Project Title

Virtual Training Improves Knowledge and Confidence of NUHS Primary Care Network Primary Healthcare Practitioners in Performing Diabetic Foot Screening (DFS)

Project Lead and Members

Project lead: Arnold Hu

Project members: Jolene Tai, Christel Leong

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group(s) Involved in this Project

Allied Health

Applicable Specialty or Discipline

Podiatry

Aims

Increase the confidence and knowledge of Primary Healthcare Practitioners (PHPs) in NUHS Primary Care Network (PCN) in performing DFS through a virtual training workshop.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

Holding the session virtually was beneficial for PHPs in increasing their knowledge on DFS and its risk stratification especially in a pandemic era as it provides accessibility to resources. The session also enhanced their confidence in conducting DFS.

Conclusion

See poster appended/ below

Project Category

Care Continuum, Preventive Care, Community Health, Training & Education, Education Platform, Virtual Learning Platform

Keywords

Virtual Training, Primary Care Network, Diabetic Foot Screening

Name and Email of Project Contact Person(s)

Name: Arnold Hu

Email: Arnold_hu@nuhs.edu.sg

Virtual training improves knowledge and confidence of NUHS PCN primary healthcare in performing diabetic foot screening

❑ SAFETY
✓ QUALITY
❑ PATIENT EXPERIENCE
❑ PRODUCTIVITY
❑ COST

MEMBERS:

Arnold Hu, Jolene Tai, Christel Leong

Define Problem, Set Aim

Opportunity for Improvement

As part of holistic chronic disease management, NUHS Primary Care Network (PCN) GPs provide diabetic foot screening (DFS). These primary healthcare practitioners (PHPs) play a pivotal role in the early detection and prevention of diabetic foot complications which can be mitigated through regular diabetic foot screening (DFS). A local study (Ang et al. 2017) done in the primary care setting found that a lack of DFS is associated with a higher risk of lower extremity amputation (LEA). Patients who did not undergo DFS had a 6.3 fold increased risk of a LEA compared to patients who underwent DFS.

Therefore, the Podiatry team in NTFGH saw an opportunity to work together with our NUHS PCN colleagues to identify any gaps in their knowledge of the diabetic foot management. A pre-training survey conducted by the Podiatry team discovered that there was a lack in confidence and knowledge amongst the PHPs in performing DFS and risk stratification of the diabetic foot. This may result in patients receiving delayed specialist treatment, which may further lead to poor outcomes such as delayed wound healing and/or LEA.

Aim

- Increase the confidence and knowledge of PHPs in NUHS Primary Care Network (PCN) in performing DFS through a virtual training workshop.

Establish Measures

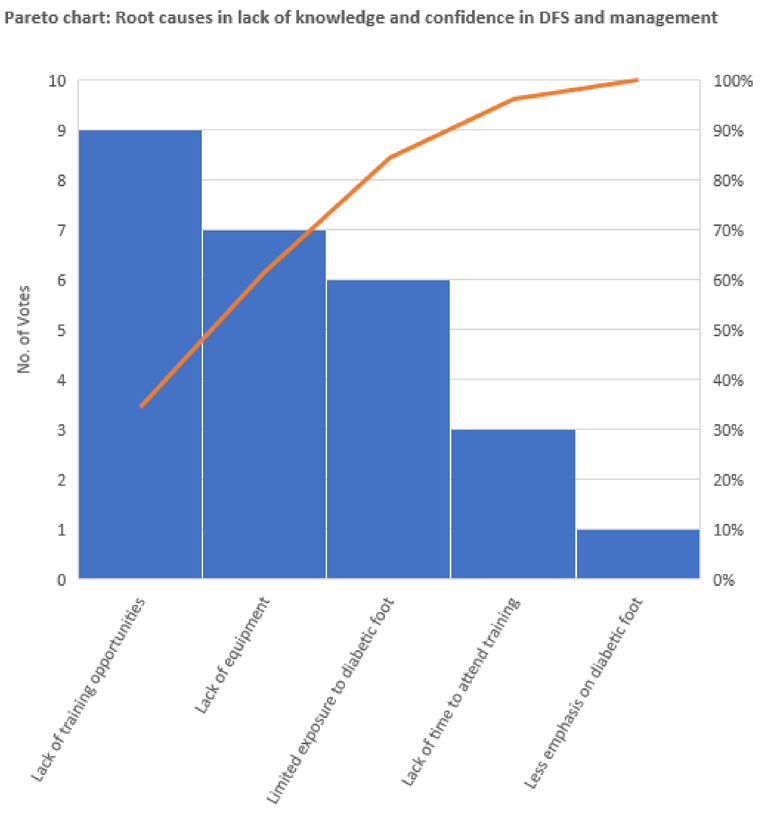
What was your performance before interventions?

- 45 PHPs (33 GPs, 8 nurses, 4 care coordinators) performed a baseline assessment of their knowledge and confidence on DFS and risk stratification via an online questionnaire.
- None attended any diabetic foot related training in the past year.
- 62.3% of participants were unaware of the MOH Appropriate Care Guide (ACG) on diabetic foot assessment and guidance in identifying and managing risk of diabetic foot ulcers.
- 26.7% of participants were confident in performing a DFS.
- Limited knowledge in DFS and management of a diabetic foot.

Analyse Problem

What is your process before interventions?

