



Innovation Project Star – Stop Tobacco and Revive: A Revised Smoking Cessation Record Book for Smoking Cessation Service in Malaysia

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ABSTRACT

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STAR (Stop Tobacco And Revive) is an innovation book that has been produced to improve the 2010 edition of the Smoking Cessation Clinic Client Record Book and by that, producing a new book that is more comprehensive and practical. The old record books did not contain much of the information necessary to comply with the required specifications. The old record book also had no Pharmacy Officer records in it. The Pharmacy Officer's record which was almost the same as the Medical Officer's record should be attached in the record book at each visit. This causes duplication of records, waste of time to record data, additional cost for two separate records, and additional storage space for two separate records.

Thus, a new book has been produced to improve the old record book. With the production of STAR, it was found that there was no duplication of records by Medical Officers and Pharmacy Officers and no time wastage to record information in two separate records during each patient appointment by Medical Officers and Pharmacy Officers. The cost for production was also much cheaper, space saving, neater and complied to Conducive Ecosystem of the Public Sector (EKSA). Overall, STAR was more precise, comprehensive and practical for use.

INTRODUCTION

Smoking is one of the causes of increasingly serious health problems in this country. Smoking and its complications will increase the burden on the national health service in addition to affecting the quality of life of patients and families involved. Tobacco products, especially cigarettes, are the most important risk factors that threaten

public health and are clearly proven to be harmful to human life in various aspects including health, social, economic and environmental.

The National Health Morbidity Survey (NHMS) 2019 reported that more than 27, 200 deaths of Malaysians every year are caused by smoking habits.¹ Based on the World Health Organization (WHO) Framework and the Convention on Tobacco Control (FCTC)², a National Strategic Plan for Tobacco Control 2015-2020 (NSPTC)³ has been developed to strengthen the implementation of tobacco control in Malaysia. The NSPTC has targeted a reduction in smoking prevalence to 15% in the medium term by 2025, in line with the WHO target and the long-term target to achieve the 'Endgame' of tobacco in Malaysia by 2045³.

It is reported in the NHMS 2019 that an estimated 4.8 million Malaysians aged 15 and above are smokers with

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a prevalence of 21.3% (95% CI: 19.86, 22.75).¹ According to the 2022 NHMS Survey, the use of e-cigarettes and vaping among Malaysian teenagers aged 13-17 increased from 9.8% in 2017 to 14.9% in 2022.¹ Smoking cessation services need to be strengthened by improving access to smoking cessation services and pharmacotherapy treatment with active and systematic implementation of Smoking Cessation Services.

The Quit Smoking Service Programme at the Buntong Health Clinic was established in 2014. In beginning of its establishment, a total of 5 staffs from the Buntong Health Clinic consisting of a Family Physician, a Medical Officer, a Pharmacist, an Assistant Medical Officer and a Nurse have undergone training at Jinjang Health Clinic and Tanglin Health Clinic. After completing the training, these staffs returned and worked together to strengthen the existing Smoking Cessation Service at the Buntong Health Clinic.

Throughout the running of the quit smoking service, we found that there were several aspects that could be improved. Among them is the use of the client record books. The smoking cessation clinic's client record book that was used before, was published by the Non-Communicable Disease Control Unit (NCD) of the Perak State Health Department in 2010. The contents of the book were incomplete and not detailed for smoking cessation treatment. This record book also had many excess pages and there were some irrelevant information.

In addition, there were many similarities in client treatment records and duplication of data by Medical Officers and Pharmacy Officers. This was because Medical Officers need to record all the information in the clients' books while Pharmacy Officers need to fill in a special form obtained from the Pharmacotherapy Guideline Book for Smoking Cessation Division of the Ministry of Pharmacy Services First Edition of 2012.⁴ The form also needs to be enclosed with the client's book. Furthermore, the information and data that needs to be filled in the client book and the form are the same. This causes more time needed to record all the repeated data and the use of two different records for one client in the same session.

