

**Fall prevention in the hospitalized elderly using Falls Risk Increasing Drugs (FRIDs) assessment tool through multi-disciplinary approach:
A Quality Improvement Project**



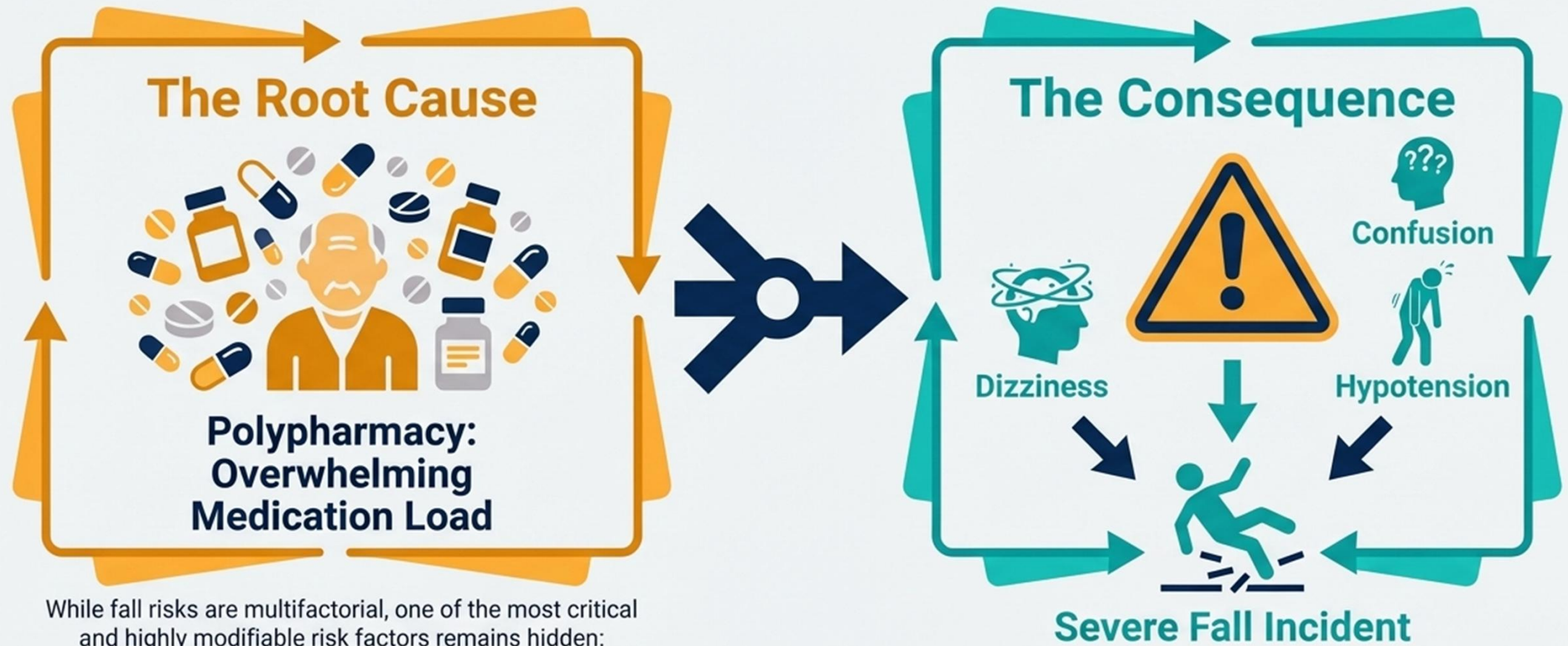
Clinical Safety & Quality Service (III)

