Implementation of pharmacist-led medication reviews to address polypharmacy and optimise medications in a geriatric population

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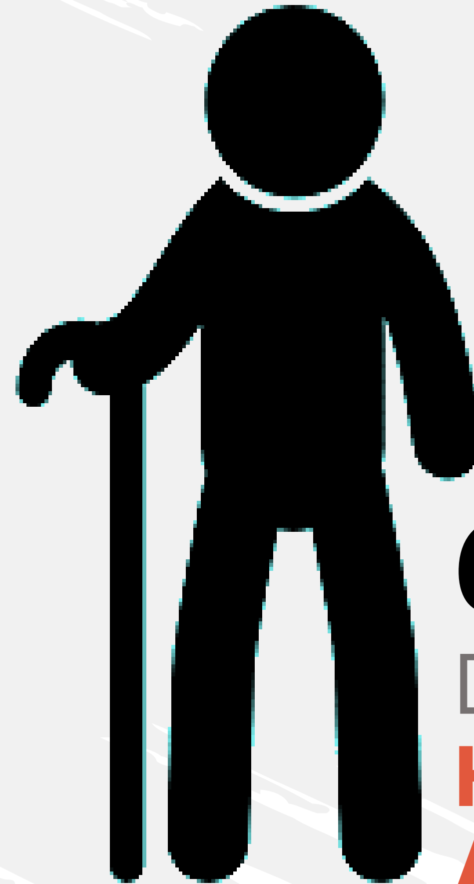
HSQC QI Scientific Symposium
Wellington

2500
2500

ADULTS **OVER 65** YEARS OF **AGE**

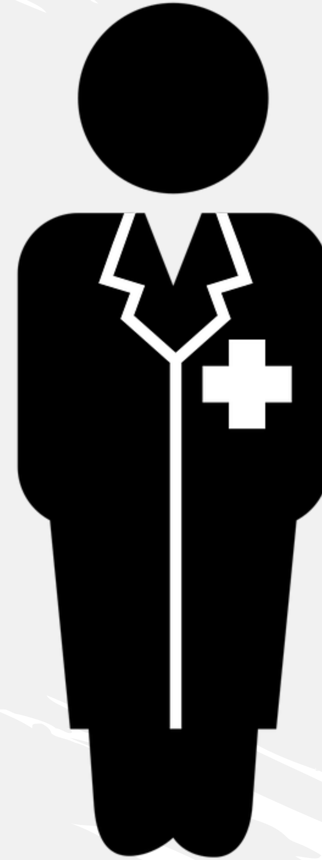
40-50% OF **TOTAL** HEALTHCARE **BUDGET**



