Evaluation Report:
Primary Level Diabetes Care Capacity Building Project

Date: 10/11/2019

Author: Viliame Qio

INTRODUCTION

Diabetes Fiji Inc in partnership with Ministry of Health and Medical Services rolled out the Primary Level Diabetes Care Capacity Building Project in 2013, with a view to strengthening primary level Diabetes care and promoting diabetes awareness, through the support of World Diabetes Foundation.

The choice of this Goal reflects a desire to optimise the clinical management of diabetics and to decrease the morbidity related to Diabetic sepsis and amputations. Based on NCD Steps Survey in 2002 and other anecdotal studies, Diabetes remains a major burden for the Ministry and the prevalence currently stands at 16.2%. The prevalence has increased 4-fold in less than 2 decades, from 4% in 1985 to 16% in 2002. There is also lack of awareness among people of their diabetic status and only 12% who were part of 2002 NCD Step survey were controlled with medication. The Ministry of Health's Annual report also states that the admission to hospitals for Diabetes and its complications doubled over the past years.

The economic burden from the disease is also demonstrated by staggering 20% of offshore expenditure by Fiji spent on Diabetes related complications. Further, according to the World Health Report (2003) and about 6% of the health budget is spent on Diabetes. Diabetes accounts for about 5% of admissions to surgical units and in many cases, patients undergo 5-7 surgical intervention before amputation. The amputation rate from Diabetes has been gradually increasing from 20 to 36 per 100 admissions over the past 5years. There were a total of 1445 admissions for Diabetes and its complications in 2009 of which 32% had ulcers, 4% had renal complications and 3% with eye complications such as cataract, background, and proliferative retinopathy.

Given the above status of a diabetic related complication which has led to a major burden for the Ministry of Health in Fiji, a systematic and comprehensive approach is required.

Considering the broad nature of Diabetes related issues, the project focused mainly on clinical management and prevention of diabetic footcare in Fiji.The report highlights the impact of the foot care project.

Project objective:

The primary objectives in the project were to:

- Strengthen the capacity of health service providers for prevention and management of diabetes with special focus on diabetic footcare;
- Equip the health facilities for improved diabetic management including diabetic footcare with essential medical equipment and supplies; and
- Improve health seeking behavior among the communities especially the high-risk population and diabetic patients especially on diabetic footcare.

Evaluating Project Targets:

The project has achieved all of these objectives.

1. ***Objective 1: Strengthen the capacity of health service providers for prevention and management of diabetes with special focus on diabetic footcare.***

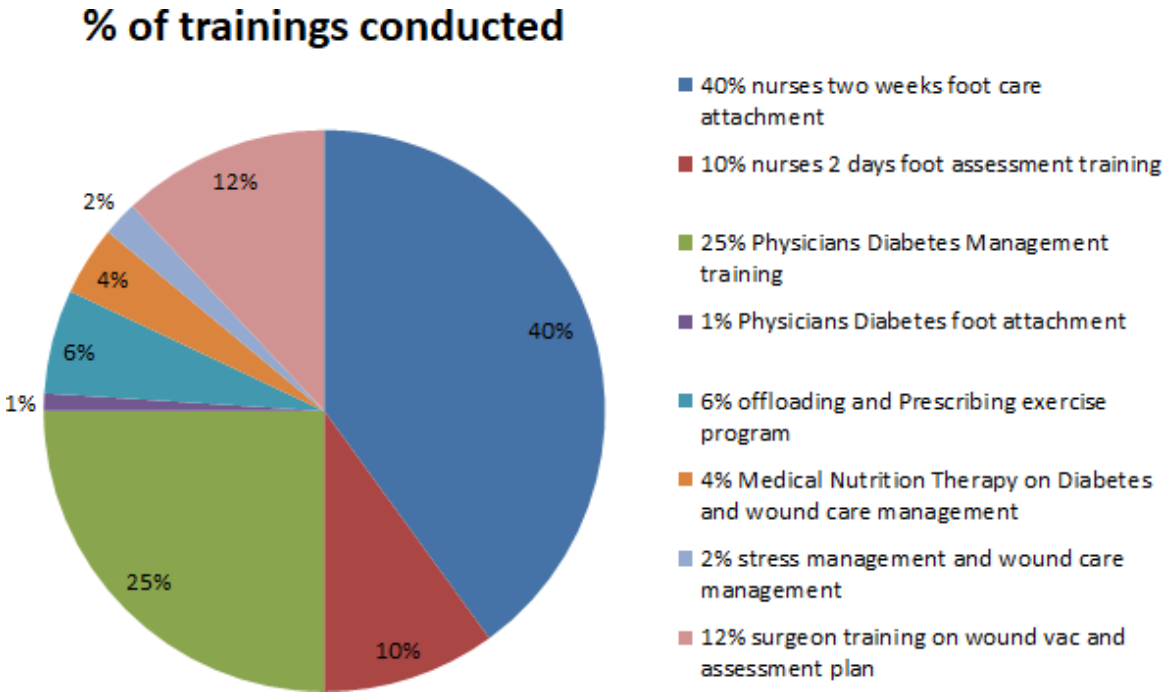
The three steps footcare training manual has been developed for the two weeks training

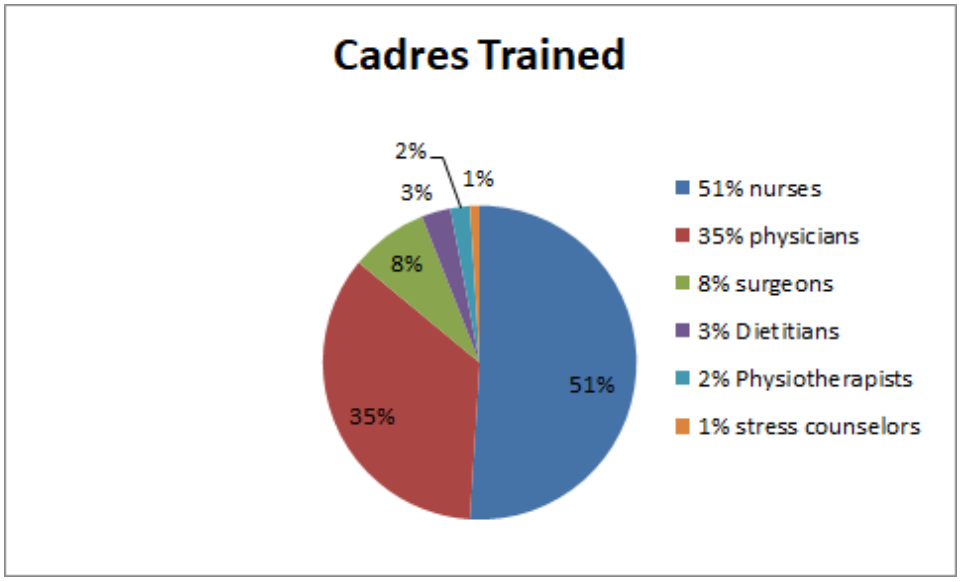
- A foot care assessment form was also developed and now been used by nurses.
- 263 Nurses undergone 2 weeks attachment.
- 180 Primary care physicians attended two days diabetes management training.
- 519 nursing and 467 medical students undergo their 1 week attachment training at the hub.
- A total of 36 surgeons undergone a training facilitated in visiting surgeons from Indian and Humanitarian missionary and Podiatry surgeon from California.

