EXAMINING EYE CARE IN THE SOUTH PACIFIC THROUGH A HEALTH SYSTEMS STRENGTHENING LENS

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ABSTRACT

There is great potential to reduce the incidence and prevalence of visual impairment if concentrated effort is made through interventions that follow the health systems-strengthening framework. This dissertation uses three studies to examine eye care in Pacific Islands Countries and Territories (PICTs) through a health systems-strengthening lens.

The first study used qualitative methods to analyze key informant interviews. The key informants represented six nongovernmental organizations (NGOs) active in eye and vision care in PICTs. A grounded-theory approach was used to create a theoretical frame work which was compared to the health systems-strengthening framework. NGOs are active in five of the six health system building blocks, but function in a limited area of those building blocks.

The second study used qualitative methods to analyze PICT community expectations of the non-health enhancing aspects of the health system. Eight focus groups were held in two countries: Fiji, and Western Samoa. The focus groups were generally satisfied with the eye care component of the health system. The seven elements of responsiveness were important and applicable in PICT settings although some elements (prompt attention, dignity) were more important than others.

The third study used quantitative methods to investigate the level of professional motivation PICT eye care providers have, as well as to determine what, if any, aspects of the health system can predict motivation level, and lastly to determine how NGOs influence professional motivation. PICT eye care providers were highly motivated, but that motivation seems to be intrinsic.

PICTs have a highly motivated eye care workforce, despite a perception of a lack of support from Ministries of Health. Communities appreciate having eye care services available,

but have concerns with wait times and not always being treated with dignity. Half of respondent NGOs primarily provide clinical services, which is what is least desired by eye care providers. Efforts to strengthen the health system will require, in part, the identification, and support of leaders and a shift of vision NGOs from concentrating on eye care to concentrating on the broader health system. The involvement of community in the planning and decision making process is encouraged.

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CHAPTER 1. INTRODUCTION

Visual impairment (blindness and low vision) is an important public health problem, having profound effects on quality of life (Langelaan et al., 2007), economic productivity (Rein et al., 2006), and physical activity (Willis, Jefferys, Vitale, & Ramulu, 2012). Globally, there are an estimated 285 million people with visual impairment (Pascolini & Mariotti, 2012). Of these, 39 million are blind (presenting visual acuity <3/60 in the better eye), and the remaining have low vision (presenting visual acuity ≥3/60 but <6/18 in the better eye) (Pascolini & Mariotti, 2012). This is likely an under estimate of the burden of vision problems, as it excludes uncorrected presbyopia which is thought to affect the near vision of a further 410 million individuals (Holden et al., 2008). Approximately 90% of visual impairment occurs in developing countries, and 80% of it is avoidable (World Health Organization, 2012a), being either preventable or treatable.

Pacific Island Countries and Territories (PICTs) (Figure 1) have small populations that cover large geographic areas. The spread of their populations over large distances makes the provision of eye and health care more difficult and expensive (World Health Organization, 2012b). The literature suggests that cataract, refractive error, and diabetic retinopathy are significant causes of visual impairment (Keeffe, Konyama, & Taylor, 2002; Newland et al., 1992; Newland, Woodward, Taumoepeau, Karunaratne, & Duguid, 1994; Ramke, Brian, & du Toit, 2007; Ramke, Brian, Maher, Qalo Qoqonokana, & Szetu, 2012) in PICTs.

Figure 1. Map of Pacific Island Countries and Territories (United Nations, 2013)

Health systems have three goals: to be responsive to community expectations; to promote, restore or maintain health and; to be financially fair to all individuals (World Health Organization, 2000). Poorly functioning health systems are associated with poor population-health (World Health Organization, 2000).

The WHO recommends that health systems be strengthened in order to improve population health (World Health Organization, 2007a) A health systems-strengthening approach involves a careful analysis of, and improvement in, each of six health system building blocks--service delivery; health workforce; information systems; medical products, vaccines and technologies; financing; and leadership and governance (stewardship) (Table 1)--as well as strengthening the interactions between blocks (World Health Organization, 2007a).

Table 1. Health System Building Blocks (World Health Organization, 2010)

Health System Building Block	Definition
Service delivery	The provision of health care
Health workforce	All people engaged in actions whose primary intent is to enhance health. Includes clinical staff and management and support staff
Health information systems	The collection and analysis of health data to inform health-related decision-making
Medical products, vaccines and technologies	Essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness
Financing	The collecting, and allocating of money to cover the health needs of the people
Leadership/governance	Health policy development, oversight and regulation

A number of PICTs rely on foreign aid (World Health Organization, 2012b), including to assist with health systems. An unknown amount of eye care provision and funding is delivered via foreign assistance. This is primarily done through the work of nongovernmental organizations (NGOs) that have long worked to increase access to eye health care.

Framework

The conceptual framework (Figure 2) for this study is based on the health systems-strengthening model. It inserts NGOs into the health systems-strengthening framework as an unknown influence on the six building blocks. Further it divides the health-systems-strengthening framework into three levels: 1) the funding and planning level, 2) the service provision level, and 3) the community level.

The funding and planning level is where a well-functioning Ministry of Health would reside. In PICTs, with under-resourced and/or under-skilled Ministries of Health, it is likely that NGOs take some role at this level. The service provision level is where the six health system building blocks are located and interact. It is the necessary intermediary to improved health. It would be impossible to have improvement in population health without having people, resources,

and information systems working together to provide clinical, preventive, and health promotion services. The community level is where health systems' outcomes reside. All the inputs, including human and financial resources, are designed to impact communities to maintain and restore health.

Purpose

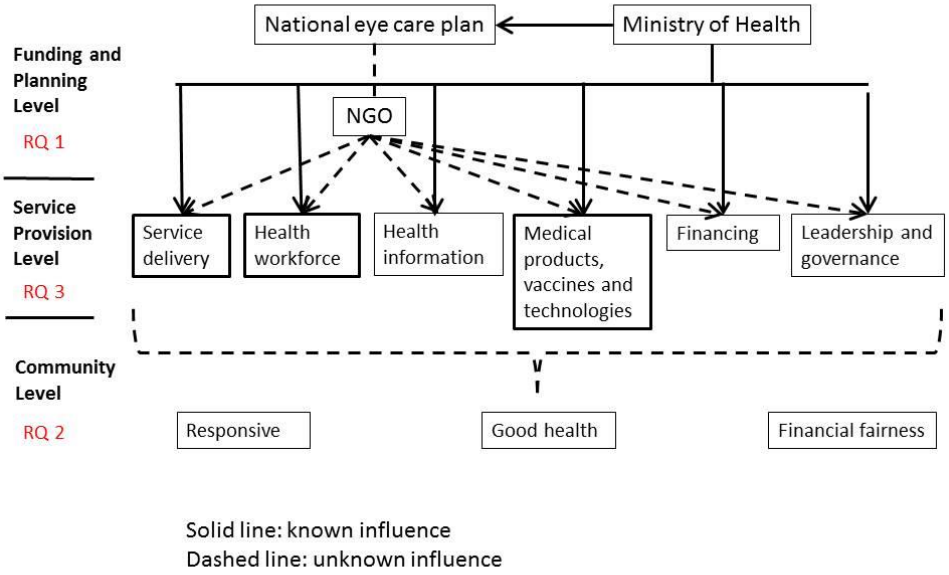
Recognizing that the elimination of avoidable visual impairment in the Pacific region will only occur if health systems are strong, this study examined three research questions related to the provision of eye health care through a health systems-strengthening lens. To form a broad understanding of eye care in PICTs, this study looked at three levels of the eye care system: the planning and funding level; the service provision level; and the community level.

Question 1. How do PICT-based, vision NGOs perceive their influence on health systems in PICTs, and how does the work of NGOs correspond with the health systems-strengthening model?

Question 2. What expectations do PICT community members have of the non-health enhancing aspects of eye care services within the health care system, and what is their perception of the responsiveness of the health system to these expectations?

Question 3. What do PICT-based eye health professionals believe are community expectations for eye health care, and how is their professional motivation influenced by the health system and vision NGOs?

Figure 2. Conceptual Framework



CHAPTER 2

How do PICT-based, vision NGOs perceive their influence on health systems in PICTs, and how does the work of NGOs correspond with the health systems-strengthening model?

Abstract

Health systems-strengthening is a key component of improving population health, including eye health. Many Pacific Island Countries and Territories (PICTs) rely on foreign aid including in health systems. Nongovernmental organizations (NGOs) are active in eye care in PICTs. Key informant interviews were conducted with six NGOs. Grounded theory was used to create a theoretical framework which was compared to the health systems-strengthening model. The respondent NGOs described three goals in their work in PICTs: 1) to reduce the prevalence of visual impairment, 2) to develop capacity, and 3) to achieve sustainability. They work within five of the six health systems building blocks. NGOs are encouraged to further strengthen local leaders, both clinical and governmental, to begin to shift management, planning, and implementation tasks to local Ministries.

Introduction

Pacific Island Countries and Territories (PICTs) are island nations that have small populations dispersed across vast ocean expanses. The average population in PICTs is less than 200,000 (minimum10,000 (Nauru), maximum 850,000 (Fiji)) (World Health Organization, 2012b). The remoteness of these island countries, together with populations being spread across large geographical areas, raises costs associated with health care (including eye care) provision (World Health Organization, 2012b). Even though PICTs are often referred to collectively, they have vastly different cultural, economic, and political climates that influence their provision of eye and health care. PICTs face difficult economic futures, and often have limited wage-generating employment opportunities for adults, especially young people (World Health Organization, 2012b).

Given their limited economic resources, a number of PICTs rely on foreign aid (World Health Organization, 2012b), including for their health systems. An unknown amount of eye care in PICTS is supported, provided, and funded by non-governmental organizations (NGOs), where the term NGO refers to any non-state organization that is funded by an agency outside of a ministry of health (Pfeiffer et al., 2008) and works to improve population health (Meredith, Cross, & Amazigo, 2012) either directly (e.g. by providing health care services) or indirectly (e.g. funding, training health care professionals). NGOs have long recognized that there is disparity and inequity in the availability of eye care services in developing countries (Pearce & Pearce, 2012), including PICTs. They have worked to increase availability of, and access to, eye health care for decades.

Poorly functioning health systems are a major cause of poor health outcomes (World Health Organization, 2000).The World Health Organization defines a health system as consisting

of "all the organizations, people and actions whose primary intent is to promote, restore or maintain health" (World Health Organization, 2007a, p. 2) Health systems have three primary goals: to be responsive to community expectations; to promote, restore or maintain health and; to be financially fair to all individuals (World Health Organization, 2000).

Historically, much of the work performed by vision NGOs has been conducted via so called "vertical programs" (Blanchet & Patel, 2012). These are programs that are run separately and often with parallel organizational structures to national health systems (Blanchet & Patel, 2012; Mussa, Pfeiffer, Gloyd, & Sherr, 2013). Vertical programs do not generally strengthen national health systems and can actually weaken the health system by drawing resources away from the system as a whole and demotivating health workers that remain within the national health system (World Health Organization, 2000).

The WHO recommends that health systems be strengthened as a means of improving population health (World Health Organization, 2007a). Health-systems-strengthening is vital to the improvement of eye health (Blanchet & Patel, 2012), especially with the growing epidemic of diabetes, a disease that affects the eyes as well as other organ systems. A health systems-strengthening approach involves a careful analysis of, and improvement in, each of six health system building blocks--service delivery; health workforce; information systems; medical products, vaccines and technologies; financing; and leadership and governance (stewardship) (Table 2)--as well as strengthening the interactions between blocks (World Health Organization, 2007a).

Table 2. Health System Building Blocks (World Health Organization, 2010)

Health System Building Block	Definition
Service delivery	The provision of health care
Health workforce	All people engaged in actions whose primary intent is to enhance health. Includes clinical staff and management and support staff
Health information systems	The collection and analysis of health data to inform health-related decision-making
Medical products, vaccines and technologies	Essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness
Financing	The collecting, and allocating of money to cover the health needs of the people
Leadership/governance	Health policy development, oversight and regulation

It is clear from the health system definition above, that NGOs are part of the health system. The work of NGOs should, therefore, be evaluated based on their alignment with health systems-strengthening principles and their ability to work within and strengthen the six health system building blocks. If their work is in opposition to health-systems strengthening, they may have a detrimental impact on whole-body health outcomes and community expectations of care.

Vertical programs running parallel to the health system are, however, attractive to many NGOs, as they believe that they are able to more rapidly and efficiently achieve desired program outcomes than can the health system (Pfeiffer et al., 2008). Vertical, parallel programs do not generally strengthen the entirety of the health system (Mussa et al., 2013); rather, they are likely to improve health outcomes solely for their health condition of interest and can weaken the six health system building blocks. They divert resources from the health system and have the potential to increase opportunity costs and inefficiencies through the creation of redundant, parallel management and administrative systems and distribution networks (Pfeiffer et al., 2008). Parallel systems may also contribute to reduced motivation in the health workforce, as health

care providers outside of the vertical program are asked to work in poorly functioning facilities without required equipment and medicines, and with low pay (World Health Organization, 2000). This contributes to internal brain drain, as health care professionals are drawn from the national health system to work in the vertical program(s) that they perceive offer more professional opportunity and better quality of life (Pfeiffer et al., 2008). This limits the potential of the health system to meet community expectations and improve overall health.

Vision 2020, the global framework for the elimination of avoidable blindness, calls for those working in the vision and eye care arena to concentrate on human resource and infrastructure development. These are also key components of the health-systems-strengthening framework.

High quality eye care is needed everywhere, but the need for good eye care in PICTs is increasing dramatically due to the increased prevalence of diabetes and it sequelae in these countries. PICTs have some of the highest rates of diabetes in the world (Kessaram et al., 2015). In fact, PICTs make up seven of the top ten countries with the highest rates of diabetes (Tin, Lee, & Colagiuri, 2015). The prevalence of overweight and obesity also is increasing, and this condition is associated with diabetes. The prevalence of overweight women is as high as 94.9% in Tonga, with the lowest prevalence being 54.5% in Vanuatu (Kessaram et al., 2015). Overweight prevalence ranges from 92.7% (American Samoa and Nauru) to 47.0% (Vanuatu) in men (Kessaram et al., 2015). The prevalence of obesity is also high in PICTs ranging from 80.1% (American Samoa) to 24.3% (Vanuatu) in women and 70.7% (Nauru) to 14.7% (Vanuatu) in men (Kessaram et al., 2015).

A common sequelae of diabetes is diabetic eye disease. Diabetic retinopathy, a microvascular complication of diabetes, is one of the leading causes of vision loss in PICTs

(Keeffe, Konyama, & Taylor, 2002; Ramke, Brian, Maher, Qalo Qoqonokana, & Szetu, 2012). From a research study in Fiji, where 41% of individuals ≥40 years old have diabetes (G. Brian, Ramke, Maher, Page, & Szetu, 2010), about 16.0% of research participants that knew they had diabetes also had some level of diabetic eye disease (G. Brian, Fischer-Harder, et al., 2010).

