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World Health Organization Collaborating Centre
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Review of Pacific Open Learning Health Net (POLHN)

World Health Organization Collaborating Centre for Nursing, Midwifery and Health Development, University of Technology Sydney

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Acronyms

APW	Agreement for Performance of Work
CPD	Continuing Professional Development
DCS	Directors of Clinical Services
DFAT	Department of Foreign Affairs and Trade
FNU	Fiji National University
IELTS	International English Language Testing System
KIT	Nursing School Kiribati Institute of Technology
MoH	Ministry of Health
MOA	Memorandum of Agreement
NGOs	Non-governmental organisations
PHMM	Pacific Health Ministers Meeting
PHH	Pacific Head of Health
PICTs	Pacific Island Countries and Territories
POLHN	Pacific Open Learning Health Net
PPTC	Pacific Paramedical Training Centre, Wellington
PRCSWIP	Pacific Regional Clinical Services and Workforce Improvement Program
SINU	Solomon Islands National University
SPC	Pacific Community
SSCSiP	Strengthening Specialised Clinical Services in the Pacfic
USP	University of South Pacific
VCNE	Vanuatu College of Nursing Education
WHO	World Health Organization
WHOCCUTS	World Health Organization Collaborating Centre, University of Technology Sydney
WHO/SP	WHO Representative for the South Pacific and Director of Pacific Technical Support in Fiji

1. Introduction

Following discussions at the Pacific Health Ministers meetings in 1999 and 2001, the World Health Organization (WHO) initiated a study of the feasibility of developing an open learning service for healthcare professionals in the Pacific (Hezel Associates, 2001). Following this, a Pacific Open Learning Health Net (POLHN) has been available since 2003. During this time there have been many changes in the context in which POLHN functions, such as the increase in availability of courses through global e-learning environment; increase in the Pacific region's capacity to study online; and changes in external funding for POLHN continuation and infrastructure.

The World Health Organization Division of Pacific Technical Support requested that the World Health Organization Collaborating Centre at University of Technology Sydney undertake an evaluation of POLHN and provide recommendations and monitoring and evaluation process for the next 5 years.

2. Objectives and Scope of the Review

This review provides an evaluation of POLHN reviewing retrospectively the initial concept of POLHN and current status, and the changing context for its application in the future.

As per the Agreement for Performance of Work (APW) and in the context of the vision of Healthy Islands and Universal Health Coverage, this review undertaken by the World Health Organization Collaborating Centre at the University of Technology Sydney (WHOCCUTS):

1) Provides in-depth review of the initial concept and design of POLHN, its evolution from 2003 and its relevance in the future;
2) Compiles achievements, lessons learnt and challenges of POLHN from its inception in 2003; and
3) Makes recommendations to strengthen (or reshape) the programme in a changing environment as an integrated, adaptable and sustainable component of health workforce development and planning in the Pacific for the next 5 years, which will be in line with the decisions and commitments from the Pacific Heads of Health and Pacific Health Ministers Meetings.

3. Methodology

A mixed-methods approach was used that incorporated quantitative and qualitative data collection such as online metrics, document reviews, student surveys and interviews and/or focus groups with relevant stakeholders. The syntheses of data were discussed with key stakeholders during the Heads of Health Meeting (Suva, Fiji – 24th to 27th April 2017), based on individual interviews, and has been incorporated into this final report and recommendations.

The WHO Representative for the South Pacific and Director of Pacific Technical Support in Fiji (WHO/SP) has provided vital information to underpin and guide this review and subsequent recommendations. This information in the form of discussions, meetings, databases with enrolment data, short course logins, financial data, documentation on workshops, Memorandums of Agreement, has been analysed along with qualitative data gathered from interviews, focus groups and observations to ensure the voices of key POLHN stakeholders as well as end users are heard. Fiji National University (FNU) also provided

some graduate data when available. The methodology design considers ethical considerations, as well as technical constraints.

Qualitative data collected have been thematically synthesised to inform the development of the framework for monitoring and evaluation, and to assist with the identification of the conditions required to bring about long term outcomes as per theory of change, and subsequent report recommendations. The data collection process engaged decision makers and leaders who can potentially effect change and have an understanding of the contextual issues pertaining to e-learning in remote contexts with infrastructure and internet limitations, as well as POLHN staff and end users. A consultative approach guided the review and the comprehensive range of experts and stakeholders involved ensures the relevant context of recommendations made.

Data collection

Quantitative data

Data such as course metrics, end user demographics, course retention rates, financial and sponsorship information, and country specific utilisation, has been supplied by WHO/SP Fiji and country specific focal points. Data supplied have undergone detailed analysis where possible. Inconsistencies in data supplied by different sources have, at times, made it difficult to analyse and to draw accurate conclusions from. Examples of the number of databases all containing different information is included in Appendix 3.

An online survey with POLHN focal points in 15 countries, and an online survey for POLHN students studying through FNU were also conducted as part of the review. These surveys both contributed valuable quantitate and qualitative data.

Qualitative data

Interview and focus group discussions were held in seven POLHN countries: Solomon Islands, Nauru, Kiribati, Vanuatu, Samoa, Fiji and Tuvalu. Data collection has also been carried out through telephone meetings, interviews at the Pacific Heads of Health meeting and through online surveys with Tonga, Cook Islands, Federated States of Micronesia, Guam, Palau, and Fiji. A snowball sampling technique was used whilst in-country to ensure the inclusion of country specific nuances in the review, and the engagement of key stakeholders and those who hold knowledge relevant to the review. All qualitative data are considered confidential and no identifying information has been used.

Stakeholders contacted for discussion included:

- WHO POLHN past and present staff, POLHN centre focal points;
- Ministry of Health as available - HRH, training, Chief Nursing and Midwifery Officers;
- Country staff for Department of Foreign Affairs and Trade (DFAT);
- Permanent Secretaries/Secretaries for Health;
- Director-General, WHO – in-country staff;
- End users/students of POLHN; and
- Institutes: Solomon Islands National University (SINU), National University of Samoa (NUS), Fiji National University (FNU), Nursing School Kiribati Institute of Technology (KIT), Vanuatu College of Nursing Education (VCNE), University of South Pacific

(USP), University of Wellington (PPTC), World Continuing Education Alliance and University of Technology Sydney Global e-learning experts.

During this review a significant number of stakeholders have been included in data collection, the full list can be found in Appendix 1.

Discussions for the review focused on the respective stakeholder's areas of expertise and experience to provide information for the review on a variety of areas including the use of POLHN across different countries, continuing professional education needs, and future directions. Observations at POLHN sites assessed functionality of sites and utilisation.

Data, both qualitative and quantitative, was collected and analysed throughout the review and incorporated into final report findings and recommendations. Databases collated for the review are listed in Appendix 3.

Two meetings: one at the Heads of Health Meeting held in Fiji on 27 April 2017 and a teleconference with WHO Fiji staff and Regional Director of WHO Western Pacific Regional Office, further clarified relevant information for inclusion in this final report.

4. Findings

4.1. POLHN'S Evolution Since 2003

Brief Timeline of Events

1999	Recognised distance, flexible education was needed in the Pacific region
2001	WHO was invited to present their findings on this topic. The meeting recommended the development of eLearning in any country be based foremost on an assessment of training needs and demand.
2003	WHO with funding from the government of Japan in response to requests from Pacific Health Ministries established the Pacific Open Learning Health Network (POLHN) [1] to assist in meeting the needs for continuing education through open learning. In ten countries, learning centres were equipped with network, computers and various other hardware. Reference materials and course materials were developed and sent out to the learning centres. Country Task Forces were established and local staff were trained in the countries.
2004	Nine non-credit pilot courses to 229 students and three credit pilot course were offered (component only) in the first half of 2004 [2].
2005	Partnered with Fiji School of Medicine[3] to develop, host and sponsor post-graduate courses in Public Health, Health Service Management
2006	Partner with Pacific Paramedical Training Centre to sponsor Diploma in Medical Laboratory Science, and In-country workshops for Laboratory Diagnosis of Sexually Transmitted Infections including HIV
2009	Funding received from NZAID (3 million NZD over 3 years). Expansion of POLHN. 29 short courses to over 600 students provided.
2010	Korea National Information Society Agency donated computers.
2011	The review conducted in 2011 (Hezel Associates) concluded that "POLHN was on track to complete most objectives and the impact on stakeholders has been positive. POLHN provides crucial services to professionals in the healthcare sector. As many academic institutions in the PICs are in the early stages of adoption of online learning, it is crucial for WHO to continue to provide assistance for sustainability."
2011	FNU transitioned post-graduate courses in Public Health and Health Service Management to their own e-learning software Moodle.
2013	Partnered with Penn Foster to sponsor Dental Assistant Programme for dental assistants in Northern Pacific.
	Partnered with other institutes offering short courses – Lippincott, BMJ Learning, Global Health E-learning Centre and Medscape.
	42 POLHN short courses offered.
2015	FNU post-graduate course costs increased to $1575 from $900. Sponsorships were reduced to 50 sponsored students per semester from 100 per semester

[1] Later on, 'Network' became 'Net'.
[2] *WHO, The Pacific Open Learning Health Net Manual (first draft), July 2004*
[3] Now as "Fiji National University"

2016	Countries revised and renewed MOA for transition ownership to country
	Cross-country training conducted in Solomon Islands and Vanuatu. One focal point from each of the 15 countries travelled to another country to share information and their experience, providing peer training. For example; Kiribati focal point traveled to Solomon Islands to facilitate POLHN awareness and Infection Prevention and Control training in 2016.

