their degree or a rural practicum during their degree program. This simple change, though costly to the NDOH, will expose students to the health management issues and conditions of service within rural communities, and give them a better understanding of the realities of rural health work. Before this can be done, DWU in partnership with NDOH would need to engage with provincial training coordinators to facilitate this program.

There is also a need for current health managers, whether they are clinicians or professional staff in the health system that would need access to continuing education and professional development necessary to maintain competence and improve performance. DWU runs the Diploma in Health Service Management (DHSM) through the flexible mode and has also partnered with NDOH to run the Rural health facility management training program (RHFMTTP) in each province. The DHSM provides introductory training to mature aged students seeking a qualification in health management while the government funded RHFMTTP trains government and church Officer in Charge (OIC) who administer rural health facilities in districts.

Some of the respondents of this study have indicated their desire for further higher learning. The DHSM would need to be improved to a Bachelor level and a Masters of Health Management be given prominence to attracting senior level managers who may be focusing on topics such as *transformational leadership* and *change management*. Both programs could be run though the flexible mode and instead of requiring a thesis, internship, or residency, a capstone course with a series of projects designed to integrate work experience with academic training makes more sense (Crow et al., 2005). Another way forward could be to set up a ‘Transition Support Office (TSO)’ in hospital settings or provincial health to offer leadership, guidance, and support to key players (managers, clinicians, and their teams) throughout the different phases of its major redevelopment project, transition or change management processes (Lavoie-Tremblay et al., 2012). This could be ideal for provinces that have the Provincial Health Authorities.

There is a need for another study with more respondents using in-depth interviews to understand the full extent of HM knowledge and skills in different levels in the health workforce. Future studies could also focus on health worker training curriculum and its impact on student career pathways. The major limitation of this study is the low response rate. Only 30 of the intended 191 which is an estimate of 50% of the number of graduates (since the year 2000, there have been 375 graduates from the Bachelor of Health Management program -an average of 25 graduates a year). Secondly, the snowball sampling directed us to employed graduates only and it was difficult to trace unemployed graduates.

## **Conclusion**

Where are the health management graduates of DWU? There is good evidence from this study to say that HM graduates are making an impact in the PNG Health System. So why should this study matter? While PNG has numerous health plans and policies in place to encourage better planning of human resources, there is still a huge shortage of qualified and competent health managers leading to over 30% of clinicians holding on to administrative and management roles, as suggested by NDOH. The government, through NDOH, needs to revisit the role of this undergraduate program to fulfil the required number of junior and middle management positions according to NDOH’s

Health Workforce ‘Enhancement Plan’ 2013-2016 and other subsequent workforce plans.

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