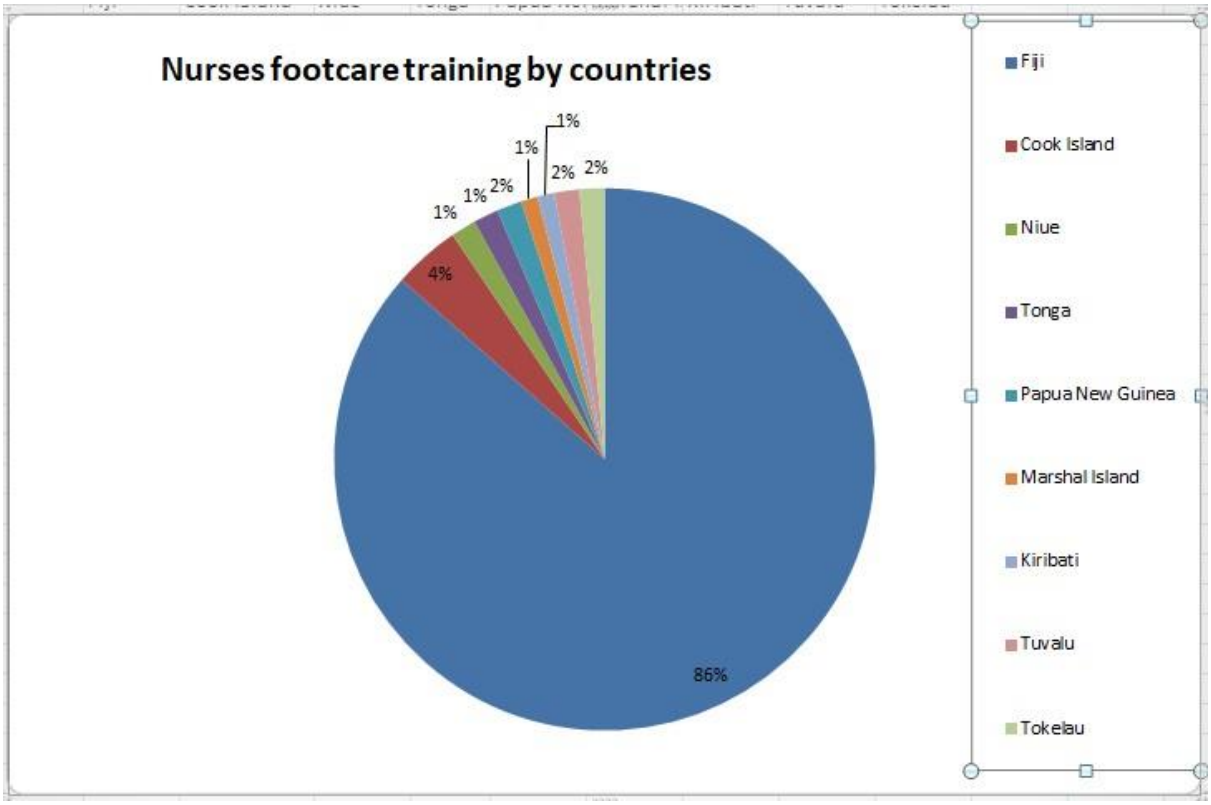
The project has also delivered:

- *Training of 16 Dieticians on medical nutrition therapy on Diabetics with special focus on wound care.*
- *A volunteer podiatry surgeon was attached with the project for 18 months through the support of LDS Charities. The Podiatrist worked with nurses, physiotherapists, and surgeons, improving offloading, dressing techniques etc.*
- *Eight physiotherapists were included in the training of offloading for neuropathic ulcers, FFA etc.*
- *Training of counsellors on diabetes and mental health in relation to poor healing due to many stress factors. Total trained 8*
- *Two footcare symposiums were undertaken on strengthening network of footcare with other cadres and institutions. A resolution was also submitted to the Minister for Health and Medical Services.*
- *A Clinical Service Network meeting was conducted and resolution submitted to Minister for Health and Medical Services.*

- *Doctors attached at the foot clinic for 1 week to improve communication with foot care nurses.*
- *Training of footcare rolled to 8 other countries in the Pacific.*
- *Two days Assessment training conducted to community nurses (zone nurses). Total trained 63 nurses.*







Results:

The training has evolved from foot care training which is the pivotal part of the project to other cadres training to enhance holistic approach in wound care management. Also the training has gained interest from Pacific Countries bringing nurses to be attached at the hub for training.

1.0 SUCESS STORY OF THE NAQALI HEALTH CENTER

The footcare project has trained more than 200 nurses around Fiji. The audit team visited one, Naqali Health Centre, located in the province of Naitasiri. The Health Centre has the busiest clinic, with the population more than Vunidawa medical area. Despite this, Naqali was able to do foot assessment to 80% of their diabetic patients. It has also saved 60% of foot ulcers cases from amputation.

The biggest problem which not only faced at the clinic but around Fiji is patient presenting very late with their foot problems. Most resort to herbal treatment at very early stages, deteriorating it more and then present to the hospital when the condition has really worsen. It is very late for foot care nurses to intervene as infection has penetrated severely.