Five evaluations have been previously undertaken, with summary information included in this review (Sarkis, 2012, JTA International, 2004, Hezel Associates, 2001, Hezel Associates, 2011, Baxandale, 2010).

At Pacific Health Ministers' Meeting (PHMM) in 1999, the Palau Action Statement recognised the increasing importance of distance education (Negin, 2008). WHO Western Pacific Regional Office was asked to consider methods of implementation and specific course needs for the Pacific and requested a feasibility study which was conducted by Hezel Associates in 2001(Hezel Associates). This study found "In general, health professionals need continuing education to upgrade their skills and to achieve satisfaction in their jobs. For medical training and for many nursing specialties, out-of-country education has been the sole source of learning, but it opens countries to the risk of losing professionals through emigration." (Hezel Associates, 2001).

It was ascertained, in 2001 (Hezel Associates), that the sole source of education for Pacific Island people was face to face training which required many health workers to move out-of-country, to overseas institutes in countries such as Fiji, New Zealand or Australia. For many health professionals being trained in the Pacific, this can exacerbate the chances that they may not return to their country after training, or may subsequently migrate, (Buchan et al., 2011). A flexible distance learning style system was recommended for in-service education and training (Hezel Associates, 2001). Pre-service education was seen as requiring close supervision due to the clinical components and therefore not suitable for distance modalities. The original barriers were (Hezel Associates, 2001):

- Teacher training to use technology for teaching,
- Technology hardware and software,
- Content development,
- Internet connectivity,
- Cost.

In 2003, POLHN was launched providing online education to Pacific Island health workers. With funding from Japan, FNU post graduate course facilitators were trained, POLHN centres were established and course content developed by WHO and /or partner institutes (JTA International, 2004). By 2004, there were POLHN Learning Centres established in 10 countries within hospitals and in a nursing school in Solomon Islands. These centres each had networked computers along with other teaching aid equipment and resources such as printers and projectors which were managed by Ministry of Health (MoH) appointed focal point. Country task forces to oversee and support POLHN within each country were established with representatives from MoH and non-government organisations (NGOs). Nine non-credit courses were made available through POLHN which were developed by various training institutes and universities. Three pilot credit courses which could fulfill part of the requirements for a post graduate certificate in Public Health, were made available via WHO-

provided CD-Roms as well as online learning (JTA International, 2004).

In 2005, POLHN partnered with Fiji School of Medicine (now known as Fiji National University) to develop, host and sponsor post-graduate courses in Public Health and Health Service Management.

The POLHN grew and by 2010 there were 25 POLHN Learning Centres in the following countries: Cook Islands, Federated States of Micronesia (Chuuk, Kosrae, Pohnpei, and Yap), Fiji (Labasa, Lautoka, and Tamavua), Kiribati, Marshall Islands (Majuro and Ebeye), Nauru, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu (Sarkis, 2012). In 2010, Korea donated computers to help update the by then outdated infrastructure (Baxandale, 2010).

Between 2008 and 2012 the New Zealand Aid Program supported POLHN with funding to increase its available selection of relevant courses and improving primary access for health professionals (Sarkis, 2012). In addition, technical support was provided to institutes providing education, and in-country learning facilitators in selected countries provided support to students and capacity building for nursing schools. A regional continuing education framework for accreditation and recognition of courses was recommended (Sarkis, 2012), but this current review found it has not been integrated into regional structures.

In 2011, FNU transitioned post-graduate courses for Public Health, Health Service Management POLHN courses to their own Moodle.

From 2013 to present POLHN has been mainly funded by WHO through administration, upkeep and post-graduate course sponsorships. Other than short courses, POLHN does not offer pre-service accredited education due to the amount of supervised practical hours required for medical, allied health, nursing and midwifery educational programmes. Dental assistant and laboratory technician courses are available through Penn Foster and Pacific Paramedical Training Centre (PPTC) respectively.

At the 2013 Pacific Health Ministers Meeting, Pacific leaders had identified several health workforce issues affecting countries in the region, which included (10th Pacific Health Ministers Meeting, 2013):

- shortage of specific personnel and skill sets, and recruitment, retention and an ageing workforce;
- access to education and training opportunities to meet current shortages and continuing professional development (CPD) requirements;
- public sector working conditions, institutional capacity and financial constraints to improve;
- the implications of increasing mobility of health personnel, both internally and internationally; and others such as inequitable distribution; health worker performance; the unique requirements of small populations scattered throughout remote, rural and outer island settings and over wide geographical distances.

Although agreements had been in place between WHO and countries in regard to POLHN, in 2016 Memorandums of Agreement (MOA) with all POLHN countries were significantly

strengthened (WHO Memorandum, 2016). The MOAs transferred the “ownership” and administration (including focal points, infrastructure, equipment and maintenance) of POLHN to the MoH in each country.

In 2017, the Directors of Clinical Services (DCS) and Pacific Heads of Health (PHH) meeting identified ongoing priorities in terms of health workforce in the Pacific and in response to health workforce training programmes recommended the following to be discussed at PHMM, held in the Cook Islands in 2017 (SPC-PRCWSIP, 2017):

1. training providers be more responsive to the specialised clinical training needs of PICTs;
2. training providers consider that formal postgraduate clinical training be undertaken in-country;
3. training providers offer postgraduate radiology training
4. training providers make the entry requirements more realistic and make their training programmes more appealing;
5. strengthening the pipeline from elementary school to high school so students can meet the requirements to undertake tertiary health education;
6. provide bridging programme for Pacific health workers entering formal training from high school to diploma and from diploma to bachelor degree;
7. WHO deliver offline mode for POLHN and include clinical training in POLHN;
8. strengthening primary health care training;
9. short-term clinical attachments for PICT clinicians and nurses Is made available
10. PRCSWIP keep PICTs informed on the scheduling of clinical courses and workshops;
11. continuing in-country training and mentoring through visiting teams;
12. strengthen mentoring programmes for clinical services;
13. countries continue reviewing and updating clinical services HR plans annually;
14. PICTs develop contingency plans for the absence of specialists.
15. SSCSIPs Programme work with Pacific Clinical Organizations to develop CPD frameworks for the various clinical disciplines.

A discussion paper for the Heads of Health meeting 2017 (not published) on standardisation of health professionals’ education also recommends (Roberts, 2017):

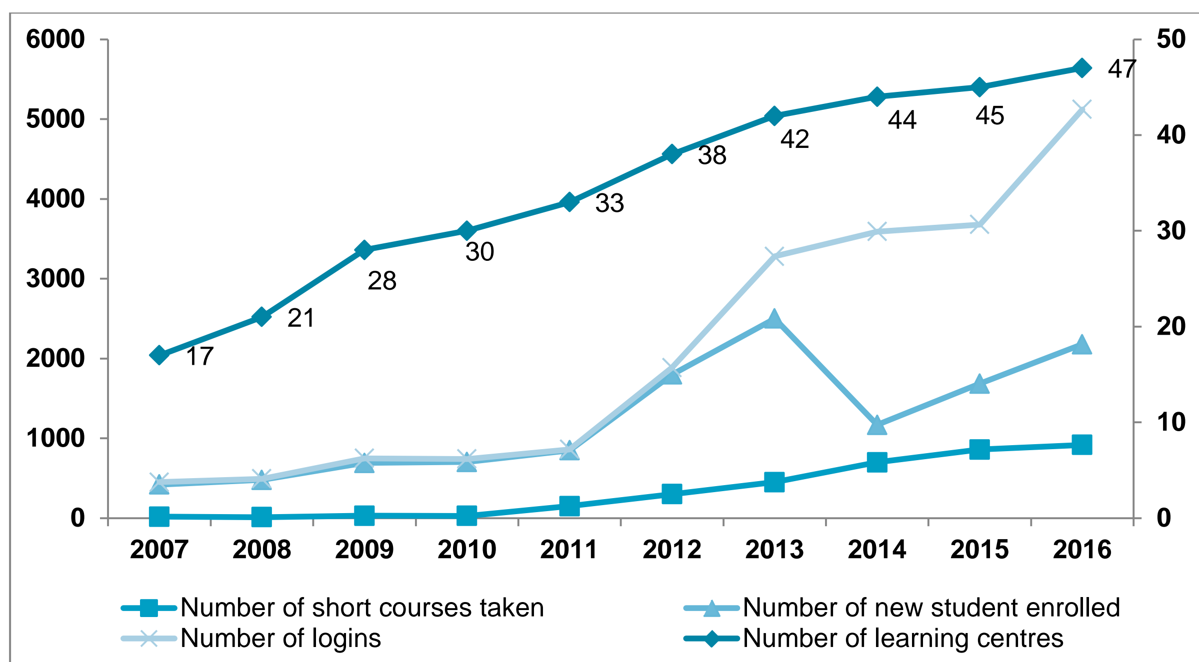
1. Pacific Heads of Health should support further progress towards the development of a regional framework for health professions education competencies, programme accreditation processes and quality standards.
2. That countries with limited academic capacity, or opportunity for clinical exposure, seek collaboration and support to meet the regionally agreed health professional education standards.
3. That work be undertaken to identify current programme accreditation or approval processes in use and to collaborate with countries to develop common frameworks for each discipline.
4. That in accordance with test item 4 of the *Framework for Pacific Regionalism* this issue be placed on the agenda of each annual PHMM to oversee progress of the above recommendations.
5. That the professional bodies of each discipline group in the region hold joint meetings, regionally supported, to discuss and agree on the creation of common core

competencies and methods of assessment (this was also agreed on by DCS integration of health professions alliances e.g. SPCNMOA).

