Rethinking the health system in Samoa: building on past achievements and the search for new perspectives

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Abstract

This article reviews evidence to identify gaps and explore opportunities for improving the health system in Samoa, and searches for new perspectives to mitigate threats to the health of the people in the near future. It proposes that the health system should prioritize health education programs in community and schools, conduct diagnostic screening programs, and advocate for laws and policies that directly address endemic non-communicable diseases (NCDs) in Samoa. The health system in Samoa was once community-based but is now hospital-based. The shift had been driven by the high prevalence of non-communicable diseases among its adult population, such as heart attacks, strokes, obesity, diabetes and hypertension, requiring the attention of medical doctors who mostly work in the capital city of Apia. The emphasis on doctors, hospitals and technology while cutting back community-based preventative programs over the past few decades was a mistake. Consequently, Samoans are dying prematurely from these non-communicable diseases. Efforts by the Samoa Ministry of Health and development partners to reverse the trends have produced no clinical evidence of success. In addition, the field and discipline of public health has received less and less attention and hence fewer resources over the past few decades. Funding also affects health services and financing the health services in Samoa continues to increase over the past few decades. One of the greatest challenges faced by researchers is the difficulty with finding data and published articles about the health of the Samoa people. Even more worrying is a lack of evaluative reports documenting the results of the activities already being implemented. Without such studies it will be difficult to design evidence-based policies and strategic plans appropriate and relevant to the issues identified.

Keywords: Samoa, Health system, Public health, policies

Introduction

The World Health Organization (WHO) defines the six building blocks for a health system in any country, regardless of the level of its economy. These building blocks include (1) strong governance (accountability and transparency) and leadership, (2) transparent human resource management, (3) stable financial support and management systems, (4) a workable information and technology system including a surveillance system, (5) optimal clinical and public health services, and (6) efficient procurement of commodities and medicine (World Health Organization 2007). Although much debate had been published concerning their holistic application to evaluation of specific interventions on health systems, it still stands as a valuable tool to create a common language and shared understanding among the health workers anywhere in the world. (Mounier-Jack et al 2014). As declared in the WHO constitution all individuals have the right to the highest attainable standard of health, and governments have the overall responsibility to improve the health of their populations by providing adequate health services and equitable social measures (WHO, 1978). The WHO Commission on Social Determinants of Health has posited too that, the ill health of the poor, the social gradient in health within countries, and the marked health inequities between countries are caused by the unequal distribution of power, income, goods and services, both globally and nationally (WHO, 2008). Hence, the onus is on each country to develop and implement laws and policies to ensure the whole population benefits from these rights to health.

Health is created and lived by people within the settings of their everyday life. Where and when they spent most of their time during the day or night, either at home, school, work, social gatherings, sports facilities, and religious places. Health may therefore be created by both individuals and peoples living in a specific geographical environment and hence to control the circumstances and conditions within it to ensure everyone cares for one another to attain heath for all members (WHO 2012). However, a person's health and wellbeing is also influenced by other factors outside of their communities, workplace or school, such as the socio-economic status of the country, urbanization and urban planning, globalization, water and sanitation, food supply and food and beverage industries, to name but a few (Lameko 2020). Health is then defined by the WHO as a "dynamic state of complete physical, mental, and social wellbeing, not merely the absence of disease state" (WHO 1978). The ultimate goal is for every citizen to have equal access to health care services and public health activities regardless of their level of education, socio-economic and community status.

The forecast population of Samoa for 2022 is 202, 241 persons with approximately 48.24 % female and 51.76 % males. Approximately 40 percent of the total population comprises young people less than 15 years of age, giving a median age of 21.8 years, with 6 % aged 65 years old and more indicating a growing population (World Bank 2020). Today only about 60% of the population live in traditional villages; urban settlements have grown around the town of Apia with no effective local government (Samoa Bureau of Statistics 2017).

History of the Health System Models in Samoa

The health system in Samoa had long adopted the universal coverage model of health. Although it had undertaken a lot of changes over the previous eight decades, but the overall goal is to provide the basic health care to all the citizens (Schoeffel 2016). The early health activities, which goes way back to the 1940s and had continued on until the late 1970s, involved the provision of basic medical and nursing care such as the treatment of common infectious diseases, surgical procedures, and administration of vaccination to children, providing home care for the elderly and those with chronic diseases, school programs with a focus on infectious diseases and dental care, and the provision of ante-natal clinics for pregnant women. Also during this period of time, Samoa's health system had relied on hundreds of village women's committees throughout Samoa, called Women's Health Committees (WHC) to promote disease prevention, each serviced by a district public health nurse who met with the committees monthly to hold maternal and child health clinics and sanitation inspections. Such a partnership had allowed for the WHC members to work with the health care workers (HCW) working at the district health centre to implement a lot of community health activities (Schoeffel 2016).