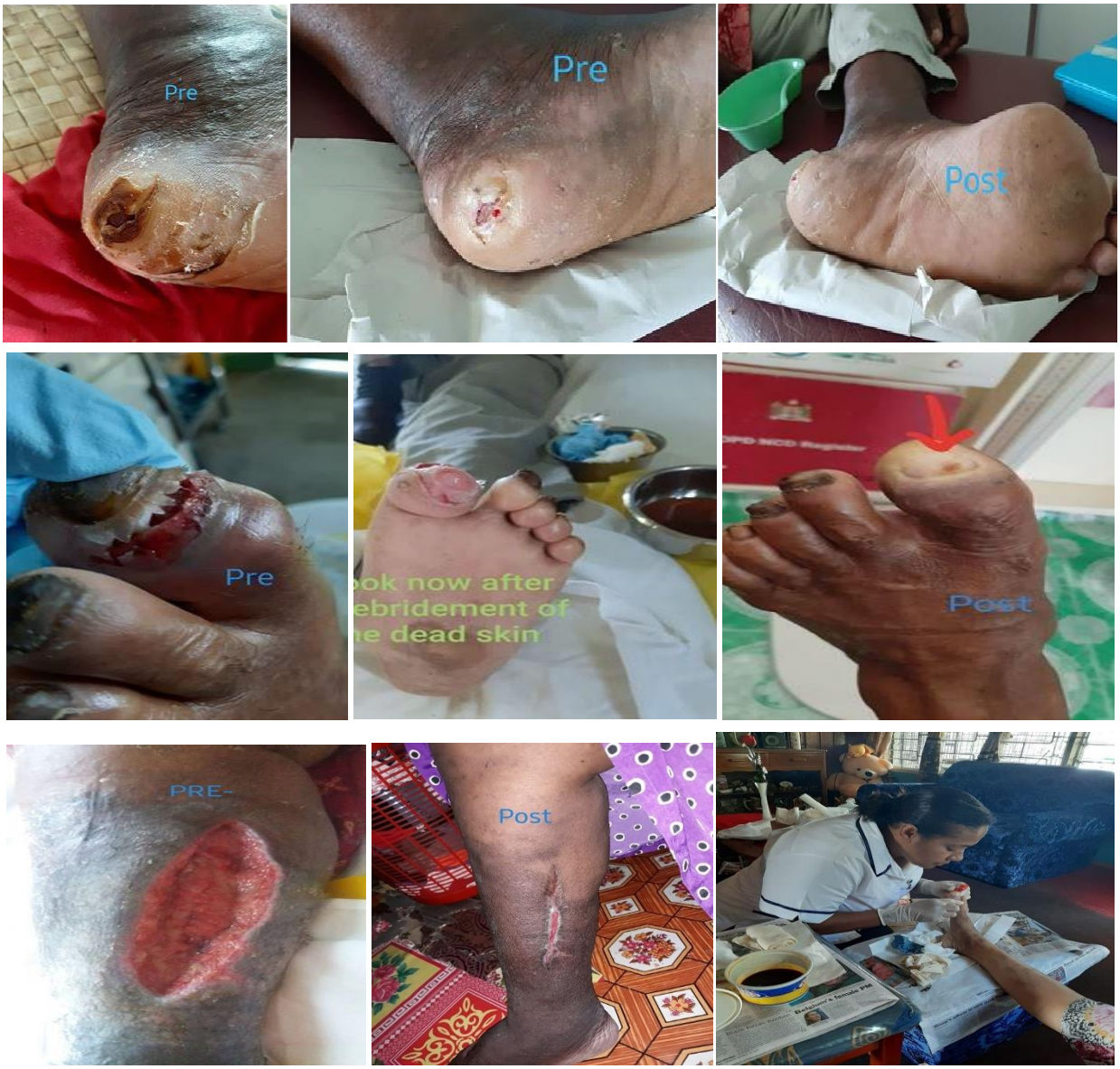
S/N TavaitaDau a clinic nurse at Naqali Health Centre is behind this achievement. Trained in 2017 her sentiments about the training as quoted from an interview with Fiji Times, 2nd August, 2017. “We have both patients with diabetes and hypertension. We have more than 150 diabetes patients in Naqali” She said.

Back at the health centre, dressing for diabetic foot, we applied saline, washed and send them home, but here we debride some of the thick skin in the wound and if it’s clean we apply some other creams”.

She said she also learnt how to dress the diabetic wounds with honey and Betadine solution.

Sharing where her passion for foot care draws from was how patients shed tears when their wounds are healed knowing that they have been saved from amputations that could have changed their life forever. Most diabetics in the area are farmers; her work has built a rapport relationship between her and her patients. She also shared that healing not only comes from dressing done or the medication used but using other approaches she learnt from the training which is stress management, spiritual life with diet and exercise. In most cases wound healing can be delayed if these areas are been neglected. Therefore S/N Tavaita spends extra time with patient to provide counselling.

Below are some of the pictures of success stories from her clinic.



1.10 Success Stories from our trained foot care nurses in Tonga

MINISTRY OF HEALTH
TONGA

Dr Dean,

From: Kendall Shumway <kpsdpm@gmail.com>
Date: February 22, 2019 at 1:09:24 PM MST
To: cdc<cdcdpm@aol.com>, hans.sorensen@ldschurch.org
Subject: Re: Prosthetics Program for Pacific Islands

Not sure how I neglected to tell you another exciting development. While in Tonga this last visit I went out to visit some of the community health centers and the NCD nurse that took me around had a project last year to screen all diabetic feet in her area. (one of seven health centers) She knew exactly how many people she covered and how many of them were diabetic. I think it was something close to 4,000 patients with 423 of them being diabetic.

Seilini Soakai (who you trained in Fiji) had shown them how to make their own monofilaments with fishing line and they had screened 97% of their diabetics feet and had a presentation and graph of their project on the wall of the community health center. Litania- the other nurse you trained- is the main wound care giver at this point at the hospital. She said they did not have any amputations in the whole country for the months of November and December. Pretty incredible. While there Litania told me she has been recommending a certain sandal that is available in Tonga now for her patients. I sent an email a few days ago asking if she would send me a photo of the sandal- and it was of a Croc shoe. An upgrade from the sandals they typically wear but still would be very difficult to off-weight. Would love to get together again for any further input you might have.

With much

appreciation,

Kendall.