41% PRESCRIBED **INAPPROPRIATE** MEDICATIONS

6-30% ADVERSE DRUG REACTION **HOSPITAL ADMISSIONS**

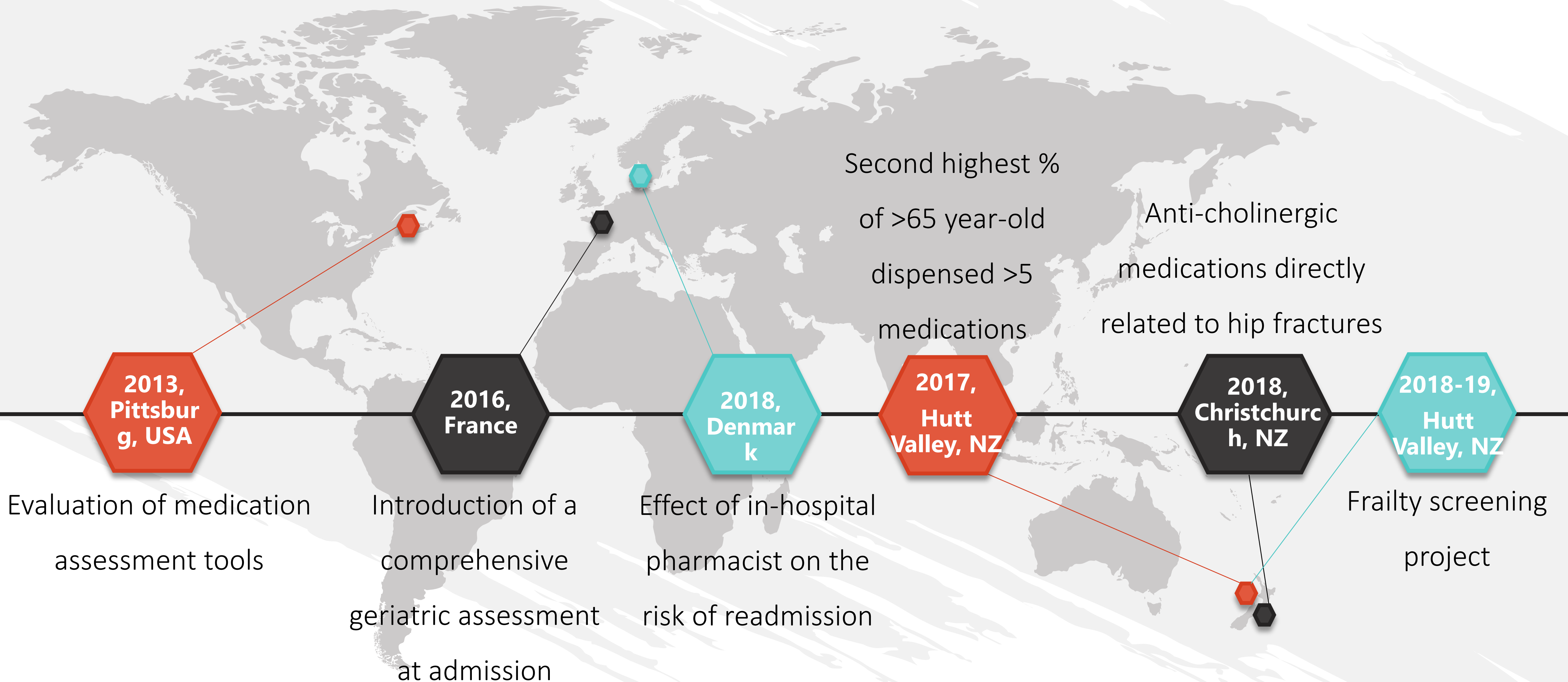
SHARE **KNOWLEDGE**
DECREASE PRESSURE
ON **HEALTHCARE**
SYSTEM



25 PHARMACIST PRESCRIBERS

7.84
PHARMACISTS PER **100,000**

Identifying the problem

