

MEDICATION APPROPRIATENESS INDEX TOOL:

A VALID IMPLICIT INSTRUMENT FOR MEDICATION SAFETY IN OLDER ADULTS.

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P157

INTRODUCTION

In-appropriate prescribing for older adults is a major problem and health concern in healthcare setups. **Poly-pharmacy** is a wide spread issue especially in low income and middle income countries accompanied by elevated risk of medication related complication such as patient falls discussed in **World Falls Guidelines (WFG)** 2019 for fall prevention.

The study discusses the Implementation of **Assessment Tool and Medication appropriateness index tool (MAI)** to **reduce FALL RISK** in elderly along with consideration of the medication error in poly pharmacy develops as a **predictive risk factor** which differ in lot LMIC and high income countries.

AIM

- To measure the **appropriateness of prescription** in older adults using MAI tool with its impact on fall risk.
- To choose the **best interventions** to sensitize the healthcare staffs to reduce patient safety incidences like fall and medication error.
- To analyze the efficacy of **fall risk assessment tool** and MAI tool in decreasing the polypharmacy and inappropriate prescribing.
- Assessing **Challenges in implementation of assessment tool** and multifactorial fall risk assessments and its significance in hospitals.

METHOD

Study Design: Mixed quantitative and systematized qualitative approach

Study period: April 2022 to March 2023 (ongoing) including phase 1 and 2

Sample size: Treatment charts of 200 geriatric patients

Study universe: One cooperate hospital

Tools used: MAI-Medication appropriateness index tool, PDCA and Driver diagram model.

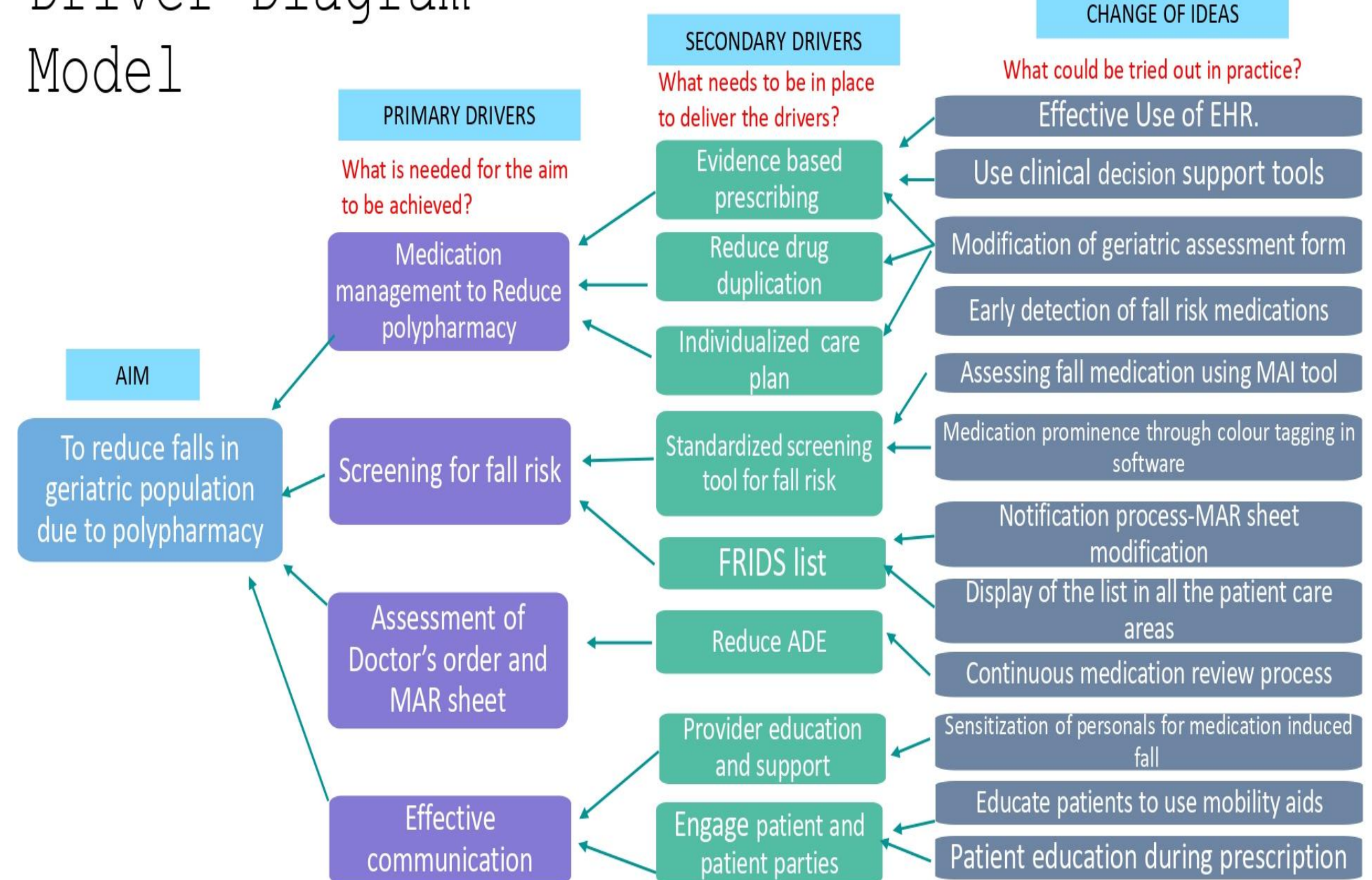
The MAI ratings generated a weighted score of 0-18 per medication and are summed across medications to achieve a patient score.