GPs are required to attend yearly Continuing Medical Educational activities. Currently, the NUHS Primary Partnership team would engage with Specialists for disease management training. Otherwise, GPs would have to source for external CMEs, often organised by College of Family Physicians. Currently, there is not much training/education on diabetic foot screening or diabetic foot management.

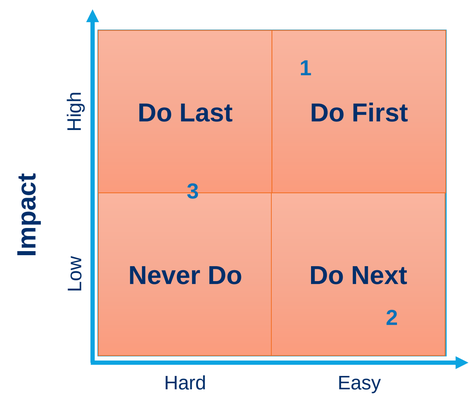


Select Changes

Root causes: Lack of time, equipment and training on DFS

Possible solutions:

1) Conduct a virtual training via Zoom to better equip them with DFS knowledge and its risk stratification
2) Provision of MOH ACG 2019 on diabetic foot management
3) Face to face practical workshop on DFS



Test & Implement Changes

CYCLE	PLAN	DO	STUDY	ACT
1	Aim: Identify gaps in knowledge and areas of concern in the diabetic foot screening and management. •Collaborate with Primary Care Partnerships to disseminate pre-workshop questionnaire	Disseminated an online questionnaire to participants. Created an online workshop regarding DFS and updates on guidelines of diabetic foot management.	80% of the participants found the most common barrier to performing DFS was a lack of time, equipment and training. PHPs lack the knowledge, training and confidence in conducting DFS. Several PHPs did not implement DFS in their regular practice.	There is a need to improve and increase the training and resources for diabetic foot related management amongst the PHPs. Plan: Create a virtual workshop and provide extra resources to supplement their knowledge on DFS
2	Aim: Increase the confidence and knowledge of diabetic foot screening and management amongst PHPs •Conduct a virtual workshop over Zoom •Create a post-workshop questionnaire to determine the participants' increase in knowledge from virtual training and any areas of improvement for future workshops	Disseminated a post-workshop questionnaire to participants. Due to COVID-19 restrictions, participants commented on lack of hands-on approach which would have better facilitated their DFS knowledge. However, they appreciated the convenience and accessibility of attending a workshop online especially in such pandemic times. Participants wished that future sessions could include a bigger component on wound care and dressing choices.	Self-reported confidence in performing DFS increased from 26.7% (pre) to 70.8% (post). 79.2% of the participants who filled up the post-questionnaire indicated that they will be incorporating DFS in their future practice. Participants became more aware of the different aspects of DFS (e.g., neurological and vascular assessment of the foot) and its risk stratifications after attending the virtual talk but will require additional resources to reinforce knowledge and clinic practice.	With the inclusion of ACG, it further enhanced their knowledge on DFS and they could easily refer to this resource when necessary. Plan: Conduct yearly talks for primary healthcare professionals on various aspects on diabetic foot management such as wound care, offloading so that they can be regularly updated on the latest information. PHPs to be able to use the CHAS referral form for medical referrals to SOCs, to refer patients with diabetic foot issues to NTFGH Diabetic Foot MDC when required.

	Correct Answers				
	Pre-training		Post-training		Effect size
Vascular assessment	n	%	n	%	%
Pulses palpation (DP & PT)	32	71.1	20	83.3	12.2
ABI results interpretation	18	40	20	83.3	43.3
Neurological assessment					
No. of monofilament testing sites	6	13.3	13	54.2	40.9
No. of insensate sites to diagnose DPN	7	15.6	10	41.7	26.1
Risk Stratification					
Risk status with CKD stage 5	35	77.8	24	100	22.2
Risk factor of just loss of protective sensation	22	48.9	13	54.2	5.3
Frequency of DFS if moderate risk	26	57.8	20	83.3	25.5
Risk status with impaired vascular status and foot deformity	35	77.8	21	87.5	9.7
Frequency of DFS with Hx of amputation	19	42.2	22	91.7	49.5
Risk status with callus with intradermal bleeding	24	53.3	15	62.5	9.2

Spread Changes, Learning Points

Future plans/ strategies to spread change:

- Organize regular training sessions with PCN stakeholders about various aspects on diabetic foot, to improve their management in the primary care setting.
- Future training sessions can be done over Zoom and face-to-face, to allow hands-on practice.
- Future training sessions can be incorporated into various specialty departments of NTFGH as part of their CME sessions, in order to raise awareness about diabetic foot

Key learnings from this project? What can be improved?

Holding the session virtually was beneficial for PHPs in increasing their knowledge on DFS and its risk stratification especially in a pandemic era as it provides accessibility to resources. The session also enhanced their confidence in conducting DFS.

More PCN PHPs will be incorporating DFS in their practice after this session.

Participants feel that a physical session involving practical training components will make the session more useful and effective.

There can be more future collaborations with PCN to increase awareness for a more seamless and accessible referral pathway to our diabetic foot multidisciplinary clinics as it is still currently not being widely practiced by our PHPs.

Ng Teng Fong General Hospital

Jurong Community Hospital

References:

Ang, GY, Yap, CW & Saxena, N 2017, Effectiveness of Diabetes Foot Screening in Primary Care in Preventing Lower Extremity Amputations, Ann Acad Med Singapore 2017;46:417-23.