The use of different documentation systems, i.e. in client books and forms also involves the addition of printing costs. In addition, larger storage space is also required as record books become thicker and untidy. Due to the excess pages in the clients' books and the forms that have been attached to these books, it has led to disorganization to the book keeping system which does not conform to Conducive Ecosystem of the Public Sector (EKSA).⁵

Therefore, we have carried out an innovation on the existing Smoking Cessation Service Client Record Book to improve the book by including more relevant space and data and eliminating unnecessary data for the treatment of Smoking Cessation Service clients. In addition to being able to save printing costs and reduce documentation time by officials, we also want to introduce the use of a new record book, STAR, which is more accurate, comprehensive and

practical for all clients recruited into the Quit Smoking Service programme.

OBJECTIVES OF STAR

1. Prevent duplication of data and records by Medical Officers and Pharmacy Officers.
2. Reduction of consultation time and time to record information during each patient appointment by both Medical Officers and Pharmacy Officers.
3. Saving the cost of printing and using record books for Smoking Cessation Services for a long period of time for the entire state of Perak.
4. Saving storage space for the client's record book. The client's record book is also neater, not thick and organized.
5. Introducing the use of the new STAR record book which is more accurate, comprehensive and practical with the addition of important data and the abolition of irrelevant data.

METHODOLOGY

An innovation group named Buntong Smokebusters was established to implement this project. The group members are 7 staffs of Buntong Health Clinic consisting of 3 Family Physicians, 2 Medical Officers, a Pharmacy Officer and a nurse. They have worked together and worked hard to hold monthly meetings to produce an innovation project named STAR (Stop Tobacco And Revive). The work process to produce the new STAR book has been established for pre-intervention and post-intervention for the first visit and also the follow-up visit. Several discussions have been held and we successfully held a collaboration with the Primary Unit, Perak State Health Department for the purpose of printing the new STAR book, for the books to be used by all health clinics in the state of Perak. The use of the new STAR book has also been extended to other institutions and agencies, including private sector for the purpose of joint use in the management of Smoking Cessation Services.

Data collection process was carried out in two phases, namely before the intervention and after the intervention. For the pre-intervention phase, data was collected from February 2022 until April 2022 while for the post-intervention phase, data was successfully collected in the following year starting from February 2023 until April 2023.

The time taken from registration at the clinic counter to the completion of consultation with the officers for the first visit and follow-up visits are recorded in the old and the new record books. A total of 9 patients' books (old books) have been collected within 3 months from February 2022 until April 2022 and compared with 9 patient books (new STAR books) within the same 3 months the following year which is from February 2023 until April 2023.

For the pre-intervention phase, the minimum time taken from the client registration counter to the completion of the entire consultation was recorded and analyzed for each initial visit, as well as first, second and third follow-up visits.

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The same process was also done for the post intervention phase where data collection was done in the following year from February 2023 until April 2023. The minimum total time taken for each visit was recorded and analyzed.

INNOVATION MADE ON THE SMOKING CESSATION RECORD BOOK

Page 1

Addition of a column for source of referral. The purpose of this addition is to find out from which sources clients are referred to officers at the Quit Smoking Clinic. Among the referral sources are from other Medical Officers who treat patients and from related promotional activities carried out such as health campaigns and educational talks.

Page 4

1) Abolition of the question on the level of willingness to quit smoking and replaced with an assessment of the level of clients' readiness of using the Prochaska Chart. This chart has 4 levels: pre-contemplation, contemplation, preparation and action. Officers will determine the patient's level of readiness based on these levels.

2) Added column for 'Quit date'. 'Quit date' is the date a client intends to stop smoking and this date will be set by the client himself.

3) Added a column for 'Date of Successful Quit Smoking'. This is the actual date the client successfully quit smoking, which is 6 months from the 'Quit date' set initially.

Page 5

A) Medical history

1) The abolition of the smoker column is because it is irrelevant, as the client who comes to the clinic is already a smoker.

2) Abolition of Myocardial Infarction (MI)/Angina, Atrial Fibrillation (AF) and Left Ventricular Hypertrophy (LVH) columns due to irrelevant and replaced with Ischaemic Heart Disease (IHD).

3) The addition of a column for psychosis/depression is aimed at identifying the appropriate medical regimen for the client in the future.

4) The addition of the asthma/chronic obstructive pulmonary disease (COPD) column is relevant for clients who are smokers.

5) Addition of drug and alcohol addiction history as well as drug allergy columns

B) Surgical History

This column was added.

