PP-06

Improving Patients' Adherence to Scheduled Diabetes Medication Therapy Adherence Clinic (DMTAC) Follow Up Appointments

Tong HL[1], Liew CH[1], Sia WW[1], Safawati S[1], Geetha SM[1], Yeak CY[1], Lok HC[1], Tay CY[1],
[1]*Department of Pharmacy, Hospital Kuala Lumpur (HKL)*

KEMENTERIAN KESIHATAN MALAYSIA

BERSAMA KE ARAH KECEMERLANGAN — HKL — TQM DALAM PERKHIDMATAN HOSPITAL

1.0 SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

1.1 Problem Identification & Prioritization

SERIOUSNESS — 19
- Patients who missed or defaulted DMTAC follow up sessions may lead to issues such as **poor medication adherence** and **unable to achieve their glycemic control**[1]

MEASURABILITY — 21
- All patients' visits with DMTAC are documented inside Pharmacy Sistem. Patients are required to attend **at least 4 DMTAC sessions**

APPROPRIATENESS — 20
- Regular follow-up sessions can ensure patients' responses to treatment are **monitored on a regular basis** and **appropriate interventions** can be performed, if needed

MEASURABILITY — 20
- Available resources can be **implemented** to ensure patient **do not miss their DMTAC follow up sessions**

TIMELINESS — 21
- This study can be done **with periodic evaluation** and be completed within the specified time-frame

Total:101

Rating scale: 1 – 3, Total Members: 8

1.2 Introduction

Since 2007, pharmacists in HKL have been involved in DMTAC, with the aim to help patients with poor glycemic control with medication adherence and achieve their individualized glycemic, blood pressure and lipid targets. Patients recruited into DMTAC are assigned follow up visits and can be discharged if they fulfil criteria such as achieving individualized HbA1c targets, and completed minimum of 4 visits with good medication knowledge and adherence score.[2]

1.3 Literature Review

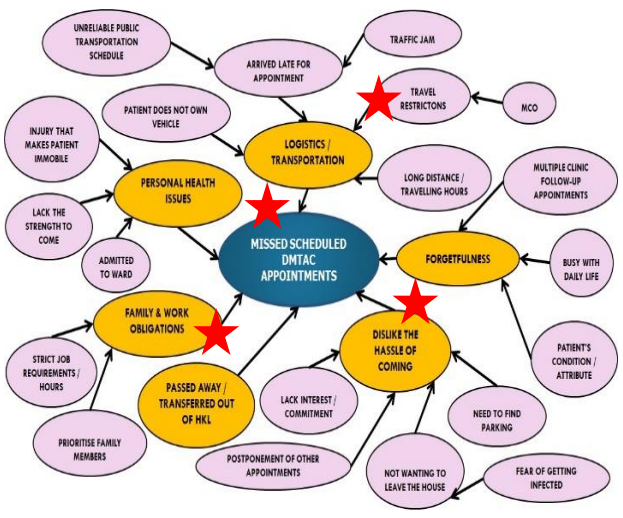
Patient adherence to medication regimens is important to prevent or delay **microvascular and macrovascular complications**.[3]

Adherence to appointments was a **strong predictor of diabetes metabolic control.** Patients that missed appointments more than 20% of the time have average HbA1c more than 1% higher than those who missed appointments 5% of the time.[4]

Patients who had more number of visits to the clinic and did not miss their clinic appointments enable physicians and pharmacists to re-evaluate prescriptions **according to the patient's current condition**.[5]

The **mean HbA1c was significantly decreased** from 10.7% pre-intervention to 9.7% post-intervention (after completed 4 DMTAC visit).[6]

1.4 Cause- Effect Analysis



1.5 Problem Statement

- Among 171 patients recruited into DMTAC in 2019, 61% of them dropped out in less than 4 visits.
- This will make it difficult to continuously monitor patients' responses to treatment and to make any necessary interventions
- Multiple factors such as lack of time and commitment from patients as well as logistics issues may have contributed to this problem.
- This study aims to investigate reasons patients are unable to attend scheduled DMTAC visits and consequently, to improve percentage of patients who are able to complete at least 4 visits with DMTAC pharmacists