These recommendations may be to be taken into consideration following 2017 PHMM by POLHN for future strategy and development and are addressed in recommendations.

POLHN has continued to expand over time, with increases in the number of learning centres, enrolled students, courses available and undertaken, and student use (see Figure 1). There was a dramatic decrease in *new student enrollments* recorded in 2013 which may be in response to the funding and support from New Zealand ceasing.

Figure 1: POLHN changes 2007 to 2016 from the WHO/SP Scoping Paper (WHO, 2017).



Source: POLHN Database

POLHN continues to aim to improve the quality and standards of practice of health professionals in the Pacific through an e-learning network of academic institutions (World Health Organization. Regional Office for the Western Pacific, 2016).

4.2 Achievement

Currently POLHN is available in 15 countries (American Samoa, Cook Islands, Federated States of Micronesia, Fiji, Guam, Kiribati, Marshall, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu).

The report of findings will cover POLHN's three main areas:

1. **Infrastructure and human resources** – including POLHN centres, computers, internet and country focal points who administer POLHN at a country level.
2. **Short courses** – for continuing professional development

3. **Credited courses** – post-graduate courses through Fiji National University, dental assistant programme through Penn Foster and Diploma in Medical Laboratory Science through Pacific Paramedical Training Centre (PPTC).

4.2.1. Infrastructure and human resources

Finances & governance

Funding has come from various sources since the inception of POLHN in 2003. It was started with seed funding from Japan which set up the network of POHN Learning Centres including computers, training, and course development.

In 2008 to 2012 New Zealand funded a total of (NZD)**$4,500,000** to further extend the network and increase enrolments. This investment was considered a success and an evaluation (Sarkis, 2012) described: course participants increased from 229 to 850; better diversity of short courses available from 17 to 150; and improved access for health professionals to IT and educational resources through POLHN Learning Centres which increased from 17 to 33.

WHO has provided support funding for POLHN, between 2008 to 2017 this is recorded as being USD**$2,649,161.00** see Table 1. However, this is not a full representation of WHO investment. For example, WHO also supported focal points and institute support and workshops. The last such workshop was undertaken in August 2016 at a cost of USD**$12,000**. There are also ongoing WHO staff costs and individual WHO country post-graduate sponsorship costs. The total amount paid to FNU as direct sponsorship costs is FJD**$1,220,380**, broken down in Table 2.

In 2016, the administration and maintenance of POLHN was under gradual transfer to the countries and currently countries fund their own activities through the POLHN Focal Point who is now an employee of the Ministry of Health (in some countries).

POLHN is coordinated by WHO/SP. Historically there were several staff allocated to POLHN in WHO/SP as funding allowed, currently there is one full time staff member dedicated to POLHN and others as needed through structures such as finance, strategy, technical support etc. WHO/SP is responsible for the design POLHN activities; develop short continuing professional development online courses; replace learning centre equipment on a case-by-case basis (WHO Memorandum, 2016). While equipment and infrastructure funding is not currently provided by WHO, it was noted that support funding is provided through the WHO country office in several of the countries visited.

In 2016, WHO strengthened agreements to transfer “ownership” of the administration of POLHN to the Ministries of Health in all countries. These agreements require the MoH to be responsible for the upkeep of the POLHN learning centres including technology and internet; provide a focal point; provide updates for POLHN country website page; incorporate POLHN courses in the National Training Plan; provide regular progress reports on activities undertaken through POLHN (WHO Memorandum, 2016).

This transfer of ownership may have resulted in an initial reduction in activity in some countries (example Solomon Islands where the focal point went from fulltime WHO staff

member, to POLHN focal point activities being part of another role) whilst in other countries activities continued at a similar level (example Kiribati who has a fulltime focal point and management committee oversight). However, it is a major achievement to transfer ownership of POLHN to countries and a transition period can be expected.

Although all representatives of countries interviewed recognise the value of POLHN, this does not always translate into a strategic plan of matching POLHN courses with human resources for health needs. With a transfer to full country ownership, overall integration into country human resources for health plans, skill shortage reviews and continuing professional development (CPD) requirements will need to be strengthened. These regional priorities have been discussed for many years at PHMM. In line with Roberts (2017) there needs to be further work undertaken to identify current programme accreditation or approval processes in use and to collaborate with countries to develop common frameworks for each discipline. Some registration bodies recognise POLHN provides CPD towards annual licensing, however not all Pacific Island Countries have a fully functional registration board.

Country Resources

The number of POLHN Learning Centres has increased since the launching of 10 Centres in 2004 to 54 Centres in 2017 and another 6 proposed (Table 3). Each centre has networked computers with internet access, printer, scanner, data projector and educational materials in digital and print form wherever possible. There has been a significant increase in functioning computers as countries within the region improve their management and maintenance of technical infrastructure. Currently there are 318 POLHN computers in 2017 that are reported to be functioning; connected computers across the region see Table 3. In each country the internet connection is maintained by the MoH, four countries have internet fibre and three more are planning on an internet fibre upgrade in the next two years. However, computer maintenance is still an ongoing issue not only as capacity for maintenance is often lacking, but provincial Centres need to send their computers to a main centre for maintenance, which is time consuming and costly.

The POLHN Learning Centres are placed where they can be accessed by health workers in either the hospitals (main or provincial) or Ministries of Health. During country visits and interviews it was found countries are for the most part **proud of their Centres** and maintain them as best as they can. They try to ensure the Centres are available to all cadres of health worker. Focal points report up to 60% of the Centre usage is by POLHN students (Focal Point Survey). Interviews reported the Centres are **a valuable** resource to the health workforce, in some countries providing the only available computer/internet to access courses. The Centres are mainly used for short courses, and by PPTC and FNU students. The FNU post-graduate student survey (*n*=90) indicated the majority of students who responded to the survey, 70% do not use the POLHN Centres but use their own or a work computer/internet (Table 4). However, this does not correspond with interview data which showed the Centres were a valuable resource, and while barriers exist to access because they are mostly open during “work” hours they were at times the only access to computer/internet health workers had. Therefore this survey data should be analysed with caution. There are over 500 FNU post-graduate students, and the survey respondents by the very fact they could respond to an online survey indicates they have access to computers/internet, which could have skewed the data.

We’ve rolled all the POLHN Centres into continuous learning and development

centres and so it can be used by everybody, not just POLHN.

Focal Point

This place is mainly for all including POLHN students. ..So when POLHN students come here to study…. We honour the students first that want to do the (POLHN) online courses.

Sometimes when there's a professional wanting to do their research after hours I can make it (the Centre) open for them. This place is very important to the Ministry of Health.

Focal Point

Currently, there are 22 country focal points in 15 countries (Multiple focal points in Fiji, 4; Federated States of Micronesia, 4; and Samoa, 2). However, there are also more provincial focal points who communicate directly with the country focal point, resulting in 52 POLHN focal points in total. Survey responses were gained from 11 of 15 countries: Federated States of Micronesia, Guam, Kiribati, Nauru, Palau, Samoa, Solomon Islands, Tuvalu, and Vanuatu. These correlate with the countries visited and focal points interviewed. Of those responding 70% have been in position for under five years and the majority undertake their POLHN tasks as part of another position sometimes dedicating as little as 2 hours a week to POLHN.

One focal point interviewed explained the situation common to many POLHN Centres:

I think the POLHN coordinator should be a full time person… for logging in and logging out … some of the students they don't know how to sign up for the email …. Most of the nurses don't know'.

Other Focal Points interviewed described the range of work required in the role for the Centre to function well, which included computer skills training for new or prospective POLHN students, and activities to promote POLHN:

(The Focal Point) talks about how you engage the audience and create interesting activities that facilitates learning and sponsorship. The way you present matters and your knowledge will be passed on.

Some focal points reported innovative ways to disseminate information on POLHN and sponsorship which potentially led to increased use of the Network, such as:

We're planning a career day for health which is another good way to put up awareness for POLHN to older students. Last year we also marketed POLHN through Public Service Commission Day. We always look for those opportunities where we can take out POLHN for the information of people. And there's an increase of the awareness of people on POLHN, even some government ministry stakeholders ask what POLHN really is and they kept on asking about the process and these online courses for health.

With the transfer of ownership of POLHN to country Ministry of Health, the POLHN focal points described how they spend their time with POLHN students with the majority of time spent on WHO sponsorship coordination, FNU admissions and IT computer skills and

understandably, the least amount of time spent on Penn Foster admission processes (Penn Foster only available in Northern Pacific).