C) Physical Examination

1) Addition of 'BMI' column

D) Medical Examination

1) Addition of columns for pulse rate, Chest X-ray and peak expiry flow rate (PEFR)

2) Addition of columns for FBS, FLP, LFT and serum creatinine (blood investigations)

3) Abolition of the irrelevant columns for 'Estimated blood level COHb' and 'Actual Blood COHb' columns and these were replaced with Expired CO (carbon monoxide) readings only.

E) Treatment

1) Addition of column for 4 types of medications, namely:

- Varenicline,
- Nicorette Patch 10mg/16hrs,
- Nicorette patch 15mg/16hrs and
- Nicorette Patch 25mg/16hrs

2) Adding the word 'gum' to the existing Nicorette 4mg and 2mg columns.

F) Added a new section namely: Medications taken for other concurrent co-morbidities

Page 6

1) Abolition of this entire page which had an irrelevant Quit Diary and replaced with a single page for notes.

Pages 7 and above

1) Pages 7 and above used to record follow-up visits were abolished. The results of our group discussion found that Pharmacy Unit records from Smoking Cessation Pharmacotherapy Guidelines for follow-up treatment were more detailed. Therefore, these records will be used entirely for follow-up treatment.

Additional:

1) Due to limited writing space for Medical Officers/Pharmaceutical Officers/Assistant Medical Officers, we have added 1 blank page for each follow-up visit. This allows the officers to record in detail any issues related to the client's treatment.

2) The addition of the Prochaska Chart in the 'Appendix' section to enable officers to refer to the model.