1.6 Study Objectives

General Objective

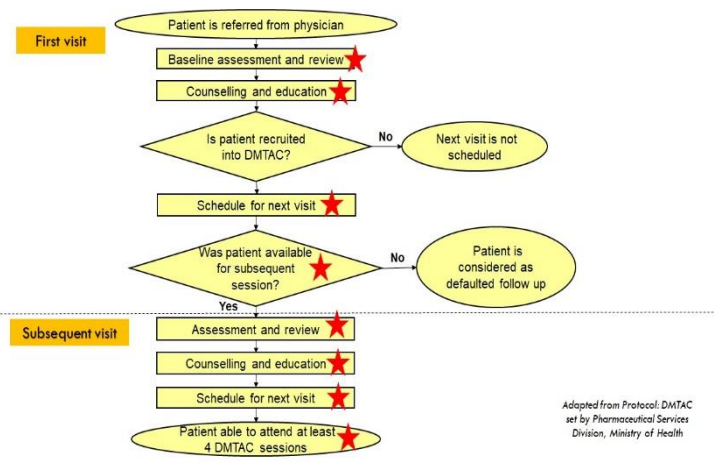
To improve number of DMTAC patients who can attend at least 4 visits with DMTAC pharmacists

Specific Objectives

1. To determine the percentage of recruited DMTAC patients who cannot achieve the 1:3 DMTAC indicator
2. To identify the causative factors contributing to patients unable to attend DMTAC follow up sessions
3. To formulate and implement remedial measures in order to improve adherence of patients to DMTAC visits
4. To evaluate the effectiveness of the remedial actions implemented

2.0 KEY MEASURES FOR IMPROVEMENT

2.1 Process of Care



2.2 Indicator and Standard

% Patients who achieved 4 DMTAC sessions = (Number of patients who attended at least 4 DMTAC sessions / Number of patients recruited to DMTAC) X 100%

Standard set: 100%

Based on Pengurusan Farmasi 5.5(b), minimum of 4 sessions (1: pre; 3: post) set by Pharmaceutical Services Division, Ministry of Health

2.3 Model of Good Care

Critical Step	Criteria	Standard	Pre-remedial	Post-remedial
Counselling and education	Counselling and education are given and reinforced during each visit	100%	100%	-
Assessment and review (for first and subsequent visits)	a. Assessment of glycaemic control and laboratory investigations	100%	100%	-
	b. Pharmacological interventions (e.g. insulin dose adjustment)	100%	100%	-
Schedule for next visit	Based on pharmacist's evaluation, duration between 1 to 3 months is set for patient	100%	100%	-
Availability of patient for subsequent visit	Patient attended first DMTAC follow up session with SMBG booklet	100%	**70.3%**	**76.9%** (↑)
Patient able to attend at least 4 DMTAC visits	a. Patient attended second DMTAC follow up session	100%	**45.5%**	**75.5%** (↑)
	b. Patient attended third follow up DMTAC session	100%	**14.8%**	**61.5%** (↑)

3.0 PROCESS OF GATHERING INFORMATION

3.1 Methodology

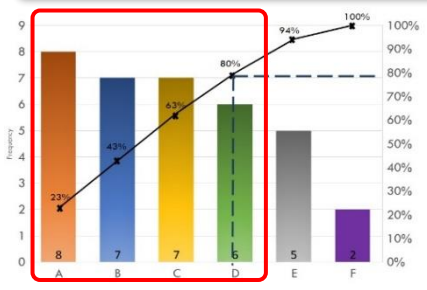
Study design	Prospective study
Sampling technique	Universal sampling (All patients recruited into DMTAC from October 2020 - January 2021)
Study site	Room 24, Physician Clinic (PC) HKL
Duration of study	**Verification study:** December 2019 – September 2020 *(All patients recruited into DMTAC from December 2019 - March 2020)* **Remedial measures:** October 2020 – July 2021 **Remedial measures** were implemented from **October 2020 to July 2021** Population: Patients who were **recruited into DMTAC** from **October 2020 to January 2021** Followed up for **6 months** to determine if they can attend **4 DMTAC visits**
Inclusion criteria	Patients who fit recruitment criteria and able to attend DMTAC visits
Exclusion criteria	Patients who passed away; transferred to other facilities or admitted to wards