By the 1970s monthly village health talks by the district nurses included advice on nutrition using health messages formulated for the Pacific Islands region by the South Pacific Commission (now the Secretariat of the Pacific Community). However in the early 1980s the women's committees were slowly being de-linked from the public health nursing services in the Ministry of Health to support a broader agenda for 'women in development'. The policy changes in health services meant that nurses no longer went out to villages (except in the case of special programs); instead people in villages sought advice and treatment from the nearest health centre or district hospital, or if they had the

means to do so, went to the outpatient clinics at the main hospitals on Upolu and Savaii (Taua'a & Schoeffel 2019).

Then, by the late 1980s, the public health system in Samoa once community-based became hospital-based (Schoeffel 2016). There was greater outreach at the community level, until the government decided to centralize the health services in Samoa. It was a clear shift from a community-based and public health focused system to clinical medical care; sometimes referred to as the "medicalization of the society model" (Conrad and Bergey 2015). At the same time, the basic public health matters, such as health education, screening for basic health problems and advocacy and policy for healthy practices became less important. Even more importantly, the shift to hospital-based health system led to the establishment and implementation of an overseas treatment scheme, in collaboration with the New Zealand Ministry of Health in the 1990s which allowed for Samoan patients to receive advanced investigation of diseases and treatment in New Zealand, with those ineligible for the New Zealand scheme paid for the Government of Samoa (Schoeffel 2016).

In 2005, the Department of Health underwent a major reform and created two organizational arms, namely the Ministry of Health (MOH) and the National Health Services (NHS) (Samoa Ministry of Health Act 2006). The MOH served as the regulating arm of the health system, while the National Health Services provide the service delivery arm of the health system. The split in 2006 also led to the complete removal of the partnership between the WHCs and the Ministry of Health. (Schoeffel 2016). This decision saw the gradual moving away of MOH from working with WHC. In 2005, the Government of Samoa (GoS) also established the National Kidney Foundation (NKF) which provides hemodialysis to end stage chronic kidney disease patients (National Kidney Foundation of Samoa Act 2005). The health sector plans also saw the broader inclusion of important stakeholders in the whole health sector, including other providers such as private medical practitioners, pharmacists, dental practitioners, nursing practitioners and physiotherapists. Moreover, a range of traditional Samoan healers began to be recognized as part of the health sector. In 2005 too, an industrial action against the Government of Samoa by the Samoa Medical Association (SMA) marked the beginning of an era of true recognition of professional associations by the Government of Samoa. In addition, one of the new development partners in the sector, in particularly focused on developing human resources, was the establishment of the Oceania University of Medicine (OUM) in Samoa, in the year 2002 (Oceania University of Medicine Act 2002). It was clear from the health sector plans (HSP) that the government of Samoa wished to strengthen the partnership between the Ministry of Health and stakeholders including overseas development assistance partners. Consequently the Ministry of Health and the key development partners such as the New Zealand Aid (NZAid), Australian Aid (AUSAid) and the World Bank signed an agreement based on a strategic direction towards a "sector wide approach" (SWAp), as a basis for assistance to help implement the first five years of one of the HSP (FY 2009-2013).

After 10 years of the split and expansion in health services, the Government of Samoa realized that the reform was not cost effective and was not delivering the promised outcomes as originally intended. They decided to re-merge the health system into one entity again (Ministry of Health Amendment Act 2019). In fact, the 2019 measles epidemic which led to the death of 83 children within less than 4 months saw the need for Samoa's health system to return to working with communities. Many people were concerned about the low vaccination coverage and children's health status in the community, once a strong component of the partnership between the MOH and the WHCs. It brought

a rethinking of the priority areas of the health system in Samoa. It was also recognized then that Samoa is better off if the health system revives a public health model which reinforces community collaboration and places more emphasis on primary care and public health activities which involve communities in the planning and implementation of health related interventions in the spirit of the meaning of public health. As a result, the new organizational structure of MOH consists of two main streams of work (1) the clinical care services for treatment of patients, and (2) the public health services to look after health promotion, preventative medicine, health policies and rural health centers and community stakeholders. Awareness of the importance of public health gradually returned on the government's agenda especially within the MOH. For example, after more than 30 years since the last medical doctors were posted to stay permanently at the district health centers and hospitals, the practice was reinstated in 2019. Although it was part of the preparedness program for the Covid19 pandemic, it was a response to long time requests by the people residing in rural areas of Samoa for medical doctors to be available on a fulltime basis at the district hospitals across the two main islands of Upolu and Savaii.