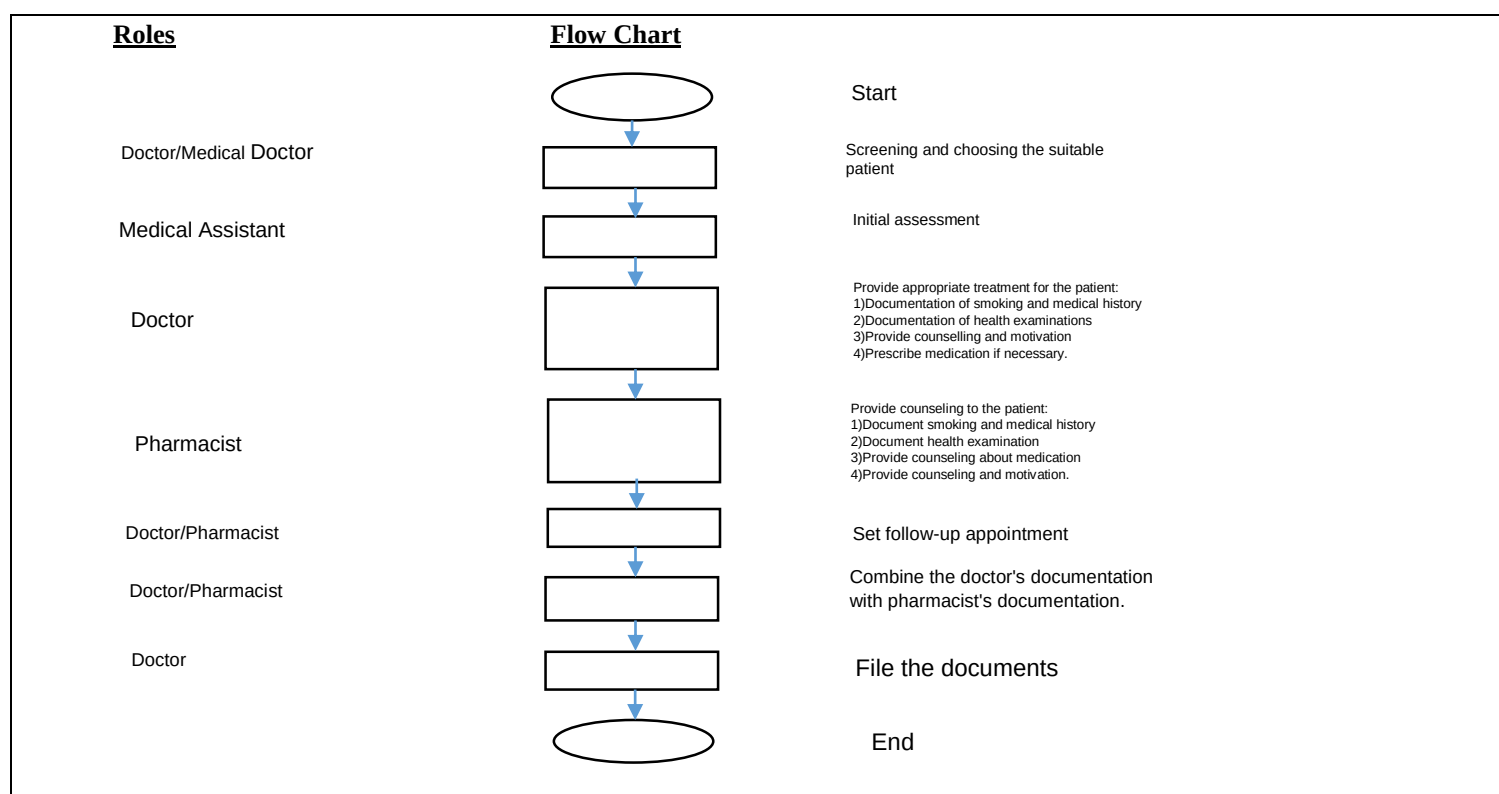


BUNTONG SMOKEBUSTERS BUNTONG HEALTH CLINIC

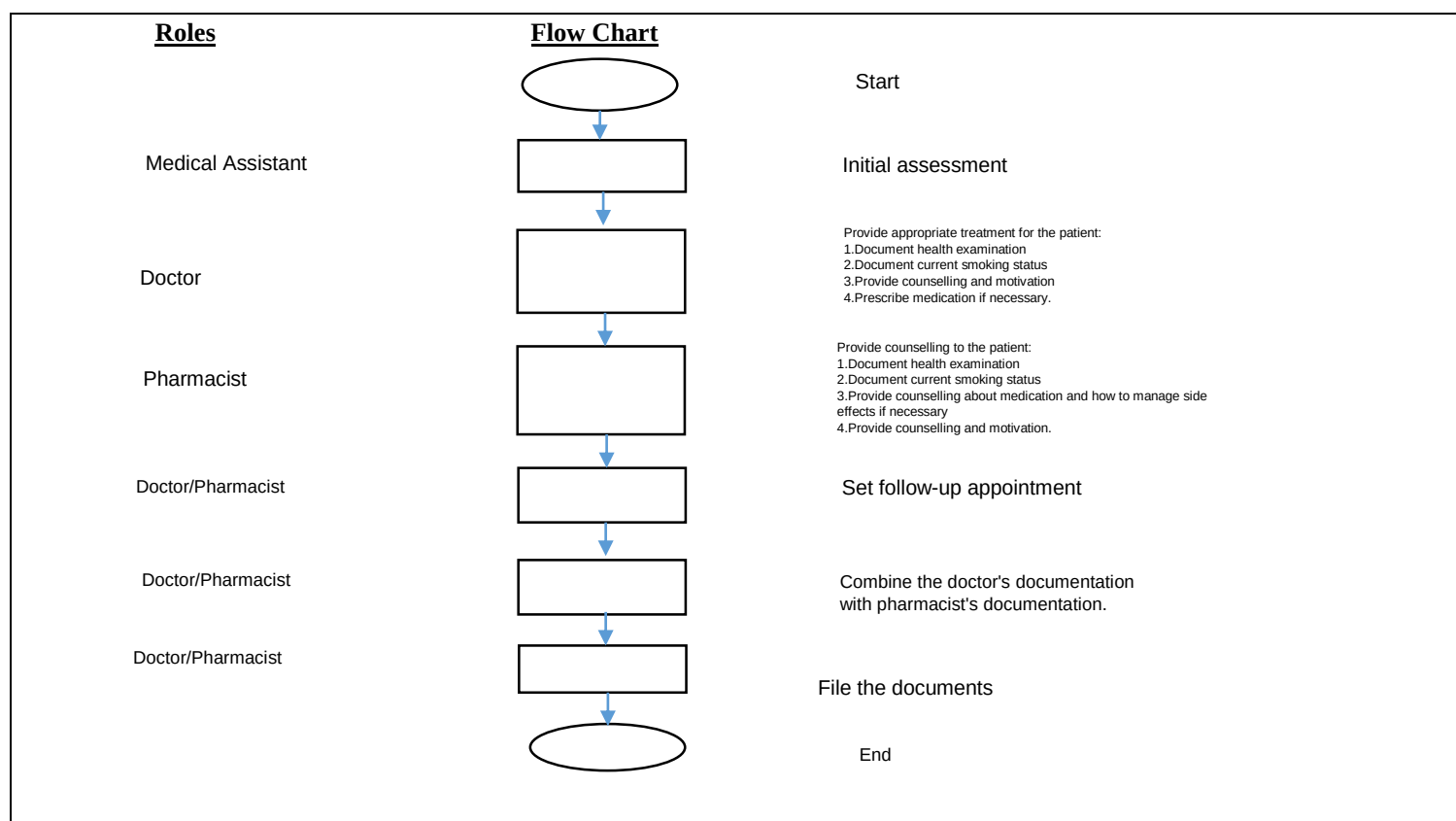