3.2 Data Collection Tool

Open-ended survey to determine reasons unable to attend scheduled DMTAC appointments

DMTAC NO	Visit Date	Status	Rescheduled date (if got)	Pharmacist	Reason patient could not come for appt

4.0 ANALYSIS AND INTERPRETATION



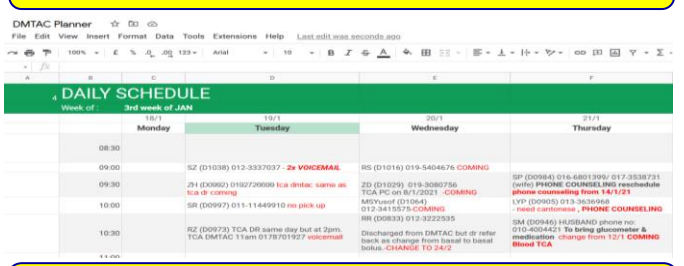
A	Occupied by other matters
B	Worried to come to hospital
C	No transportation
D	Forgot the appointment
E	Did not perform SMBG
F	Feeling unwell/admitted to ward

Figure 1: Pareto-analysis of reasons unable to attend scheduled DMTAC visits

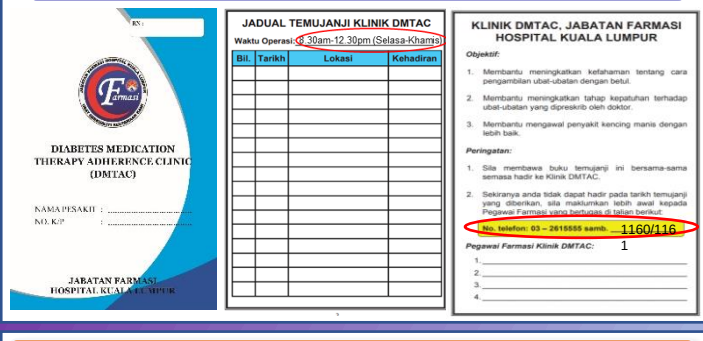
5.0 STRATEGY FOR CHANGE

Tele-Smart Service: Patients send SMBG readings via smartphone messaging application before being counselled through telephone during DMTAC follow-up session

DMTAC pharmacists will **call and remind** patients to come for DMTAC appointments



Revision of SMBG Booklet to include operational hours and phone number highlighted so patient can know the phone number to contact if need to reschedule appointment



6.0 EFFECTS OF CHANGE

6.1 ABNA (Achievable Benefit Not Achieved)

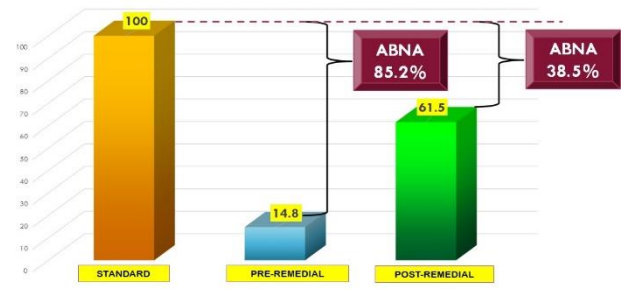
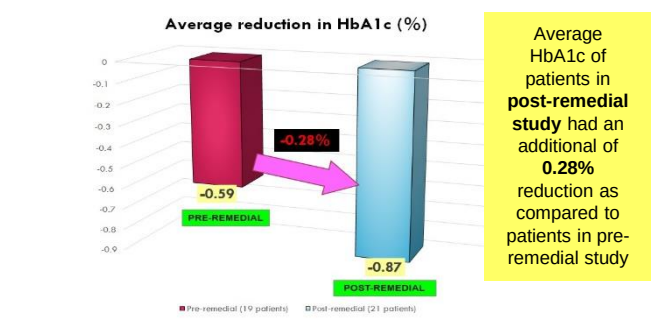