With the current rates of diabetes, and a likely increasing prevalence, NGOs and Ministries of Health need to be prepared with a strong health system to prevent vision loss. However, it is unknown the extent to which NGOs in the regions are working from a health systems-strengthening perspective or their views on this approach to advancing vision care in developing countries. In this study, qualitative methods were employed to evaluate if vision NGOs in PICTs work from a health systems-strengthening perspective.

Methods

An interview guide was created with questions designed to encourage key informants to describe the goals and philosophies of their vision NGOs. Questions pertaining to the basic history and goals of the key informant's organization, as well as their involvement in the six health system strengthening blocks. Questions on their level of cooperation with Ministries of Health were also included. The interview guide was pre-tested with a representative from an NGO active in PICTs, and it was determined to be adequate in uncovering information related to the methods of NGOs and their alignment with the health systems-strengthening framework.

Vision NGOs known to be active in PICTs were contacted by email to request an interview with any member of the organization who could describe the work done by the organization. Willing participants were interviewed individually via Skype after informed consent was obtained. Relatively unstructured interviews occurred where the goals, work, and philosophies of the organization were discussed. The interviews were allowed to follow their

natural course with limited interruption from the interviewer. All interviews were recorded and transcripts created.

A grounded-theory approach to data collection and analysis was used. Grounded-theory is a data-driven methodology (Charmaz, 2006). Transcripts were initially coded line by line using Atlas.ti7 (version WIN 7.5.10; ATLAS.ti 2016), and in vivo codes were used whenever possible. Focused coding followed, with the most commonly repeated and most significant initial codes synthesized into a framework describing the collective work that vision NGOs do in PICTs.

Results

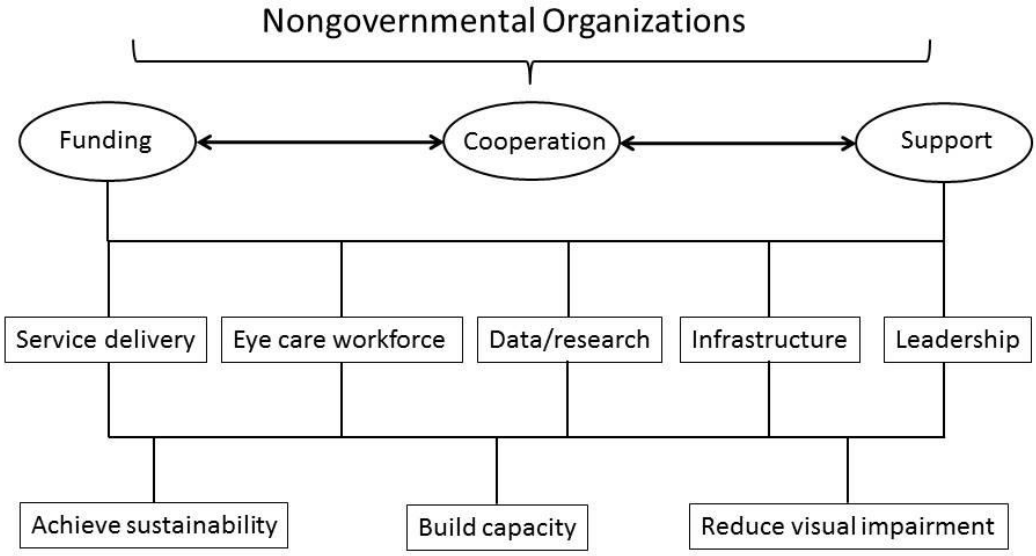
Attempts were made to contact ten NGOs active in some aspect of eye care in PICTs. This included all NGOs suggested for interview by the NGOs themselves. Of the ten NGOs identified, two did not respond to repeated emails, two responded and elected not to participate, and six agreed to be interviewed. These were identified as NGOs A though F. This response rate (60%) was higher than that of previous surveys conducted with volunteer-based vision NGOs active in the developing world (Pearce, 2008; Pearce & Pearce, 2012).

The six respondent NGOs have different staff compositions, with four relying, at least partially, on volunteers to supplement paid staff (NGOs B, C, D, and E). Two of the organizations are involved in health issues beyond vision and eye care (NGOs C and D). Three of the organizations also work in countries outside of PICTs (NGOs B, E, and F). The size and budgets of the organizations vary dramatically, with some receiving grants in the millions of dollars and others relying on in-kind donations and fundraising.

The data suggested that, as a whole, the respondent organizations have three goals related to their work in vision impairment in PICTs: 1) to reduce the prevalence of visual impairment, 2)

to develop capacity, and 3) to achieve sustainability. The data also suggest that these NGOs aim to accomplish these goals via cooperation and by funding and supporting five inter-related blocks: infrastructure, service delivery, eye care workforce, leadership and governance, and data (Figure 3). Not all organizations are active in all blocks, but most recognize that they are a part of a larger group of stakeholders that together can leverage their different strengths to hasten the accomplishment of the three goals. In the next section, examples from the data illustrate the three functions of NGOs, as identified by the respondents —cooperating, funding, and supporting.

Figure 3. Theoretical Framework



Cooperating

The idea of cooperation was found across all organizations, but with varying emphasis. Respondents noted that they cooperated with other NGOs and between professions, and many mentioned cooperation with local PICT health workforces, Ministries of Health, academic institutions, and communities.

NGO B mentioned the importance of cooperation across eye care professions:

> *"[Non-PICT optometrists] started to realize that a big part of the problem was the medical care as well, in form of cataracts and diabetic retinopathy, so they invited some of their local [non-PICT] ophthalmologists to start coming with them [to provide surgery]."*

NGO F cooperated with local PICT organizations to ensure their work didn't negatively impact existing local systems:

> *"…in terms of setting up the spectacle supply we had a lot of consultation with local [PICT] organizations and with local [PICT] optometrists."*

NGO C sought a cooperative relationship with local health workers:

> *"…before [the organization] set out to the remote place [the organization] tr[ies] and, you know, [to] network with the local [PICT] health people."*

NGO E needs to cooperate with other NGOs to accomplish its goals:

> *"…but what we lack is in-country representation so we rely on NGOs and so we really don't seek to do projects on our own."*

Some of the organizations provide other types of clinical services in addition to eye care, such as primary care, dental services, orthopedic surgery and more. There is limited collaboration across these specialty areas and, aside from the logistical coordination of outreach services, the NGOs have limited involvement with PICT health care providers not directly involved in eye care.

NGO C coordinated their activities with local PICT health care providers:

> *"We are also doing dentistry and various other things... So there is a lot more to it than just the eyes… [A]t the place we would go to we certainly would [coordinate with local health care providers] because it would just be, probably a fairly basic primary health care nurse who would be in charge of the facility where we would be working, so we would certainly be coordinating with her and obviously we would be talking to the dentists in the hospital and all the other whatever – whatever other skill or teams we were taking at that time, we would be talking to those people as well."*

NGO A recognized the growing need to collaborate in meaningful ways outside of eye care:

> *"But I mean clearly [diabetes] is a massive space that, you know, you're not going to succeed if you're not working in that space across multi-disciplinary areas rather than [just] eye care."*

Funding

The NGOs themselves take on the responsibility of raising the funds, through charitable fundraising and grant applications, necessary for their work. This reduces the financial burden of the eye care system on PICT Ministries of Health. Ministries of Health are involved financially through employing most PICT eye care providers and maintaining facilities, but a lot of aid is provided by NGOs. Continued, sustainable funding is a concern for many of the NGOs.

NGO F commented on significant expenses NGOs face working in PICTs:

> *"To have oversight is extremely expensive; travel in the Pacific is very, very expensive. So if you are building in those on-costs, the sustainability of the programs, the – which – and our aim is to always have them locally sustainable, that starts to suffer."*

NGO A commented on the benefit of Ministry of Health taking on more financial ownership:

> *"[F]inance [is not so much a struggle] because we've been able to use the contacts we have in the countries, often we've got an office in those countries now or some sort of connectivity. So that's made it a lot easier in terms of funding and finance. Liability, you know, if I want to bring a graduate from the Banks and Torres in Vanuatu down to Villa to a workshop, when you pay the bill for their flight you assume liability. And so it's actually easier, well more desirable, if we can use the Ministry of Health to set those workshops up and help fund them."*

NGO D commented on funding their work:

> *"…we raise funding to pay for readers and blah blah blah. We also have donated materials from our resources as well."*

NGO E commented on limitations from funding:

> *"I do think, yes funding is a limitation, because if we had better – a bit more funding, at least we could have more program staff, you know, checking and do[ing] stuff, whereas*

now we are reliant on [other] NGOs to support activities in country. But sometimes to maintain that trust and relationship it is important to have face-to-face meetings, which isn't always that possible.

Also the inability to really advocate in country, to tell the embassies, you know, of New Zealand and Australia - who are the ones that potentially could provide donor funds. I mean because we are not there, we are not really able to talk to them about the benefits and so forth so we have to rely on third parties to do that and it sometimes it – we lose out on good opportunities because we are not there basically."

Supporting

Half of the organizations repeated the idea of being a support to the local eye care workforce, Ministry of Health, academic institutions, or spectacle supply systems. The other half of the NGOs, however, expressed their roles as one of going and doing, primarily clinical services.

NGO A described itself as a supportive organization:

"So the initial focus was to train a workforce, and as the workforce grew it became more obvious that workforce support for that workforce was going to become more of an issue because there was plenty of examples where there was really no support given to the graduates on return to their countries."

NGO B described itself as a "doing" organization:

"…we do three main trips a year. We do a trip to Tonga, where we go to the three main island groups, or between one and three - depends on how busy it is. Umm – We go to Samoa and umm we do a big trip as well to Fiji as well. We used to go to Papua New Guinea…"

Developing a theoretical framework to encapsulate the work of these organizations needs to recognize the duality of focus in their work. The idea of support, while expressed explicitly by NGOs like NGO A, can also be applied to the group that focuses on going and doing, whether they recognize their work as support or not. The work that the clinical service organizations do is supporting service delivery. While they may not formally support the local workforce through things like continuing professional development, they are clinicians who add manpower,

generally temporarily, to the workforce which may enable more patients to be seen (although the clinical and cultural appropriateness of foreign teams seeing patients remains open to discussion).

NGO B recognizing their role of clinical support:

> *"So we would like to make ourselves redundant is our aim. We would like to be not needed in the places we go to i.e. get on top of the cataract situation or the diabetic situation to the point where the locally-trained and the local eye service can cope with that ongoing level instead of just trying to catch up on the backlog".*

The data also provide illustrations of how the cooperation, funding, and support provided by NGOs positively impact five inter-related blocks of vision care: infrastructure, service delivery, training, leadership and governance, and research.

Infrastructure

The impact of NGOs on infrastructure was discussed by almost all organizations. Less than half (2/6) work on infrastructure development on a regular basis, whereas the others (4/6) do so on an ad hoc basis. Infrastructure support ranged from large projects like hospital remodeling to smaller projects like providing equipment to PICT eye care providers and leaving left-over eye drops within PICT clinics following an NGO-led outreach.

NGO D noted how this organization augments consumables and clinical facilities:

> *"We begin our year in January and we end it in the end of June. So by the end of June we gift over all of our excess medication to the hospital. We also distribute medication throughout the nursing stations that are up there and, oh gosh, what remains of us? Yes, I mean we continually remodel the hospital. [Laughing] We've provided a lot of stuff, a lot of equipment, supplies, etcetera. So at the end of the stay their storerooms are filled to the brim."*

NGO E described how it works on infrastructure on an ad hoc basis:

> *"Not normally, we do not engage in procurement of equipment and so forth, but because we had a substantial grant in 2011 we actually bought a YAG laser, or supported the procurement of a YAG laser, for the diabetic eye center…"*

NGO B described how it supplements consumables:

> *"Yeah. We used to get a lot of donated, short-dated [medications] from Alcon but it has got so difficult to do that now that… what we've done is just turning to purchase it ourselves now and just take it back out of the trip budget… [W]e would never bring [medications] back. It's just not worth it. We always leave it [in PICTs] and it's open access if anyone in the future needs that on any trips and we always let people know that it is going to be appropriate – what the appropriate storage medium is for that."*

Respondent NGOs who have been attempting to create spectacle supply systems have encountered some difficulty with integrating them into the local health system. There has been some successful integration, but much of the spectacle supply system takes place outside of the public system and is run as either private enterprise or a public-private partnership.

NGO A explained a new trial spectacle supply system, illustrating why in some countries the spectacle supply is being run external to the health system:

> *"There's examples of Ministries that were running quite good [spectacle] system[s] but, you know, one particular Pacific country Ministry got – didn't pay their bills and the labs they were using just closed them down so won't deal with them anymore. There is a lot of problem with the financial management. There are Ministries that will take money – Ministries of Health that will take money for your eye care glasses but you'll never get it back, because it gets spent in maternity. You know it doesn't get ring-fenced into eye care so – so you know we're just going supporting where we can to see if we can allow these countries to work out what works for them. And you never want to be exclusive outside of the Ministry. You want the Ministry to adopt it…*"

NGO B also has a spectacle supply system that is a public-private hybrid in some countries:

> *"…in each case the vision centers are within the hospitals, but they're private employees. So, so – in certain cases the vision center is actually within or adjacent to the eye clinic so it kind of – they work as a team and they come, they – work as part of the eye care team within the hospital. But we pay for them… [I]n my experiences it's about – it's about finding ways to plug the holes that exist within the systems. It's not about working outside the system, it's about working within the system and finding sort of creative and inventive ways to fulfill the service within the national framework in whichever country we are working in and often times that means going down the private partnership route."*

Service delivery

All of the respondent organizations described activities related to direct clinical service providing to the populations of PICTs. The purpose and amount of that clinical service varied across organizations. Further, the types of services provided differed in scope and focus.

All organizations recognized the importance of treating the primary causes of blindness and vision impairment in the region. There is significant focus on refractive error and cataracts, but limited involvement in diabetic eye care by the NGOs. Some of the respondent organizations noted that they are not equipped to provide surgical services and therefore act as a screening team for other groups that do surgery.

NGO C noted focusing on refractive error, cataracts and pterygiums:

> *"[S]o when they have an optometry clinic they give out umm ready-made glasses now… And obviously the optometrist would do a brief health check of the eye and refer anything – umm that was beyond them… I think on the whole they are screening for cataracts and pterygiums, just because they are the most common things that are able to be treated. Obviously they are just looking at everything. But those will be the main ones that they could probably put on a surgical list and that sort of thing."*

NGO D also described focusing on refractive error, cataracts and pterygiums:

> "*[Optometrists] go into the field each day with their – all of their equipment and accoutrements and set up shop and dispense readers, sunglasses, do general eye examinations, do basic treatment of minor eye maladies… So the purpose also of the optometric team and our medical team is to screen for the ensuing weeks of surgery that we have so they are also screening for cataracts and pterygiums because a couple of months after these outreach missions they then come in for surgeries."*

Other organizations provided clinical services as a means to a different end, training local clinicians, for example.

NGO E provides limited clinical care:

> *"To some extent, I guess, there is a bit of service delivery sometimes for the most difficult cases. Sometimes [the people we send] do those cases and then the others [PICT eye care providers], through observing and so forth, get more skill or at least they get – they can*

see how things can be done differently. So that is one aspect is those teaching visits... [But] we don't want to have a direct role in [service delivery]"

NGO A uses clinical care as a means of doing continuing professional development:

"A secondary goal has been to use [outreach] as an opportunity to do work force support for the doctors…from the various parts of the Pacific."