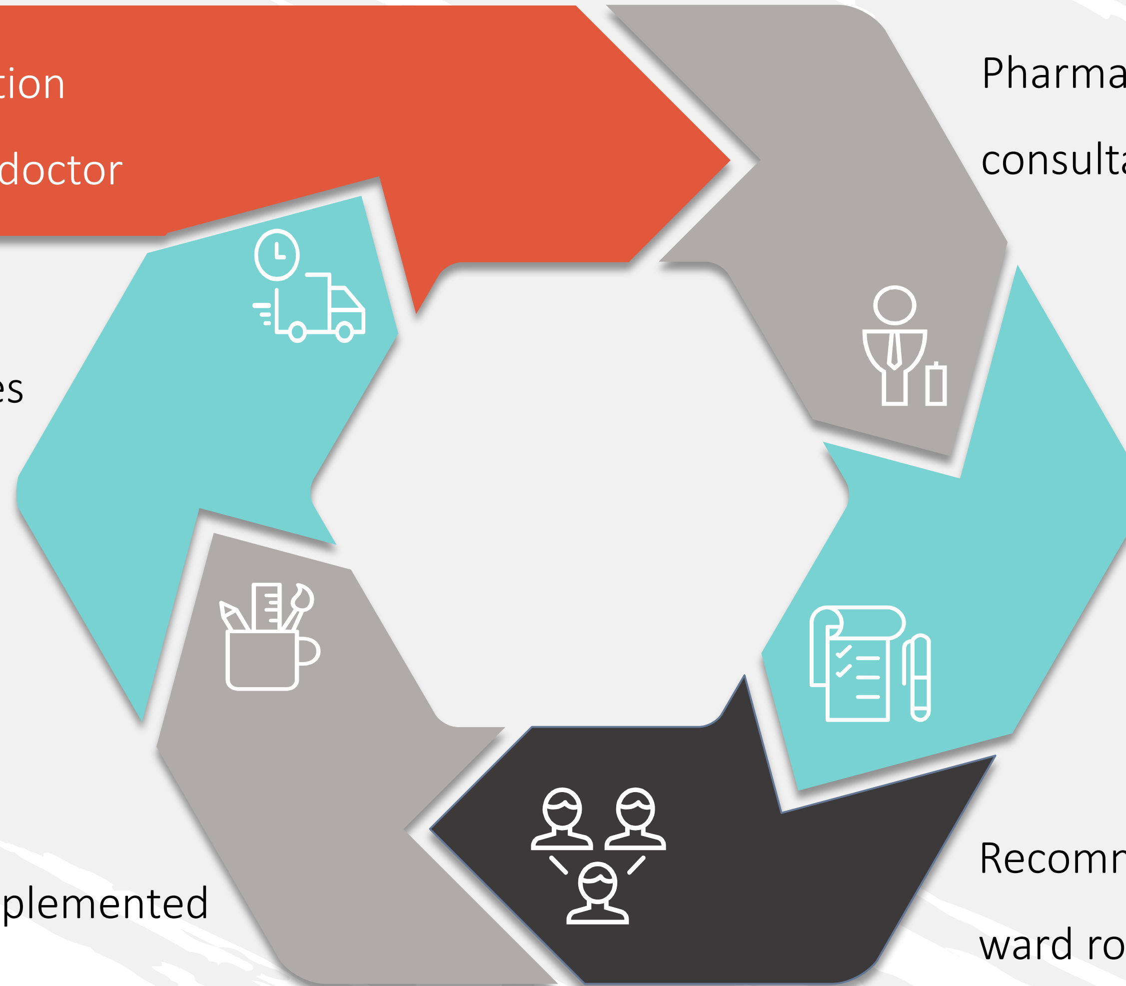


Purpose

Introduce a comprehensive pharmacist-led medication review (CMR) to geriatric patients on the older persons and rehabilitation ward at Hutt Hospital, in order to improve medication use and documentation of medication changes; thereby, optimising therapeutic outcomes.