LDS Humanitarian

Missionary (LDS

Charities– Project

partner)

LDS

Foot care Nurse: AkoteuLitania(centre)

Footcare Nurse: SeiliniSoakai

Objective 2: to equip the health facilities for improved diabetic management including diabetic footcare with essential medical equipment and supplies

- Established a reporting system for footcare infiltrated in the current system.
- 15 dedicated established foot clinics opened;
- 48 Special Outpatient Department clinics have footclinic incorporated while 85 health facilities have foot care services;
- A more improved communication with surgical team including viber chat;
- Surgical team now providing outreach to communities.
- Post training conducted to 148 health facilities;
- Improved medications used for dressing. Saline dressing was commonly practiced previously which has now changed to Betadine and saline dressing. Including seven more dressing medications with different purposes.
- Improved practices from daily dressing to wound care management, resulting in drop of workload, better care with more time spent with patients. Also they are empowered to do own dressing with given consumables, this saved their daily transport cost;
- Improved equipment and toolkit from basic dressing tray to more toolkits
- Converting container into clinic has addressed the lack of space for foot clinic.

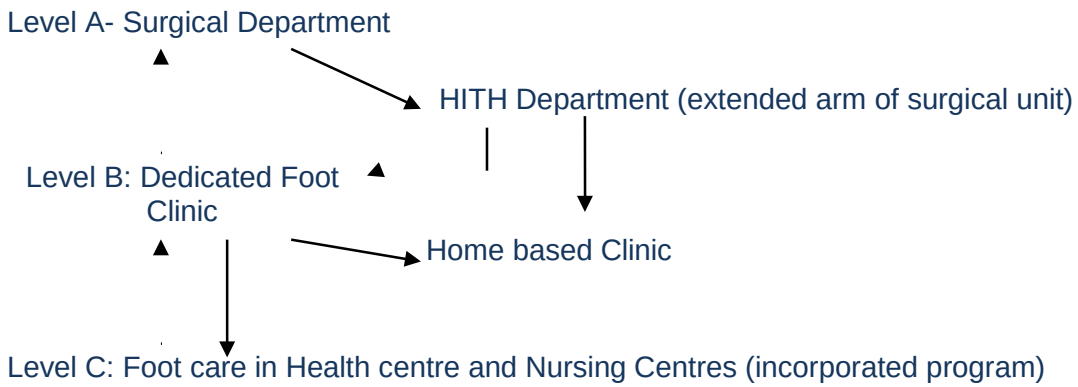
The Project also delivered:-

- *Objective 2: to equip the health facilities*
    - *Felt padding and modifiable shoes distributed to foot clinics for offloading with support of LDS Charities and Ausaid program.*
    - *Ambulatory offloading materials to footcare nurses and physiotherapists with support of Equal Meds organisation.*

Results:

From 3 to a 15 dedicated foot clinics established today. Also there has been an established referral system that improves foot care management with more holistic approach with basic standard of procedures equipment in foot clinics.

REFERRAL SYSTEM



Level A:

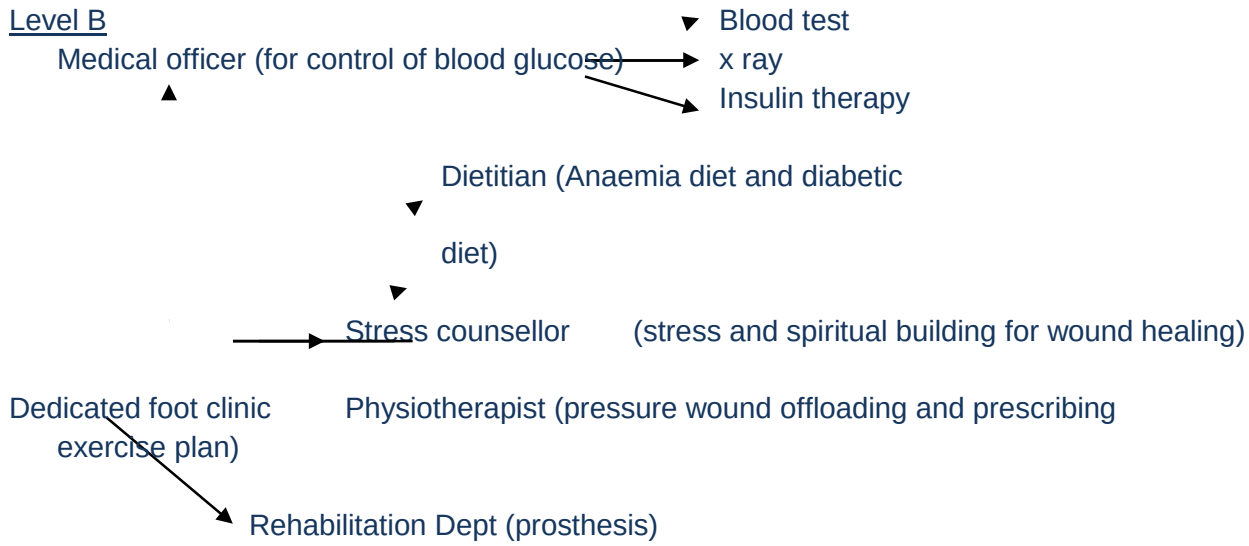
Surgical intervention- debridement and amputation.

HITH Dept- Since patients are discharged from hospital within few days after amputation, care are completed at home due to shortage of bed with a surgical unit set up to complete care by visiting them at home.

The HITH and surgical unit conduct outreach to dedicated foot clinic to assess patients and conduct early surgical intervention to avoid amputation.

Cases are also referred to Home based clinic if patient is totally bed ridden or confined to wheelchair with very limited movement.

Level B



The dedicated foot clinic works in a more holistic approach with links to various department and units for better management of diabetes foot sepsis.

Medical officers (M.O)- Patients are also seen by M.O if there is a need to have blood glucose controlled, also xray done such as cases of osteomylitis, and last necessary blood test on HbA1c, Hb etc.

Dietitian- Patients are advised on diet to improve blood glucose and also promote wound healing.

Stress counsellor- advise on stress management and spiritual building to improve blood glucose promote wound healing

Physiotherapists- very crucial cadres, as most cases needs offloading whether is mechanical or ambulatory and also prescribed exercise plan according to patient's condition.

Rehabilitation- referred for prosthesis

The unit accepts cases from Level C and also cases discharged from surgical ward or HITH unit. Its also works with Home based department when cases needs home management.

Level C

Cases seen at Health centre and nursing station level and refer to dedicated foot clinic if need further management.

Foot care is conducted on specific days in the week (such as Tuesday and thursday).
Also foot care nurses visit cases at home.

Key activities:-

- Wound care management
- Awareness and education
- Outreach program
- Training for caregivers and village health workers on home wound management.