RESULTS

1. WORK PROCESS

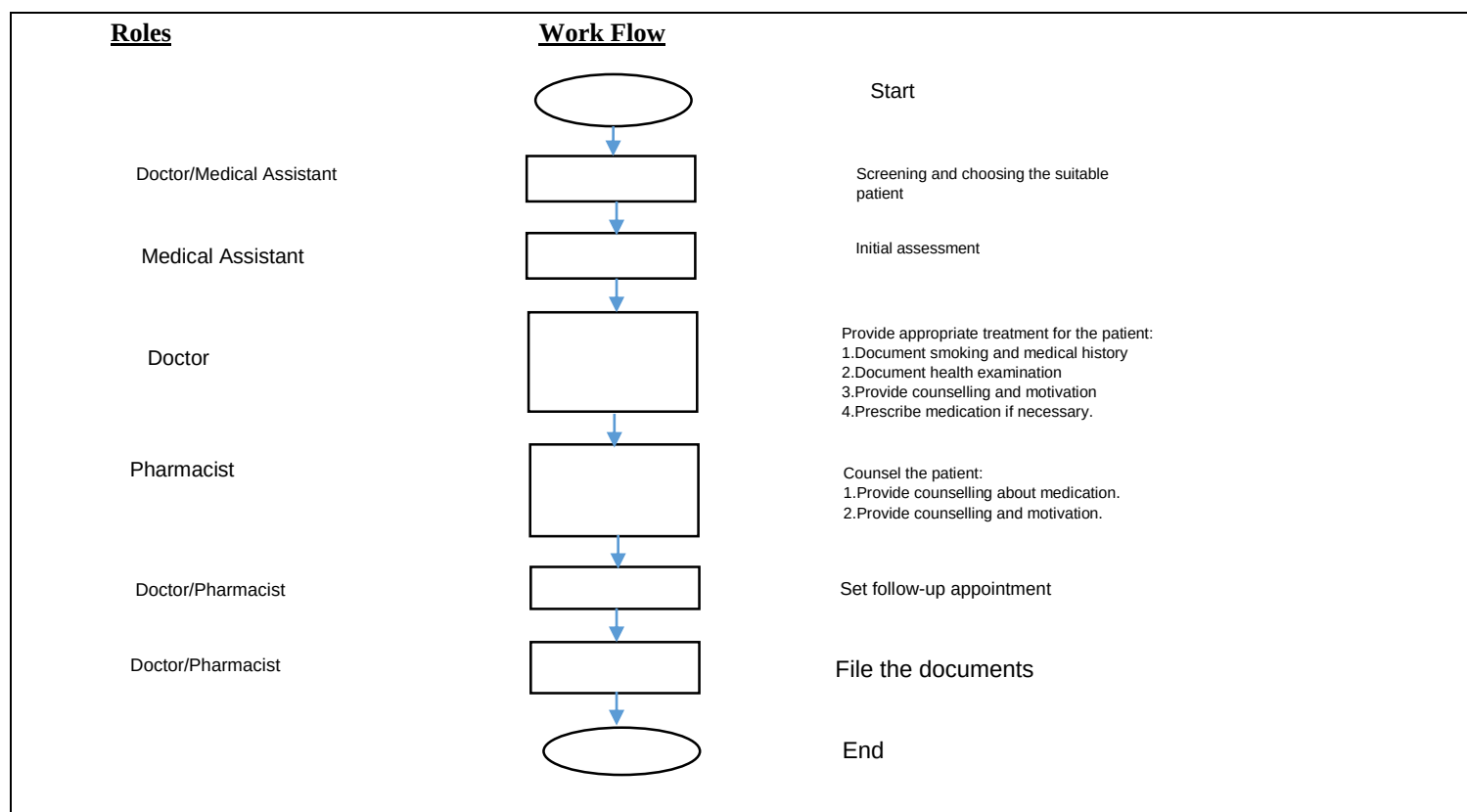
a) WORK PROCESS OF THE FIRST VISIT (OLD BOOK)