History of public health and health promotion in Samoa

Public health is a multidisciplinary field whose main goals are to prevent the development of illness among the population, prolong life, and promote physical health and wellbeing through organized community efforts. (National Center for Health Statistics 2011). The key activities include (1) assessing the health status of the population, (2) diagnosing the health problems of the nation, (3) searching for the upstream and proximal causes of the health problems in the population, (4) designing and implementing solutions with the community members, and (5) conducting epidemiological research. (Aschengrau and Seage 2014). Public health is the scientific diagnosis and treatment of community health and social issues. There is also a great appreciation of the role played by politicians and policy makers when it comes to public health activities. This is because of its control over resources and responsibilities for developing laws required to protect population health. In Samoa, the public health system include, the Government agencies such as the Ministry of Health, the Samoa National Kidney Foundation; local agencies such as Private Doctors and Nurse Practitioners; non-governmental-organizations such as Red Cross, Family Planning Association of Samoa; Community organizations such as Women's Committees; and Academic institutions such as the Oceania University of Medicine and the School of Medicine and School of Nursing at the National University of Samoa. (Ministry of Health 2018).

Over the past several decades, many affluent countries have witnessed that social and health indicators revealed that public health makes a greater contribution to the overall health status of populations than advances in clinical medical care. For example, the increased average life expectancy of Americans is mainly attributed to improvements in the public health activities and services over several decades, not the medical clinical care system. (Bunker et al 1994). But public health seemed to be "losing ground" in Samoa over the previous decades, which a previously described, was once community based and now centralized. (Schoeffel 2016; Lameko 2022). The emphasis on doctors, hospitals and technology at the expense of preventative community programs has been a mistake. Samoa is now classified as a middle-income-country, but is still in transition from being a low-income-country. Samoa is currently experiencing a deep recession due in large part to the economic effects of the COVID-19 pandemic and in July 2021, the World Bank downgraded Samoa's classification to

"lower-middle income" from its previous status as an "upper-middle income" country (Department of State 2022). There are parts of the country which do not have adequate supplies of clean water and which have poor sanitation and sewerage systems, and which have no access to permanent health care services such as maternal and child health services and palliative care. Moreover, the reverence in which Samoans hold the clergy and their elders means disproportionate resources are demanded by the public for expensive clinical treatments of limited long term value, which means fewer resources to prevent disease among younger people.

Another issue is that public health programs are less influential because other sectors of government have taken over some public health functions or public health related functions such as water and sanitation, stream pollution, air pollution, rural hospital construction, safe public transportation, injuries prevention (motor vehicles, bicycles, others) and chronic disease control. Moreover, many politicians tend to be more interested in the treatment of individuals through the new diagnostic machines and the new 'magic drugs" and overseas treatment, rather than public health activities. This is why the field of clinical and acute medicine, which focuses on individual patients, had received a lot of attention and resources, especially among the politicians and policy makers. (Schneider 2011). Nonetheless, public health solutions are still relevant nowadays and lie within a range of broad interventions, such as health promotion and educational programs, implementing screening programs for early detection of diseases, and working with local governments and community organizations to raise people's awareness of how to improve their health and avoid disease. And at the heart of public health planning, implementation, monitoring and evaluation, stands the field of epidemiology which is defined as "the study of the distribution and determinants of disease frequency in human populations and the application of this study to control health problems."(MacMahon and Tricopolus 1996)

Government policy and Samoa's health profile

Since the inspiring Declaration of Alma-Ata (WHO 1978) on the centrality of primary health case to public health, community development and empowerment messages have continued to dominate health discourses, with WHO calling for a return to its principles, along with an emphasis on increased inter-sectoral collaboration. This approach advocates a "bottom-up, action oriented focus on the community's control over its environments and top-bottom professional driven approach with health advocacy. For instance, the development and designing of the Samoa National Health Promotion Policy (NHPP) 2010-2015 adopted the following strategic areas, such as (1) to build healthy public policies, (2) to create supportive environments, (3) to strengthen community action, (4) to develop personal skills, and (5) to reorient health services to work with other sectors and the community. (NHPP 2010.)The health promotion policy emphasizes the central role of health promotion in health. It proposed that health promotion is a process of enabling the individuals to take control of their own health and to negotiate their inclusion in matters affecting their own health. It also encourages people to look at their own health as a resource for everyday life not merely an objective of living. Moreover, it also argued that a country's economy and social development is inherently reliant on a healthy population. The Alma-Ata principles, articulated over thirty years ago, are reflected in government policy, if not always in practice, to address the social and economic and environmental issues which are central concepts of public health. The health promotion policy contains strategic directions that involve multi-sectoral coordination and support between the government, NGOs, social and economic