POLHN focal points, when interviewed, often noted the importance of ongoing training and development, as illustrated in comments as follows:

> *Every two years we go to Suva and have a meeting with POLHN focal points in the Pacific and we get together for one week. Last year I went to the Solomons …to do some cross-training. It was just like a cross training workshop for POLHN. We went to some other countries to learn from others.*
>
> *When I was in the Solomons I saw that people were different there - the POLHN co-ordinators there keep changing and they keep on asking what I have learned … That's a bit different because they keep on changing their coordinators.*

4.2.2. Short courses

The provision of short courses through POLHN has changed over the years as the global e-learning market has expanded. POLHN has historically either developed courses itself, through WHO, or partnered with other institutes to develop courses which were accessed directly from POLHN. Currently, there are a number of courses available directly from the POLHN website which are made available free. These are:

- Best Practices for Food Establishment Inspectors
- HIV/AIDS & TB
- Infection prevention and control
- Health information system
- Mental Health Gap Action Programme
- Cause of death
- Antimicrobial Stewardship Programmes in Hospitals
- Childhood TB for Healthcare Workers
- Obesity and Overweight
- Infants and Young Child Feeding
- Salt Reduction
- Healthy Diet

While the absolute numbers of students who complete these courses is not available, we can analyse which countries are accessing these short courses and their popularity. This analysis is done through measuring logins. This has many limitations as it does not allow analysis of completed courses taken, by which cadre, from which country. A robust monitoring and evaluation process to gather this information can provide evidence of CPD needs. However, by analysing the login data between 2003 and 2017 (Table 5) we see that Fiji is accessing the majority of short courses. It should be noted that Fiji showed a large increase in short course login in 2013 when courses became recognised as CPD points for registration license renewal. Recognising CPD as part of registration requirements and also Public Service Commission (or equivalent) for structured career development can have an impact on health workers seeking further education and short courses. Recruitment and retention studies have shown that motivation of health workers is extremely important (Buchan and Weller, 2013), CPD increases motivation (Lopes et al., 2017). It is also

recognised that skilled, educated health professionals provide quality health care services (Aiken et al., 2017). Table 6 shows us in the majority of countries, the MoH recognises POLHN short courses as CPD, but it is not necessarily a requirement for renewing registration.

One Focal Point spoke of the direct link to remuneration:

> *They want to get the certificate so they can increase their wages.*

Another senior MoH official explained the issue more broadly in terms of motivation to study:

> *What people are wanting is recognition, with pay. Usually, if the programme is free that's fine. If we have to pay for it we pay for it. ..But you know what it is, it's advocacy for those programmes that's lacking. You need somebody to get it excited. You need somebody on the ground to say … it would be worthwhile to do that.*

In data provided by WHO, it is clear that the most frequently accessed short course offered by POLHN between 2015-2017 was Infection and Prevention Control (Table 7) followed by HIV/AIDS & TB and Introduction to Disease Surveillance and Outbreak Investigation. In 2013 however, data show that the most popular short courses were Basic Computer Literacy courses (WHO, 2013). The need for computing skills was also confirmed in a student survey and interviews across 15 countries, such short courses for computing skills may need reinstating as an option.

Short courses are also now provided by three partners: Lippincott Nursing Centre, Medscape, and Global Health eLearning Centre provides thousands of options through their websites. These websites can be accessed through the POLHN site, however tracking usage is not currently possible and options for collecting data on this may need addressing for the future. There is no regional accreditation process for institutes providing courses, so these accredited institutes providing continuing professional development courses are a good option. However, a regionally recognised accreditation process could assess whether a course is appropriately contextualised for the Pacific Island context.

4.2.3. Credited courses

Fiji National University

Post-graduate courses sponsored through POLHN are currently only offered through Fiji National University. While there are varying viewpoints on this, with students citing a lack of feedback and feelings of isolation, this is also regarded as the best possible option at present for several complex reasons: FNU courses are contextualised for the Pacific; FNU does not require the International English Language Testing System (IELTS) for admission which other international universities in Australia, New Zealand, United Kingdom, and America require.

In addition, the costs for overseas study can be prohibitive. Comparison of post-graduate study costs from one university in Fiji and two universities in Australia show that Fiji is relatively cheaper. For example; a three year degree in Fiji is approximately AUD$9,000, for a Sydney university a three year degree is approximately AUD$94,000 and a Queensland

university equivalent is approximately AUD$87,000. On top of this are living costs, Fiji AUD$7,000 per year, Sydney AUD$23,000 per year and Queensland AUD$15,000 per year. A Master's Degree for Sydney and Queensland is approximately AUD$45,000, whereas a post-graduate diploma for one year in Fiji is approximately AUD$10,000.

Students across 15 countries are eligible for sponsorship to complete a post-graduate course through POLHN. WHO sponsors about 50 students (1 unit per student) per semester (about 100 per year). The students, for the most part, must gain a B average or above to continue getting sponsorship.

Three approval processes are required for a POLHN student to enter into a post-graduate course at FNU. The approval process requires:

1. Applicants apply through POLHN to FNU for academic approval;
2. Once accepted the Ministry of Health in their country must approve their application; and
3. Finally, their application is approved by WHO for sponsorship (either country office or WHO/SP).

This process is complicated with students reporting a lack of feedback on the status of their application; time constraints between when courses become available and when application and acceptance are due. POLHN focal points facilitate this complex process that spans institutions, country offices, WHO and individuals.

One student interviewed explained their experience:

> *Instead of sending my birth certificate I sent my passport. But they wouldn't accept me because I didn't send a copy of my birth certificate. But then it was too late down the road… And if we ask WHO they say they can't do anything … They change the process every semester… It's very hard. I've got Masters, but then they said I didn't send a copy of my birth certificate but I said my passport is sufficient, it's got all the information there.*

Receiving course and enrolment information with adequate lead time was reported by some focal points as an issue that negatively affected student numbers:

> *I remember last year we got the email (to enrol in POLHN courses) when there were only two days before the due date. So we requested for extension and they gave us one week so that's the only time for our applicants to prepare. Especially the new applicants, they have to submit a lot of supporting documents and all that.*

Between 2008-2017, WHO has sponsored 1302 units of study (Table 9 and 10). While of these students 504 additional units were paid for privately (Table 11). This equates to 362 students graduating from FNU through POLHN (Table 8). Currently these data are not tracked by POLHN, FNU holds the record. A student survey with 90 respondents has provided some further insight, for example:

- 50% of respondents paid for one or more units of study themselves (Table 13);
- Majority of graduated students have received a post-graduate certificate - 26%; with 57% not yet completing/graduating (Table 14), the majority of these (24%) reported it was because they were not offered sponsorship (Table 15);

- The most popular course is the Post-graduate Certificate in Public Health, 33.3% (Table 16);
- The overwhelming majority found POLHN very-to-extremely useful for their health role and position, 87% (Table 17), with 29% reporting that their POLHN study had helped them to receive a promotion; 28% reporting that study had helped them to change jobs, and 16% receiving a pay rise after completing postgraduate study through POLHN.

Many students surveyed commented positively on the impact that postgraduate study through POLHN had had on their career and its relevance to their work. Examples of these comments are as follows:

> *I have been able to use my management qualification, knowledge and experience to address issues at work when dealing to staffs that I work with and those I supervise and manage. It has also given me a boost knowing that I am qualified to hold senior position at work and not only that I am experienced. Sharing my experiences has encouraged my colleagues to take up courses and pursue further qualifications.*
>
> *It has helped me a lot in the delivery of eye care service in my work place and when I travel around the region. I am skilled, competent and the teaching has broaden my knowledge in the provision of eye care service in Fiji and around the region.*
>
> *The knowledge that I gained through this courses, I am able to use it in my work area. It also has helped me to look at work data critically as well. I learned about tools that I can use for data analysis.*

POLHN courses are reported as being very helpful in improving quality of work and career development, yet there are low completion rates. Almost a quarter of student survey respondents reported not completing because they did not get offered further sponsorship. It is suggested sponsorship should be continued for willing students, regardless of a B or above average. Particularly for the first semester when students are feeling most isolated and are learning new processes and computer literacy. POLHN's original concept was flexible learning which was discussed at the Pacific Health Ministers Meetings since 1999 (10th Pacific Health Ministers Meeting, 2013). PPTC in particular recognises the need for flexible learning and following several evaluations and reviews set the requirement for continuing sponsorship at a pass mark. This increased graduate motivation and continuation of the program with in a complex health setting.

> *We try to give support and help as much as we can. We try to encourage them to finish it. We are very flexible as long as they pass we allow them to continue on. If they don't get a certain mark it's too harsh.*
>
> CEO, PPTC

It was found through country visits, interviews/focus groups that entry into post-graduate courses at FNU are not possible for nurses who have completed a certificate or diploma of nursing from a School of Nursing, which is the majority of nurses in the Pacific. Nurses with diploma level qualifications are required to work for 5 years as well, prior to being eligible for post-graduate study, this creates one barrier to entry. It has been identified that a huge need exists for a bridging course for nursing students to continue their studies immediately following their certificate. Interviews showed that waiting for 5 years meant young graduates

who wished to continue with study may be lost to family life or work pressures.