NGO F works on refractive error and uses clinical care as health education:

"We have refractionists in our vision centers and they do two outreaches a week. So most of the – they are not rural outreaches, they are outreaches to settlement areas around the major towns or to business houses. They serve a dual purpose I mean there is a clinical purpose but there is also an awareness raising purpose to them."

Health workforce

Many of the organizations impact the health workforce by providing clinical training to PICT eye care providers. Some of this training is done formally through tertiary academic institutions that culminate in a degree or certificate. Other training is done through formal programs, but doesn't result in a recognized degree or certificate. Still other training is informal, done more as continuing professional development at PICT clinics and on outreach trips. There is limited focus on non-eye care professionals.

NGOs A and E talked about the offering of formal degree and certificate training:

"[The] vision, I suppose, for the Pacific [when it] was put together it was about training a workforce for the Pacific… [A]s of the end of last year that group anyway was a little over 200 nurses trained in the Postgrad diploma in eye care level, the one year level, and around about 21 doctors trained through their 4 years Master of Medicine... There is also a focus in latter years, I think 2010 or 11, they started training in the post grad certificate in diabetic eye care…"

"And so [we] have been involved in helping to develop the curriculum and benchmarking that against the International Council of Ophthalmology standards. And what we have been doing… since 2011, we have had about 6 or 7… teach[ers] going over there 1 week a year and training you know in a speci – particular sub-specialty area and usually what happens we have an exam at the end of the year [and we provide] the external examiner."

NGO F talked about their formal non-degree or certificate training:

"Yeah we train [our refractionists] – some of them we trained, some of them came to us, they were trained by another organization. And we umm – we continue to upskill them… [W]e actually have a whole education department within the institute."

NGOs E, B, and C talked about providing informal training:

"…[W]e had prior to that a hospital visit - Wellington Public Hospital where they [PICT eye care providers] could engage with the nursing staff and the clinic staff and so forth just to see how they can do things differently or to see how things are being done in a different context."

"Yeah, yeah cause the teaching is the big part of it now. We've got some good, good, good, good – nurses and locally trained optometrists now who have been there awhile now and either are going to stay or are bonded to stay because of the training they've been through and we feel comfortable doing the teaching with them, and in fact in Tonga, the trip that has just come back, was predominately seeing the patients with the local two refractionists. [They're] having a little bit of problems with higher cyls or slightly irregular cylinders so we spent a lot of time teaching and going through that refraction sort of on term-by-term basis and really getting to the bottom of things. There is a lot more teaching value in that than just sort turning up and dishing out some glasses these days."

"And [the patient] go[es] in, anybody who can't see, say 6/9, and that varies depending on the crowds - what the line is, would go and see an eye nurse or an optometrist who would then refract them and have a look, umm and yeah – I really enjoyed it because, you know, you could be on hand to just discuss cases with [the PICT eye nurse] and it was really good kind of on the job training… Personally I wish that [we] would focus more on training, but it's very hard to change the whole sort of concept so I just have to let go of it really. So it happens but fairly informally as they go along."

NGO A recognized the need to integrate eye care into primary care facilities, but felt that it was better done by Ministry of Health staff.

"[We] took a position and said, 'look we really need to just manage our [formal education] program well and if we can train our [students] well enough and then we can help equip them with the tools they can in turn get out into that primary health care space'… [A]nd so I think that's probably more appropriate to allow the graduates to work at that level."

Leadership and governance

A limited number of NGOs discussed the importance of Ministry of Health and clinical staff that are well-trained and supported leaders in eye care. These organizations desire to form strong relationships with key Ministry of Health staff. By having good relationships with Ministry of Health staff and advocating to them about the importance of eye care, it is hoped that Ministries of Health will gain the knowledge and skills to take greater ownership of the eye care system and develop and implement prevention of blindness plans. These organizations also work to train clinicians in leadership skills so that they could increase their advocacy efforts within their own countries.

NGO A commented on its desire to support leaders in eye care:

"*As an organization we feel we have the opportunity to talk to Ministers [of Health], you know influential people, in [relation to the WHO Global Action Plan] and offer them whatever support they might like in terms of helping them be more prepared for that space. So I guess it's coming in from a different level of influence and trying to, you know, offer maybe a model eye care system. You know, we kind of know what a national eye health plan tends to need to look like, we know the WHO initiatives and objectives that they want to see in these things… [We'd also like to offer] training support for, you know, people's roles as national eye health coordinator."*

NGO E developing leaders in PICTs:

"… [S]o we half fund the leadership [training] program and [NGO A] the other half and what we have done is we added a week… to have these five PacEYES members go through a rigorous – there was a two day intensive [leadership] training facilitated by academics from Auckland University… And [PICT eye care providers] then were assisted to develop return to work plans… [of] what they are going to do over the next 6 months… [S]o we are hoping that they will now go away, do some work and we will keep on mentoring them and we see how we can benefit that… The main thing that we really want to do only in leadership development and education and training."

Data

Eye care data can take many forms. The two primary sources of data are patient charts and clinic records, and research data. The latter was not a priority for the NGOs. One NGO,

however, did note that it collected data that it hoped would support publishable research for the benefit of both the academic arena and PICT Ministries of Health.

NGO A commented on needing to share existing data locally and broadly:

> *"We've actually got a lot of research, we've got a lot of data from our work force support visits that really needs to see the light of day in some published space because, you know, that was brought home to me recently when a New Zealand Auckland university optometry final year student was writing up a paper on spectacle supply in the Pacific – and when I saw the paper she was referencing – they were just out of date and old frankly and I know they weren't accurate, but I can't blame her because we haven't put anything out there… [W]e need to start to engage further up the administration tree of the Ministries of Health with things like our workforce support findings and this sort of thing and diabetic workshops, our diabetic clinics and that sort of thing. We need to engage further up the tree with what we're finding before in fact we can probably even we can go to publish."*

Patient examination data are collected and left in country by almost all organizations that provide service in the clinics they work in. The organizations noted significant barriers to collecting examination data in an electronic format. That is, all clinics use paper records, which makes looking through the clinical information for population data that can be used to inform planning of services extremely difficult.

NGO D commented on using local protocols:

> *"[During examinations we use] our own records, integrated into theirs. So that we have intake forms and if [patients are] surgical [cases] we are very compliant, we take [the hospital's] whole protocol and use it. [We] fill out the information and then it is returned to their patient files. They are trying to be electronic, but that might take a millennium"*

NGO B talked about ensuring that patient records are well maintained:

> *"We leave them [patient records] in the hospital and the emphasis is on the fact they are stored within the eye department at the hospital and have to be accessible to anyone else who is visiting including ourselves the year after. That is a feature that's got better and better. Because otherwise, you know, it is so difficult starting, especially with a complicated case right from the start based on what the patient is telling you as opposed to a good medical record. So they've gotten a lot better at storing that. None of them have gone computerized yet. It is still paper. But it is getting better, yeah."*

NGO C, however, does not leave detailed patient records in the clinic:

"It's more recorded in [our] paperwork, but we would then just give the summary of the statistics to – I think we would have left a copy of it with the local nurse in charge of whatever sort of little clinic we were working in as well as leaving a copy with the hospital when we got back to Port Vila, but not really the details, unless there was a very interesting patient who needed more detail."

NGO A commented on the struggles of digitizing medical records:

"There's been a lot of – desire and attempt to put in to support these countries with systems that will allow them to report on their cataract surgical outcomes or their diabetic clinic results particularly. The general state of – our trying medical record and department of health information systems is pretty grim... There's been high hopes being held out for some of the open source software coming from out of England – Community Eye Health – consortiums is one particular one called Open Eyes which has been pushed and supported by Moorefield's eye hospital in the UK. It's written for developing world scenarios and it looks very good. It's very close to being pilot tested. So we're hoping to see that as an opportunity as an eye health medical – electronic medical record thing in the major clinics to be something that would be really appropriate."

Discussion

In comparing Figure 3 with Table 2, it is clear that vision NGOs active in PICTs work in five of the six health system building blocks. NGOs are not directly involved in the financial building block. While they provide funding to their projects and programs, they do not seek to create a local system of collecting and distributing funds to cover the health needs of the population. Vision NGOs limit their impact on the health system to a niche of vision and eye care, rather than taking a broad strengthening approach.

The health systems-strengthening framework has the Ministry of Health directing the six health system building blocks. Respondent NGOs reported good relationships with Ministries of Health, although they acknowledged that there is dysfunction in some of the Ministries of Health. Even though the NGOs have these relationships with the Ministry of Health, respondent NGOs spoke more about the work that they do and not about working through the Ministry of Health directly.

The data suggest that the work of vision NGOs participating in this study is done through redundant, parallel management and administrative systems. While recognizing the importance of strengthening and supporting Ministries of Health, NGOs are the ones who determine what work they will do and where they will do it. From a health systems-strengthening perspective, this is a distinct weakness in the work of NGOs. It would be preferable for them to work under the direction of the Ministry of Health and add their expertise to Ministry of Health projects. That is, the Ministry of Health should have an ownership stake and voice in the work that NGOs do. This assumes that Ministries of Health are functional enough to make good use of the NGOs' expertise. If they are not, significant effort should be exerted to strengthen Ministries of Health and their current management and administrative systems. Some organizations are beginning to recognize this need, but to this point it has been an area that has not received sufficient attention.

Respondent NGOs deliver clinical services, but they aim solely to reduce visual impairment, rather than to improve population health. NGOs focus on key eye and vision conditions like refractive error, cataract, pterygium, and to a lesser extent diabetes eye disease in relative isolation from other important health conditions and providers. It is important, if visual impairment is to be reduced, that NGOs begin to engage with the health system more broadly (Blanchet & Patel, 2012). This is especially true in light of the prevalence of diabetes and the significant impact this has across the health system.

Diabetic retinopathy, a microvascular complication of diabetes, is one of the leading causes of vision loss in PICTs (Keeffe, Konyama, & Taylor, 2002; Ramke, Brian, Maher, Qalo Qoqonokana, & Szetu, 2012). The solution to diabetic retinopathy is not found in eye care alone. The secondary prevention strategies of laser treatments and expensive anti-VEGF injections only temporarily halt the progression of diabetic retinopathy. A strong emphasis on primary

prevention measures is preferable to prevent diabetes related blindness. This requires integration with all other sectors of the health system (such as endocrinology, nutrition, primary care, podiatry, behavior change counseling, health promotion, financing, and medication supply chains) as well as the education system is required to stem the incidence of diabetes and prevent retinopathy from occurring. The diabetes epidemic in PICTs reinforces the need for strong health systems and for eye and vision care to occur as part of the broader health system. This puts some onus on vision NGOs to assist in health systems strengthening and ensure the work that they do helps strengthen the entirety of the health system. This may involve forming new partnerships with non-vision NGOs, and becoming less focused on eye care and more focused on broad systems changes, such as assurance of the availability of diabetic medications, assurance that there is a sufficient workforce to care for diabetic patients (including diet and nutrition experts, behavioral counsellors, nurse and physicians trained in diabetes management, and administrators to oversee diabetes care), improved funding schemes, improved data collection and use, and strong leaders to take charge of health systems strengthening. All of this work should be coordinated by the Ministries of Health with NGOs lending their financial support and technical expertise as needed.

The current framework by which NGOs work in PICTs concentrates on the eye health workforce via clinical training and the continuing professional development of eye care providers. There is limited focus on administrative staff and other health professionals. The development of a well-rounded health workforce is needed. As the number of clinical providers increases, attention can be shifted to supporting primary health care workers, administrators, and bureaucrats. This will enable eye care to be better provided in primary care settings, as well as improve collection and interpretation of population data. Consequently there will be better

prevention of blindness planning and implementation. Leaders within clinical settings and the Ministry of Health structure should continue to be identified and relationships strengthened.

NGOs go about infrastructure development in an often hap hazard way. Leaving extra eye medications at the end of vision camps is not a sustainable source of essential eye medications for PICTs. While Ministries of Health should be providing essential eye medications to its clinics, NGOs are encouraged to see how their provision of medications can better support the development of in-country distribution networks and be a more reliable source of medications if Ministries of Health are struggling with keeping stock up to date. NGOs are encouraged to move beyond their concentration on eye care infrastructure in clinics specific to eye care, and evaluate other areas of the health system (Primary Care for example) that might benefit from eye care equipment or facility upgrades.

The respondent NGOs described three goals in their work in PICTs: 1) to reduce the prevalence of visual impairment, 2) to develop capacity, and 3) to achieve sustainability. Missing from their goals is responsiveness to community expectations. While many of the organizations feel some kinship and affection for the communities they serve, and many work directly in communities, none mentioned the idea of using feedback from communities to inform the work that they do. Involving the community in program planning is vitally important for the success of any health care program and the health system specifically.

Recommendations

It is recommended that all NGOs begin to shift their attention to working directly with Ministries of Health. This process could begin by holding a summit with all relevant stakeholders where NGOs can lay out their strengths and the status of their current projects, and Ministries of Health could describe their perceived needs. A culture of direct collaboration,

where NGOs act under the direction of the Ministry of Health, could then commence. This collaboration would be one of mutual respect where each organization recognizes where its expertise is most useful and the Ministry of Health recognizes its own limitations and attaches staff to NGO projects in a way that can lead to local takeover at some point in the future. While collaboration occurs to some extent currently, a greater emphasis on structured collaboration is encouraged.

NGOs are encouraged to welcome local Ministry of Health staff to observe, collaborate, and have input into their projects and programs. This should be viewed as a way of training, mentoring, and encouraging local Ministry of Health staff to be able to take over administrative, planning, and over-sight tasks of vision and eye care projects and programs.

NGOs are encouraged to think beyond eye and vision care and begin to network, via the above mentioned collaborative process, with other sectors of the health system. This should include primary care and community health clinics as well as those involved in the diagnosis and treatment of diabetes. By moving eye and vision care directly into primary care settings and ensuring that eye care is involved in the planning around addressing the diabetes epidemic, a greater impact on the incidence of visual impairment can be made.

NGOs are encouraged to plan infrastructure and resource development in a systematic way with in close collaboration with the Ministry of Health. This should be done with locally-led sustainability in mind from the onset. Foreign aid may be necessary in the short-term, but long-term sustainability should for the foundation of planning.

NGOs, and Ministries of Health, are encouraged to seek community input before projects and programs are planned, during project and program implementation, and after project and program completion. The community offers valuable insight into the success or failure of

programs and by involving them in early stages of planning provides a better chance of success. Community input should be sought from all segments of the community with special attention paid to the input of vulnerable groups including women, and the visually impaired.

Limitations

This research had several limitations. Not all NGOs active in PICTs were identified. Those that responded may be dissimilar to those that did not respond or were not found. The framework created is one of "representative concepts" (Mjoset, 2005), and the framework developed should now be tested against NGOs not interviewed and/or those active elsewhere in the developing world.

Future research should identify leaders in Ministries of Health and determine their perception of the work of NGOs (across the entire health system) and if they feel that NGOs are useful in strengthening the local health system in a way that is sustainable and respectful of local desires and plans.