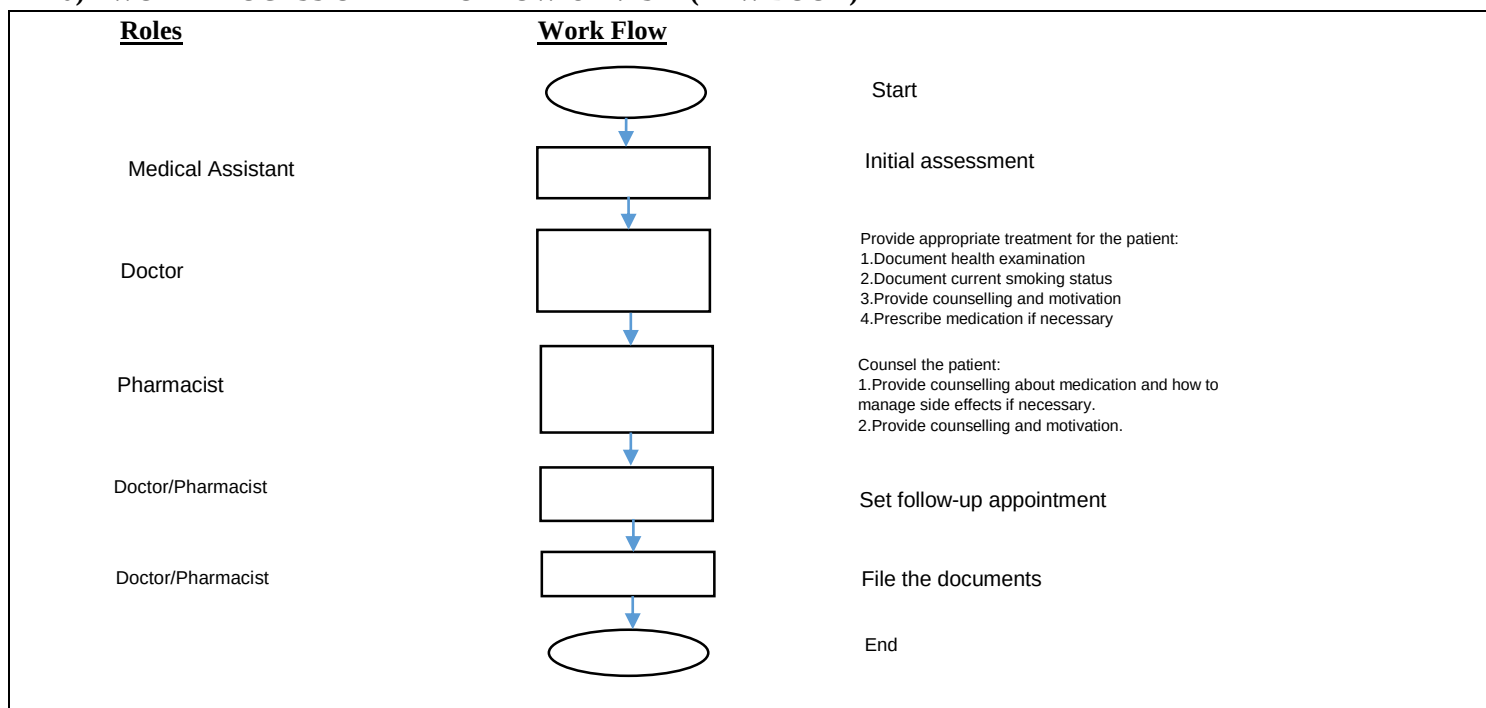
b) WORK PROCESS OF THE FOLLOW-UP VISIT (OLD BOOK)



c) WORK PROCESS OF THE FIRST VISIT (NEW BOOK)



d) WORK PROCESS OF THE FOLLOW-UP VISIT (NEW BOOK)