One MoH senior staff member from a country with a shortage of nursing staff commented:

> *FNU couldn't accept our nurses because they need some pre-requisites for them to enter (the course). Two of our nurses have been deferred from last year, this year to go. They don't have most of the science they need.*
>
> *Stakeholder, MoH*

Another noted:

> *Our issue with that is that 5 years is a long time as a nurse (to wait to enroll). Way too long. though people will get in straight from a diploma and they're ready to go … I do feel for my longtime staff who's been around for a long time. I think they should also be given the opportunity too.*
>
> *Stakeholder, MoH*

Pacific Paramedical Training Centre

The Pacific Paramedical Training Centre (PPTC) was established primarily to provide training and assistance in the Medical Laboratory Sciences and provide developmental assistance for clinical laboratories and blood transfusion services in the Pacific. PPTC has become the main provider for medical laboratory training in the Pacific. Since its establishment, the PPTC has been supported by the New Zealand Government, and historically by WHO through POLHN student sponsorships. WHO stopped sponsorship in 2016 as PPTC is now solely supported by the New Zealand Government, with POLHN sponsorships still available through the New Zealand government. PPTC training was available through POLHN from 2003, in 2006 course graduates were provided with a certificate, this was upgraded to a Diploma programme in 2010. The number of students who have graduated with a Diploma of Medical Laboratory Science totals 91 (Table 8 and Table 18).

Unlike other POLHN courses, PPTC has a practical component that requires supervision.

> *"The students would go through the learning programme and during the multiple choice component just find the answers quickly. We came to the conclusion they didn't understand what they were doing at all. It wasn't a good system. So we put in place a practical log book that they had to go through all the practical processes themselves until they were competent and get their supervisors to sign off them."*
>
> *CEO, PPTC*

This process can be difficult as students must access medical laboratories to complete the course.

PPTC is working to get recognition from Health Ministries so graduates are paid accordingly. A few countries have linked recognition of course graduation with employment, such as the Marshall Islands, and Samoa is in the process.

> *What we want to do and the Government of New Zealand want to see is measurable*

outcomes and bigger impacts. They reduced our scope to four major countries and work with them for five years and get international accreditation by 2020.

The ministries are trying to adopt it (PPTC qualification) into their pay scales. Then it becomes a stepping stone into universities but as a basic qualification we are trying to get recognition from health ministries.

I need the health ministries to take a better stance on the diploma knowing they don't have money for CPD. They should look at it more seriously and put it as our basic qualification and register it as such. The PPTC is not like university.

PPTC

Penn Foster Dental Assistant Programme

It was identified by the Pacific Basin Dental Association (PBDA) and the Pacific Islands Health Officers Association (PIHOA) that training opportunities for dental hygienists in the region was limited and to create such training would be resource intensive. Yet the need for more dental hygenists was growing. In 2012, it was proposed that locally trained dental assistants, who have no formal qualifications in Dental Assisting, enroll into a dental assisting programme which POLHN sponsored online through Penn Foster. By 2016, POLHN had sponsored seven students in Federated States of Micronesia (FSM) and thirteen students in American Samoa had successfully completed the 9 modules programme.

After the completion of this programme, suitable candidates would be able to apply and enroll into the FNU School of Dentistry And Oral Health programme to train as dental hygienists.

4.3. Evidence of what works

Distance learning opportunities and information technology can be used to address the limited professional development experienced by health workers in remote locations (Ndege, 2006). And this method of online learning, for the most part, has been found to be as effective as face to face learning. A review of almost 50 e-learning studies (Al-Shorbaji et al., 2015) found that computer- and web-based e-learning methods are as effective for building health worker knowledge and skills as traditional learning methods. The systematic review found in comparison to traditional learning methods, networked computer based learning showed statistically significant benefits in: knowledge gains (27% of studies); skill acquisition (40% of studies). For student satisfaction 14% of studies favoured computer based learning, while 74% of studies did not find a statically significant difference between the two learning methods. However, 67% of the studies did not find a statistically significant difference between the two learning methods for attitude (67% of studies).

However, the review found the most common disadvantages reported by learners for e-learning were: more time-consuming; lack of student teacher interaction and tutor support, feelings of isolation, being unable to clarify doubts with a tutor, and lack of in-depth group discussion.(Al-Shorbaji et al., 2015) These disadvantages are what the Pacific Island health workers accessing POLHN have reported. Students reported that a lack of feedback from tutors was demotivating. Feelings of isolation and being unable to clarify doubts were also cited as being a major issue.

> *"I have (used POLHN) in 2008, 2009, 2010, 2011, before I went for my post-graduate studies. And at the time it was coordinated by WHO and we used to have mentors coming from Fiji School of Medicine at the time. Unlike now, there's no mentoring … they used to provide an hour's session with us."*
>
> *Solomon Islands, Student*

Studies show low completion rates of e-learning courses, and the importance of instructor-student and student-student interactions in classrooms, and have suggested that e-learning alone is unlikely to be the most effective strategy for teaching and learning (Chen and Yao, 2016). Blended learning, a convergence of e-learning approach and face-to-face learning, has been regarded the way to integrate the benefits of e-learning and classroom learning (Wu et al., 2010). However, blended-learning is difficult for POLHN due to major geographical constraints in the Pacific Islands. The original idea for POLHN was to not only remove barriers to further education, but reduce health worker movement so that already stretched country health systems are not losing vital health workers to go study abroad. A POLHN student survey shows 75% of students have remained and continued to work in the country they were born. Other studies have previously shown a trend of Pacific health workers migrating and working overseas. For example six hundred and fifty-two Pacific Island born doctors and 3,467 Pacific Island born nurses and midwives are working in Australia and New Zealand (Negin, 2008, Negin et al., 2013, Hawthorne, 2012).

However, there are ways POLHN can facilitate the learning of its students. Studies have suggested positive learning experiences are developed through good social environments, ease of usefulness of the course and ease of use of the delivery mechanism (Chen and Yao, 2016). Furthermore, a study of student satisfaction showed a positive learning climate significantly affects students' learning satisfaction. The study recommend education institutes should provide incentives and supports to enhance students' computer competency as well as a good social environment that facilitates student-to-student and student-to-instructor interaction will foster a better learning climate (Wu et al., 2010). Increasing the student to student interaction through in-country study groups organized through the POLHN focal point; computer training and practice for joining in online group discussions and capacity building of FNU for more tutor support and feedback. In interviews with students, tutor to student interaction was found to be severely lacking from FNU, at times causing distress and even drop outs.

> *"The support from FNU is not good - sometimes it takes turnover reply maybe 48 hours, or sometimes a few days which is not that ok really. So whenever I am in Fiji I have to go in person for example to collect a certificate, collect a transcript and so on…even if I am going on leave, on personal leave I take advantage of the opportunity to go to FNU."*
>
> *Tuvalu, POLHN student*

Internet/infrastructure

Various reviews and studies have highlighted both the need to make effective use of modes of distance learning to support CPD, and the technological challenges of providing access across vast distances and remote islands and atolls, often with limited infrastructure (Chen et al., 2007, Colquhoun et al., 2012, Sarkis and Mwanri, 2013). POLHN itself has been described as "one example of an initiative to improve health worker skills and motivation"(Sarkis and Mwanri, 2013) in the Pacific.

Drawbacks to integrating e-learning for institutes that have been cited include high initial costs for preparing content materials, and substantial costs for system maintenance (Wu et al., 2010). These have been issues for POLHN, which have been mostly overcome with initial funding from Japan allowing for the setup of POLHN Centre infrastructure, ongoing support from WHO (through various sources including country governments) for infrastructure maintenance, and ongoing sponsorships from WHO supporting institutes such as Fiji National University, Penn Foster and PPTC to develop course content. Short course content has been mostly outsourced to global partners who are already supplying short courses in health care (such as Lippincott Nursing Centre, Medscape.com, Global Health eLearning Centre) (Hezel Associates, 2011).

Given that through POLHN all interactions must all take place online, a working level of computer literacy and competency is needed for this to be successful. The United Nations International Telecommunication Union (ITU) who publishes an Information and Communication Technologies (ICT) index, providing a world rank of ICT usage shows that of the 175 countries ranked, Pacific island countries are among the lowest for ICT usage. For example: Solomon Islands ranked 153/175, Kiribati 152/175 and Fiji - the highest in the Pacific region - is 102/175 (International Telecommunication Union, 2016). While this is measured as ICT usage, it may also indicate computer literacy is less likely to be prevalent in the Pacific region. Interviews with students and country focal points confirmed that computer literacy was very low for the majority of health workers in the Pacific. Historically computer literacy courses were offered through POLHN and may be necessary as an ongoing offering for new students of both short courses and post-graduate courses.

Since the inception of POLHN in 2003, the internet capacity in most Pacific Islands has grown. However, it is still lacking and many POLHN Learning Centres struggle to maintain computers and equipment. Internet is also reliant on reliable power which is not available consistently in the Pacific. Internet remains one of the largest barriers to online learning for the Pacific Islands.