Current practice

Patient arrives on ward, medication history completed by admitting doctor



Pharmacist attends weekly consultant ward round

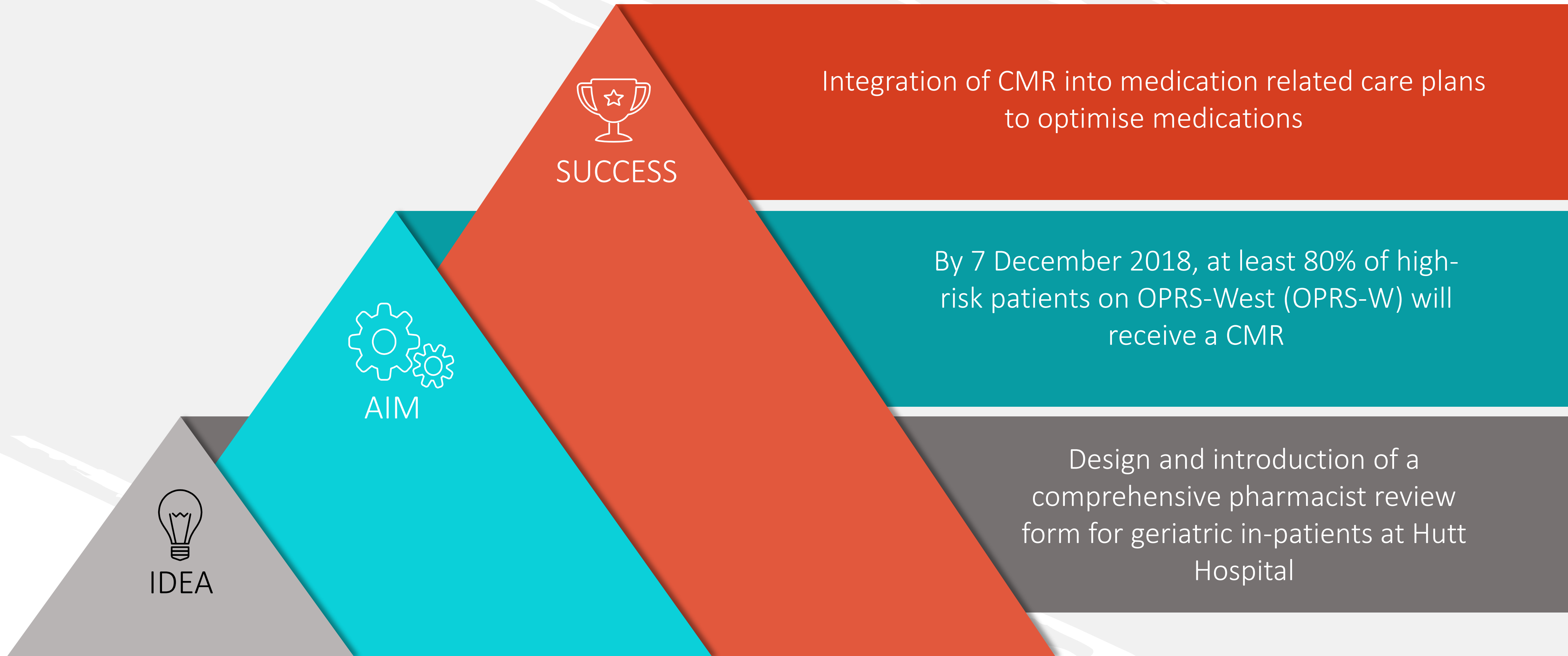
Medication reconciliation on ward round

Recommendations made on ward round

Changes implemented

Patient Discharges

The dream



Methods

Model for improvement approach

Project Presentation to the team

Literature Search

Developing a driver diagram

Problem Definition

PDSA timeline

AUGUST-SEPTEMBER 2018	OCTOBER 2018	NOVEMBER 2018	DECEMBER 2018	JANUARY 2019

PROJECT DESIGN

31/07/19- 30/09/18
Project design

PDSA 1
Intro of CMR form

02/10/18-08/10/18
Form spread over 4 pages and reformatted

PDSA 2
Promotion of form

09/10/18-29/10/18
Introduction of folder, education, green paper

PDSA 3
Electronic form

29/10/18- 12/11/19
Electronic forms

PDSA 4
Increase pharm. presence on rounds

29/10/18- 12/11/19
Twice weekly ward rounds

REVIEW: MEDICATION RECONCILIATION

Safe use of Medications in Older Persons

SURNAME: ______________ NHI: ______________
FIRST NAMES: ______________
DATE OF BIRTH: ____/____/____ SEX: ______________

Reason for medication review: ______________
Pharmacist completing review (date): ______________

Allergies and ADRs:

Weight:
Height:
Adj. weight (if req.):
Cal. CrCl:

Medications prior to admission	Dose	Route	Freq.	Indication	Needs reconciling (✓)	Interactions	MAI score	Adherence Good/ Poor	Monitoring
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
Medicines the patient was NOT taking prior to admission but have been prescribed with no documentation to indicate initiation									
1									
2									
OTC medications:									
1									
2									

Untreated conditions:

PATIENT FACTORS

Safe use of Medications in Older Persons

SURNAME: ______________ NHI: ______________
FIRST NAMES: ______________
DATE OF BIRTH: ____/____/____ SEX: ______________

Patient factors:

Managing medications:

Community Pharmacy:

Any difficulties with medications (taking, obtaining):

Experiencing any side effects:

Any reminders:

Yellow card or similar:

Believes medications are working:

Expectations from medications:

REVIEW: PHARMACIST MEDICATION RECOMMENDATIONS

MAI score (admission):________ DBI score (admission):________

MAI score (discharge):________ DBI score (discharge):________

SURNAME:________ NHI:________
FIRST NAMES:________
DATE OF BIRTH: ___/___/___ SEX:________
Please attach patient label here

Medication problem identified	Action proposed

CHANGES IN MEDICATIONS

Medications				New:	Stop (✓)	Changed:	Reason for change/cessation:
1	0	0	0				
2	0	0	0				
3	0	0	0				
4	0	0	0				
5	0	0	0				
6	0	0	0				
7	0	0	0				
8	0	0	0				
9	0	0	0				
10	0	0	0				
11	0	0	0				
12	0	0	0				
13							
14							
15							
16							
17							

What is needed for safe medication use on discharge?