Conclusion

Ministries of Health are the foundation of health systems in PICTs. The respondent NGOs, however, are the supportive rebar in the foundation in many PICTs. Without the work of these NGOs there would be fewer eye care services provided, fewer opportunities for the development of local human resources, less infrastructure development, and less priority placed on reducing avoidable visual impairment. Many of the respondent organizations have modified the work they do over time to focus more on the development of local eye care human resources and infrastructure. These organizations are active in limited health systems strengthening, but are encouraged to shift focus, slightly, again to become fully invested in broad health systems-strengthening work. Given that they are all foreign NGOs with relationships with Ministries of

Health, but are not directly part of the government, they still work with separate management and administrative structures. This redundancy is inefficient. NGOs are encouraged to further strengthen local leaders, both clinical and governmental, to begin to shift management, planning, and implementation tasks to local Ministries.

Respondent NGOs work primarily with eye and vision conditions. While some of the clinical-based organizations also provide non-eye related clinical services, there was limited collaboration across medical specialties mentioned. With the whole-body effects of diabetes, greater cooperation across the health system is recommended for vision NGOs. This is a key component of health systems strengthening. Work in eye care should not detract or weaken other aspects of the health system, but care should be taken to ensure that the entire health system is strengthened. Further, the respondent organizations who are primarily providers of clinical services are encouraged to work more closely with the Ministry of Health and other NGOs to ensure they are strengthening other health system building blocks, particularly the health workforce.

Responsiveness to community expectations is an important component of the health system. NGOs and the Ministry of Health are encouraged to speak with communities to determine what they expect of the health care system, and ensure that eye care meets those expectations as well.

CHAPTER 3

What expectations do PICT community members have of the non-health enhancing aspects of eye care services within the health care system, and what is their perception of the responsiveness of the health system to these expectations?

Abstract

Being responsive to community expectations is one of the goals of a health system. A responsive health system leads to higher levels of patient welfare regardless of health impact. Eight community-based focus groups were held in two countries: four in Fiji, and four in (Western) Samoa, to determine their expectations of the eye health system, and to gauge their perception of how responsive the health system is to their expectations. There was general satisfaction with the eye care component of the health system, and the seven elements of responsiveness were found to be applicable to PICT communities. There were two common priority expectations across the focus groups: 1) prompt attention; and 2) dignity. The focus groups noted that some expectations are generally being met (autonomy, confidentiality), but others are not being met (prompt attention, choice of provider), or not being met consistently (dignity, quality of basic amenities, access to social support networks). The focus groups were uncertain of how to share their expectations with decision makers and were resigned to have some of their expectations go unmet.

Introduction

Health systems have three primary goals: to be responsive to community expectations; to promote, restore or maintain health and; to be financially fair to all individuals (World Health Organization, 2000) Poorly functioning health systems are a cause of poor health (World Health Organization, 2000), including eye health. Health systems strengthening is recommended as a means of improving vision and eye care outcomes in populations (Blanchet & Patel, 2012).

Health systems are made up of all "organizations, people, and actions whose primary intent is to promote, restore, or maintain health (World Health Organization, 2007, p. 2)." This includes public hospitals and employees, private health care facilities and employees, as well as those non-governmental organizations (NGOs) and their employees that are active in health care, including eye care. Health systems are composed of six inter-related building blocks: service delivery; health workforce; information systems; medical products, vaccines and technologies; financing; and leadership and governance (stewardship) (Table 1) (World Health Organization, 2007).

Pacific Island Countries and Territories (PICTs) have economic, geographic, resource and capacity challenges that are impacting their ability to achieve the Millennium Development Goals (World Health Organization, 2012b), including those related to health. A health systems-strengthening approach is encouraged to assist PICTs in improving the health of their populations.

Table 3. Health System Building Blocks (World Health Organization, 2010)

Health System Building Block	Definition
Service delivery	The provision of health care
Health workforce	All people engaged in actions whose primary intent is to enhance health. Includes clinical staff and management and support staff
Health information systems	The collection and analysis of health data to inform health-related decision-making
Medical products, vaccines and technologies	Essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness
Financing	The collecting, and allocating of money to cover the health needs of the people
Leadership/governance	Health policy development, oversight and regulation

A strong, well-functioning health system is one that is, in part, responsive to community expectations (World Health Organization, 2000, 2007, 2010). The health system goal of responsiveness to community expectations is not to be confused with the health system's response to the health needs of the community (which is related to health outcomes) (World Health Organization, 2000) nor a health service's goal of patient satisfaction (de Silva, 1999). Rather, a responsive health system is aware of community expectations and meets objective standards of the non-health enhancing aspects of health care (de Silva, 1999). While patient satisfaction influences utilization of services and compliance with medical recommendations (Darby, Valentine, Murray, & de Silva, 2000), a responsive health system leads to higher levels of patient welfare regardless of health impact. For example, a health system that is responsive treats patients with respect and dignity and provides services in a timely-manner in clean and well-maintained buildings, thereby increasing patient quality of life and peace of mind irrespective of their health outcome (de Silva, 1999).

Responsiveness is based on normative (what ought to happen) expectations (de Silva, 1999). de Silva (1999) proposes seven elements to responsiveness: dignity, autonomy,

confidentiality, prompt attention, quality of basic amenities, access to social support networks during treatment, and choice of care provider (Table 4). The level of the seven elements should fall within a universally accepted zone of tolerance. That is, while the level of basic amenities may differ from a developed to a developing country, a responsive health system will meet a minimum standard no matter where it is in the world. Given differing socioeconomic factors, cultures, and beliefs, the importance of each element may differ from country to country or even community to community.

It is unknown what expectations PICT communities have of the health care system generally, and eye care specifically. It is not known if de Silva's seven elements of responsiveness apply in practice to PICTs. Further, it is unknown what level of responsiveness exists in PICT health care systems. Without knowing what communities expect of the non-health enhancing aspects of eye care services, Ministries of Health and concerned NGOs may not plan and/or provide services in an appropriate manner, thereby limiting their success in eliminating avoidable blindness.

This study used community focus groups to determine the non-health enhancing expectations that purposefully selected communities in two PICTs have of eye health services and their perception of the responsiveness of the health system.

Table 4. Elements of responsiveness (de Silva, 1999)

Element of Responsiveness	Explanation
Dignity	The right of a care seeker to be treated as a person in their own right rather than merely as a patient who, due to asymmetric information and physical incapacity, has rescinded his/her right to be treated with dignity
Autonomy	The right of an individual to information on his/her disease and alternative treatment options. The right to be consulted about treatment. The right to informed consent in the context of testing and treatment. The right of patients of sound mind to refuse treatment.
Confidentiality	Information relating to the patient and his illness should not be divulged during the course of care, except in specific contexts, without the prior permission of the patient.
Prompt attention	Consists of three characteristics: • Patients should be entitled to rapid care in emergencies, and • Patients should be entitled to care within reasonable time periods even in the case of non-emergency health care problems or surgery, and • Patients seeking care at healthcare units should not face long waiting times for consultations and treatment.
Quality of basic amenities	Relates to the provision of physical infrastructure and a conducive care environment including: • clean surroundings • regular procedures for cleaning and maintenance of hospital buildings and premises • adequate furniture • sufficient ventilation • clean water • clean toilets • clean linen • healthy and edible food
Access to social support networks during treatment	Procedures in the provision of inpatient health care should allow: • regular visits by relatives and friends • provision of food and other consumables by relatives and friends, if not provided by the hospital • religious practices that do not prove a hindrance to hospital activities or hurt the sensibilities of other individuals
Choice of care provider	Patients should be allowed to choose their provider of care, including electing to see the same health care provider (continuity of care), a different health care provider, or a specialist

Methods

A focus group guide based on de Silva's (1999) seven elements of responsiveness and informed by Hsu, Chen, Hu, Yip, & Shu (2006) was created. Ten primary questions were included, but the discussion was not limited to these questions: 1) tell me about an experience you had visiting an eye care provider; 2) tell me what you think about the idea of dignity; 3) tell me what you think about the idea of autonomy; 4) tell me what you think about the idea of confidentiality; 5) tell me what you think about the idea of prompt attention; 6) tell me what you think about the idea of quality of basic amenities; 7) tell me what you think about the idea of access to social support networks; 8) tell me what you think about the idea of choice of eye care provider 9) How are you able to influence the health system; and 10) Put the seven elements of responsiveness in order from most important to least important. Interaction within the focus group was encouraged to allow for consensus to be reached when possible.

Eight community-based focus groups were held with adults ≥35 years in two PICTs: Fiji and (Western) Samoa. Fiji was selected as it has a well-developed public and private eye care sector and is home to the Pacific Eye Institute, a regional eye care training institution. Western Samoa's eye care system is under-developed, with no full-time ophthalmologist currently in practice. Eye care is provided by a few eye care nurses who are unevenly distributed throughout the country.

Prior to conducting the focus groups, eye care nurses from each of the communities suggested the most appropriate composition of the focus group, what language the focus group should be conducted in, what cultural practices should be followed, and what an appropriate gift of appreciation would be. They also located a comfortable, convenient space to hold the focus group and invited potential participants to attend. In those communities in which the eye care

nurses felt that the focus group would best be conducted in a local language, training on how to conduct a focus group was given to facilitators who spoke both the local language and English. All focus groups were recorded and transcribed. Pseudonyms were used for all participants during transcription and reporting.

Results

Four focus groups were held in Fiji in November, 2015 and four focus groups were held in (Western) Samoa in April, 2016. All focus groups were of mixed gender and all participants received a small monetary gift for participating, six of the eight focus groups also had a thank-you tea at the end.

The four focus groups held in Fiji took place at the Pacific Eye Institute in Suva, Fiji. Two were conducted in English with the iTaukei population. Two were conducted in English with a Hindi translator with groups of Indo-Fijian participants. In Western Samoa, all four Focus groups were conducted in Samoan with simultaneous English translation being recorded--two at the Magiagi Methodist Hall in Apia and two at the Malietoa Tanumafili II Hospital in Tuasivi Village in Savai'i. In the next section, examples from the data are used to show which elements of responsiveness the focus group participants found important.

Fiji - iTaukei

The two iTaukei focus groups included ten participants. They were predominately male (7/10), with an average age of 57.1 years (maximum 70, minimum 41). Participants were moderately educated with most having completed the equivalent of 10^{th} grade or higher.

When telling about their experiences with the health system, iTaukei participants first brought up negative experiences with the health system. Even when asked specifically for positive stories, the respondents reverted to examples of negative experiences. Their experiences

revealed four main expectations: prompt attention, dignity, autonomy, and the quality of basic amenities.

The participants noted that they have long waits in all areas of the health system, including the eye care department. Participant B recalled a conversation he had with another patient in the eye clinic waiting room.

> *"Then we've been left there, and I think last month I was talking with one of the senior citizen. He came all the way [from the] outskirts of Nausori. He left home at 5 o'clock that morning. He arrived [at the eye clinic] at 8 o'clock. He sat there until 3 o'clock in the afternoon. No one was there to [help] him."*

Participant A feels that long wait times for patients is related to a lack of professionalism on part of the eye care providers.

> *"I think another reality is the efficiency in the service. We need – not people – unnecessarily waiting, when they should have been looked at, you know, and treated and let them go home and something like that. And professionalism is another wording for it. We lack that in some places."*

With respect to long wait times participant A thinks that patients should be attended to in the waiting area to ensure they are comfortable and informed about what is happening in the clinic.

"…we need some more people especially people going around and checking people why, what's happening to you and not just leaving the people sitting down there for too long without being attended to."

Participant G noted that long wait times are the norm at hospitals, but not health centers.

> *"[Things are] a bit different when you go to hospitals than health centers. In health centers the service is nice, and in the hospital it takes ages and ages and ages and you come back and you… Like if you come early in the morning, like 7 o'clock in the morning, you – and you will be waiting until 7 o'clock at night again. A health center is different."*

When asked to expand on why that might be she stated that she believed that the health care providers ignore patients in hospitals.

"We can see plenty of doctors and plenty of nurses and it seems like they ignore us in hospital but in health centers as long as they wait they attend to you."

Being treated with respect was identified as an important concept for iTaukei participants. A perceived lack of respect from health workers was noted in some of their recollections of health system experiences. A recalled an incident from earlier in the day where he felt there was a lack of customer service, but was uncertain if his perception was a valid one because it was such a "small thing".

"[I entered] the diabetic [eye] center today. I came and there – about 12 people was in there. They were all oldies and I saw the light was switched off, I just came there, 'why are you sitting in the dark here?' and everybody said, 'we have been sitting down here for about – almost one hour now.' So I just switched on the light. And I was prepared if they come in and say, 'who switched on the light?, I would say 'I switched on the light'. Because we are – these people are sitting in the dark. It's a very small thing, I know, but it's the service as a whole. I think we need to improve that. Maybe just inform the staffs they can do better than that."

Participant E recalled an experience in the dental clinic where a lack of respect shown to him caused him to discontinue going to the clinic which resulted in morbidity and self-doubt.

"[An expatriate doctor] was trying to know more about [me], but to me the body language of the other local doctor, like this senior man was trying to stop him going further, like so from that body language and that thing, it let me down. I didn't want to go back to the hospital. So now my teeth is bad, but I blame myself for that... But I feel really sorry – I was trying to go back to that civilian doctor to thank him because he was really worried about my problem, but only through that body language and that facial expression of that local doctor… really let me down."

The iTaukei idea of being treated with dignity is well summarized in the following exchange that occurred between participants E and G:

"…[G]oing back to that dignity you said, I think we should be respected because I think the first step when you come in, when you reach the doctor's door, just like the body language and the facial expression, that is the first medicine."

"It seems like we carry a heavy load, when you see a smiling face or someone treats you nicely and respects you, that a big light. And the sickness go light and fly away again."

The idea of autonomy was thought to be important. A lack of autonomy was considered poor service. Participant B perceived coming to the hospital as a risk. Some of this risk was due to a lack of information (autonomy) being given to patients by health care providers.

"To me to come down to CWM [Colonial War Memorial Hospital] is a big risk for me, because – I mean – I think the service is not there. Patients been left out [in the hall or waiting area]. We haven't been told what medical treatment has been given to us. What is the good effect of it? What is the side effect of it?"

Participant A noted that he was able to achieve a degree of autonomy in the diabetes eye clinic and that made he and his wife happy.

"No, I don't think [there is always autonomy] sometimes they [doctors] just do what they will. That is why this afternoon [the doctor saw] my wife and the doctor was explaining to me and I said, 'doctor I'm asking you a question, can you recommend to me what is the best option? Otherwise we will be picking the wrong one', you know? And she told me that the best option was A so B or C alright [but] we will pick A. [I said] 'because I think would you agree that that is the best option and she said, 'yes'. So it gives us the satisfaction that we are doing the right decision. Not for me but for my wife."

Participant E noted that autonomy is expected in Fiji but is often not practiced.

"I think [autonomy] is important [others agree]. It's not happening here. The doctor[s] here, they just go explain your sickness and you go and the medicine, but sometime you want to know [more]. The doctors are told to do that, but they never do."