> *"…the challenges we face are internet …sometimes we are ready to submit, and the internet cuts off. It did once, and that was during my exam. So I wrote down my answer and printed out something and send it to them in an email. … it screwed me up for a while, I was kind of freaked out. I said I am sorry, I am doing it from my home, I'm doing it before the time, I was really freaked out."*
>
> *Tuvalu, POLHN student*

The infrastructure available through POLHN is being used by more than just POLHN students, and interviews showed it is regarded as an enormous benefit for all health care workers. A survey of POLHN students who have undertaken post-graduate studies through FNU showed 70% are using their own and/or a work computer to access their POLHN course. However, POLHN focal points expressed that short courses are often accessed through POLHN Learning Centres, with some health workers completing up to 40 short courses. Computer and internet access remains mixed, with many health workers still unable to access their own/work computer. It is therefore recommended the infrastructure needs to be maintained for at least the next 5 years.

WHO recognises the value of CPD for health workers and that POLHN provides an

important CPD opportunity for health workers and (WHO, 2017). It ensures the ongoing competency of health workers and can be a prerequisite for practice, however in the Pacific region this is often not the case. Interviews through this review, and other Pacific studies (Thiessen et al., 2016, Rumsey et al., 2013a, Lock et al., 2013, Rumsey et al., 2013b, World Health Organization, 2010) have highlighted that the health workforce in the Pacific want to remain in their home countries and for this to occur, they require flexible learning opportunities. Equally other studies have shown if health workers study overseas, they may then migrate permanently (Connell and Wales, 2010, Buchan et al., 2011).

However, recognition of continuing professional development is currently sporadic across the Pacific. More systematic recording and recognition of CPD access and completion by respective country's public service commission, Ministries of Health and regulation bodies is essential if there is to be progress. Data collected through interviews/focus groups and graduate and focal point surveys found that some countries did have better recognition of CPD achievements which resulted in some cases of corresponding increases in remuneration and health professionals indicating that they felt valued.

Evidence of Impact

POLHN, not without challenges and barriers, has still managed to successfully bridge several gaps around provision of education for the health workforce in the Pacific:

1. 15 countries, 54 POLHN Learning Centres, 318 working computers are managed by country Ministries of Health who support 52 country focal points to coordinate POLHN.
2. Significant increase in computers and Learning Centres has enabled all cadres of health workers to access computers/internet for continuing professional development in urban and many provincial sites.
3. While difficult to track, short courses for continuing professional development are being taken throughout POLHN countries. By partnering with other reputable institutes to provide online short courses, the pressure has been reduced for POLHN to produce and monitor their own short courses.
4. 362 students have graduated through POLHN since 2008, to undertake post-graduate courses through FNU.
5. A recognised lack of medical laboratory assistants in the Pacific is being addressed with 91 students having graduated from PPTC. Negotiations with FNU are continuing to enable these students to access higher education.
6. A recognised lack of dental hygienists is also being addressed through Penn Foster with 22 graduates; these students may be eligible to apply for further study at FNU.
7. 75% of students surveyed have remained in their own countries during and following POLHN study.
8. 87% of POLHN post-graduate students stated that involvement in POLHN courses has been very/extremely useful for their health sector position.

Therefore POLHN is meeting previous WHO strategic directions which have:

- emphasized the need for transformative education of health professionals that matches education to health needs, and builds on new technologies and innovative approaches to training and development (World Health Organization, 2013),

- highlighted that the retention of health workers in rural and remote areas was in part supported by use of technology based distance learning and CPD to motivate and retain staff (World Health Organization, 2010).
- Supported the need to deliver CPD that meets criteria that include "Learning is based on such an identified need or reason…Follow-up provision is made for reinforcing the learning accomplished…In-service training is linked to preservice faculties as far as possible to create a seamless CPD system" (Global Health Workforce Alliance, 2008)

4.4. Challenges

Governance, infrastructure and human resources

- Sponsorships are not linked with country human resources for health needs to fill the gaps.
- There is a general lack of coordination of CPD in the Pacific.
- Lack of data collected for analysis on –country human resources for health needs, POLHN graduates and skills, enrolments, length of study, retention rates, graduation rates etc.
- Time spent by POLHN country focal point variable affecting individual country engagement.
- Access to POLHN centres and computers can be difficult because only open during business hours.
- Internet connectivity is a barrier to POLHN.

Short courses and credited courses

- There is a lengthy process of application for POLHN FNU post graduate students, which can be confusing and time consuming.
- FNU students report a lack of feedback from FNU, isolation, and lacking computer skills.
- Further education barriers to entry for nurses who lack the requirements for entry to post-graduate courses – need a bridging course.
- PPTC, Penn Foster and short courses not always recognised by regulatory authorities, public service commissions or Ministry of Health for career development.
- Specialisation for health workforce not being addressed in a strategic way.

4.5. Changing environment

The High-Level Commission on Health Employment and Economic Growth (High-Level Commission on Health Employment and Economic Growth, 2016) has recently highlighted the major potential contribution that e-learning, in its broadest definition, can make to health worker effectiveness, retention, and health outcomes. The High-Level Commission stated that e-learning has the potential to enable education and training to be scalable without compromising effectiveness. However, they recognised that there are obstacles to e-learning reaching its full potential in addressing health workforce gaps and improving health services. These obstacles have been found to affect POLHN as recorded in evaluations in 2001, 2004, 2011. (Hezel Associates, 2001, Hezel Associates, 2011, Baxandale, 2010, JTA International, 2004). These are:

- Lack of evaluation (evidence of what works).
- Lack of internet access/infrastructure (electricity, connectivity costs).
- Lack of technology knowledge and resistance to change (High-Level Commission on Health Employment and Economic Growth, 2016).

The health workforce development challenges and potential for technological innovation and health systems challenges in the Pacific were recently summarized: “The impacts of geography and distance from health services apply to most areas of the Pacific region and to the remote areas of Asia. The potential for new and emerging technological innovations to overcome distance will develop into the provision of remote diagnostics and treatment support from centrally based specialist to clinicians in the field, epidemiological mapping of health needs and staff deployment leading to the reduction of staffing inequalities within countries, and access to on-line learning for health professionals. The use of such technologies will increase the demand for specialist consultations and services and will need to be incorporated into health worker training programmes. A cadre of information technicians will be required to support their application and maintenance”(Negin et al., 2013).

The scope to scale up broader based information communication technology (ICT) and have a major impact on health care delivery has been noted, notably in “ICT projects to support clinicians and other health workers (e-learning, e-resources and telemedicine) and the use ICTs in the delivery of health services” (Willis-Shattuck et al., 2008).

5. Future Direction

This review enabled high level discussions with many stakeholders including from Ministers of Health, Health Secretaries, educators, and health practitioners at all levels in the clinical areas. The review highlighted the lack of regional coordination and varying degrees of provision of quality of health workforce education. For example, in this review alone it was identified for nursing, there were four countries in desperate need of curriculum review for nursing and one country where the government is proposing to close the school of nursing, while another small Pacific Island Country is trying to establish a school of nursing. Different funding organisations, World Bank, MFAT, DFAT, etc were funding different components of health workforce development at different levels, country by country, with limited regional coordination. However, discussions are being held on a regional level, with meetings such as the Clinical Directors’ Meetings feeding into the Heads of Health, which in turn puts recommendations forward to the Health Ministers’ Meeting.

As the administration of POLHN’s infrastructure and Centres has largely been handed over to member countries, a regional body to oversee the future and direction of POLHN is now urgently needed. This body ideally can ensure that what POLHN provides is meeting the continuing professional development and education needs of the healthcare workforce in the Pacific.

A regional CPD framework and health workforce needs assessment has been discussed at PHMM since 1999, in previous evaluations (Sarkis, 2012) and at the Heads of Health meeting (SPC-PRCWSIP, 2017). This is not new thinking, but regional discussions are building momentum and now may be the time for a new strategic direction. A dedicated group is required to direct POLHN to link regional and national CPD and health work needs. The 12th Pacific Health Ministers Meeting also discussed the need for regional health workforce coordination body (WHO, 2017).

There have been previous and current regional groups that have had Secretariat and Steering Committees such as the Pacific Human Resources for Health Alliance (PHRHA); South Pacific Chief Nursing and Midwifery Officers Alliance (SPCNMOA); and Directors of Clinical Services Meeting. To maintain these regional groups requires consistent funding and a strong Secretariat to administer, and support the group. The full engagement of member states is also a pre-requisite for success of any regional underpinnings. Just creating a new piece of regional architecture would not in itself guarantee success.

For POLHN to stay relevant for both flexible learning and continuing professional development it needs to be understood and owned by the countries. This review was able to gather data, information and views from the many countries with their complex geographies and health workforce needs; regional bodies such as WHO WPRO, SPC and Heads of Health, SPCNMOA, DCS; donor partners; educational institutes; WHO policy and strategic documents and existing published literature. **POLHN is considered a vital part of the continuing professional development and ongoing education of the Pacific health workforce.** Taking this into consideration, recommendations fall into three main areas: governance, continuing professional development, and monitoring and evaluation.

5.1. Governance

A regional view of the Pacific health workforce through a regional accreditation process of institutes and courses, regional CPD framework, and regional regulatory standards has the potential to decrease ad-hoc funding on a country by country basis and increase the potential for countries health workforce education needs to be met. A Regional Managing Board is required to coordinate the strategic direction of POLHN's continuing professional development mission, vision and goals (see M&E Framework for details). However, while regional structures and governance may be necessary, they are not in themselves sufficient to achieve the desired change. Country engagement is required.