sectors, professional groups, social groups and civil society, so as the industries and media. It is aligned with other key public health policies, such as NCD Strategic Policies; Nutrition policies and Tobacco Control Regulations.

The government acknowledges that over the past several decades, the health status of the Samoan people has improved largely through the provision of basic health services and public health programs delivered communities. (Government of Samoa 2018). Public health achievements and specific activities that account for improvements in health and life expectancy among the Samoans include, (1) routine use of vaccinations for children against infectious diseases, (2)improvements in motor vehicle and work place occupational safety and health policies, (3) control of gastrointestinal infectious diseases through improved sanitation and clean water, (4) modification of risk factors for coronary heart diseases, strokes, diabetes and hypertension, such as tobacco smoking cessation, blood pressure and obesity control, (5) safety of food processing and handling, (6) improved access to family planning and contraceptive methods, (7) improved access to antenatal and postnatal care for pregnant women, (8) acknowledgment of tobacco as a health hazard and the ensuing antismoking campaigns and restricting tobacco smoking in public areas, (9) improved knowledge of unhealthy diet and importance of physical exercise, and (10) increasing inclusion of community organization, such as Women's Health Committees (Ministry of Health 2018).

Measures to address the prevalence of some sexually transmitted infections were fund to be "off-track" according to the Government of Samoa's 2010 Millennium Development Goals report. Although measures have been strengthened, Schuster and Schoeffel (2019:114) cite findings by Boodoosingh & Schoeffel (2018) that many teachers are uncomfortable about covering the curriculum strands on relationships and human reproduction in the health and physical education curriculum because of "the Samoan cultural prohibition of any topic with sexual connotations", especially in mixed sex classes.

Improving basic health services have resulted in progress. For example the Infant Mortality Rate (IMR) declined from 25 per 1,000 live births in 1988 to 17 per 1,000 live births in 2003, and to 15 per 1,000 live births in 2020 (World Bank, 2020). The under-five mortality rate dropped from 39 to 24 and to 17, in the years 1988, 2003, and 2020, respectively. During the same period, the Maternal Mortality Rate (MMR) declined from 140 to 107 and to 43 per 100, 000 live births. Since the turn of the 20th century, the average life expectancy at birth of Samoans has increased steadily by 20 years, from 50 to 75.46 years for female, and 71.32 years for male in 2019 (World Bank, 2019). The crude birth rate per 1,000 people has been fluctuating between 25 % and 29 % over the last decade.

Trends of non-communicable disease in Samoa

The epidemiology of NCDs and their associated risk factors among the adult population of Samoa is less encouraging that those cited above. They are thus a priority area of concern for the Ministry of Health and the Government of Samoa, today. It has long been known that NCDs have overtaken communicable disease as the dominant health problem in Samoa, and is now the leading causes of mortality, morbidity and disability (MOH 2017). The so-called "epidemiological and nutrition transition" in Samoa have resulted in high prevalence of diseases such hypertension (28.9 %), diabetes (21%), people with obesity (54.7 %), heart attack and strokes. (WHO 2013). Rates of obesity among Samoan adult female are three times those found in men. The rates of obesity have more than

doubled in the past 20 years (Lin et al 2017). Also interesting to note that obesity is more prevalent among people residing around the urban city of Apia, reflecting how urbanization and internal migration contributed to ill health of the Samoan people.