RESULTS

Out of 1495 drugs audited for 200 patients 52 % (n= 782) of the drugs prescribed were inappropriate, 9.1 % (n=137) of drugs were marginally inappropriate whilst 38 % (n=569) were appropriately prescribed.

MAI CRITERIA	Drugs with an inappropriate MAI criterion (n=1495)		Patients with an inappropriate prescription (n=200)	
	NUMBER	%	NUMBER	%
1. Is there an indication for the drug?	109	7.3	56	28
2. Is the medication effective for condition?	38	2.6	24	12
3. Is the dosage correct?	269	18	124	62
4. Are the directions correct?	388	25.6	142	71
5. Are the directions practical?	124	8.3	66	33
6. Are there clinically significant drug-drug interactions?	85	5.7	44	22
7. Are there clinically significant drug disease/condition interactions?	57	3.8	30	15
8. Is there unnecessary duplication with other drug(s)?	39	2.6	22	11
9. Is the duration of therapy acceptable?	224	15.4	100	50
10. Is this drug the least expensive alternative compared to others of equal utility?	143	9.5	82	41

Driver Diagram Model



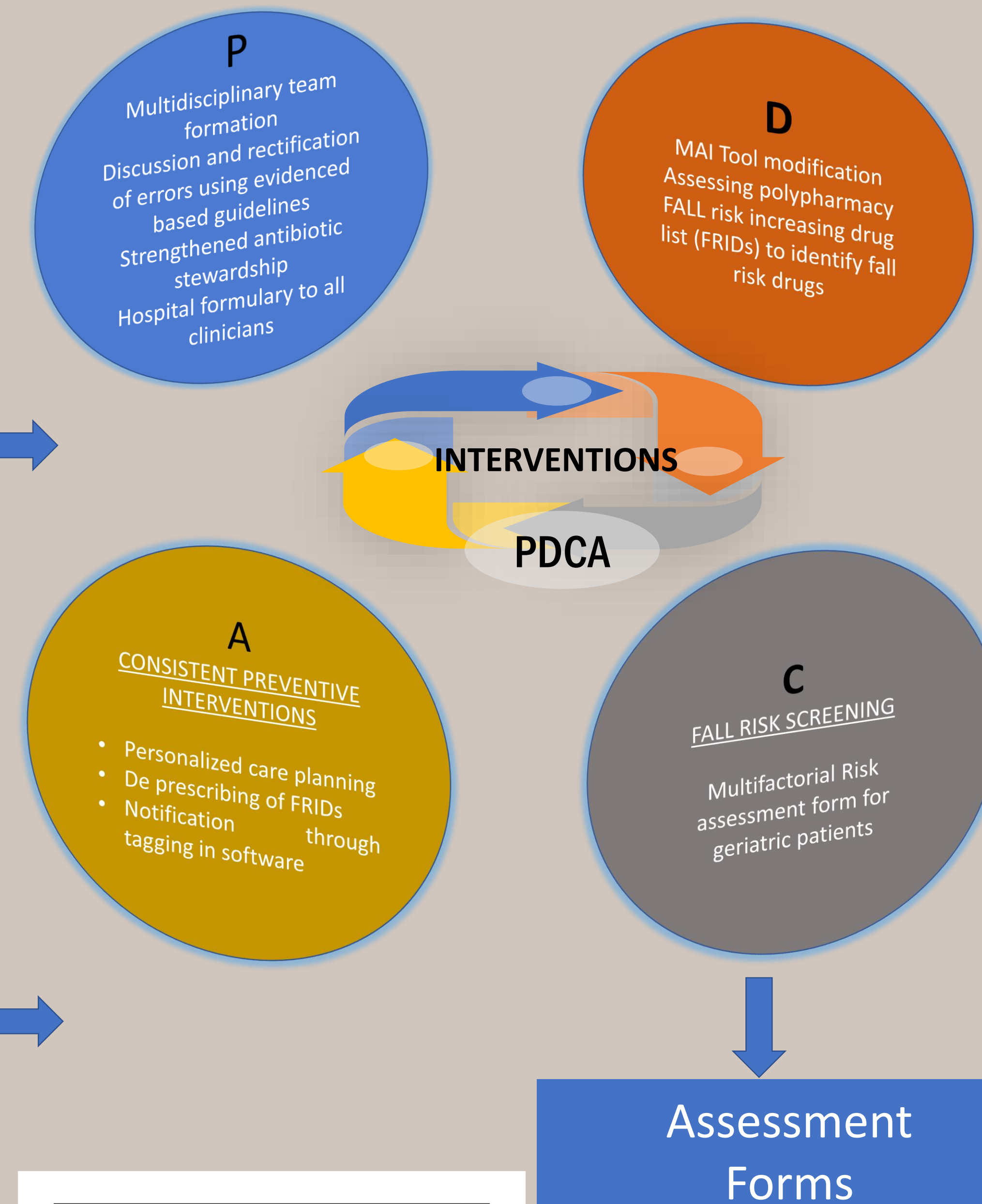
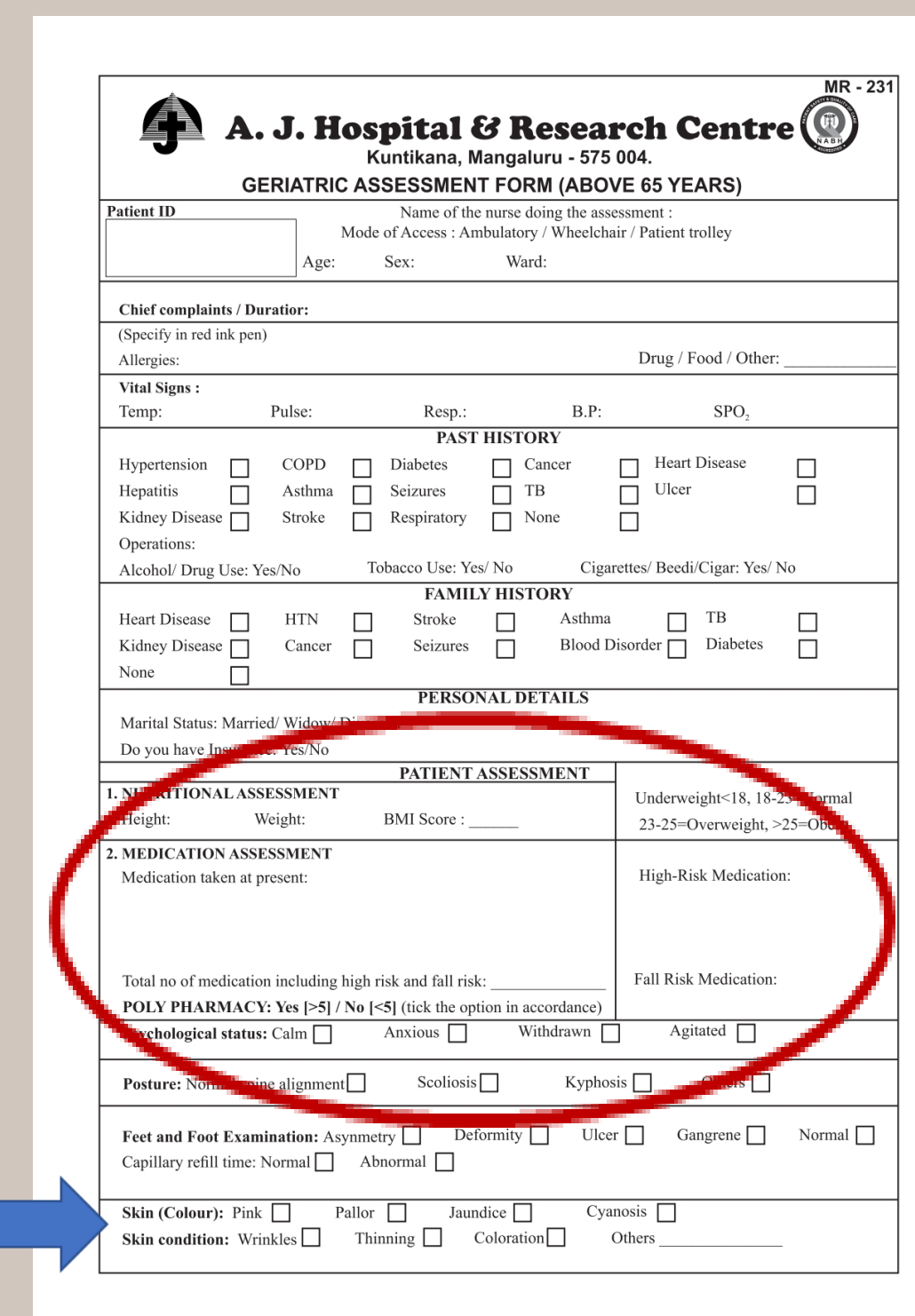
IMPACT OF INTERVENTIONS