SOP FOR EQUIPMENTS

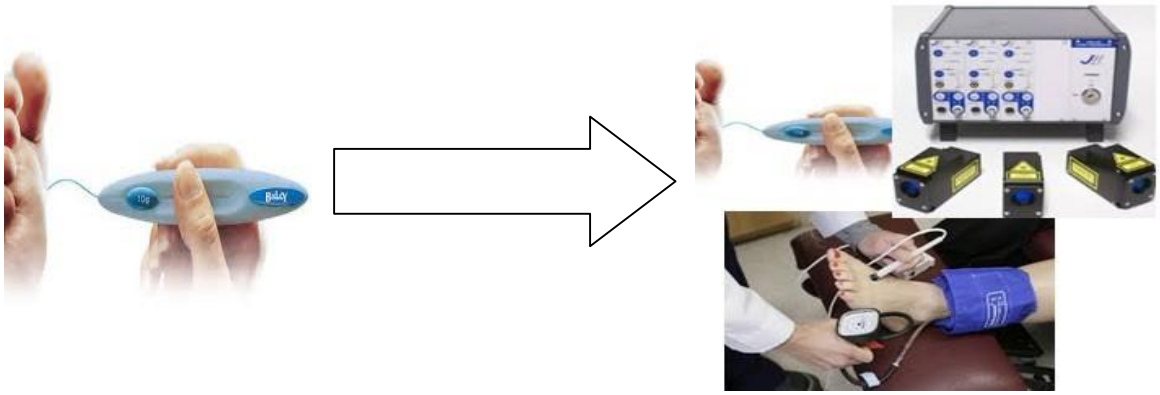
LEVEL B	LEVEL C

• 5 dressing trays3 tissue nipper
• currette
• 2 probe
• Doppler
• Monofilament
• Podiatry chair
• Medications
• Silver nitrate
• Purocol
• Autoclave machine
• Dressing trolley foot couch
• Foot stool
	• 2 dressing tray
	  ○ Nail cutter-1
	  ○ Tissue nipper-1
	  ○ Curette-1
	• Monofilament
	• Dressing table
	• Foot couch
	• Foot stool
	• Bededine solution

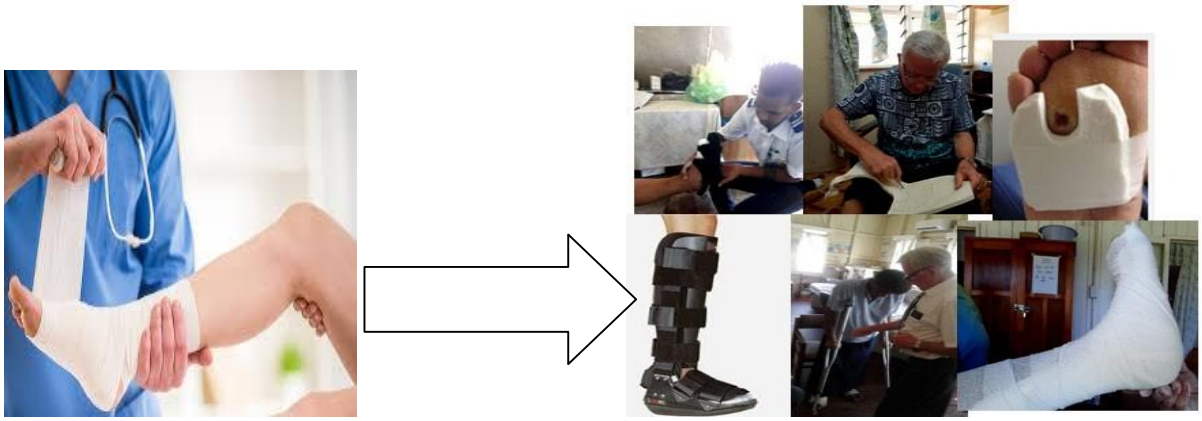
Project Impact: *An evaluation into the project from 2014 to 2018, how much it has impacted*

Before project **After project**

Normal saline was used in all wound dressing (L) Now different medications on different diabetic wounds presented

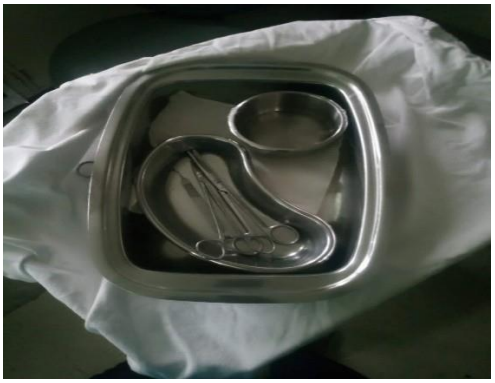


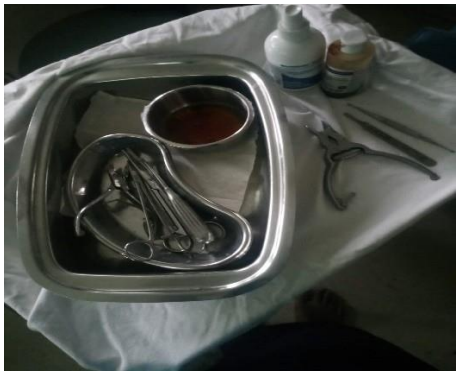
Foot clinics are now using many other assessment kits to check for pulse and nerves



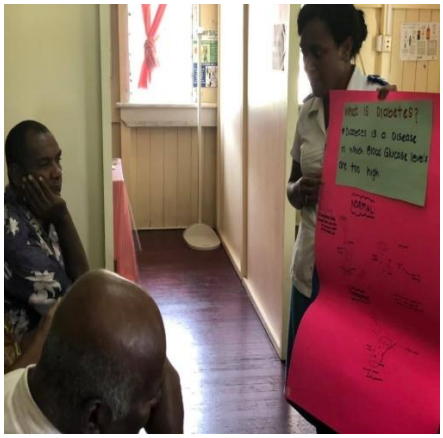
The project has brought in different offloading to reduce pressure on wound and increase healing, modifiable shoes, felt padding, moon boot, crutches, wheelchair and walkers.

Before project **After project**





The transition from basic dressing tray to a more equipped tray with essential footcare instruments that has boosted wound care management making work more easier and faster.



Our foot care training has now been recognised by other Pacific Countries. The success of our Pacific trained nurses have raised interest of Pacific Nurses. Left our Koro H/C Nurse and right is nurses from PNG.