Recommend:

> **POLHN Regional Managing Board established to work closely with WHO/SP as the Secretariat. This will build regional management capacity, increase country ownership, and ensure POLHN is contextualised for the Pacific Island Countries.**

The Regional Managing Board, to be effective, needs to:

- represent the Pacific countries, donors, and partners organisations, particularly for funding arrangements;
- continue to strengthen MOAs for country ownership of POLHN processes;

- collaborate with regional forums covering all health worker professions to develop policies with regulatory authorities, professional bodies, ministerial bodies and educational institutes;
- coordinate how POLHN can meet regional and national continuing professional development frameworks;
- recognise career pipeline and pathways, including educational gaps, for relevant health professions via POLHN courses;
- improve relationships with research and academic institutions/partners for course administration and course selection, build public private partnerships and increase partners to provide further education (eg. USP, The World Continuing Education Alliance etc)
- improve strategic advocacy and promotion of POLHN and its courses
- oversee monitoring and evaluation reporting (see below) to ensure POLHN is providing quality, equity, efficiency and effective e-learning platforms that support health workers to have a more sustainable and responsive skill mix.

5.2. Continuing Professional Development

Currently, there is a regional skill shortage which needs to be mapped and continuing professional development opportunities aligned and developed to address this skill shortage. Regional and country scholarships and fellowships need to be aligned with skill shortages, rather than on an ad-hoc basis, to develop an integrated regional approach. This has already been identified (WHO, 2017). Alongside this a regional process needs to be agreed on for CPD registration recognition and accreditation of health workforce educational programmes (Roberts, 2017).

Recommend:

POLHN Regional Managing Board coordinate with countries to drive CPD development and relevant policies to strengthen link between POLHN programmes and existing/future needs.

For this recommendation to be effective:

- Develop a regulatory code of practice in line with recommendations presented to Heads of Health (Roberts, 2017), for recognition of CPD for registration licencing in the Pacific, with relevant bodies including: Public Service Commission (or equivalent) and regulation bodies, Ministries of Health, educational institutes, partners/stakeholders.
- Ensure CPD roadmap or framework includes educational gaps in the Pacific eg. nursing bridging courses, public health undergraduate courses required for continuing education.
- Match POLHN sponsorships and fellowships to identified skills shortages to address regional and country-specific needs to provide more relevant educational opportunities.
- Explore other educational institutes and e-learning platforms eg. The World Continuing Education Alliance https://www.wcea.education/ that may have infrastructure already available for use

- Provide ongoing sponsorships to continue to support health workers to remain in their home countries and remain in the health workforce while continuing education.
- Set up an alumni throughout the Pacific as a support system for ongoing students and to track health workforce successes.

5.3. Monitoring and Evaluation

Currently, there is no formal annual monitoring and evaluation of POLHN, however there have been several evaluations since its inception. Monitoring and evaluation is critical for funding bodies, guiding future activities and building an evidence-base of impact and effectiveness.

Recommend:

> **POLHN Regional Managing Board with partners review and adapt the draft Monitoring and Evaluation framework and oversee the annual reporting against outcome indicators.**

For monitoring and evaluation to be effective:

- WHO/SP Secretariat would manage robust data collection from countries (as required by MOA) and institutions (eg. FNU, PPTC, Penn Foster) for the M&E process and report to the Regional Managing Board.
- Assess if POLHN courses are meeting human resource country and regional needs and assess how many POLHN sponsorships result in completion/graduation (robust data collection required);
- Ensure evidence-base decision making for ongoing POLHN resources and solutions (using data).

Monitoring and Evaluation Framework

Theory of Change

The Theory of Change (see Appendix 6) utilises an evidence-based approach which incorporates multi-method data collection and analysis to monitor and evaluate the outcomes of the Pacific Open Learning Health Net (POLHN). The Theory of Change has been developed to guide changes or alterations or area of actions where necessary to steer POLHN towards its vision, mission and goals. The components of this Theory of Change are the foundation of the M&E framework. Achieving consensus with POLHN stakeholders will be vital to ensure the monitoring and evaluation is valuable and effective.

The M&E framework guides the assessment of the outputs, outcomes and objectives of POLHN to achieve its vision, mission and goals. The proposed vision, mission and goals are as below.

Vision: E-learning excellence for a better Pacific health workforce.

Mission: To develop a knowledgeable, skilled and motivated health workforce using relevant, effective and quality e-learning.

Goals:

1. To provide access to quality, equitable, efficient and effective e-learning platforms that support health workers to maintain relevant skills and in so doing to enable countries to have a more sustainable and responsive skill mix;
2. To assist regulatory and ministerial bodies to develop relevant policies for continuing professional development (CPD) of health workforces; and
3. To support in building and sustaining the capacity of institutions to provide appropriate and accredited curricula through collaborative partnerships with health professionals, service providers, professional bodies, healthcare organisations, education and research entities.

Definitions

For the purposes of this document the following definitions of monitoring and evaluation are used.

Monitoring: The continuous and systematic collection and analysis of information (data) in relation to a programme or project that can provide management and key stakeholders with an indication as to the extent of progress against stated goals and objectives. Monitoring focuses on processes (activities and outputs) but also monitors outcomes and impacts as guided by an accompanying Evaluation Plan. [11, 12]

Evaluation: Planned and periodic assessment of programme or project results in key areas (e.g. appropriateness, effectiveness, efficiency, impact and sustainability). The evaluation builds on the monitoring process and by identifying the level of short to medium-term outcomes and longer term impacts achieved; the intended and unintended effects of these achievements; and approaches that worked well and those that did not work as well; identifying the reasons for success or failure and learning from both. The evaluation process will also provide a level of judgment as to the overall value of the programme or project. Baseline data and appropriate indicators of performance and results must be established. [11]

Governing Principles

The M&E of POLHN is guided by the following principles:

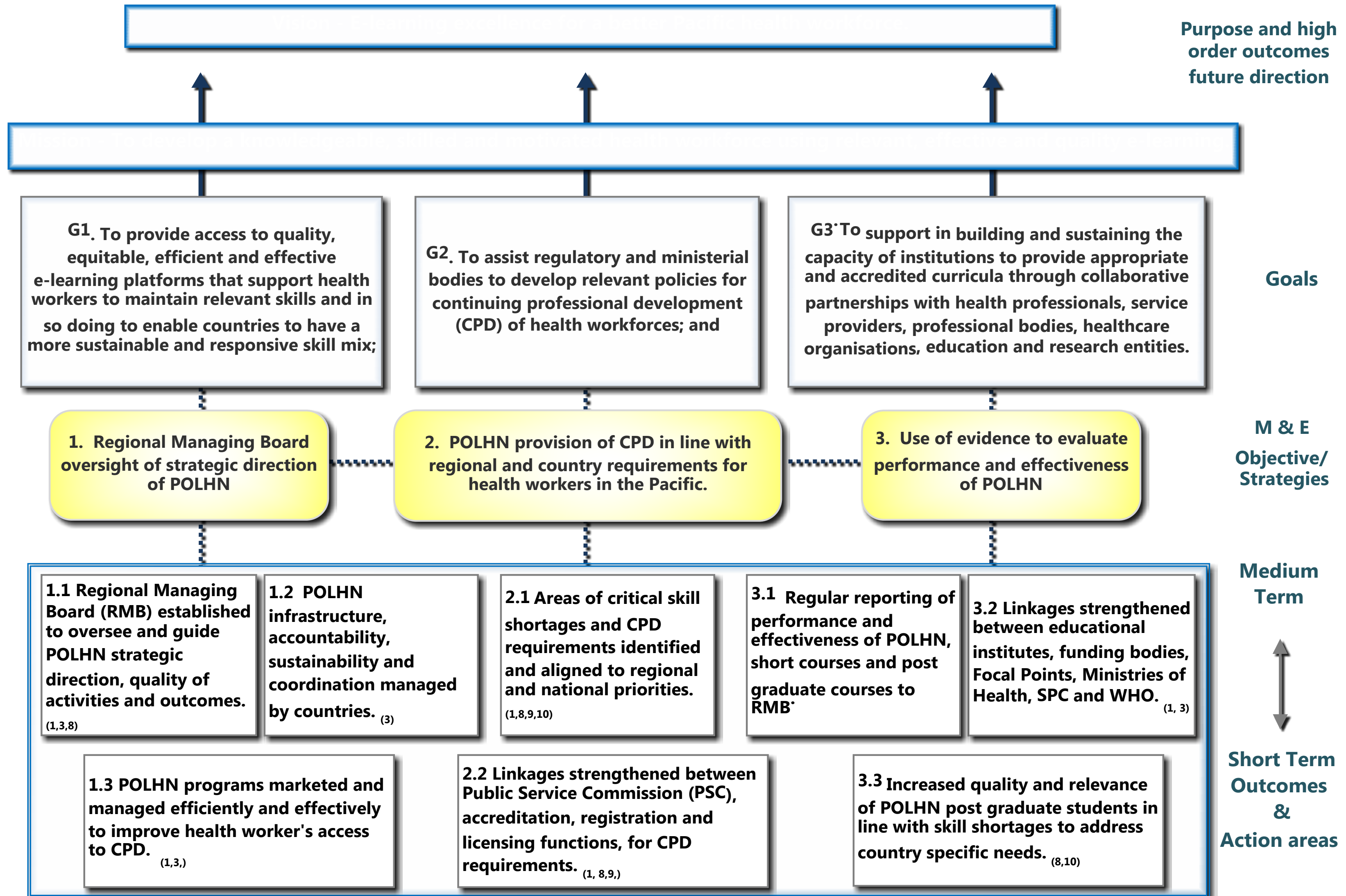
- Locating responsibility for monitoring and evaluation within WHO/SP and/or a Regional Managing Board where it can be used to inform decision making and resource allocation processes;
- Use of multi-method data collection for the establishment of progress toward or achievement of processes (outputs) and impacts (outcomes);
- Allow for stakeholder involvement and engagement in both the design and implementation of the framework;
- Use of stakeholder perceptions of change and/or validation of the program logic;
- Use of systematic reporting of progress toward achievement of outcomes and impacts including identification of successes and failures.