The quality of basic amenities was noted to be lacking, especially in the inpatient department of the hospital.

Participant F noted the experience she had with her husband a few years ago.

"My experience: my husband was admitted [to hospital in] 2012. First thing I noticed the bedsheets in the hospital never changed and the food too. The food is not good. He wanted me to go and cook his food at home all the time, no utensil, no beddings. Everything I had to bring from home and the service at the hospital, one thing I saw that she [the nurse] came and put injection, otherwise no. If I'm not there, so my husband will [not] go and wash and whatever, change and whatever. I will have to go do it myself."

Participant E agreed with the experience of poor basic amenities.

"Myself, I admit last week. Now I stay in the hospital for my pregnancy. One thing, last week I [was] admit[ted] on Wednesday – [no], Tuesday. Now I [am by] myself for one

week now. Only one bed set from the starting, just now. Only one bed set. Only the blood [from] the first [day], still here in my bed set now."

Participant G had similar experiences with her mother in the hospital, but related the poor quality to poor health worker behavior.

"So I always feel sorry for some patient, when they are crying for help, same time no nurse there. They just ignore them. So that's what I've seen when I stay with my mother in the hospital. My mother is still there so I have to keep watching her [and do] the changing of the bed sheets, the changing of the diapers…"

Participant C brought attention to the importance of outdoor spaces of the clinic. He noted that the parking area seemed unsafe in front of the eye clinic. The others agreed that there should be a separation of walking space and driving space as currently the door to the eye clinic exited right onto the drive way, which seemed unsafe to the group. Participant B noted that he felt it was also unsafe to have benches for sitting right near the door.

"You are not supposed to be sitting outside. The chairs are not supposed to be there because you do not know the driver who is coming in. He can just come and have a – there is nothing, there is no defense there to – I mean my eyes is better now than when I am seeing now but this is really… They are taken care of inside, the inside is a bit ok, but the outside is not ok."

Indo-Fijian

Of the nine participants in the two Indo-Fijian focus groups, five were male. The average age was 58.2 years (maximum 70, minimum 46). Participants were generally poorly educated with most not having exceeded the equivalent of 6^{th} grade.

Both Indo-Fijian focus groups began by saying how happy they were with the health system, but were not able to describe what met-expectations made their visits to the health system good. With further discussion it was clear that the expectations of confidentiality, autonomy, access to social support networks, and choice of care provider were met, and that their expectation of the quality of amenities was partially met, but they were resigned to accept that

the expectations of prompt attention and respect provided by health care workers would not be met.

Participant B noted that he would have preferred to get an appointment for an eye exam within a day to three, or at least the same week, but was given an appointment a month or two later. Participant C mentioned that wait times are long everywhere but could understand why:

> *"I had my eyes operated here. I am happy with the way things turned out. Other health centers, other places also get delayed because of – because there are a large number of patients [to be seen]."*

Participant A agreed: *"I have had to wait when I go to the clinic, but there are a lot of people and everybody has to be seen so I understand the need to wait."*

Participant D hypothesized that a shortage of health care providers was a cause of long wait times.

> *"Emergency department is short of doctors, if you go there you have to wait 2 to 3 hours for the doctor to attend you."*

Others blamed inefficiencies in patient check in as the reason prompt attention could not be achieved, with Participant F noting that charts of people who just arrive at the clinic are often put on top of the charts of people who have been waiting for some time so the new arrivals end up being seen first.

The non-met expectation of being treated with dignity was revealed through discussion of poor treatment by health workers with participant F recalling issues with her post-operative care at CWM.

> *"I had gall stones removed at CWM. I was in a lot of pain post-operatively, but the nurses didn't attend to me. They didn't give me anything. They didn't sedate me, until the doctors came the next morning. When the doctor was talking to me the nurses started to pay attention, the whole night prior I suffered in pain."*

Participant B noted issues of health care providers not taking an interest in doing examinations to determine the cause of illness.

"I had high sugars one day. I was feeling weak. They only took my pressure at the clinic and the doctor and nurse at the health clinic gave me an injection and told me to go. I was feeling dizzy when I tried to get out of bed, so I called the nurse again. They checked my sugar and then they managed that, but they were trying to send me home without checking. The doctor asked, 'how come you didn't know you sugar was high?' It was because they didn't check."

It isn't just health care providers that don't treat patients with dignity. Participants B and D recalled times when health staff didn't treat the patient with respect.

"I was trying to pick my number [to determine when he would be seen], when a particular maid chased me away. I reported it to the Ministry [of Health] and they called from there and got my folder. When the maid is not there, there is no problem for picking numbers."

"[At a particular clinic] the [clinic] cleaners come and take the numbers for their family members. And they bring the doctor to see them first."

Apia, Samoa

The two focus groups held in Apia were primarily made up of women (11/14), who had varying levels of education. The average age of participants was 54.4 years (maximum 80, minimum 35). When telling of their experiences in the health care system two themes became evident. The focus group participants value being treated with dignity, and felt that this expectation is generally met, but they noted that their expectations of prompt attention and access to social support networks are unmet. The quality of basic amenities is generally an expectation that is met, but it was noted that the waiting area and record keeping areas could be a bit bigger. Participant F noted that some people are forced to sit on the floor while waiting.

Participant F noted that there were long wait times both to get a surgical appointment and to be seen once the surgical date came around.

"I came to the eye clinic and the staff told me there was no doctor to do the operation. I was told there would be a team here in March. They asked me if I needed to do the operation, and I said I did because my vision is so blurry. There was a long stay at the hospital during the operations. I came early in the morning and went back home late

afternoon. I am very happy because I can see again, even though I was here for a very long time all I wanted was for my operation to be done."

Participant E noted happiness with the job the doctors and nurses do, but commented that there was long waits and that there was not enough information provided to those waiting.

"The doctors and nurses are good to do their jobs, but the problem was I was waiting for a very long time for the doctor and nurse to call me. The person responsible for the record kept walking back and forth without call our names to see a doctor."

Participant F explains why she thinks there are long waits.

"I was schedule for [eye] operation at 9 in the morning, but when I came for the operation it was not done until 4 in the afternoon. I was asking the nurse why should I wait for so long when the appointment says it is at 9 in the morning? I think that it is the nurses and doctors decision because there are so many patients waiting there for operations."

Participant M explained that he was not pleased with the respect shown by eye care staff.

"The service is good, but I noticed that maybe the nurses were playing around [ignoring] patients that came to the eye clinic. The communication between nurses and doctors is not good."

Participant I thought that services fluctuated in quality and that at times the health care providers might treat some patients with less respect by seeing people they know before the others who are waiting.

Participant A was very pleased with the treatment that is provided by the eye care providers.

"The staff show respect. They show their smiling face and have good actions when they see patients. The environment is very clean and very nice all the time. The government should pay the nurses and the eye clinic staff equally with the Prime Minister salary."

The participants noted a hospital rule that prevented most patients from having a social support network with them in the consultation room. They desire to have the ability to bring family and/or friends back into the room with them. Participant K stated:

"I brought my mother to the eye clinic and the service is good. I think there should be a rule at the hospital to allow the family member to accompany the patient to the clinic."

Savaii, Samoa

The two focus groups conducted in Savaii included a younger population with an average age of 48.8 years (maximum 63, minimum 34). The focus groups were half women (6/12) and included people of a wide range of education levels. In recounting their experiences with the health care system the participants noted the importance of: being treated with dignity, basic amenities, prompt attention, autonomy, and access to social support networks.

The respondents, like E and J, were generally pleased with the attitude of the eye care nurses and how they treated them.

"I experienced service from the eye care workers that was good from the start. From the facial expression, to the way they talk to the patients."

"Customer service is good and people are treated with respect."

Despite the general perception of respectful treatment, participants, like M and F, noted that their expectation of prompt attention was often not met, both because there is no staff ophthalmologist, but also because at times the eye care nurses are not found in the eye clinic.

"Another bad thing is we need to wait for a visiting team to come for surgery. When people come to the eye clinic and need surgery, they have to wait for the visiting team. When we come for visit sometimes there is nobody in the clinic so we have to wait a long time until the eye care providers come back."

"When people need pterygium and cataract operation there is nothing that can be done. We depend on visiting team from overseas, but when people come to the clinic they need the operation at the same time or maybe a week after. There is nothing that can be done. There is eye specialist [nurses] but no ophthalmologist right now. Need to wait for visiting team."

"The service is not good sometimes, the wait is late for them. Sometimes we visit the eye clinic and it takes time to be served."

The participants discussed their concerns with not receiving prompt attention. They worry about those people with progressive eye conditions that might lead to vision loss if they are not seen and treated right away. They expect the eye care providers to see them immediately when they get to the clinic. They furthered the discussion by mentioning that they feel a lack of communication when waiting for service, especially during surgical days. They are left to wonder why they are waiting for so long, often wondering if there were complications.

People felt that their expectation of quality of basic amenities was met with the new clinic facilities and like that the new clinic is bigger now, but they are unhappy with the lack of spectacles, medicines and emergency equipment.

Participants C, F, and D in agreement with others find that while waiting for a visiting surgical team is inconvenient it allows them time to decide if they want to have the surgery done or not. This allows their expectation of autonomy to be met, while their expectation of prompt attention goes unmet.

> *"Before we don't have a visiting team before, but now starting from 2011 each year we have visiting teams. So that is a good thing. I was told I needed to go for an operation, but I refused."*

> *"I was seen by the eye care nurse specialist before the visiting team and I was booked for the operation. It is a lot of time to decide to do the operation before the visiting team arrives."*

> *"Good time to wait to decide for operation during the time of booking to the vision team arrives. A lot of time to decide if we want to do the operation or not. The good thing for people is after they can see so they benefit from the operation. The things that they decided is good…"*

The participants feel that it is important to allow older people to have someone come into the consultation room with them, but are negative about bringing kids inside the clinic. Participant K said:

"I used to come to visit the eye clinic with my grandfather. He had hearing problems and they allowed me to come with my grandfather into the eye clinic. The eye care providers give the opportunity to bring in family, especially for the older people."

Discussion

This study was the first to attempt to determine what expectations communities have of the health care system in Fiji and (Western) Samoa. It revealed general satisfaction with the eye care component of the health system, and determined that de Silva's (1999) elements of responsiveness are applicable to PICT communities, although some elements are more important than others. The focus group participants expressed gratitude in being able to share their experiences and expectations, and hoped that their input would be able to facilitate change, although it was recognized that change may take a long time.

Examining all eight focus groups revealed that there are two common priority expectations of the health care system across countries and communities that are not being met. All focus groups suggested that prompt attention and being treated with dignity were the most important expectations.

Interestingly the iTaukei population perceived longer waits than the Indo-Fijian population. No evidence on actual wait times was collected, but the iTaukei spoke about a full day's wait in the emergency department whereas the Indo-Fijian groups mentioned a few hours wait (and both thought the waits were excessive). Whether there is a difference in actual wait times or not, the perception that is the expectation of prompt attention is not being met an important one for Ministries of Health and NGOs to consider. Wait times were thought to be related to the number of patients needing to be seen in both Suva and Samoa, and the availability of eye care providers in Samoa. While the number of patients to be seen is likely to only grow, it becomes important to train more eye care providers, especially surgeons. Identifying physicians

who have interest in eye care should be a priority for the Samoan Ministry of Health. Current eye care providers are encouraged to recognize the importance of their being in their clinic at the appropriate times.

Moving eye care out of secondary and tertiary centers is important to meet prompt attention expectations. As many in Fiji mentioned that health centers have lesser wait times, it would be beneficial to move eye care to the primary care level and educate communities that they need not avail themselves of tertiary care for basic problems. Notably transferring basic eye care to primary care centers adds a burden to already busy community health nurses, and requires training and continuing professional support. It is no easy feat, but if they are able to treat the simplest of conditions it will ease the burden on the secondary and tertiary centers allowing for reduced wait times.

Dignity was also an important expectation across all groups. While the groups mentioned that they were generally treated well in the eye clinics, they all had examples of times when they felt they were not treated well somewhere in the health system. Interestingly, much of this perception was related to the body language and facial expression of the health care provider. It is important for eye care providers and support staff to recognize that there is more to a clinical encounter than making the correct diagnosis and treatment plan. Patients also need to feel listened to and accepted for the encounter to be successful in their minds. This involves working with a positive attitude and with a smile on the face, ensuring that patients are kept up to date on any delays that are occurring in the clinic, and that they are told what tests are being conducted and why.

Although focus group discussions focused most on timeliness and dignity of care, all of de Silva's (1999) elements were deemed important by at least some of the focus groups. They

are discussed briefly here. A certain level of basic amenities was required by the groups. This likely did not come up as an extremely important element because all three communities that were selected to participate in this study have access to relatively new eye clinics. Each of the hospitals in the selected regions was built within the last 5 years. Because of these new clinics, the groups were happy with the general amenities, but some mentioned that there was room for improvement elsewhere in the health system – the inpatient department for example.

Autonomy was recognized as an important expectation that is generally being met already. Confidentiality was also a well-practiced expectation that needs to be maintained.

Being able to choose what provider you want to see is not an expectation of PICT communities. They are used to seeing whichever provider is available and feel that all providers have the same training and are, therefore, generally happy to see whoever is available.

Having the ability to have a social support during an eye care consultation was also expressed by many as an expectation that is not always met. Eye care providers and clinics should be prepared to have a reasonable number of family members (or friends) attend the consultation in order to help the patient.

Focus group participants felt that there was little that they could do to bring about change in the health system, or ensure that their expectations were heard. They suggested that writing the Ministry of Health would be on possibility, or filling out comment cards in the clinics, but they didn't expect anything to come of it. They also suggested that just speaking with a manager at the clinic would be appropriate, but did not tend to do so out of fear of retaliation by the doctors and nurses.

Recommendations

Key health system stakeholders, including NGOs and Ministries of Health, are encouraged to seek out community expectations of the health system and their perception of the responsiveness of individual clinics and the health system as a whole. This could be done through periodic focus groups or the creation of committees consisting of administrators, clinicians, NGOs, and community members as a means of discussing community expectations and how these expectations might be met, if they are not being met already. These committees could also be a pathway of addressing community complaints about services provided. These committees should be at the district or lower level. The committees should consist of a wide demographic and be sure to include representation from vulnerable populations including the elderly, women, and the disabled.

When community expectations are known, Ministries of Health, clinic administrators, clinicians, and NGOs should make concerted effort to meet these expectations or explain why they are unable to be met.

A public information campaign should be held that reassures community members that their expectations of the health system are important and that they are encouraged to share them with clinic administration, and/or the Ministry of Health. Communities should be reassured that anything they share is held in strict confidence and that there will be no retaliation should they make a complaint or suggestion of change.

Clinicians of all types should be educated that meeting the expectations of community members is an important component of health care. This includes treating individual patients with dignity and is as simple as smiling and greeting patients.

Limitations

This research had several limitations. These focus groups were not representative samples from the community and the theory developed cannot be generalized. Rather the data obtained simply reveals ideas that can now be further tested in multiple communities. The communities that were selected to participate have access to eye care services. There are many communities in both Fiji and Samoa that do not have readily accessible eye care. It is acknowledged that the expectations of the health system may be different in underserved areas as compared to areas that have easier access to health (including eye) services.