The risk factors of NCDs such as tobacco smoking among adults between ages 18-64 years old is 25.6 % and poor diet and lack of physical activities, to name a few (WHO 2013). Apparently, the prevalence rates for both sexes for obesity had increased by one percent between 2003 and 2013 (54.7 % to 55.8 %0; type 2 diabetes from 20.9 % in 2003 to 22.1 % in 2013; hypertension from 28.7 % to 29 % in 2013. Subsequently, the top five causes of death in Samoa are all NCD related, namely heart attacks and strokes (34 %), cancers (15%), chronic lung diseases (11%), and diabetes related diseases (9%). Unfortunately, the high prevalence of NCD risk factors is seen among the younger population of Samoa too, especially given that median age in Samoa is 21 years old, and that more than 40 % of the total population is less than 15 years old. The Global School Survey conducted in 2010 among 13-15 year olds found that 43.4 % of boys and 59.1 % of girls were overweight, and 15.7 % of boys and 22.3 % of girls are obese. (Fiji National University 2012)

The trends of obesity and diabetes, as noted by Lin et al (2017), saw the high prevalence of obesity already of the Samoa people in 1978 (27.7 % and 44.4 % for male and female, respectively). As a result the prevalence of diabetes among Samoan adults dramatically increased from 1.2 % in 1978 to 21 % in 2013. Interestingly, the adults reported a significant increase in physical activities in the 2012 survey compared to the earlier survey in 2002, but the overweight and obesity rates have both increased. The decreasing consumption of fruits and vegetables could explain this, but type of food containing high levels of calories were not being asked and recorded.

An estimated 81.75 % of all deaths in Samoa can be attributed to NCDs (World Bank 2019), and according to the National Health Accounts Report for FY2014-2015, NCDs accounted for over 36.4 % of total health care expenditure in Samoa. (Ministry of Finance 2014). A further cost analysis of just NCDs in 2017 (Institute for Health Policy 2017) confirmed that spending on cardiovascular diseases (heart attacks and strokes) are the most costly (11 % of the total health budget), followed by cancers (6%) and diabetes (6%). However, the measles epidemic in 2019 marked the first time since the last 60 years in Samoa, an infectious disease has ranked number one among the top 5 causes of death in Samoa.

Multiple factors are believed to have a strong association to obesity development and a causal inference of obesity such as behavioural factors leading to poor dietary patterns and sedentary lifestyle; genetic predisposition; early life dietary predisposition, and structural factors such as social economic status of the country and individuals, rural-to-urban migration, global industrialization, and world free trade rules. (Lameko 2020; Lameko 2021; Lameko 2022). Interventions of health policies and behaviour change strategies have been developed aiming to change the individual's behaviour to reduce eating calorie-dense food and drinks, and to increase physical activities. That is living an active physical lifestyle. But for decades now, very little had been achieved, and countries had just observed with desperation and speculation as the trends of both people living with overweight and obesity escalated to higher rates. (Lameko 2022)

In Samoa, the culture and people's traditions have been partly to blame, but interestingly, as noted by Lameko (2020), the Samoan culture of food has not changed; food and exchange of food

items between families and villages is still part of their culture. What has changed is the food items now dominating this exchange of food. Samoans have moved from a traditional diet consisting of root crops, fish, shellfish and birds, to a modernized diet of canned meat and fish, salt beef, mutton flaps, turkey tails, pizza, bread, rice, dairy products, and sugary drinks. (Lameko 2020; Wang et al 2017). Viali has also argued that the government of Samoa must seriously look at developing laws and policies to mitigate the negative effects of structural factors on the health of the people and especially obesity and NCDs, even if they involve intervention with market forces for the public good.

Government responses to the prevalence of NCDs

Samoa, through the MOH, had implemented 3 consecutive and successive Health Sector Plans (1998-2003; 2004-2008; 2008-2018) and the current Health Sector Plan 2018 – 2023 (HSP), which have been developed to align with the Samoa's Development Strategies 2018 -2023. The Government of Samoa, like many other small island countries in the Pacific, recognizes the high national costs of NCDs and obesity leading to the development of National NCD Control policies for 2010 – 2015, and 2018 – 2023 and the Samoa National Health Promotion Policy 2010 – 2015. A new and updated nutrition policy for 2021- 2025 has recently been published by the Ministry of Health (2010).

The focus of the first two Health Sector Plans were (1) to upgrade clinical facilities and equipment, (2) to establish a national health information system (HIS), and (3) to improve the service delivery to rural population, with an emphasis on nurse-led teams. Prompted by the high prevalence of NCDs and risk factors of NCDs, to date, during the life of three HSP, the Samoa MOH had launched and implemented three NCD Strategic Plan of Action for the years 2004-2008. This NCD Strategic Plan Of Action was informed by the findings of a WHO and MOH NCD Risk Factors STEPwise Survey which was conducted in 2002 and published in 2003. The essence of the NCD plan is to slowly move away from costly clinical treatment and hospital services, and focus more on health promotion and preventative measures. This was followed by the NCD Policy 2010 -2015 which also reemphasized the need to strengthen primary prevention and health promotion and the need to ask for more resources for implementation of activities. Interestingly, strides were made, especially with PEN Faa-Samoa, to foster community involvement and inclusion in health promotion programs.