Distribution of equipment, medications, and instruments for dedicated foot clinics

No	Items distributed	No of item distributed
1	Toolkits	210
2	Monofilament	515
3	Dressing medications	180
4	Foot couches	35
5	Foot stool	45
6	Autoclave machine	1
7	ABI machines	20
8	Moonboot	86
9	Modifiable shoes	450
10	Walking aid devices	87
11	Dressing trays	120
12	Clinic stools	28

Distribution of equipment, medications, and instruments for health facilities with foot care services

Charts can be improved

Results:

All health facilities are equipped with necessary footcare toolkit and 80% are with necessary supplies and medications

- **Objective 3:** ***To improve health seeking behaviour among the communities especially the high risk population and diabetic patients especially on diabetic footcare.***

    a. 7 young juvenile camps conducted
    b. 30 Diabetes community peer groups established, which include 2 groups (west and central) for young people living with diabetes
    c. No of community outreaches and screening 4,068 with 40, 282 attended.
    d. No of people screened with diabetes: 39,679.
    e. 1 national community peer group symposium was held with presentations of achievements on the peer group program done to Assistant Minister for Health, heads of divisions and stakeholders
    f. 2 NCD/Diabetes Congress conducted to map all NGOs, CSOs, faith based, sporting bodies and other stakeholders who are carrying NCD and Diabetes program. This was done to ensure collaborations between Ministry of Health and stakeholders minimize duplication of works, and sharing of information and data.
    g. 1 media advocacy workshop conducted to strengthen collaboration with media partners
    h. 6 Sugar sweetened beverage workshops conducted around Fiji

The project has also delivered:

a. Partnership program with Basketball Fiji and Fiji Volleyball Federation to address NCD among women in rural setting and suburbs. A tailored program was also made for children during school breaks.

b. Partnership program with faith based bodies. Seventh Day Adventist promoting healthy cooking practices and sound nutrition to women in communities. Sai Organisation conducting health on wheels outreach to rural communities.

c. Corporate screening and awareness with Ministry of Health and Medical Services

Collaborated in awareness program including 5k runs, booth displays during festivals and outreaches.

Success Story:

1.2Success story of Ravuka Peer Support Group

Located 20minutes drive from Sigatoka town towards Nadi Airport is Ravuka peer group. The members are mostly consisting of retirees, housewife and farmers. Staff Nurse Amelia Volavola while posted at Sigatoka Health centre decided to establish this peer group after identifying it as community with high number of people living with diabetes. Without hesitant the peer leader was elected and the project officer supplied necessary equipment and consumable. The peer group meets fortnightly and the peer leader would record their results. Unfortunately the peer was mostly women and men were hesitant to come as they were labelled the diabetics group.

The drawback did not last long after one of the prominent men in the village was admitted at Sigatoka with diabetes foot sepsis. The patient was ruled out with Methicillin-resistant Staphylococcus aureus (***MRSA***) ***infection***, condition caused by a type of staph bacteria that's become resistant to many of the antibiotics used to treat ordinary staph infections. Fortunately the peer coordinator, S/N Amelia was his footcare nurses and convinced his medical officer not to refer to Lautoka Hospital but if she could attend to it, daily. She even visited him daily after work when he was discharged.

During this time he realized that if he wants to save his limbs then he need to accept his diabetes and change his lifestyle. A change of lifestyle also brought a change of mindset. The women were surprised when he limb in with his crutches to join the group fortnightly meet.

Today Semisi is walking again and has totally changed his lifestyle with his blood glucose is at a normal level and is off medication now on diet control only.

The group has impacted lives of the members. This is evident in their blood results with a 60 percentage of members have improved blood glucose.

The group requested for a vacant land for their gardening. The women displayed their capabilities with their produce they made. The vegetations have really changes the landscape of the village beautifying it with varieties of vegetable garden.

The group continues to make changes in the village not only by improving supply of fresh produce but conducting awareness during village meeting. This resulted in the village heads agreeing to have smoke free homes in the village.

The group is visited by medical professional every quarter doing training and awareness. They are also involved in learning activities and peer to peer sharing to motivate each others.

The group celebrated another milestone when the village was declared smoke free home by Nadroga subdivision.

	Start of Peer Grp (before)	2 yrs (after)		Start of Peer Grp (before)	2 yrs (after)
HbA1C (3 months average blood glucose control)	8.9- Average	6.3	Cholesterol	5.4- average	5
	11.3- highest 7.3 lowest	8.6- highest 5.2 lowest		7.6 highest 4.8 lowest	5.24- highest 4.7 lowest
Kidney test- eGFR	65% average Highest- 78% Lowest-24%	86% Highest-90% Lowest-65%	Foot	95%-Normal 5% -acute	100% normal
Skin	3 demartitis 1 kanikani	0 dermatitis 1 kanikani	Tuberculosis	Negative	Negative
eye	Nil assessment	1 - injuries	Knowledge Attitude Practice	K-35% A- 20% P-30%	K-80% A-100% P- 80%
Paps smear	Nil assessment	Clear and Normal	Prostate cancer	Yet to test	

Poor control

Fair control

Better control

(The change in colors from red to yellow then to green indicates improved health and targets achieved)

Medical visit during a peer meeting (L) a fortnightly peer group meeting and check (R) Below is the peer group vegetable garden, done by peer group members

Semisi sharing his story during village meeting(L) the success of the peer group setting Yadua village Tobacco free home. Members standing behind SDMO Nadroga and Roko Tui Nadroga (L)

Young Diabetes of Fiji

The Young Diabetes of Fiji (YDF) was established during the Juvenile Diabetes camp to empower and support diabetes prevention among children and to raise awareness about childhood diabetes. YDF continued its program on one child one machine to assist underprivileged children who cannot afford to purchase his or her own machine. The group also made efforts to reach out to the young diabetics living in remote areas to provide peer support and counselling.

One child one machine

The programme runs into its fourth year providing Glucometer to underprivileged children.

The programme was initiated to provide unprivileged children an opportunity to own a machine. Having a machine allows type one to regularly check their blood glucose and titrate their insulin if necessary.
The daily checking has improved the health status of many diabetic. Improved blood glucose improved HbA1c and Kidney function.

Success story

Waking up from a coma after three days at the emergency department with her lower limbs immobile with multiple fractures, the last thing she remembered crawling out of the slope near World Harvest Church after been hit and run by a taxi. She was rescued by few pass by with her clothes covered with bloods. Totally traumatized and enduring the physical pain, she set beside her bed contemplating her next move as the doctors has also diagnosed her with type 1 diabetes. “I don’t know where to start or where to go as I will not be able to walk again and psychological worry about diabetes and its complication has shut a bright future in front of me”.