PHASE-1

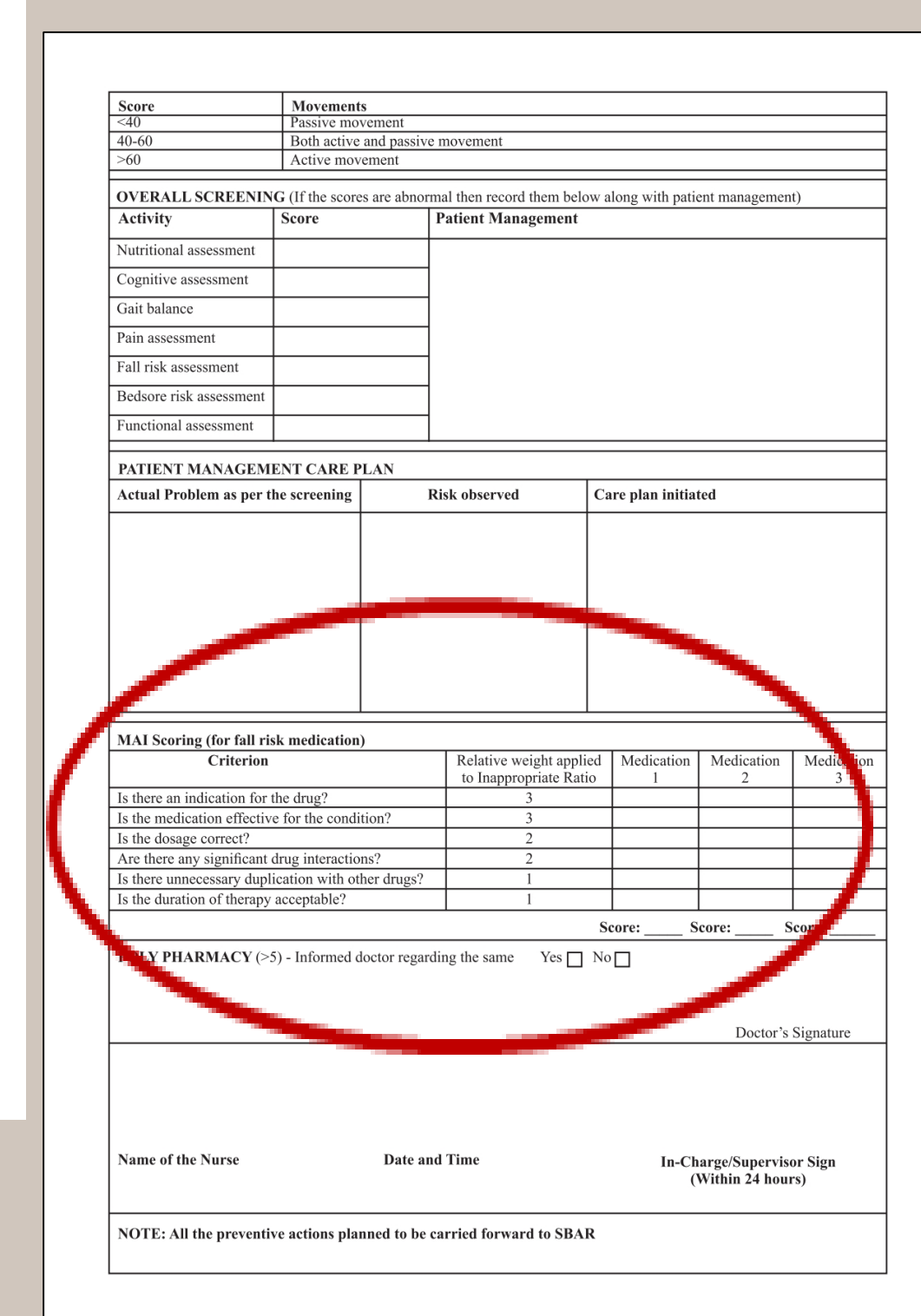
- Using MAI tool analysis inappropriate prescription was reduced from 52% to 24%.
- 61% of polypharmacy among geriatric patient was reduced to 32 %.
- Developed Fall risk increasing drug list

PHASE-2

- Multifactorial assessment tool developed as a excellent screening tool to prevent fall.
- Validating the sustainability of the tool in other hospital (ongoing)

The form is a Geriatric Assessment Form (ABOVE 65 YEARS) from A. J. Hospital & Research Centre. It includes sections for Patient Information, Clinical History, Physical Examination, and Assessment. The form is used to assess the patient's health and medication use.



The Assessment Forms show the results of the geriatric assessment. It includes sections for Patient Information, Clinical History, Physical Examination, and Assessment. The form is used to assess the patient's health and medication use.

Ref: Resources for the Comprehensive Geriatric Assessment based Proactive and Personalized Primary Care of the Elderly.

CONCLUSIONS

- MAI tool can be used as valid tool for medication review** to analyse the inappropriate prescribing but not designed to assess fall risk.
- Driver Diagram a new Quality improvement tool** systematically identify change of ideas in fall prevention.
- Combining **Fall risk increasing drug list** with a **multifactorial fall risk assessment tool** based on **MAI criteria** in elderly patients **impacted on the medication error related to polypharmacy** thereby **reduced the rate of fall incidences**.
- This study **highlights the need for a constant review of fall risk factors** in geriatric patient thus providing safe and quality care for the elderly patient with high incidence of polypharmacy in **developing countries like India**.
- The study to be **continued for another 6 months** for **validating the sustainability of this tool in other hospital**.
- Patient safety culture** is incorporated among health care staff to handle geriatric patients better with better quality of life for our elders.

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