The current National NCD policy 2017-2022 seeks to reduce the preventable burden of morbidity, mortality and disability due to NCDs, through multi-sectoral collaboration and the national level. Health promotion and Food Policies also emerged during the life of the HSP and NCD SPOA. A lot of new areas and disease entities have been included in the current policy. For instance, the current policy have included indicators to address CVDs, cancers, diabetes and obesity of population and chronic lung diseases. It has also taken a stance in oral heath, auditory health, palliative care, dermatological diseases, reproductive health and disaster preparedness as related to NCDs. Samoa's health policy is now re-emphasizing community-based interventions such as school programs to promote physical education and after-school sport, and engagement with village women's committee to support screening of NCD risk factors in members of the community and referring those at risk for treatment.

The Search for Answers and New Perspectives for the Health of Samoans

Better research methods and tools are among the top public health needs for Samoa. Although Samoa's Government is slowly re-emphasizing the return of its health system to public health and community-based interventions, there is a great need for new baseline data regarding the impact of the activities already being implemented under the previous Health Sector Plans and other public health policies. The MOH will have to adopt a more active approach towards health research to increase understanding of real health issues at the community level. MOH needs to facilitate research by the National University of Samoa, Oceania University of Medicine and overseas research organizations to train local researchers and, if necessary train health workers in research methodologies and how to conduct research projects at the community level. Knowing the health profile of the country and the district where you work will give health workers more understanding of baseline problems within that district. Evidence supports action; it helps to point to the best ways improve access and quality of health services leading to better preventative outcomes. For example health workers need to know the nutritional intake of the young children in their district and the prevalence of anaemia and malnourishment among them. They need to understand the underlying social and economic issues of malnourishment. Little is currently known on this subject. Another fact that needs to be known by health workers in is whether there are equity issues in communities, in terms of accessing health care and public health activities in Samoa, and there are norms and practices in communities that may negatively affect equity.

The MOH needs to base its public information activities on evidence about how both individuals and groups of people view their own world and social relationships; how they identify things as being problematic in their own terms. Such practical knowledge will help to inform people in ways they can relate to, to create their own healthy communities and environments. It is often the case that sponsorship by external donors sparks the implementation of health activities which are short-lived, followed by a lack monitoring and evaluation of the impact on the health on whether the expected health outcomes were achieved. There is a need to know and learn about "real" social processes at the community level in order to understand the health issues at that specific level. For instance, more knowledge is needed on what people eat on a daily basis; what children do after school, and what aspects of the lifestyles of men and women are undermining their health. The strategy to build a healthy environment as articulated by the National Health Promotion Policy (NHPP) 2010-2015 is indicative of the importance of environment where people live, grow, schooling, religion, leisure, and sports, to name a few. The NHPP 2010-2015 also saw the shift of the focus from just health care and clinical services to social and economic determinants of health in Samoa. While this was a great way forward for the health system in Samoa, the lack of new data and information was counterproductive. Public health issues including the heavy costs that diseases have on the economy also need to be made known at the governmental level of Cabinet. Not least, in the economic hard times Samoa is facing along with most of the world today, there is a need to identify how the government could provide health services at a less-rapidly-rising expense, specifically the budgetary costs of hospital and medical care including services of nurses, physicians and surgeons.

An independent report written and submitted by a consultant in 2013 immediately pointed out the weaknesses in the application of monitoring and evaluation framework (M&E) and absence of valid baseline measures in many areas of the health sector plans in the previous years, between 2008 and 2013. (Davies 2013). It further explains that while planning and drafting new health policies and

legislations was well done, monitoring of the implementation and outcomes was lacking. Samoa is no stranger to strategic planning, which has been incorporated into government processes since the 1990s. Strategic planning is based on expected and targeted outcomes, which require careful monitoring so that progress to be calculated, and failure recognized, analysed and corrected. Such measures must be used to assess the efficiency and effectiveness of health sector plans, both past and present, including non-communicable diseases strategic plan of action (NCD SPOA), Nutrition Policy, health promotion policies, and others.