Conclusion

The focus group participants agreed that de Silva's (1999) elements of responsiveness are important and applicable to their situation. There was general agreement across countries and communities. The focus groups noted that some expectations are generally being met (autonomy, confidentiality), but others are not being met (prompt attention, choice of provider), or not being met consistently (dignity, quality of basic amenities, access to social support networks). The choice of health care provider was not a significant expectation for the focus groups. Focus groups are uncertain how to share their expectations with decision makers and are resigned to have some of their expectations go unmet.

CHAPTER 4

What is the level of professional motivation of eye care providers in the South Pacific, what aspects of the health system can predict motivation level, and how do nongovernmental organizations influence motivation?

Abstract

Visual impairment remains an important public health problem in Pacific Island Countries and Territories (PICTs). A health systems-strengthening approach is suggested as a means of reducing the prevalence of visual impairment. The most important component of both Vision 2020 and health systems strengthening is the health workforce. There are three core health system objectives within the health workforce building block–worker coverage, competence, and motivation. A questionnaire related to motivation was administered to a convenience sample of PICT eye care providers attending a regional eye care meeting in Suva, Fiji in June, 2014. PICT eye care providers are a highly motivated group in spite of being faced with difficult working conditions, including a lack of medication and equipment, low pay, and a perceived lack of support from their Ministry of Health. Of the five components of the health system considered, only NGOs, and Leadership and Governance showed a statistically significant relationship with motivation level.

Introduction

Despite the increased focus on the prevention and treatment of visual impairment that occurred with the development of the Vision 2020 framework in 1997 (World Health Organization, 1997), visual impairment remains an important public health problem. Globally, an estimated 285 million people are visually impaired (Pascolini & Mariotti, 2012). This includes 39 million blind individuals (presenting visual acuity <3/60 in the better eye) and 246 million with low vision (presenting visual acuity ≥3/60 but <6/18 in the better eye) (Pascolini & Mariotti, 2012). A further 410 million individuals have near vision difficulties due to uncorrected presbyopia (Holden et al., 2008). Approximately 90% of visual impairment occurs in developing countries, and 80% of it is avoidable (World Health Organization, 2012a), being either preventable or treatable.

Pacific Island Countries and Territories (PICTs) have small populations that are dispersed across vast ocean expanses. Their populations range in size from 10,000 (Nauru) to 850,000 (Fiji), with the average population being less than 200,000 (World Health Organization, 2012b).

While there is a growing understanding of the prevalence and causes of visual impairment and blindness in PICTs, information is still limited (Brian, Pearce, & Ramke, 2011). The literature suggests that the most important causes of visual impairment and blindness in PICTs are: cataract, refractive error, and diabetic retinopathy (Keeffe, Konyama, & Taylor, 2002; Newland et al., 1992; Newland, Woodward, Taumoepeau, Karunaratne, & Duguid, 1994; Ramke, Brian, & du Toit, 2007; Ramke, Brian, Maher, Qalo Qoqonokana, & Szetu, 2012).

The Vision 2020 framework calls for countries to develop national eye care plans that focus on eye conditions of local epidemiological importance through the development of well-

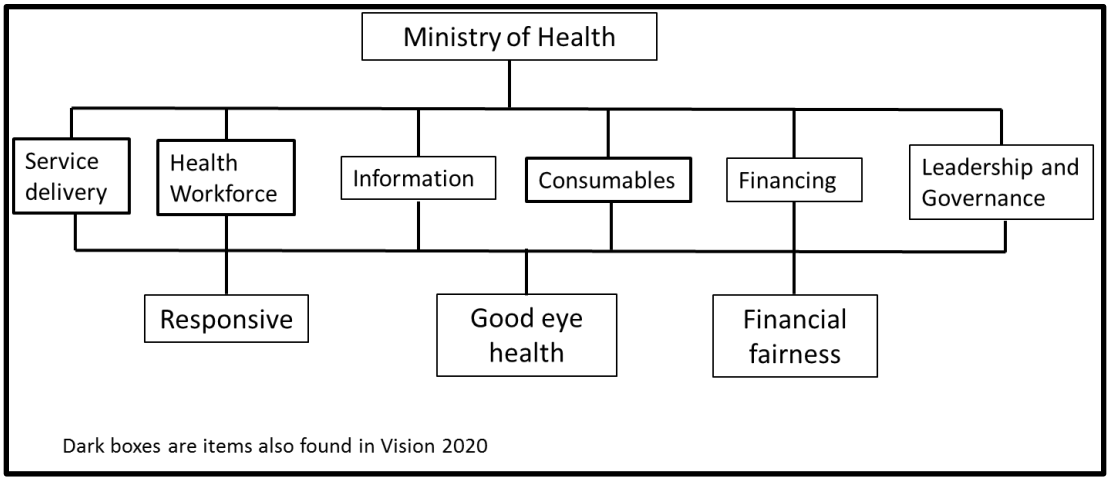
trained and supported local human resources and infrastructure (World Health Organization, 1997).

Concurrent to the focus on human resource and infrastructure development to reduce visual impairment, the World Health Organization recognized the importance of strengthening health systems to improve population health (World Health Organization, 2000, 2007). A health system has three primary goals: to be responsive to community expectations; to promote, restore or maintain health and; to be financially fair to all individuals (World Health Organization, 2000). The health systems-strengthening framework recognizes the importance and interrelatedness of six building blocks--service delivery; health workforce; information systems; medical products, vaccines and technologies; financing; and leadership and governance (stewardship) (Table 5)--as a means of accomplishing the three goals. When comparing Vision 2020 and health systems strengthening, it is clear that the Vision 2020 plan is subsumed within the idea of health systems strengthening (Figure 4).

Table 5. Health System Building Blocks (World Health Organization, 2010)

Health System Building Block	**Definition**
Service delivery	The provision of health care
Health workforce	All people engaged in actions whose primary intent is to enhance health. Includes clinical staff and management and support staff
Health information systems	The collection and analysis of health data to inform health-related decision-making
Medical products, vaccines and technologies	Essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness
Financing	The collecting, and allocating of money to cover the health needs of the people
Leadership/governance	Health policy development, oversight and regulation

Figure 4. Health Systems (adapted from (World Health Organization, 2007))



A number of PICTs rely on foreign aid (World Health Organization, 2012b), including in the realm of eye and vision care. Eye care education, provision, and funding are provided, at least in part, via foreign assistance in many PICTs. This is often provided directly or indirectly by non-governmental organizations (NGOs). NGOs are defined as "private organizations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development"(Meredith, Cross, & Amazigo, 2012, p. 2). NGOs have long recognized that there is disparity and inequity in the availability of eye care services in developing countries (Pearce & Pearce, 2012), including PICTs. They have, therefore, worked to increase access to eye health care for decades.

Arguably, the most important component of both Vision 2020 and health systems strengthening is the health workforce (Weldegebriel, Ejigu, Weldegebreal, & Woldie, 2016). While the other five health system building blocks are important, little can be accomplished without a sufficient workforce (Weldegebriel et al., 2016). The performance of the health workforce directly influences patient satisfaction with the health system as well as the quality, efficacy, and efficiency of health services (Weldegebriel et al., 2016). There are three core

health system objectives within the health workforce building block–worker coverage, competence, and motivation (Joint Learning Initiative, 2004).

An insufficient number of health workers (poor coverage) is a concern in many health systems generally (World Health Organization, 2000), and in eye care systems in PICTs specifically (du Toit, Brian, Palagyi, Williams, & Ramke, 2009; du Toit, Palagyi, & Brian, 2010; Ramke et al., 2007). Recognizing the dearth of eye care providers in PICTs, and the need for a highly competent workforce, an NGO, the Fred Hollows Foundation, New Zealand (FHFNZ), started a regional eye care training institution, the Pacific Eye Institute (PEI), in 2006 that is currently based in Suva, Fiji. With the number of eye care providers trained by FHFNZ in the last 10 years, PICTs are approaching the WHO recommended level of coverage (G. Nicholls, presonal communication, February 21, 2016). Significant effort is being expended now to ensure that eye care workers maintain a high level of competency (G. Nicholls, presonal communication, February 21, 2016).

PEI trains doctors, nurses, and health technicians via a variety of eye care training programs ranging from 6 months to 3 years in duration (Table 6). The programs are designed to train health care workers to provide care within the context of their local health systems. That is, they are trained with equipment and medications that will be most readily available in their local clinics, and didactic training concentrates on conditions of local importance and emphasizes practical knowledge and skills over theory.

Given that quality eye care training is occurring in the Pacific (du Toit et al., 2009; du Toit et al., 2010) and that the number of eye care providers is approaching sufficiency, it becomes important to begin to understand provider levels of motivation and satisfaction (Weldegebriel et al., 2016), and what leads to higher (and lower) levels of motivation and

satisfaction. This understanding will allow managers and other stakeholders to develop plans that maximize the likelihood that eye care workers will be invested in the success of the health care system and minimize the number of providers who leave eye care for other opportunities (Kanfer, 1999).

In the context of this study, motivation refers to the psychological processes that influence a health professional's accomplishment of health system goals and tasks (Kanfer, 1999). Motivation is reflected through a professional's willingness to put forth and maintain an effort toward the goals of the employing organization or health system (Franco, Bennett, & Kanfer, 2002). While this paper does not intend to thoroughly review the professional motivation literature, a brief summary follows.

Health professional's motivation influences their work behavior which, in turn, has a significant impact on health system outcomes (Franco et al., 2002; Weldegebriel et al., 2016). In many countries health system objectives are not met due, in part, to low motivation among health professionals (Weldegebriel et al., 2016). A motivated health care provider is more likely to come to work, to work more diligently, and to be more flexible and willing to take on tasks (Hornby & Sidney, 1988).

Table 6. Programs at the Pacific Eye Institute (adapted from (Pacific Eye Institute, 2014))

Program	Length	Description
Non-physician		
Postgraduate certificate in eye care	6 months	Produces an eye care professional with limited but specific competencies in a subspecialty area such as Refraction, Eye Operating Theatre or Essential Eye Care.
Postgraduate certificate in diabetes eye care	6 months	Produces a health professional with competencies enabling them to examine the eye to identify signs of diabetes eye disease, grade level of retinopathy and appropriately refer cases needing treatment.
Postgraduate diploma in eye care	1 year	Produces a general eye care professional with broad competencies in many areas of eye care which generally include: Essential Eye Care; Operating Theatre; Refraction; Management; Health Promotion
Master of community eye care	Self-paced (at least 2 years in addition to postgraduate diploma in eye care)	Produces an eye care professional with additional public health and research skills as well as an area of specialization
Physician		
Postgraduate diploma in ophthalmology	1 year	Produces an eye doctor competent in diagnosing and treating the leading causes of blindness and impaired vision.
Postgraduate diploma in vitreo-retinal and diabetes eye care (no longer offered)	1 year	Equips graduates to use a digital retinal camera to photograph and grade diabetic eye disease and to implement appropriate management, including laser treatment. Also, training is designed to set up diabetes eye health services, both as part of an integrated diabetes care and to audit the quality of services
Master of medicine in ophthalmology	3 years in addition to postgraduate diploma in ophthalmology	Produces an eye care professional who is an authority on ophthalmic knowledge and practice pertaining to the surgical and medical eye care of individuals as well as population-based eye care.

Motivation is influenced by both intrinsic (psychological) and extrinsic (transactional) factors. Intrinsic factors are motivating, whereas extrinsic factors prevent dissatisfaction (Thu, Wilson, & McDonald, 2015). Professional motivation results from the degree of alignment of a professional's personal attributes (intrinsic factors) with the organizational properties of their workplace (Kanfer, 1999), as well as the influence of the broader societal context (Franco et al., 2002).

Remuneration, a positive work environment, opportunities for promotion, and supportive systems are all important health system-led aspects of provider motivation (Joint Learning Initiative, 2004), whereas, self-concept, work orientation, self-confidence, and self-regulatory skills are health worker-led aspects of motivation (Kanfer, 1999). The primary aim of this study was to determine which and how health system factors (or the absence thereof) influence PICT eye care provider motivation. A secondary aim was to gain better understanding of what eye care providers desire of NGOs and how NGOs influence provider motivation.

Methods

No well-validated measures of worker motivation in developing countries were found. Further, no survey directly relating health worker motivation to the health systems-strengthening framework was found. Health worker motivation literature does, however, point toward four key system-led areas of inquiry: 1) job attributes (health worker control at workplace, clear duties, a job that offers challenge and excitement); 2) remuneration; 3) co-workers (supervisor support, feeling appreciated, treated fairly); and 4) achievement (job meaningfulness, feeling respected as a person) (Shouksmith, 1989; Joint Learning Initiative, 2004; Paleologou, Kontodimopoulos, Stamouli, Aletras, & Niakas, 2006).

Guided by these areas a 27-item questionnaire was created in English to investigate the motivational level of eye care providers in the PICT context, as well as what they felt about various health system building blocks. The questionnaire asked six demographic questions including respondent's profession, type of employer, level of training, length of time they have been in eye care, country that they work in, and how much professional time is spent providing eye care.

The questionnaire included five questions related to motivation: 1) Being an eye care provider is personally rewarding; 2) I am motivated (determined) to provide high quality eye care; 3) I am happy to be an eye care provider; 4) I am satisfied with my job; and 5) I get joy from being an eye care provider. These were scored on a 5-point Likert scale from 1= strongly disagree to 5= strongly agree.

Eleven items were included to measure system-led factors that might influence motivation level (Table 7). Specifically, three questions were asked about leadership and governance: 1) I feel supported by my Ministry of Health to provide quality eye care, 2) I feel supported by my hospital or clinic administration to provide quality eye care, and 3) I feel that I am able to make changes in my clinic to meet community expectations; three questions related to the health workforce were asked: 1) Given my job responsibilities I am fairly paid , 2) There is opportunity for me to be promoted and 3) I have a clear job description; two questions were asked related to medications and equipment: 1) I have all of the medications I need to provide quality eye care, and 2) A lack of equipment prevents me from providing quality eye care; two questions were asked about the influence of NGOs: 1) I feel supported, professionally, by organizations that visit my clinic to provide eye care and/or surgery, and 2) Visiting eye care teams **decrease** my motivation to provide quality eye care; and 1 questions was asked about

community: 1) I am respected by my community. Nine of these questions were scored on a 5-point Likert scale from 1= strongly disagree to 5= strongly agree, two questions which were asked in the negative (A lack of equipment prevents me from providing quality eye care, and visiting eye care teams **decrease** my motivation to provide quality eye care) were reverse scored to allow for a more accurate comparison. The simple sum of each question in a factor was calculated and used as a categorical variable for that factor in further analysis.

