INTRODUCTION AND AIM

+ MAI Tool

To measure the appropriateness of prescription in older adults using MAI tool.

+ Best Interventions

To choose the best interventions to sensitize the healthcare staffs to reduce patient safety incidences like fall and medication error.

+ Fall Risk Assessment Tool

To understand the limitations of MAI tool and introduce fall risk increasing drugs list (FRIDs) into the Fall Risk Assessment tool in the healthcare organization among geriatric patients.

QUESTIONS	SCORE
Is there an indication for the drug?	3
Is the medication effective for the condition?	3
Is the dosage correct?	2
Are the directions correct?	2
Are the directions practical?	2
Are there clinically significant drug-drug interactions?	2
Are there clinically significant drug disease/condition interactions?	1
Is there unnecessary duplication with other drugs?	1
Is the duration of therapy acceptable?	1
Is this drug the least expensive alternative available compared with others of equal utility?	1
Max Score of Inappropriateness	18

Preface

Medication Appropriateness Index

- **Medication Appropriateness Index (MAI)** measures the appropriateness of prescribing in elderly patients, using 10 criteria for each medication prescribed.

- Medication review is an essential component of **comprehensive falls assessment** in patient safety and geriatric assessment tool.

METHODOLOGY

Study Design: Observational study

Study period: April 2022 to March 2023

Sample size: Treatment charts of 100 geriatric patients

Phase-1

Reviewing Prescriptions using

- MAI Tool
- PDCA

Phase-2

- **Driver Diagram Quality Tool**

PDCA Tool

Plan

1. To apply **MAI tool** for reviewing medication charts of **geriatric patient.**

2. To analyse the **polypharmacy** and its relation **to fall incidences.**

Act

1. MAI tool has **limitations on fall prevention** hence we have **developed FRIDS list** (fall risk increasing drug list) into the fall risk assessment tool.

2. **Geriatric initial assessment form** was introduced with a **modification** related to polypharmacy as well as fall risk drugs.
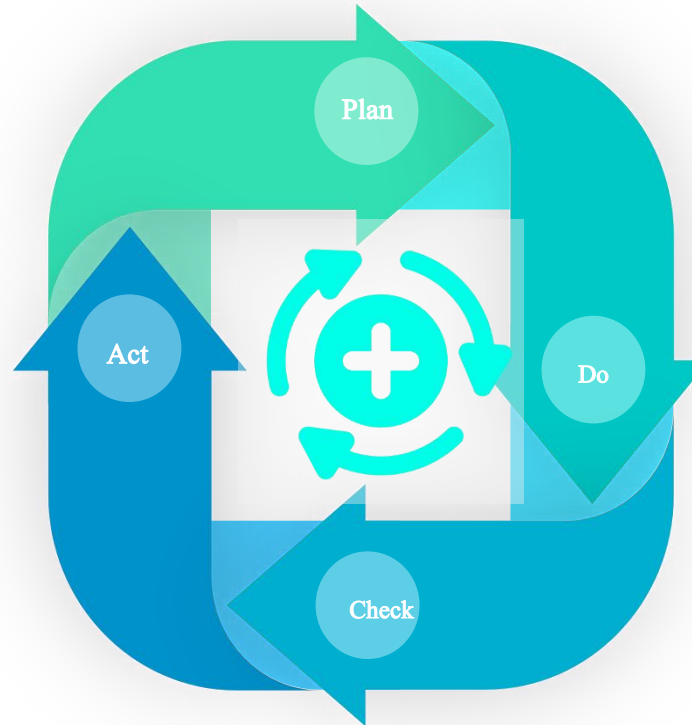
Do

1. **Multidisciplinary team** was made.
2. Discussed with concerned clinician and rectified referring **NICE/ISMP/WHO guidelines.**
3. Endorsed strict antibiotic policy.
4. Hospital formulary made available to prescribers.

Check

1. Reduction of inappropriate prescription from **52% to 24%.**
2. **61% of polypharmacy** among geriatric patient was **reduced to 32 %.**
3. Out of **258 drugs 115** were associated with **fall risk.**

MODIFIED GERIATRIC ASSESSMENT FORM

MAI tool

Reference:
1.Hanlon JT,et al. J Clin Epidemiology 1992;45:1045
2. http://z.umn.edu/INNOVATIONS

DATA ANALYSIS

Out of 495 drugs audited for 100 patients 52 %(n= 258) of the drugs prescribed were inappropriate, 9.6 % (n=48) of drugs were marginally inappropriate whilst 38 %(n=189) were appropriately prescribed.