As part of surveillance of diseases, the MOH should establish separate national registries for cancers, diabetes, hypertension, strokes, heart diseases, and obesity. For example the WHO Package of Essential Non-communicable Disease Interventions (PEN) termed the PEN Faa Samoa programme, which is a community based program to identify NCD risk factors and refer people at risk though their local hospital. The findings from PEN groups should be to collate into with hospital registries to reflect a true picture of prevalence of NCDs in defined populations. There is a need for a registry of children presenting with illnesses at the community level for conditions such as asthma, hearing and oral problems, physical and intellectual disabilities and other chronic conditions. At the same time, village health workers, together with the MOH data officers should make time every week to record some of these upstream factors and data: social and cultural determinants; education level and literacy level; employment levels; water and sanitation standards; religious practices; decisions being committed by leaders of the community; workplace environment; school environment; home environment; church environment; family planning and structure; housing conditions and crime levels.

More research on the social determinants of health is needed; these may be political as well as cultural. If the government of Samoa is to offset the rising costs of treating NCDs, it will have to explore through research how the social issues may have a negative impact on the health of the population. Such social issues include, violence against girls and women, teenage pregnancy, unemployment, child bullying, crimes against property, fighting, suicide and homeless, to name a few. The question of why some Samoans are healthy and others are not needs to tie to in this conversation and to explore social-economical-status (SES), education level, and the community status of the people. It has long been known that in wealthy countries, those who are well off financially live longer and healthier lives than do the poor. Do we know that for the Samoans? The MOH will also need to examine the risk factors of NCDs found in the work place environments to help them plan for preventative actions. Furthermore, there should be a repeat of a WHO STEPwise survey, to collect new data to inform policy development and a new HSP 2023 -2027 and the New Pathway for the Development of Samoa 2022-2227. After all, the MOH urgently needs a working HIS In order for the information from rural and GPs to link to the central MOH

Community members must consider themselves as the essential voice in matters affecting their health and wellbeing, and have a sense of “ownership” and self-reliance towards health programs which aim to prevent diseases and promote physical and mental health. One of the failed instances of PEN Fa’a Samoa programmes involved a WHC who expected to be paid for implementing it (Schoeffel 2016). A good place to start is to conduct a survey to explore and examine the level of awareness among the community members about the risk factors of NCDs and how to prevent them, because presently there is no baseline assessment date against which to measure change. Another initiative for MOH’s goal of equity is to ensure that health workers understand that traditional Samoan

hierarchical values may have negative impacts by deterring people from seeking health care, which must be overcome.

Health education activities should include youth in the form of seminars to discourage them from taking up tobacco smoking and binge consumption of alcohol, and practice skills with health benefits such as growing vegetables. Screening of risk factors of NCDs should, as under PEN Fa'a Samoa programme in some villages, be conducted by all WHCs with the help of district health officers. Support systems for people living with NCDs and complication also need attention. With the high prevalence of NCDs, patients need support systems such as appointment scheduling and especially a recall system for regular medical check-ups and refill of medications. Keeping baseline data and health information at the village level will help them analyse the trends and apply the appropriate actions. Women should be educating on breast-self-examination techniques, and men should be move aware of the need to have regular screening for symptoms of prostate cancer. Screening village school children for overweight and obesity at the village level could also be done with WHCs who could also learn the appropriate advice to give parents or caregivers.

In addition, the GoS should introduce a tertiary prevention program as part of public health to reduce the development of NCD complications. There is a need to establish formal palliative care services on both islands for cancer patients and those with other chronic illnesses for pain management and rehabilitation and mental health support. Samoa has some very effective NGOs working with people with disabilities but these often don't reach rural areas. The government should assist NGOs to support people living with permanent disabilities. MOH might consider implementing Continuous Quality Improvement (CQI) program based on the Australian model for chronic care, called Audit and Best Practice for Chronic Disease (ABC) (Bailie RS et al 2007). In the future, Samoa will see more Samoans living longer which will bring new challenges specific to the geriatric patients.

As previously noted, government should be willing to resist commercial pressures where public health is concerned; this should cover restrictions on advertising and imposition of taxes on alcohol, cigarettes, sugary drinks and foods with low nutritional value. There should also be a strict and ongoing policing of current health regulations, such as smoking in public places, and a partnership approach for a healthier Samoan between MOH, other government agencies and the private sector

The education sector also needs attention. Since 40 % of the total population is those 15 years old and less, the government should review its health education curriculum with specific topics about NCDs in schools. This will educate the young population of Samoa about the upstream risk factors of NCDs and how to prevent these diseases from developing later in life as adults.