Table 7. Questions related to health system components

Health system component	Number of questions	Questions
Leadership and Governance	3 questions	• I feel supported by my Ministry of Health to provide quality eye care • I feel supported by my hospital/clinic administration to provide quality eye care • I feel that I am able to make changes in my clinic to meet community expectations
Health workforce	3 questions	• Given my job responsibilities I am fairly paid • There is opportunity for me to be promoted • I have a clear job description
Medications and equipment	2 questions	• I have all the medications I need to provide quality eye care • A lack of eye care equipment prevents me from providing quality eye care (reverse coded)
NGOs	2 questions	• I feel supported, professionally, by organizations that visit my clinic to provide eye care and/or surgery • Visiting eye care teams **decrease** my motivation to provide quality eye care (reverse coded)
Community	1 question	• I am respected by my community

The questionnaire was shared with experts in PICT eye care and health systems for feedback. After incorporating their feedback, the questionnaire was presented to an administrator

involved in eye care in PICTs, but not directly involved in patient care. The results of this pretesting interviewing resulted in one question being removed, and questions being rewritten to better describe motivation and to better ask which type of facility the provider works in.

Further, respondents were asked to identify what types of services are needed (and not needed) from NGOs and how NGOs affect their motivation (Table 8). For example, one item asked participants to choose the most applicable answer for their situation: 1) My clinic **most** requires [nongovernmental] organizations to help with providing surgery , providing non-surgical care, providing financing, providing equipment, proving refresher training, other, or none of the above. The same response options were used for three additional questions in this section of the questionnaire: 2) My clinic **least** requires organizations to help with _____, 3) My motivation to provide quality eye care will be **increased most** if an organization helps me by _____, and 4) My motivation to provide quality eye care will be **decreased most** if an organization ____ (Table 8). Lastly, participants were asked to indicate their community's preference for receiving eye care, with response options of A) from a traditional healer, B) from the staff at my clinic, C) from visiting foreign teams, or D) other.

The questionnaire was administered to a convenience sample of PICT eye care providers attending a regional eye care meeting in Suva, Fiji in June, 2014. There is no readily available list of eye care providers active in PICTs. An invitation to attend the annual regional eye care meeting is sent to Ministries of Health, eye clinics, and past-graduates of the Pacific Eye Institute. External funding is available for many who would otherwise not be able to afford to attend. While not all eye care providers elect to attend the meeting, the attendance represents a large cross-section of eye care providers who are active in PICTs and is an important date on the PICT eye care provider calendar.

Table 8. Questions related to NGOs and motivation

Questions	Answer choices
My clinic **most** requires organizations to help with: My clinic **least** requires organizations to help with: My motivation to provide quality eye care will be **increased most** if an organization helps me by: My motivation to provide quality eye care will be **decreased most** if an organization:	A. Provides surgery
	B. Provides non-surgical care
	C. Provides financing
	D. Provides equipment
	E. Provides refresher training
	F. Other
	G. None of the above

The questionnaire was offered to all clinicians over three sessions that followed the end of the conference program on two different days (with separate administrations to physicians and non-physicians). A fourth session was offered at the Pacific Eye Institute/Colonial War Memorial Hospital eye clinic for those clinicians who were unable to attend the conference, due to their needing to cover clinical duties during the week. Prior to each session, the purpose of the study was explained and informed consent was obtained. An audience response system (i>clicker) was used to collect data. This allowed questions to be posed via a PowerPoint presentation and multiple respondents to give their anonymous answers simultaneously via remote devices. The questions were presented visually and read aloud by the principle investigator to maximize respondent understanding. Each session was conducted in English, as it is the common language across the region and the language used throughout the conference

program. Data were transferred from the audience response system to SPSS 23 where the results were analyzed.

Results

The organizers of the meeting provided a list to all attendees of those who pre-registered for the meeting. Not all who pre-registered actually attended the meeting, and the list does not account for the small number of attendees who registered on-site. Further, some registered attendees elected to only attend some of the sessions.

According to the participant list provided to all attendees by conference organizers, 85 PICT-based eye care clinicians were pre-registered to attend. Of these, 53 were listed as nurses, 28 as doctors, 2 as technicians, and 2 as staff.

Demographics

A total of 52 eye care providers elected to participate in the study. Using the pre-registration figure of 85 as the denominator, the response rate is estimated at 61.2%. Based on the information provided in their responses, the 52 participants included seven physicians, eight mid-level providers, 33 nurses, three technicians, and one "other" (Table 9).

Table 9. Subjects' professions

	Reported profession	Frequency	Percent
Physicians	Doctor	7	13.5
Non-physicians	Mid-level provider	8	15.4
	Nurse	33	63.5
	Technician	3*	5.8
	Other	1	1.9
	Total	**52**	**100**

*One known technician was listed as "staff" in the registry. This may account for the extra technician.

Given that the conference was held in Fiji, and that Fiji has the largest population in the region, it is not surprising that 44.2% of participants worked in Fiji. Fully 61.5% of respondents reported working for a Ministry of Health, 63.5% reported spending 80-100% of their

professional time working in an eye clinic, and 61.6% had worked in the eye care field for less than 5 years (Table 10).

About 6.7% of the non-physician respondents reported no eye-care training, 42.2% had a Post-Graduate Diploma in Eye Care (PGDEC), and 22.2% said their training was in progress (Table 11). Fully 71.5% of the seven reporting physicians had a Diploma in Ophthalmology (Table 12).

Participants were asked to rate their agreement to various statements about health system factors on a five-point Likert scale (Table 13). When asked if they felt that the administration of the hospital or clinic supported them to provide high quality eye care, 68.8% (33/48) strongly agreed or agreed that administration supported them. However, less than half (22/48, 45.8%) strongly agreed or agreed that they felt supported by their Ministry of Health to provide quality eye care. Almost all respondents strongly agreed or agreed that their communities respected them (48/51, 94.1%) and 88.0% (44/50) strongly agreed or agreed that they had the ability to make changes in their clinics to respond to community expectations. Given their job responsibilities, 29.4% (15/51) strongly agreed or agreed that they were fairly paid, and 57.7% (30/52) felt they had the opportunity to be promoted. Respondents agreed that lack of eye care equipment (39/49, 79.6%) and medicines (34/46, 73.9%) prevented them from providing quality eye care.

Table 10. Demographics

I work in:	**Frequency**	**Percent**
Fiji	23	44.2
Kiribati	6	11.5
Papua New Guinea	2	3.8
Samoa	5	9.6
Solomon Islands	6	11.5
Timor Leste	1	1.9
Tonga	2	3.8
Vanuatu	6	11.5
No answer	1	1.9
I work for:		
Ministry of health	32	61.5
Private practice/hospital	5	9.6
NGO	11	21.2
Other	1	1.9
No answer	3	5.8
Professional time spent working in eye clinic:		
>20%	8	15.4
20-39%	2	3.8
40-59%	4	7.7
60-79%	5	9.6
80-99%	11	21.2
100%	22	42.3
I have been working in eye care for:	**Frequency**	**Percent**
<1 year	8	15.4
1 year	4	7.7
2 years	4	7.7
3 years	8	15.4
4 years	8	15.4
5 years	5	9.6
6 years	1	1.9
7 years	1	1.9
>7 years	13	25

Table 11. Non-physician eye care education level

Education	Mid-level Provider	Nurse	Technician	Other	Percent
PGCEC	2	2	1	0	11.1
PGCDEC	0	3	1	0	8.9
PGDEC	3	15	0	1	42.2
MCEC	0	1	0	0	2.2
No formal training	0	2	1	0	6.7
Training in progress	3	7	0	0	22.2
Other	0	2	0	0	4.4
No answer	0	1	0	0	2.2

PGCEC – Postgraduate certificate in eye care; PGCDEC – Postgraduate certificate in diabetic eye care; PGDEC – Postgraduate diploma in eye care; MCEC – Master of community eye care

Table 12. Physician eye care education level

Education	Doctor	Percent
DO	3	42.9
DO and PGDVRDEC	2	28.6
MMed	1	14.3
In progress	1	14.3

DO – Diploma in ophthalmology; PGDVRDEC – Post graduate diploma in vitreo-retinal and diabetes eye care; Med – Master of medicine in ophthalmology

Table 13. Health system factors

Statement	Frequency[1]	Percent[1]
I feel supported by my hospital/clinic administration to provide quality eye care	33/48	68.8%
I feel supported by my Ministry of Health to provide quality eye care	22/48	45.8%
I am respected by my community	48/51	94.1%
I feel that I am able to make changes in my clinic to meet community expectations	44/50	88%
Given my job responsibilities, I am fairly paid	15/51	29.4%
There is opportunity for me to be promoted	30/52	57.7%
I have all of the medications I need to provide quality eye care	7/46	15.2%
A lack of eye care equipment prevents me from providing quality eye care	39/49	79.6%

1 – of those who responded strongly agree or agree

Respondents were asked five Likert-scale questions about their level of motivation to provide high quality eye care, as well their satisfaction and enjoyment of eye care. The scores for these five related questions were averaged to create a total motivation score (Table 14). Due to a technical error in data collection, the scores for only four questions were averaged for doctors. Data were also analyzed with the missing question discarded for all respondents. There was no difference in outcomes.

Table 14. Motivation questions

Question	Mean score
Being an eye care provider is personally rewarding	4.5
I am motivated (determined) to provide high quality eye care	4.7
I am happy to be an eye care provider	4.9
I am satisfied with my job	4.2
I get joy from being an eye care provider	4.5

5 – Strongly agree; 4 – Agree; 3 – Neutral; 2 – Disagree; 1 – Strongly disagree

PICT eye care provider motivation was high, with 22.7% (10/44) of respondents having a total motivation score of 5 out of 5 (mean 4.58, minimum 3.80, maximum 5.0). One-way between subjects ANOVA was conducted on various demographic variables to see if there was any difference in total motivation scores. There was no difference in mean motivation scores between respondents from different countries, professions, length of time in eye care (neither across all levels nor when dichotomized to less than five years and greater than five years), level of training, or amount of professional time spent in the eye clinic (neither across all levels nor dichotomized to less than 60% of the time and 60-100% of the time).

There was a difference in total motivation score depending on respondents' employer [$F(2,38)=6.099$, $p=0.005$]. Tukey HSD post-hoc testing revealed that those respondents who worked for their Ministry of Health ($M=4.69$, $SD=0.31$) had a statistically significant greater mean total motivation scored compared to those who worked for an NGO ($M=4.30$, $SD=0.27$).

Working for a private practice or hospital did not differ significantly from either of the other two working conditions.

Predictors of motivation

Given the small sample size, the high total motivation scores, and the limited spread of motivation scores, total motivation was recoded into a binary measurement – those with an average total motivation level score of 5 in one group and all others in another. Further, the number of potential explanatory variables was reduced by combining Likert-scaled questions that investigated the same area of the health system strengthening framework (Table 7).

To determine if various health system building blocks could predict motivation level as a dichotomous variable (scoring 5.0 vs. scoring <5), numerous contingency tables, using the summed health system building block scores as categories, were considered. Fisher's exact test was used due to a number of cells being less than 5 in all contingency tables considered.

Of the five components of the health system considered, only NGOs ($p=0.037$), and Leadership and Governance ($p=0.030$) showed statistically significant 2-tailed Fisher's Exact Test results on global testing. The dichotomous motivation level is associated – either positively or negatively – with the amount of support PICT eye care providers perceive they receive from NGOs. Similarly, the level of support that PICT eye care providers perceive they receive from health care leaders, and the level of leadership they feel they have in their clinics, is associated with the dichotomous motivation measurement.

What Clinics Want from NGOs

Respondents reported that their clinics most require equipment (14/47, 29.8%), financing (11/47, 23.4%), and refresher training (10/47, 21.3%) from NGOs. They least require NGOs to provide non-surgical care (12/45, 26.7%), "other" assistance (12/45, 26.7%), and surgical care

(9/45, 20.0%). Respondents state their motivation will increase the most if NGOs provide refresher training (26/50, 52.0%), financing (13/50, 26%), or equipment (9/50, 18%). The vast majority (38/47, 80.9%) will not have a decrease in motivation if an NGO provides surgical and/or non-surgical care, financing, equipment, or refresher training.

Discussion

Motivated and satisfied health care providers are necessary for the provision of high-quality health care (Judson, Volpp, & Detsky, 2015). PICT eye care providers are a highly motivated group in spite of being faced with difficult working conditions, including a lack of medication and equipment, low pay, and a perceived lack of support from their Ministry of Health.

Health care provider's professional and personal goals, self-concept, and expectations are strong determinants of motivation (Franco et al., 2002). Given the high level of motivation reported by health care providers despite poorly motivating health system factors (leadership and governance, medications and equipment, and health workforce), intrinsic and societal factors must play a strong role in determining PICT eye care provider motivation levels.

Communities influence health care provider motivation both through their expectations of how services should be delivered, as well as the personal interactions that health care providers have with patients from the community (Franco et al., 2002). PICT eye care providers reported that they felt they had the ability to make changes to their clinic to meet community expectations and reported that the communities held them in respect. Meeting community expectations is an important outcome for the health system (World Health Organization, 2000). If eye care providers in a particular clinic are able to meet the changing expectations of the community in the clinic catchment area, the likelihood that community members will make use of the services

increases, and consequently the probability of improving community eye health increases. The use of the clinic by many members of the community in turn acts as a motivating factor for clinicians.

PICT cultures place strong emphasis on familial and community bonds, so being a respected member of the community can be a strongly motivating factor, one that might even overcome other more demotivating factors like low pay and poorly resourced clinics.

Working for an NGO resulted in a lower, but still high, mean motivation score as compared to those who worked within the public system. There was no significant difference in level of training, time as an eye care provider, time spent in the clinic, level of employer support, or pay between the NGO employees and those respondents who worked in the public system. Although both groups reported that the community respects them, public servants may feel a deeper connection to the community they serve, thereby, allowing a higher motivation level. Motivation is related to the congruence of provider and organizational goals (Rigoli & Dussault, 2003). Those that work for the public system may have a deeper understanding of health system goals than NGO employees have for the goals of the organization. Public servants may see the work that they do as a way of directly giving to their communities, whereas NGO employees may feel more removed from the community. Publicly employed eye care providers likely knew the challenges they would face from the organization and functioning of the health system during their clinical careers. They were educated in the system, and many worked in other areas of the system prior to becoming eye care providers. NGO employees may have been expecting something different. The realities within the organization may not have been clear prior to their beginning their employment. NGOs are encouraged to ensure that organizational goals are clear

to eye care providers and help workers see the benefits (both intrinsic and external) to working toward those goals (Rigoli & Dussault, 2003).

Similarly, respondents reported a general lack of support from their Ministries of Health, but retained high levels of motivation. This reflects the importance of societal and intrinsic factors on PICT eye care worker motivation. Eye care is not a public health problem that is a high priority for most Ministries of Health. Eye care providers are well aware of this and recognize that Ministries of Health care currently faced with many competing demands. They may, therefore, rely on societal and intrinsic motivating factors to make up for the perceived lack of support from their Ministries of Health. How long intrinsic and societal motivating factors can overcome the lack of Ministry support is unknown.