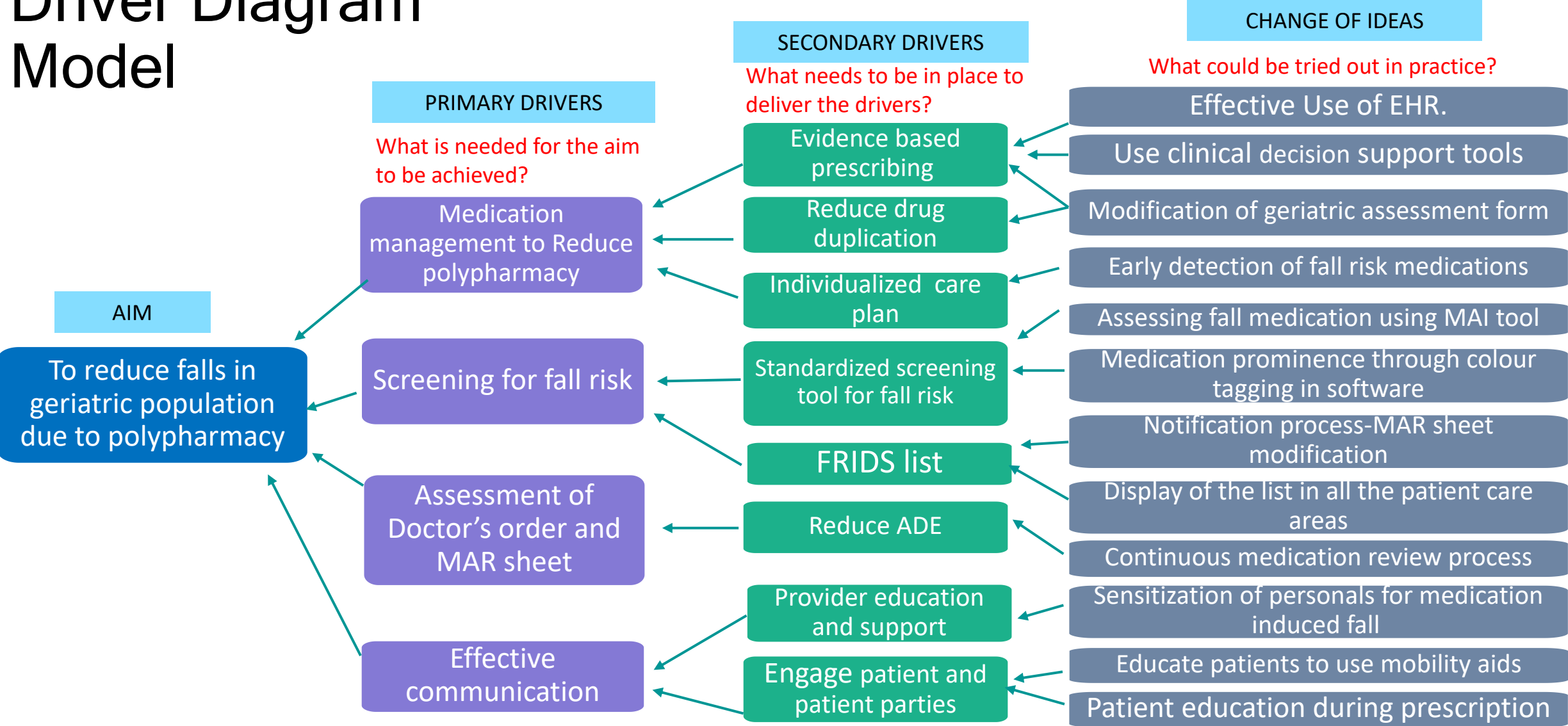| CRITERIA MAI TOOL	Drugs with an inappropriate MAI criterion (n=495)		Patients with an inappropriate prescription (n=100)	
	NUMBER	%	NUMBER	%
1. Is there an indication for the drug?	36	7.3	28	28
2. Is the medication effective for condition?	13	2.6	12	12
3. Is the dosage correct?	89	18	62	62
4. Are the directions correct?	126	25.6	71	71
5. Are the directions practical?	41	8.3	33	33
6. Are there clinically significant drug-drug interactions?	28	5.7	22	22
7. Are there clinically significant drug disease/condition interactions?	19	3.8	15	15
8. Is there unnecessary duplication with other drug(s)?	13	2.6	11	11
9. Is the duration of therapy acceptable?	76	15.4	50	50
10. Is this drug the least expensive alternative compared to others of equal utility?	47	9.5	41	41

OUTCOME

PHASE-1

1. Using MAI tool analysis inappropriate prescription was reduced from 52% to 24%.
2. 61% of polypharmacy among geriatric patient was reduced to 32 %.
3. Developed **Fall risk increasing drug list and modification of Geriatric assessment tool**

PHASE-2

❑ Driver diagram quality improvement tool to reduce falls in geriatric population due to polypharmacy

Driver Diagram Model

Driver Diagram Model

AIM

To reduce falls in geriatric population due to polypharmacy

PRIMARY DRIVERS

What is needed for the aim to be achieved?

- Medication management to Reduce polypharmacy
- Screening for fall risk
- Assessment of Doctor's order and MAR sheet
- Effective communication

SECONDARY DRIVERS

What needs to be in place to deliver the drivers?

- Evidence based prescribing
- Reduce drug duplication
- Individualized care plan
- Standardized screening tool for fall risk
- FRIDS list
- Reduce ADE
- Provider education and support
- Engage patient and patient parties

CHANGE OF IDEAS

What could be tried out in practice?

- Effective Use of EHR.
- Use clinical decision support tools
- Modification of geriatric assessment form
- Early detection of fall risk medications
- Assessing fall medication using MAI tool
- Medication prominence through colour tagging in software
- Notification process-MAR sheet modification
- Display of the list in all the patient care areas
- Continuous medication review process
- Sensitization of personals for medication induced fall
- Educate patients to use mobility aids
- Patient education during prescription

Source: What's your theory? Quality progress,ASQ,july 2015

CONCLUSION

- **MAI** is an implicit measure of medication appropriateness but not designed to assess **fall risk.**

- **Driver Diagram a new Quality improvement tool** systematically identity change of ideas.

- Fall risk increasing drug list and modification of Geriatric assessment tool helped in reduction of fall in elderly patients .

- Study to be continued to check the fall in the incidence rate in next 6 months among elderly patient

- **Patient safety culture** is incorporated among health care staff to handle geriatric patients better with better quality of life for our elders .

REFERENCES

- ❖ World Health Organization ,Medication safety in polypharmacy, 2019: 1-57
- ❖ What's your theory? Quality progress,ASQ,july 2015.

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