Maraia Loqaniquto lived in at the HART home with her elderly mother and two younger siblings. She was fortunate to recover fully from the accident by strictly following a rehabilitation program with the physiotherapist. But her diabetes was never been on her side. Hospital has become her second home, as she was regularly having Diabetes Ketoacidosis (DKA), a serious complication of diabetes that occur when the body produces high level of blood acids call ketone. The condition develops when body can’t produce enough insulin. After 5yrs her organs were failing. Her visions have really deteriorated and urgently needed a laser treatment as advised by the eye department. Her kidney function was getting

low and she has developed many skin problems. She was always defaulting her clinic and also financially constraint to purchase her syringes and insulin at rare times when unavailable from government pharmacy. She was unaware of her status as she couldn’t afford to have her own glucometers.

Maraia was introduced to the program by the Diabetes Centre, Suva after been discharged from CWM Hospital. It was a life changing experience when she received her supplies of glucometers, strips, syringes and other consumables. She finally found a sense of belonging meeting with other young diabetics. The glucometers really made an impact in her life, she was checking her sugar daily and titrating her insulin, she was also able to change her diet as she compares different foods and how they elevate her blood glucose. Her health status has improved and she was less admitted compared to previous time. Today Maraia is visiting other young diabetic in the western divisions enrolling them into the program.

Achievement:

The following are the intended outcomes of the project that were achieved

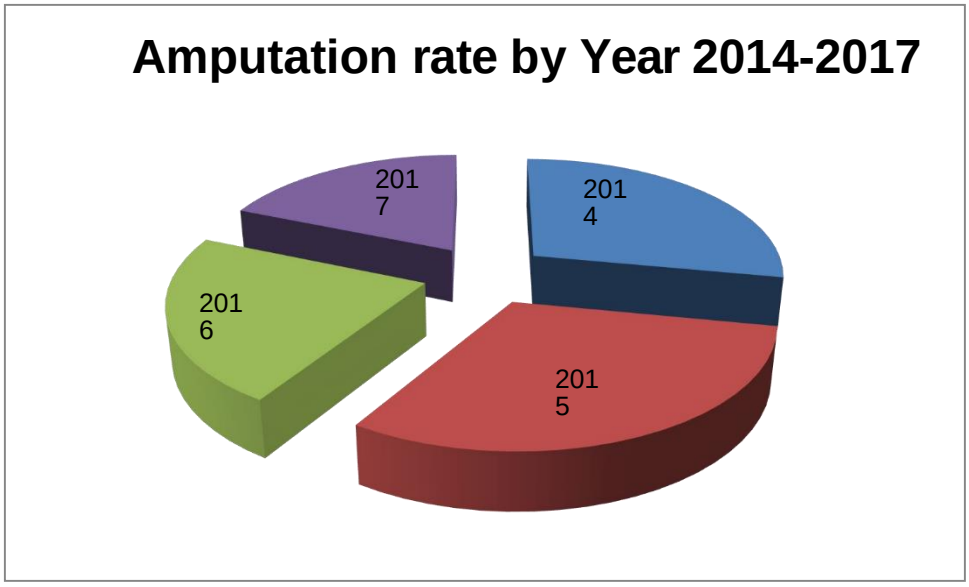
1. Standardised clinical guideline and training manual developed and used for Diabetic Management including Diabetic Foot care.

   A standardised clinical guideline and training manual was developed and used by nurses for training and in their clinic.
   A standardised referral mechanism in place linking primary care to secondary and tertiary care.

2. A decrease in amputation in diabetics

The amputation rates below are according to the Health Information as in the Annual report and Health Status report of the Ministry of Health and Medical Services.

Year	**Amputation rate (dm amputations/total dm admissions)**
2014	15.4
2015	17
2016	12.3
2017	10.3



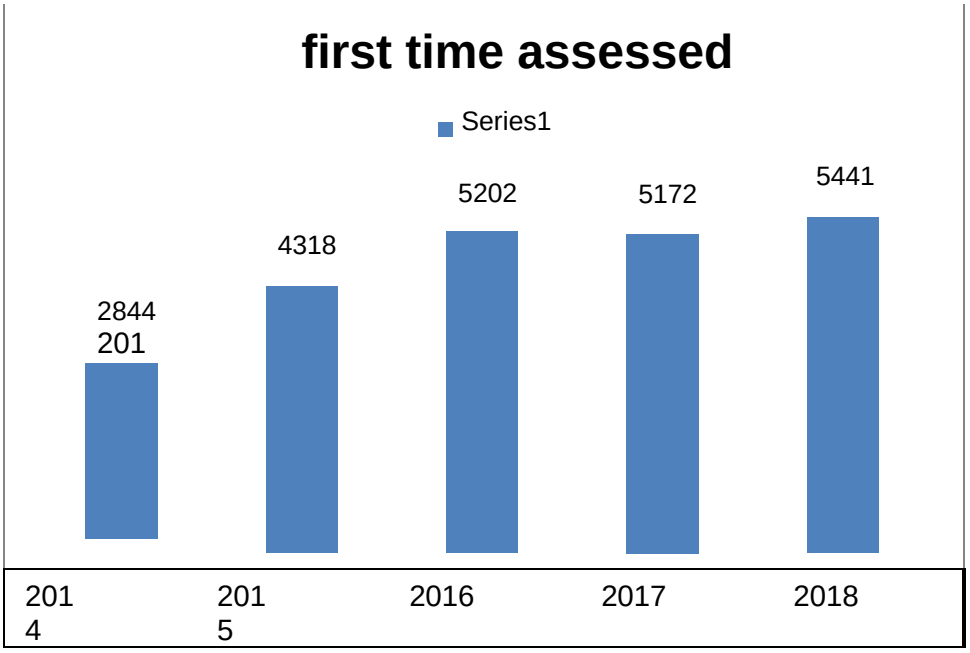
Suggest that the data be either in the table form or in the graph chart to see the trend. Pie charts usually depict as a portion of a total and thus may not be the best option for this data.

The project has impacted in the drop of amputation rate by hospital operation. The data are sourced from the Ministry of Health and Medical Services Annual Health Status report from 2014 to 2017. 2018 was yet to be compiled when the evaluation team was gathering data and success stories.