This study only considered factors external to providers as it sought to determine the effect of the health system on motivation. While there was no statistically significant predictor of motivation in the health system building blocks, it is important to note that eye care providers report an under-supply of equipment and medicines, low pay, and a general lack of support from the Ministry of Health. While PICT eye care providers are overcoming these potentially demotivating factors, stakeholders should consider their potential future impact on motivation should they not be addressed. Motivation is not a constant (Kanfer, 1999). It can change based on changes in the health care provider, work conditions, health system, or community (Kanfer, 1999). It is unknown how long PICT eye care providers can maintain a high level of motivation in difficult circumstances. Given the historical shortage of eye care providers, and the relatively recent opening of the regional training institute, the vast majority of PICT eye care providers are new to the profession. The majority (37/51, 71.2%) of respondents have been working in eye care for ≤5 years. Motivation reflects an alignment of the attributes of the eye care provider and

the health system (Kanfer, 1999). As PICT eye care providers' time in the profession increases, it may become more and more difficult to remain motivated if there is a continued misalignment of extrinsic factors such as pay, access to medications and equipment, and support compared to provider expectations.

Motivation does not directly reflect provider performance (Kanfer, 1999). That is, a provider can be highly motivated but be a poor clinician or have low productivity. Continued work in ensuring that eye care providers in these remote communities have access to clinical mentorship and other ways to maintain their clinical skills and stay up-to-date on evidence-based treatments is encouraged. In addition, it is vital that Ministries of Health recognize the importance of eye care as a public health problem and begin to develop distribution networks for essential eye medications and equipment so that these highly-trained clinicians can put their training to use.

NGOs continue to play an important role in eye care in PICTs. It is vital that they consider the impact that they have on the motivation of PICT eye care providers, to ensure that they maximize motivation and minimize demotivating factors. PICT eye care providers request equipment, financing, and training over NGOs providing clinical care. Many NGOs currently provide clinical care in PICTs as their primary intervention. While well-intentioned, this does not address what PICT eye care providers express as their needs. Cooperation between NGOs and ministries of health is vital.

Recommendations

NGOs and Ministries of Health should recognize the importance of motivation on the performance of the health workforce. Given that eye health workers are currently well motivated,

steps should be taken to determine what key stakeholders need to do to maintain that high level of motivation.

NGOs are encouraged to consider what PICT eye care provider's desire in terms of aid and work to meet those expectations rather than simply provide clinical care.

PICT eye care workers are encouraged to recognize what they need to maintain their high level of motivation and what would lessen this motivation and express these to key stakeholders. This could be done through the association of PICT eye care workers – PacEYEs.

Limitations

The small sample size of this study limited the type and amount of analysis that can be conducted. The small sample size is not surprising given the small population from which it was drawn. Further, given the how busy the conference schedule was, the only time available to conduct the study was at the conclusion of two days' programs. Many attendees see the time they have at the conference as a working holiday and are eager to enjoy the nightlife, shopping, and restaurants that can be found in Suva, Fiji with their regional colleagues. Spending extra time in the conference center to participate in the survey was not a priority for many of them. I have a stronger professional relationship with many of the nurses, health technicians, and mid-level providers than the physicians. Those clinicians with whom I have a relationship were likely more inclined to participate. Many of the non-respondent physicians (8) are currently in training and may not have felt that their input would be useful despite hearing and receiving multiple invitations to all clinicians. As motivation is not a constant, the data collected in 2014 may not reflect the current situation in PICTs. Further, the questionnaire was conducted at a conference that may have itself been a motivating event.

The motivation question was itself poorly constructed which may have led to an overestimation of the level of motivation. Future study should make use of the motivation literature to break the concept of motivation into its potential parts. This should inform the creation of a new motivation questionnaire. After administering the questionnaire factor analysis could be used to determine a better construct of motivation in the PICT context.

Conclusion

This paper is the first to measure motivation for PICT eye care providers. It did not find any health system factors that predict motivation, suggesting that at this time PICT eye care providers are self-motivated. While they currently have high levels of motivation, their ability to maintain it over time given poor health system support is questionable. Stakeholders, including Ministries of Health, should continue to strengthen health system building blocks, and the interactions therein, to increase the likelihood that PICT eye care providers maintain high motivation. NGOs are encouraged to consider what PICT eye care providers desire of them in terms of assistance and health system interactions in order to maximize the positive effect on motivation.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

These three studies considered vision care in PICTs through a health systems-strengthening lens. They raised some important conclusions and potential areas of further inquiry.

Both Ministry of Health and NGO eye care workers working in PICTs appear to be highly motivated. Interestingly, Ministry of Health eye care workers were more motivated than NGO eye care workers. This is the opposite of what is expected when the eye care system is run parallel to the health system. Although there are separate management and administrative systems between Ministry of Health and respondent NGOs, the NGOs reported working very closely with Ministry of Health eye care providers. They do so primarily by providing infrastructure support and training opportunities. This may partly explain why Ministry of Health eye care workers are able to remain motivated – despite a feeling of a lack of support from Ministries of Health they feel supported by the work of NGOs. It would be interesting to survey Ministry of Health non-clinical eye care workers (administrators and bureaucrats) and non-eye care clinical workers to see if there is any difference in their motivation levels as compared to Ministry of Health eye care workers, as the former two groups in the Ministry of Health are less likely to experience benefit from vision NGO activities.

The fact that Ministry of Health eye care workers are highly motivated suggests that NGOs can feel confident in the ability of eye care to be fully provided within the overall health system. It also suggests that NGOs can start to shift the work that they do to one of empowering the Ministry of Health directly with confidence that eye care provider motivation will remain high provided the Ministry of Health is able to support the eye care providers in a similar way to NGOs.

Eye care providers say that they least want NGOs to provide clinical services alongside them, rather preferring them to provide equipment, training, and financing, yet half (3/6) of respondent NGOs primarily provide clinical services as their main intervention. These NGOs are encouraged to re-evaluate their methods and see where they can be better used by eye care providers and Ministries of Health.

The provision of equipment, training and financing are NGO activities that can be easily shifted onto the Ministry of Health provided that proper leadership and financing is in place, and NGOs remain to give and technical expertise that hasn't been developed in the Ministry. NGOs are encouraged to begin to shift their focus to leadership development and ensure that they are working within the Ministry of Health structure.

Given the current, and likely worsening, strain on health systems in PICTs due to diabetes, NGOs are encouraged to pay particular attention to the strength of the broad health system as a means of preventing diabetes-related vision loss. This will require strengthening Ministries of Health, identifying, supporting, and working with clinical and non-clinical leaders, and ensuring that eye care is included completely within the health system – including in primary care centers.

Neither NGOs nor Ministries of Health seek to learn community expectations of the eye care system. Community members are eager to give their feedback and desire change in some important areas of the health care system – primarily in wait times and being treated with dignity. Wait times can be reduced by increasing the number of eye care providers available in primary care settings and moving basic eye care out of tertiary settings. This will require supporting limited eye care training and minimal infrastructure development in primary care settings.

While eye care providers report being motivated, community focus groups mention that they sometimes feel ignored by eye care workers, and some report feeling that they were not treated with dignity by eye care workers at times. It is important for eye care providers to recognize that coupled with their motivation to provide high quality clinical care, they must also provide a welcoming environment for community members. Community members suggest that this is as easy as the eye care provider having a smile on their face, positive body language, and keeping them informed of why there is any extended wait. NGOs and Ministries of Health should continue to monitor eye care worker motivation and ensure that motivating factors are supported and demotivating factors reduced.

APPENDIX (Consent forms)

University of Hawai'i, Office of Public Health Studies
Consent Form

Primary Investigator:
Matthew Pearce, OD, MPH, FAAO
Phone: (808) 799-4050
Email: mgpearce@hawaii.edu

Investigator's Statement:

Purpose

My name is Matthew Pearce. I am a student at the University of Hawaii at Manoa, Office of Public Health Studies. As part of my studies I conduct research on topics that are of interest to me. The purpose of this study is to examine the alignment of vision non-governmental organizations (NGOs) with South Pacific health systems. I have asked you to participate because of your involvement with an organization that is active in eye care in the South Pacific.

Benefits

There may be no direct benefits to you for participating in this research project. The study findings, however, will reveal best-practices for NGOs to integrate their work with the overall health system, which will, if widely used, improve eye health and vision outcomes in South Pacific communities.

Procedures

This study will involve as many NGOs (through a representative) active in eye and vision care in the South Pacific as can be identified. If you agree to participate you will be interviewed individually, as a representative of the organization you are involved with. The interview will last approximately 1 hour. The interview will be about the work the organization does in the South Pacific, including the methods the organization uses and its integration into the local health system.

You may refuse to answer any questions you do not want to answer. Participation is strictly voluntary, and you may discontinue participation at any time. With your permission, the audio of the interview will be recorded to ensure accuracy.

Risks, Stress or Discomfort

The researcher believes there is little or no risk to participating in this study. There is a small risk that answering some of the questions may cause you to feel uncomfortable. You may choose not to answer any questions. If you do not understand a question, or you need clarification, please ask. You are free to take a break at any time during the interview.

Other Information

The information you provide will be held in confidence. Audio recording and note taking will be used to ensure that the information collected is accurate. Audio recordings and notes will be secured on a password-protected computer. Only the researchers will have access to this information and it will be destroyed at the completion of the study. However, several public agencies with responsibility for research oversight, including the University of Hawaii Human Studies Program, have authority to review research records.

Participation in this research is voluntary; there is no consequence to you if you choose not to participate. You have the right to refuse to participate or to withdraw at any point in this study.

If you have any questions about your rights in this project, you can contact the University of Hawaii, Human Studies Program, by phone at (808) 956-5007 or by e-mail at uhirb@hawaii.edu.

_____ _____

Signature of the Interviewer Date

----------Tear Here ----------

Participant's Statement:

The study described above has been explained to me by Matthew Pearce, who has satisfactorily answered my questions concerning the study purpose, procedures, risks, confidentiality and rights. I also understand that I may withdraw my consent, and stop participation at any time. I understand that the primary investigator can be reached at (808) 799-4050 or mgpearce@hawaii.edu, if I have any further questions.

I willingly consent to participate in this study. I have had an opportunity to ask questions. I understand that if I have other questions about this research or my rights as a participant they will be answered as indicated above.

_____ I agree to be audio recorded. I understand that the audio recordings will be handled in a confidential manner.

_____ _____

Signature of Participant Date

_____ _____

Signature of Researcher Date

University of Hawai'i, Office of Public Health Studies
Consent Form

Primary Investigator:
Matthew Pearce, OD, MPH, FAAO
Phone: (808) 799-4050
Email: mgpearce@hawaii.edu

Investigator's Statement:

Purpose

My name is Matthew Pearce. I am a student at the University of Hawaii at Manoa, Office of Public Health Studies. As part of my studies I conduct research on topics that are of interest to me. The purpose of this study is to examine what communities expect of eye care providers and clinics in the South Pacific. I have asked you to participate in this study because you are a member of the community served by an eye clinic staffed by a local eye care provider.

Benefits

For your participation you will receive a small gift and we will hold a thank you tea at the conclusion of the focus group. The study findings will reveal what communities expect of eye care and will be useful in determining what eye care providers and clinics should do to best serve their community. This knowledge will lead to improved eye health and vision outcomes in South Pacific communities.

Procedures

If you agree to participate you will be participating in a discussion with 3 to 5 other people. The discussion will cover good and bad experiences you've had with eye care providers, and what you expect from an eye care provider and clinic.

You may refuse to answer any questions. Participation is strictly voluntary, and you may quit at any time. With your permission, the audio of the interview will be recorded to ensure accuracy.

Risks, Stress or Discomfort

There is little or no risk to participating in this study. There may be a small risk that answering some of the questions may cause you to feel uncomfortable. You may choose not to answer any questions. If you do not understand a question, please ask and we will ask it in a different way. You are free to take a break at any time.

Other Information

The information you provide will be held in confidence. No information that can be used to identify you will be recorded. Audio recording and note taking will be used to ensure that the information collected is accurate. Audio recordings and notes will be protected on a password-protected computer. Only the researchers will have access to this information and it will be destroyed at the completion of the study. However, several public agencies with responsibility for research oversight, including the University of Hawaii Human Studies Program, have authority to review research records.

Participation in this research is voluntary; there is no consequence to you if you choose not to participate. You have the right to refuse to participate or to withdraw at any point in this study.

If you have any questions about your rights in this project, you can contact the University of Hawaii, Human Studies Program, by phone at (808) 956-5007 or by e-mail at uhirb@hawaii.edu.

_____ _____
Signature of the Interviewer Date

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Participant's Statement:

The study described above has been explained to me and all of my questions concerning the study have been answered. I know that I may stop participating at any time. I understand that the primary investigator can be reached at (808) 799-4050 or mgpearce@hawaii.edu, if I have any further questions.

I choose to participate in this study.

_____ I agree to be audio recorded. I understand that the audio recordings will be handled in a confidential manner.

_____ _____
Signature of Participant Date

_____ _____
Signature of Researcher Date

University of Hawai'i, Office of Public Health Studies
Consent Form

Primary Investigator:
Matthew Pearce, OD, MPH, FAAO
Phone: (808) 799-4050
Email: mgpearce@hawaii.edu

Investigator's Statement:

Purpose

My name is Matthew Pearce. I am a student at the University of Hawaii at Manoa, Office of Public Health Studies. As part of my studies I conduct research on topics that are of interest to me. The purpose to this study is to examine the professional motivation of eye care providers in the South Pacific, and their feeling of support from non-governmental organizations active in the region. I have asked you to participate in this study because you provide eye care in the South Pacific.

Benefits

There may be no direct benefits to you for participating in this research project. The study findings, however, will reveal eye care provider opinion and be of use to determine best-practices for NGOs to integrate their work with the work of eye care providers, and for ministries of health and NGOs to understand barriers to eye care provider motivation. This knowledge, if properly applied, will lead to improved professional motivation and consequent eye health and vision outcomes in South Pacific communities.

Procedures

This study will involve as many vision care providers attending the Pacific Eye Health Regional conference as possible. If you agree to participate you will be participating in a group session where you will answer a questionnaire individually. You will be supplied with a "clicker" device that will allow you to submit answers to various multiple choice questions. You will be shown how to use the clicker prior to the start of the questionnaire. The questionnaire will last approximately 45 minutes.

You may refuse to answer any questions you do not want to answer. Participation is strictly voluntary, and you may discontinue participation at any time.

Risks, Stress or Discomfort

The researcher believes there is little or no risk to participating in this study. There is a small risk that answering some of the questions may cause you to feel uncomfortable. You may choose not to answer any questions. If you do not understand a question, or you need clarification, please ask.

Other Information

The information you provide will be held in confidence. No identifying information will be recorded during the questionnaire. Your answers will not be able to be identified. Answers will be secured on a password-protected computer. Only the researchers will have access to this information and it will be destroyed at the completion of the study. However, several public agencies with responsibility for research oversight, including the University of Hawaii Human Studies Program, have authority to review research records.

Participation in this research is voluntary; there is no consequence to you if you choose not to participate. You have the right to refuse to participate or to withdraw at any point in this study.

If you have any questions about your rights in this project, you can contact the University of Hawaii, Human Studies Program, by phone at (808) 956-5007 or by e-mail at uhirb@hawaii.edu.

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Signature of the Interviewer Date

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I willingly consent to participate in this study. I have had an opportunity to ask questions. I understand that if I have other questions about this research or my rights as a participant they will be answered as indicated above.

_____ _____

Signature of Participant Date

_____ _____

Signature of Researcher Date

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