2. TIME TAKEN

a) INITIAL VISIT

TIME TAKEN PRE AND POST INTERVENTION (OLD BOOK VS STAR)

Numbers	Total time taken pre-intervention (Minute)	Total time taken post intervention (Minute)
1	95	65
2	98	65
3	105	67
4	105	67
5	95	77
6	110	61
7	100	80
8	101	69
9	100	64
Total time taken (Minute)	909	615

Pre-intervention: mean time taken for every visit = $909 / 9 = 101$ minutes

Post-intervention: mean time taken for every visit = $615 / 9 = 68.33 = 68$ minutes

b) FIRST 3 FOLLOW UP VISITS

TIME TAKEN PRE AND POST INTERVENTION (OLD BOOK VS STAR)

Numbers	Total time taken pre-intervention (Minute)	Total time taken post-intervention (Minute)
1	140	87
2	129	78
3	115	90
4	125	74
5	141	107
6	143	93

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7	123	100
8	140	101
9	126	79
Total time taken (Minute)	1182	809

Pre-intervention:

Mean time taken = $1182 / 9 = 131.33$ minutes = 131 minutes (first 3 follow up visits)

Mean time taken for every visit = $131 / 3 = 43.7$ minutes = 44 minutes

Post-intervention:

Mean time taken = $809 / 9 = 89.89 = 90$ minutes (first 3 follow up visits)

Mean time taken for every visit = $90 / 3 = 30$ minutes

INITIAL VISIT

Mean time difference for each visit = $101 - 68 = 33$ minutes (33%) less compared to using the old book

FOLLOW UP VISIT

Mean time difference for each visit = $44 - 30 = 14$ minutes (32%) less compared to using the old book

INCREASED PRODUCTIVITY

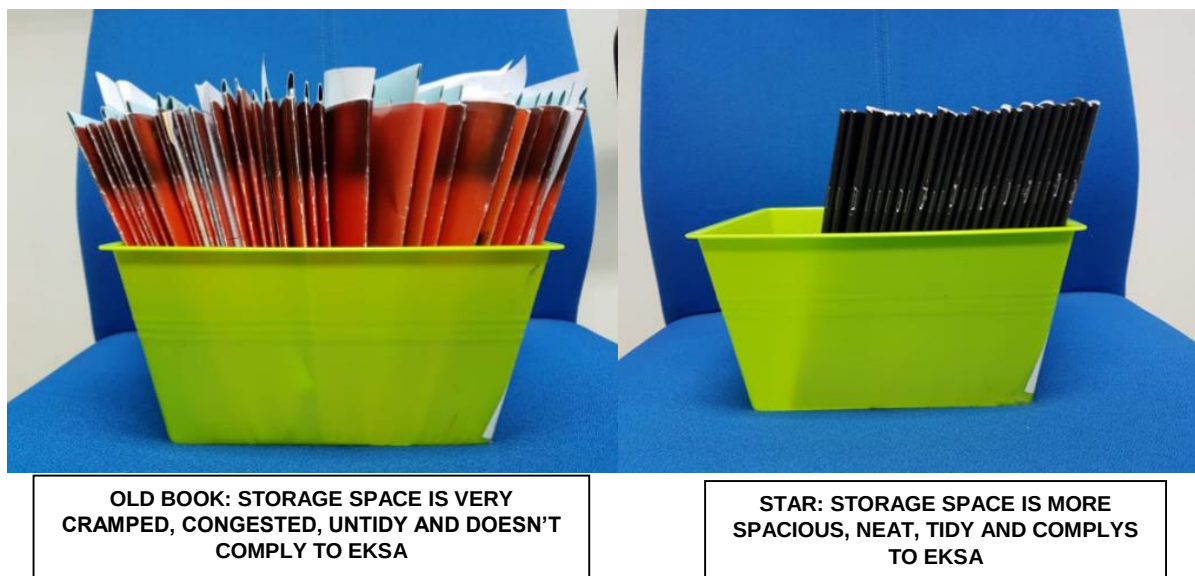
- This has increased the overall productivity of the Stop Smoking Service as more patients can be seen in the same time frame.
- The number of patients seen with the old book – a minimum of 2 new cases and 3 repeat cases – each new case takes 1.5 hours and each repeat case, 30 minutes.
- The number of patients is seen to be increased with the new book – a minimum of 3 new cases and 4 repeat cases – each new case takes 1.0 hours and each repeat case, 15 minutes.