PDSA timeline

AUGUST-SEPTEMBER 2018	OCTOBER 2018	NOVEMBER 2018	DECEMBER 2018	JANUARY 2019

PROJECT DESIGN

31/07/19- 30/09/18
Project design

PDSA 1
Intro of CMR form

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Form spread over 4 pages and reformatted

PDSA 2
Promotion of form

09/10/18-14/10/18
Introduction of folder, education, green paper

PDSA 3
Electronic form

15/10/18- 12/11/19
Electronic forms

PDSA 4
Increase pharm. presence on rounds

14/10/18- 12/11/19
Twice weekly ward rounds

PDSA 5
Scores

12/11/19-07/12/19
Process for calculating DBI and MAI scores

PDSA 6
Trial for sustainability

12/01/19-07/02/19
Trial forms for ?adopt

Medication Appropriateness Index (MAI)

- Identification of problem medications is higher with MAI compared to other tools in the elderly
- Each medication gets a score from 10-30
- **NOT** telling us the number of medications
- Key point: **HOW** each medication is being used for the patient in front of us
- Individualised score

To assess the appropriateness of the drug, please answer the following questions and circle the applicable score:

Question				
1. Is there an indication for the drug? Comments:	1 Indicated	2	3 Not Indicated	9 DK†
2. Is the medication effective for the condition? Comments:	1 Effective	2	3 Ineffective	9 DK
3. Is the dosage correct? Comments:	1 Correct	2	3 Incorrect	9 DK
4. Are the directions correct? Comments:	1 Correct	2	3 Incorrect	9 DK
5. Are the directions practical? Comments:	1 Practical	2	3 Impractical	9 DK
6. Are there clinically significant drug–drug interactions? Comments:	1 Insignificant	2	3 Significant	9 DK
7. Are there clinically significant drug–disease/condition interactions? Comments:	1 Insignificant	2	3 Significant	9 DK
8. Is there unnecessary duplication with other drug(s)? Comments:	1 Necessary	2	3 Unnecessary	9 DK
9. Is the duration of therapy acceptable? Comments:	1 Acceptable	2	3 Unacceptable	9 DK
10. Is this drug the least expensive alternative compared to others of equal utility? Comments:	1 Least expensive	2	3 Most expensive	9 DK