POLHN - M & E Framework

The framework is outlined with: objectives, short- and medium-term outcomes and outputs to achieve the overall vision, mission and goals of POLHN. These are aligned with the Healthy Islands vision and the WHO Health Workforce Strategy 2030 which aims:

> to improve health, social and economic development outcomes by ensuring universal availability, accessibility, acceptability, coverage and quality of the health workforce through adequate investments to strengthen health systems, and the implementation of effective policies at national regional and global levels[1] By accelerating progress towards universal health coverage and the UN Sustainable Development Goals by ensuring equitable access to health workers within strengthened health systems. [1]

Pacific Open Learning Health Net (POLHN) - Theory of Change M & E Framework



M&E Framework

This draft framework outlines the M&E objectives which are linked to medium-term outcomes, short-term outcomes and outputs. They are done in this order to ensure all outcomes and outputs stem from the overall objectives. The medium-term outcomes have been numbered so corresponding Monitoring and Evaluation reports can be tracked against them.

Strategies (M&E Objectives)	Action areas (Medium-term (5 years) outcomes)	Short-term outcomes (1-2 years)	Outputs Indicators (measured annually)	Possible M&E data collection tools
1. Regional Managing Board oversight of strategic direction of POLHN	1.1. Regional Managing Board (RMB, name to be refined) established to oversee and guide POLHN strategic direction, **quality** of activities and outcomes [1, 3, 8]. (G1, G2, G3)	a) Agreement gained by Heads of Health and Health Ministers to establish RMB. b) WHO Secretariat established to administer the RMB. c) Governance structure for Board established. d) Established innovative public private partnership (PPP) financial plan for funding and **sustainability** of POLHN.	• Roles and responsibilities of RMB members developed. • Terms of Reference and constitution of RBM developed and agreed on. • Board members identified and invited to join: WHO representative, regulation representative, country Focal Point representative and a minimum 3 high level Ministry of Health Executives join board (representing north and south Pacific Countries) • Board positions rotate every three years • Board members meet (virtually) three times a year • Board represented at Heads of Health Meeting • RMB considers partners – including private partners.	RMB TORs and membership review RMB meeting schedule RMB Meeting minutes Stakeholder interviews
	1.2. POLHN infrastructure, **accountability, sustainability** and coordination managed by countries, [3]. (G1)	e) RMB working with countries to continue ownership and governance of POLHN (including country maintenance of Centres, hardware, internet.). f) RBM guiding country government financial investment of POLHN through bilateral, local, and PPP mechanisms. g) WHO providing technical and professional support to focal points for Centre management (as required).	• 15 countries with established and signed MoUs of ownership of POLHN • Annual country report template developed. • Annual country reports provided to RBM/WHO Secretariat including financial investment, POLHN Centre update – usage etc.	MOU review Meeting schedule reviewed – notes/minutes review Review annual country report template Review country specific financial investment

Strategies (M&E Objectives)	Action areas (Medium-term (5 years) outcomes)	Short-term outcomes (1-2 years)	Outputs Indicators (measured annually)	Possible M&E data collection tools
	1.3. POLHN programmes marketed and managed **efficiently and effectively**.to improve health worker's **access** to CPD [1,3,] (G1).	h) WHO working with RMB to develop marketing materials and resources for country POLHN focal points, support workshops delivered annually. i) POLHN Newsletter published and distributed to developed stakeholder list and partners j) RBM review staffing and efficiency of centers. k) POLHN centers open for flexible equitable study	• Over 80% POLHN staff attend annual workshop. • Resources developed for all workshop participants and POLHN staff depending on need. • Database developed and maintained of country focal points, partners, employers, Ministries of Health and other relevant stakeholders • Newsletter written and disseminated to stakeholder list two times a year • All POLHN Centres connected to internet 80% of the time • Ongoing maintenance conducted to ensure computers accessible.	Workshop evaluation Focal Point feedback/surveys/interviews Training materials reviewed Newsletters reviewed Database reviewed
2. POLHN provision of continuing professional development (CPD) in line with regional and country requirements for health workers in the Pacific.	2.1. Areas of critical skill shortages and CPD requirements identified and aligned to regional and national priorities [1,8,9,10].(G1, G2, G3)	l) RMB working with Heads of Health to carry out review of critical skill shortages to set country CPD priorities. m) Sponsorship and fellowships provided in response to country critical skill shortages needs. n) Appropriate online resources, programmes, courses provided with academic partners and in line with identified skills and CPD shortages.	• Country CPD requirements/plans developed • 100 annual sponsorship and fellowship allocations by WHO in response to country skill shortages and CPD needs. • As funding is available a suite of courses/resources developed and provided in line with identified skills and CPD shortages.	Country CPD requirement plan review Data collected on sponsorships to correlate sponsorship with country CPD plan Measure course availability and usage matches CPD plans
	2.2. Linkages strengthened between Public Service Commission (PSC), accreditation, registration and licensing functions, for CPD requirements. [1, 8,9,]. (G2)	o) RMB negotiating with PSC and employers regarding recognition of short courses as CPD p) Strengthened knowledge and competencies of health providers aligned to regional and national priorities. q) Mechanisms established by RMB to review regional accreditation regulatory requirements to monitor the implementation of CPD for health workers. (8, 9, 10)	• Increase in numbers of countries recognising CPD points for registration and career development • Ministries of Health requesting sponsorship that are in line with their country's CPD plans • Annual review of e-learning providers of short courses. • Annual reports provided by e-learning providers of accredited courses (currently FNU, PPTC, Penn Foster).	Survey and interview students, staff and stakeholders Website analytics of short courses Data analytics of course provider reports: student graduates, courses utilized, cadre, country

Strategies (M&E Objectives)	Action areas (Medium-term (5 years) outcomes)	Short-term outcomes (1-2 years)	Outputs Indicators (measured annually)	Possible M&E data collection tools
3. Use of evidence to evaluate performance and effectiveness of POLHN	3.1. Regular reporting of **performance and effectiveness** of POLHN, short courses and post graduate courses to RMB. [13] (G1)	r) Comprehensive list of all courses, course providers available and updated regularly on POLHN website. s) Student data analyzed and used to inform ongoing POLHN requirements and G4 impact.	• Website updated each semester with calendar of POLHN courses. • Short course partners available through POLHN website – course completion data tracked. • Data on course enrolments and completions collected	Data analytics of course popularity Data analytics of course completions, cadre, country Student satisfaction surveys Student, partner and stakeholder surveys and interviews.
	3.2. Linkages strengthened between educational institutes, funding bodies, focal points, Ministries of Health, SPC and WHO [1, 3] (G2, G3).	t) POLHN sponsorship and fellowships process streamlined between country, institutes, donors and WHO u) Increased number of institutions providing post-graduate course options through POLHN. v) Report on capacity building initiatives with educational institutes providing POLHN. w) Regular review conducted of global and regional e-learning providers and internet capacity.	• Sponsorship process developed and ratified by RMB. • MoUs signed with all institutions/ course providers involved with POLHN. • Provision of more course options for POLHN students with regional and international partners. • Annual report provided to RMB on e-learning providers and internet capacity of countries.	Review MOU documents Review sponsorship process – survey focal points Review course options available - Website analytics
	3.3 Increased **quality and relevance** of POLHN post graduate students in line with skill shortages to address country specific needs [8,10] (G1)	x) Annual reports including: student demographics, course, cadre, country, provided to RMB. G4 y) Reporting by academic institutes improved. z) Training courses developed for POLHN students as per identified needs such as basic computer skills and bridging courses eg. diploma to degree.	• Comprehensive, accurate central POLHN database developed for student enrolment and progress, subject and course completion, retention rates, financial information. • Course evaluation survey developed • 90% students evaluate POLHN courses in which they have enrolled. Information on enrolments, graduations, course withdrawals collected from all participants. • Increasing number of POLHN graduates.	Monitor database for participant appropriateness Monitor reports provided to POLHN Centres. Monitor number of basic computer training courses provided by POLHN Centres. Monitor what, how many, where resources supplied. (survey/interviews) Review staff and HR documentation (survey)

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