Figure 2: Percentage of patients able to achieved 4 DMTAC sessions

6.2 Value Added Impact



Average HbA1c of patients in **post-remedial study** had an additional of **0.28%** reduction as compared to patients in pre-remedial study

Figure 3: Average reduction of HbA1c in both pre- and post-remedial groups

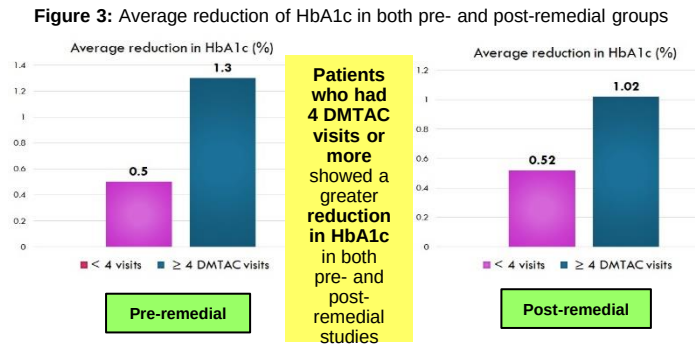


Figure 4: Comparison of Hba1c between DMTAC patients who completed less than 4 visits with those who had 4 visits or more

Patient Satisfaction Survey on Tele-Smart
90% claimed they were satisfied with the service and would continue to use it

All of them agreed it is convenient, saves time and cost of travelling.
It is estimated **RM52.50 / patient** of travelling costs saved after implementation of post remedial

7.0 THE NEXT STEP

7.1 Conclusion

1. Pre-remedial data shows that 85.2% of patients recruited into DMTAC had less than 4 visits during 6 months period.
2. Contributing factors to this problem include busy with work and family, worried to come to hospital because of pandemic, no transport and forgotten about the DMTAC appointments.
3. Strategies formulated include telephone counselling together with the use of smartphone messaging application, calling patients earlier to remind about their scheduled appointments and revising the DMTAC SMBG booklet with clearer contact information.
4. Post-remedial, percentage of patients who achieve the 1:3 indicator increased from 14.8% to 61.5%

7.2 Lessons Learnt

DMTAC visits have a correlation with glycemic control of patients. Tele-Smart was an important tool during the pandemic to ensure safety of both patients and healthcare providers. We were able to sustain our DMTAC services through remedial measures implemented.

7.3 The Next Step

For Cycle 2, we are introducing video phone call counselling to assess insulin injection technique and detect lipohypertrophy. Also, home visits for patients who do not have access to telephone. We plan to share our remedial actions with other MTAC services in HKL.

References:
1. Iqbal MZ et al. A review of pharmacist-led interventions on diabetes outcomes: An observational analysis to explore diabetes care opportunities for pharmacists. J Pharm Bioall Sci 2019;11:299-309
2. Pharmaceutical Services Division Ministry of Health, Malaysia. Protocol Medication Therapy Adherence Clinic: Diabetes Second Edition 2014.
3. Lim PC, Lim K. Evaluation of a pharmacist-managed diabetes medication therapy adherence clinic. Pharmacy Practice (Granada) 2010 Oct-Dec;8(4):250-254.
4. Schectman JM, Schorling JB, Voss JD. Appointment adherence and disparities in outcomes among patients with diabetes. J Gen Intern Med. 2008 Oct;23(10):1685-7.
5. Horii T et al. Determination of factors affecting medication adherence in type 2 diabetes mellitus patients using a nationwide claim-based database in Japan. PLoS ON 2019;E14(10): e0223431
6. You LX, Selvadurai S, Yee CK, Noh NB, Bao GC, Joyce T, et al. Impact of pharmacist-managed diabetes medication therapy adherence clinic (DMTAC) in government health clinics. Malays J Pharm Sci. 201

This poster was prepared for presentation at the 11th National QA Convention, 4 - 6 October 2022, Pulau Pinang