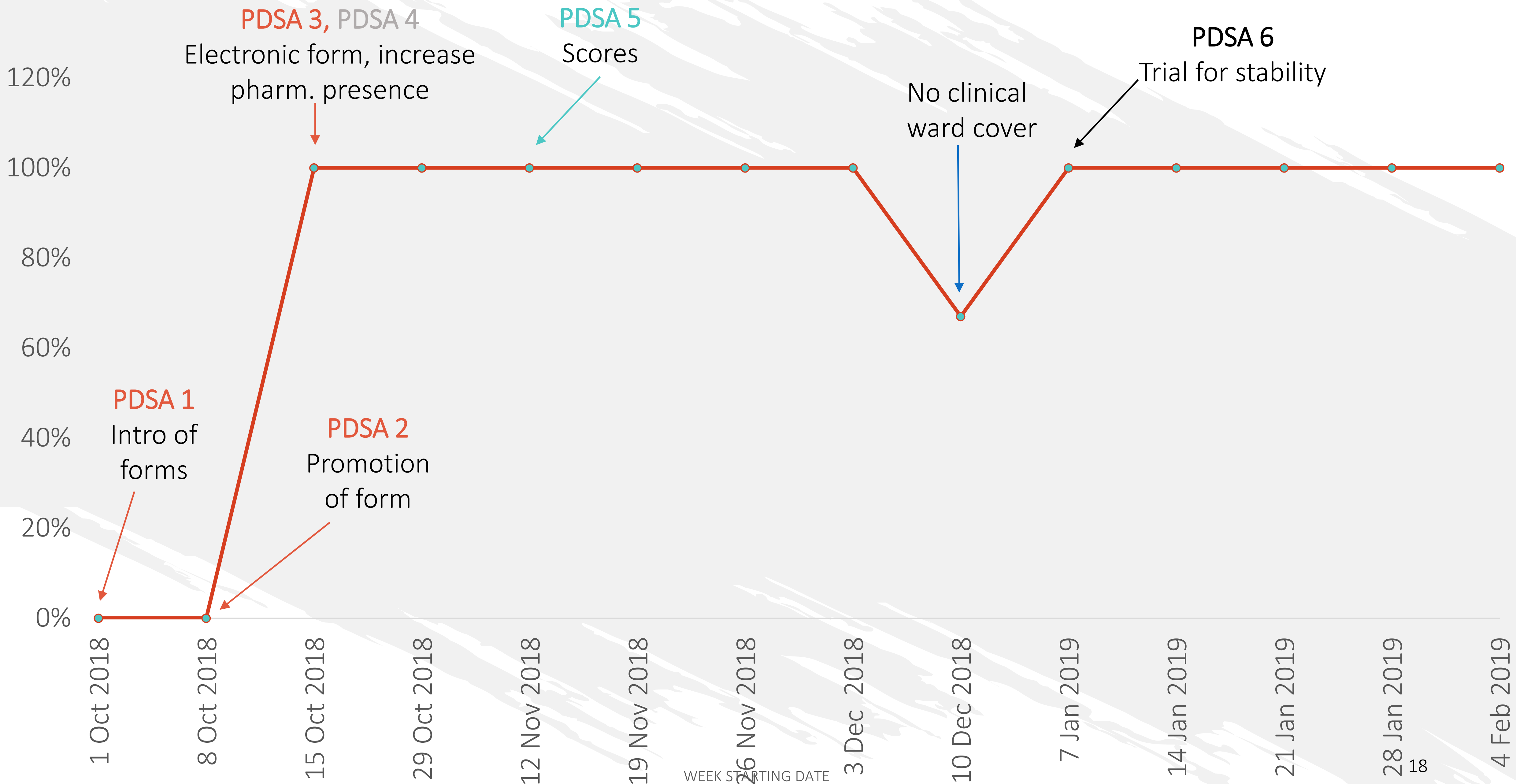
*Complete instructions in the use of the scale are available upon request.
†Don't know.