The institution by the government of district development committees supported with funds for practical budgeted proposal could benefit public health by examining, for example, the water and sanitation situation in schools. The district committees could encourage villages to choose their school committees widely and spot-check schools to inspect their sanitary conditions and adherence to the policies of the Ministry of Education Sports and Culture. They could request the National University of Samoa to conduct a KAP survey among parents about children's attitude towards obesity, heart diseases, cleanliness, and after school activities. District councils could also subsidise equipment, transport and market outlets for local food producers to increase food supply and lower prices, improve rural access roads, and work with villages to overcome the theft of food crops and their

destruction by wild pigs. The churches should also advocate for healthy living and physical active living at the community level. Using children as role models of health behaviour changes could possibly spark change. (Lameko 2022).

Measures to start a Health Promotion Foundation in Samoa, as provided by an Act of Parliament Act in 2018, need to start now. Given the need to increase the research capacity of the MOH, one could propose to combine the foundation and research, and perhaps called it the Health Promotion and Research Foundation of Samoa. The MOH should also revive the NCD Steering Committee established in 2016, and the Physical Activities and Nutrition Task Force, and review its memberships to ensure community members are also involved in the planning.

Health professionals should take the lead in promoting physical and mental health in the country. At the same time, it is crucial for the MOH to sort out the internal leadership differences among the health professionals. The health professionals, need to weigh in and lead the fight against NCDs by example. They should serve as models for other sectors in promoting healthy physical health and health behaviour. It should start by requiring by all health officers to quit smoking tobacco, and ensuring their body mass index (BMI) is in the normal range. A study by Siva and Lameko, (Ravishankar and Lameko 2021) and an unpublished study by Lameko and Patu, (Lameko and Patu 2010) shows that many medical doctors in Samoa are obese and suffering from NCDs themselves. A new study by Lameko 2022, among all Samoa doctors is being done, to get more precise data. MOH should considered getting the SQA to accredit the CME and Nursing CPD, Dental CE and all allied health professions to have some form of Continuous Professional Development (CPD) program.

Warnings on the global threat of new and re-emerging tropical diseases had been issued by the WHO over the previous decades. The measles outbreak in 2019 in Samoa, made an infectious disease appear in the top five causes of all death in Samoa, for more than five decades. It was thought to be brought into the country by a young child who travelled from NZ, via Auckland international Airport with her parents. In was compounded by a low level of MMR vaccination over the previous year, owing to the fear of parents to take their children for vaccination after two babies died instantly after a nurse administered a wrong medication, instead of a vaccine (Boodoosingh et.al 2020). The incident led the government to call for an investigation and a court case, which took a year, while in the meantime, children were not getting vaccinated. In addition, the threat of new infectious diseases has been issued by the WHO and the predictions came true when Covid19 because a pandemic in 2020. It places a lot of pressure on developing countries like Samoa to come up with efficient diagnosis tools, better control of exposure and designated isolation facilities, and hospital and ICU beds for the severe cases. Samoa has learned from its past mistakes and successes and must be prepared for future outbreaks of infectious disease.

Conclusions

There is a clear call for the Government of Samoa through the Ministry of Health and partners (national or international) to formulate new strategies to address the current issues and challenges towards and within the health system of Samoa. Whilst the current Health Sector Plan is still valid, there is a need to develop a new Health Sector Plan to align and capture the new political agenda and aspirations written therein the new Pathway for the Development of Samoa 2023 – 2026, set forth by the new government and with clear guidelines for monitoring, analysis and assessments. In this article

I have aimed to summarize that situation. Progress will depend on the Samoan health sector, with local communities and development partners to come together to identify a set of locally appropriate, evidence-based measures to halt the rising prevalence and increasing risk factors of NCDs and obesity-related diseases. Expensive technical and clinical services at the top of the health care system are not the right model for Samoa. Far more investment is needed to fix the contributing causes which have been outlined. While Samoa needs to continue to building its human and physical capital, it also needs to implement broadly based reforms; structural, financial, interpectoral collaboration and readiness for future threats. Over the next decade there should be continued efforts to renew the work of Women's Health Committees and encourage and support them towards the ownership of health activities at the village level, and to look at establishing new such committees in the emerging peri-urban areas. I have argued here for legislation and "unpopular policies" making salty, sugary, and fatty foods more expensive while subsidizing the means of increasing production of fresh local produce for the consumers. The three public health broad areas I have mentioned in this article needs to be revisited by the Ministry of Health and the Government of Samoa, namely, (1) health education programs in communities and schools (2) conducting screening programs at the community level, and (3) developing policies and enacting laws for a healthy Samoa.

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