Defaulter rate has also reduced from 61.5% to 40.0% with the use of STAR.

ADDITIONAL COST OF USING THE OLD SMOKING CESSATION CLINIC RECORD BOOK AND THE PHARMACY OFFICER SMOKING CESSATION RECORD FORM

TITLE	CALCULATION
1 patient	11 visits minimum
First visit	3 pages
2 nd until 11 th visit	$2 \times 10 = 20$ pages
Cost incurred for every page for each patient	$RM\ 0.05 \times 23 = RM\ 1.15$
Cost incurred for 500 patients recruited (yearly)	$RM\ 1.15 \times 500 = RM\ 575$
Estimated cost for the old record book	RM 1.00
Estimated cost for the old record book + pharmacy record pages	RM 2.15

STORAGE SPACE PRE AND POST INTERVENTION WITH THE USAGE OF STAR



DISCUSSION

STAR has successfully managed to prevent duplication of data and records by Medical Officers and Pharmacy Officers, as shown in the results above. STAR had also shown reduction of consultation time and time to record information during each patient appointment by both Medical Officers and Pharmacy Officers. An average of 33 minutes (33%) for new cases and 14 minutes (32%) for follow-up cases can be saved by Medical Officers and Pharmacy Officers.

This increased the productivity of the Smoking Cessation Service because more patients could be seen in the same period of time. The number of new case patients increased from a minimum of 2 to 3 patients and repeat cases, from a minimum of 3 to 4 patients in one clinic session. The percentage of defaulter cases also decreased after the use of STAR from 61.5% (16/26 patients) to only 40.0% (12/30 patients).

STAR had also managed to prove a cost reduction of RM 0.35 for printing each book copy where the estimated total cost for old books including pharmacy record pages is RM 2.15 while the printing cost for one copy of STAR was only RM 1.80. STAR successfully saved storage space for smoking cessation record books. Our new book, STAR is neat, compact and complies to EKSA. STAR is more precise, comprehensive and practical for use.

CONCLUSION

With the production of STAR, all the objectives expected from this innovation project have been achieved and various benefits have been obtained. The Buntong Smokebusters Group had obtained copyright from the Copyright Division, Intellectual Property Corporation of Malaysia (MyIPO) with Registration No. LY2023P02229. The new STAR book has already been replicated, printed and

distributed to all districts in the state of Perak for use in every health clinic.

The new STAR book has also been distributed to Pantai Hospital Ipoh, KPJ Ipoh Specialist Hospital and Perak Community Specialist Hospital to be used during their Smoking Cessation Services at their Wellness Clinic, in their respective facilities. Buntong Smokebusters had received very encouraging feedback from all STAR users at health clinic facilities in Perak as well as from the private facilities stated above.

Buntong Smokebusters in collaboration with the Perak State Health Department presented our STAR project at the National Technical Meeting of Smoking Cessation Services in Ministry of Health, Malaysia, on 27 September, 2023, whereby it was accepted to be used in all health clinic facilities in Malaysia. STAR also won the Champion prize for Category of Service, Innovation Competition Award, Ministry of Health, Malaysia, 2023.

ETHICAL APPROVAL

This innovation project was approved by Ministry of Health Malaysia and was contested for Category of Service, Innovation Competition Award, Ministry of Health, Malaysia, 2023.

CONFLICT OF INTEREST

None of the authors have any conflict of interest in this study.

FUNDING

We did not receive any funding to conduct this research.

DATA SHARING PLAN

Raw data uploaded in publicly available databases can be shared and available upon request.

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