3. Increase in the number of first time client visiting health facilities for consultation on diabetes

Year	Total	Percentage coverage by project
2014	2844	7.42%
2015	4318	18.7%
2016	5202	32.3%
2017	5172	45.4%
2018	5441	60.0%

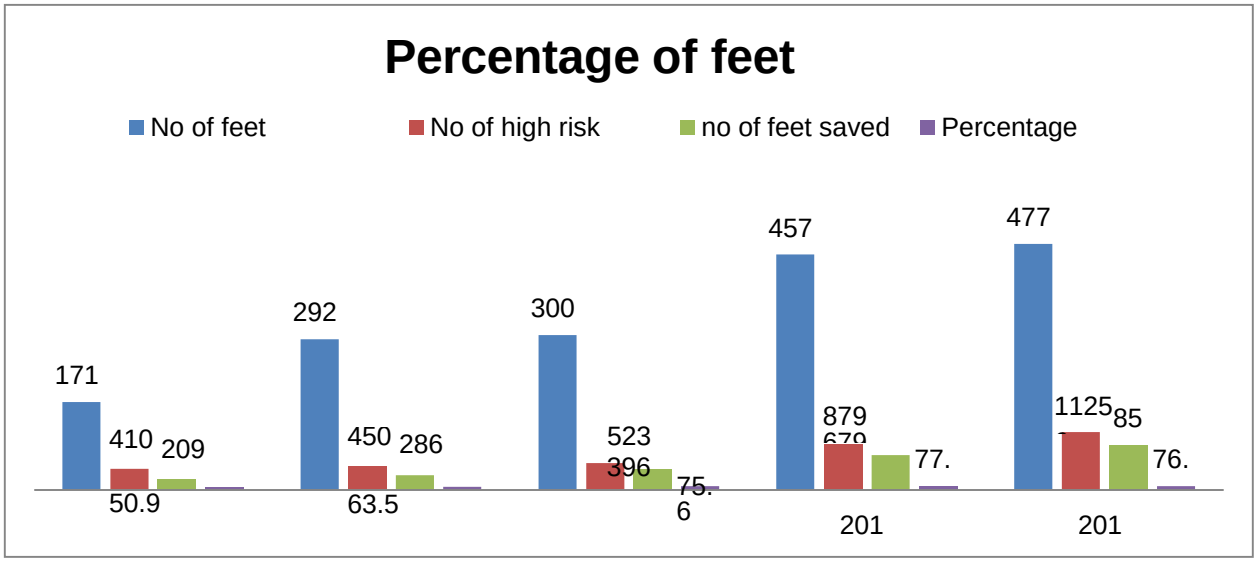
An increase of 52.58% of diabetic have their feet assessed for the first time from year 2014 to 2018.



Suggest that either table or graph would do and not both. If opting for graph, then better to use the two axis graph-so total on one side and % coverage on the other.

Percentage of feet saved increased with more cases are detected early through feet screening.

	No of feet screened	No of high risk feet	no of feet saved	Percentage saved
2014	1712	410	209	50.9
2015	2928	450	286	63.5
2016	3008	523	396	75.6
2017	4574	879	679	77.2
2018	4779	1125	856	76.1

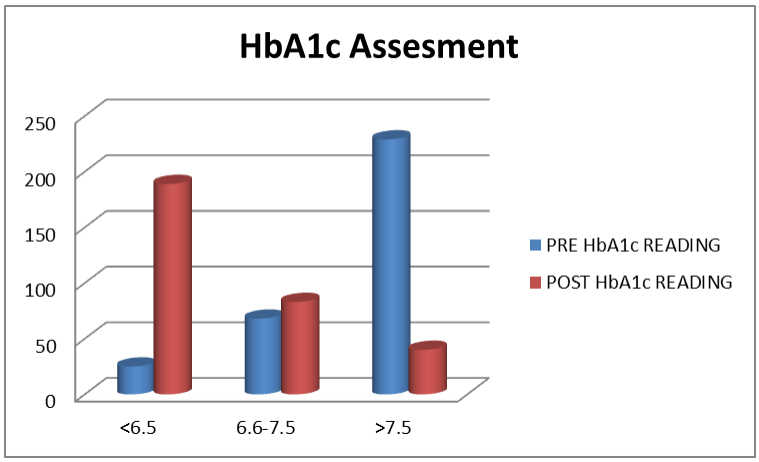


The biggest challenge continues to increases Diabetes amputation is the patients presenting very late to the foot clinic. Secondly most refuses to have early surgical intervention and therefore returning with a more severe foot sepsis requiring major amputations.

Graph to be improved-axis labels, etc

DIABETES COMMUNITY PEER GROUP DATA

DIABETES COMMUNITY PEER GROUP DATA ANALAYSIS 2014 to 2019			
#		**PRE HbA1c READING**	**POST HbA1c READING**
	<6.5	**25**	**189**
	6.6-7.5	**68**	**83**
	>7.5	**229**	**40**



The peer group program has proven to empower diabetics to take ownership of their health, also impacting their families and community at large. The biggest drawback is availability of reagent to do test for cholesterol and kidney functions as well.

CONCLUSION:

The foot care project has completely phased out this year 2019, and its impact has made tremendous improvement in the service delivery of the Health Ministry, better skilled footcare nurses and better equipped foot clinic. Also community programs have empowered diabetics to take ownership of their own health with right knowledge and practises. For this footcare to be viable in the Ministry the following areas will needs to be considered or strengthened:-

1- Established post of footcare nurses in every subdivisional SOPD, and major health centres in densely populated areas.
2- Incorporate the reporting system into the reporting system of the Health Information Unit 3- Continue the training at the three hub because there is always high turnover of nurses
4- Footcare attachment for nursing and medical students must roll out to Umanda Medical School in Lautoka and the Sangam Nursing School in Labasa.
5- Basic footcare instruments, assessment tools and dressing medication to be included in the Equipment and drugs list orders for health facilities.
6- Targeting percentage of feet to be assessed and saved must be included in MOHMS strategic plan. Also included are the diabetes community peer support group and young diabetes of Fiji program. This will ensure that Public Health will continue the programs as currently practised.

For a next possible phase 2 footcare project must focussed on:-

1. Advanced wound care management
2. Having a trained local podiatrist, diabetologist and a vascular surgeon partnership project with University of Victoria through NZAID, this currently been discussing with these project partners.
3. Training of other cadres and also having footcare attachment with physicians which is currently done with nurses.
4. Strengthen insulin training and also monitors its implementation
5. For community program, the target audience must include caregiver and family members in general
6. Equip the community program with portable HbA1c machine to improve reporting
7. Strengthen program with Young Diabetes of Fiji, reaching out to parents of type 1 and Teachers