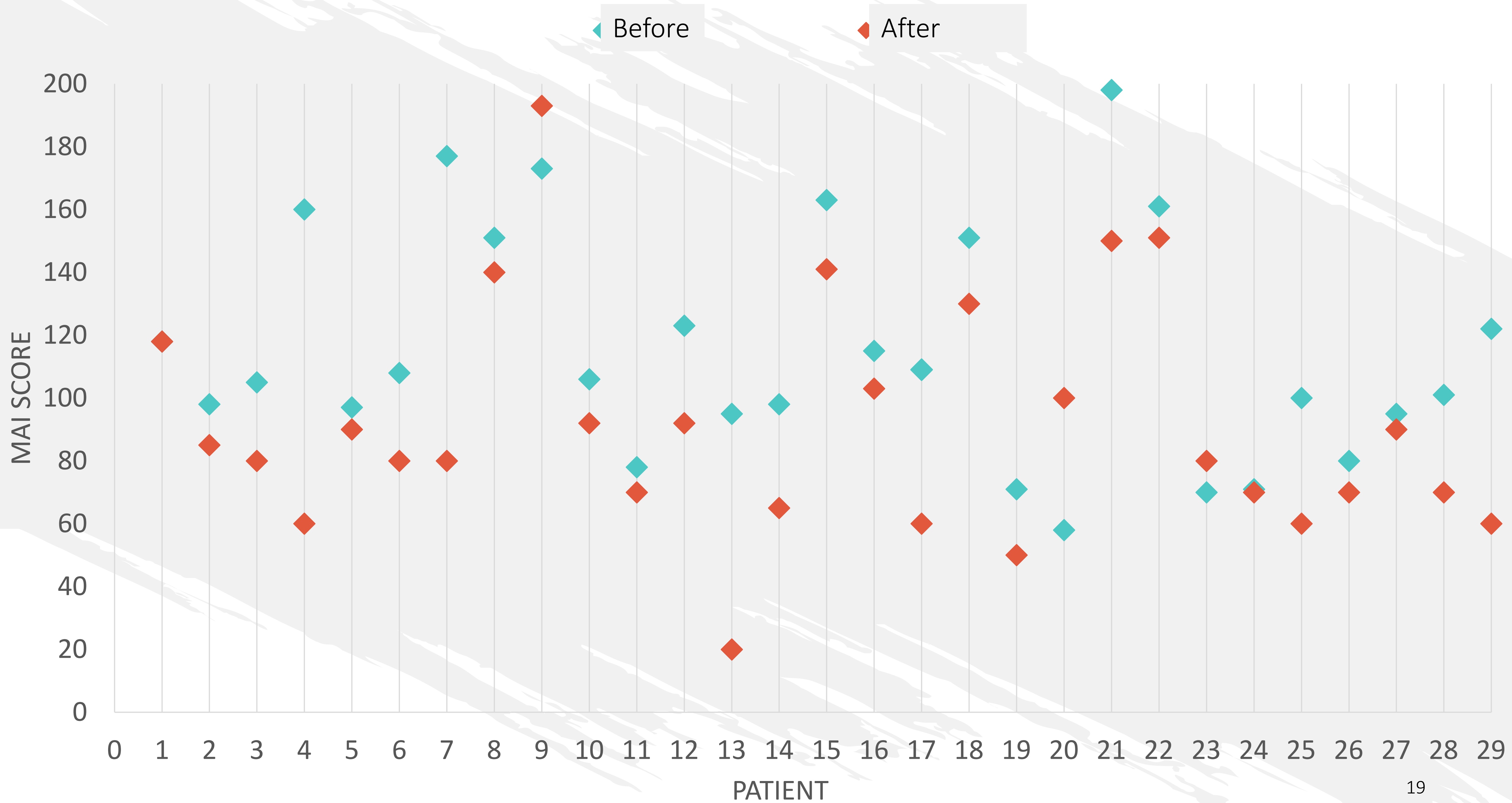
Measurements

- *Outcome measure* (aim)
  - % CMR completed in high risk patients per week
- *Process measure* (scoring tools)
  - Change in MAI and DBI score from admission to discharge for each patient
- *Balance measure* (pharmacist time)
  - Number of pharmacist recommendations
  - % recommendations considered by medical team

Results

Patient characteristics	15th October 2018- 8th February 2019
Total patients in project	38
Average age (years)	77
Gender	
- Male	13
- Female	25
Ethnicity	
- NZ European	26
- European	3
- Pacific	3
- NZ Maori	2
- Middle Eastern	1
- Polish	1
- Fijian	1
Mean number of meds/patient	10
% high risk patients	87%


PERCENTAGE OF PHARMACIST-LED COMPREHENSIVE MEDICATION REVIEW FORMS COMPLETED PER WEEK
PDSA 3, PDSA 4
Electronic form, increase pharm. presence
PDSA 5
Scores
PDSA 6
Trial for stability
No clinical ward cover
PDSA 1
Intro of forms
PDSA 2
Promotion of form
120%
100%
80%
60%
40%
20%
0%
1 Oct 2018
8 Oct 2018
15 Oct 2018
29 Oct 2018
12 Nov 2018
19 Nov 2018
26 Nov 2018
3 Dec 2018
10 Dec 2018
7 Jan 2019
14 Jan 2019
21 Jan 2019
28 Jan 2019
4 Feb 2019
WEEK STARTING DATE


CHANGE IN MAI SCORE FROM ADMISSION TO DISCHARGE FOR EACH PATIENT
Before
After
MAI SCORE
200
180
160
140
120
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
PATIENT

Results : What was the impact of the reviews?

Pharmacist recommendations	
Patients with documented interventions	28
Number of interventions	82
Mean number of interventions/ patient	3
% of pharmacist interventions that were actioned/ considered by medical team	82%

Model for improvement approach

Problem Definition

Developing a driver diagram

Literature Search

Project Presentation to the team

Design and testing of pilot

Implementation of form

End of project

Presentation of results

Implemented into business as usual

Key take home messages

Inappropriate polypharmacy needs to shift towards optimisation

Comprehensive medication review resulted in optimising individual patient's medication regimens

Pharmacist resource is scarce- any tasks need to demonstrate value

Acknowledgements

- Saira Dayal- QI Advisor
- Teresa Thompson- Geriatrician
- Katrina Tandecki- Chief Pharmacist
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