Thomas CHEUNG

Department of Pharmacy

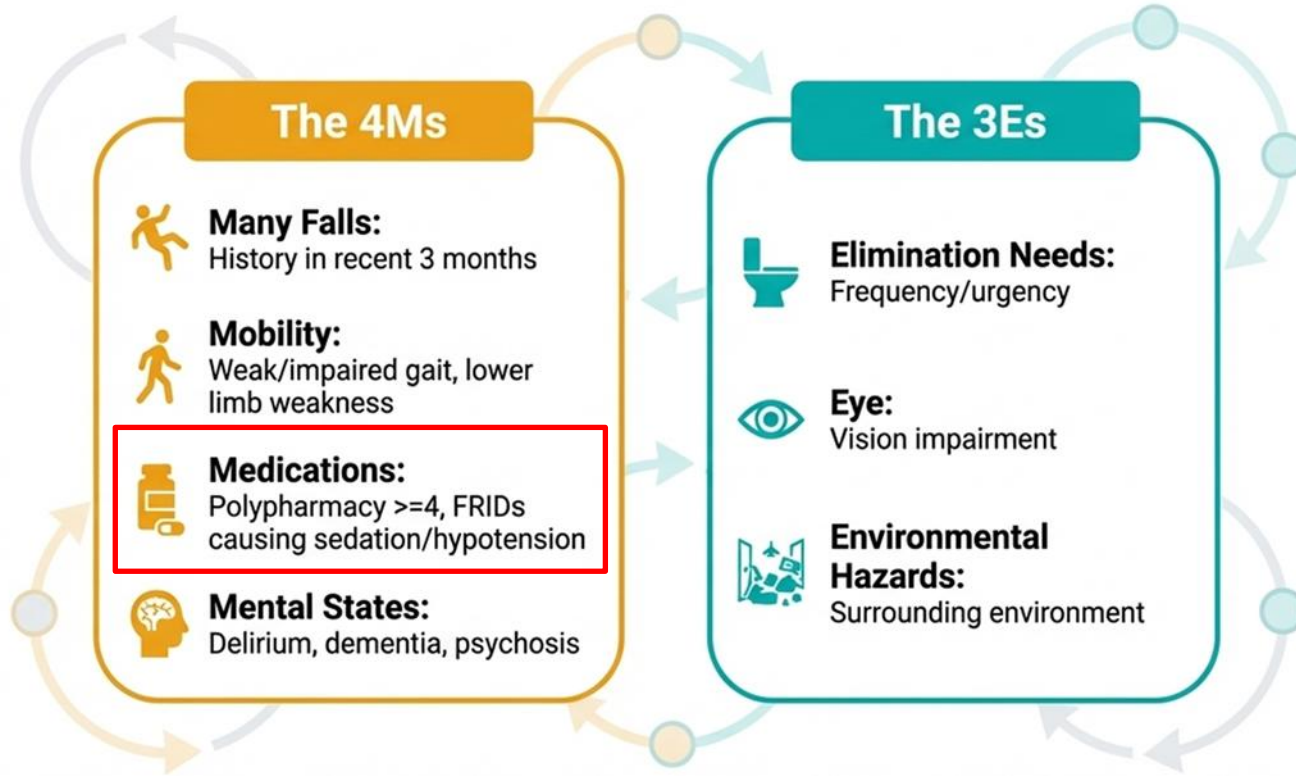
Queen Mary Hospital

Background



While fall risks are multifactorial, one of the most critical and highly modifiable risk factors remains hidden:
Fall Risk-Increasing Drugs (FRIDs).

Background



Objectives

- To assist doctors and nurses to identify medications which may contribute to patients' fall risk through using the FRIDs assessment tool
- To provide medication reviews of symptoms associated with FRIDs in collaboration with doctors and nurses for those patients with high fall risks in medical wards by Clinical Ward Pharmacists
- To increase staff awareness and knowledge of FRIDs on fall prevention

Methodology: To identify patients' fall risk through using the FRIDs assessment tool

Fall Risk Increasing Drugs (FRIDs) commonly prescribed in QMH

Legends - Potential side effects of FRIDs on fall risk

Dizziness / Nausea	Confusion	Hyponatremia	Movement Disorder	Postural Hypertension / Hypotension
--------------------	-----------	--------------	-------------------	-------------------------------------

ANTIEMETICS					
Proton Pump Inhibitors (PPI)		Selective Serotonin Receptor Antagonists (SSRAs)		Serotonin-5HT ₃ Receptor Antagonists (5HT ₃ RA)	
Cilastatin Nizatidine Rabeprazole	Esomeprazole Lansoprazole Ranitidine Magnesium	Ezetimibe Ezetimibe Plascatin	Paroxetine Parecoxib Sertaxin	Desvenlafaxine Duloxetine Vortioxetine	
Other Antiemetics		Monamine Oxidase Inhibitors (MAOIs)		Other Antiemetic Drugs	
Metoclopramide		Moclobemide		Aprepitant Tropisetron Vondaparone	

FRIDs		ANTI-SEIZURE DRUGS (ASDs)			
Vincamine Carbamazepine Prasopon Terazosin	Morphine Diazepam Pachitine Tramadol	Valproic acid Carbamazepine Pachitine Gabapentin	Lacosamide Lamotrigine Levetiracetam Oxcarbazepine	Phenytoin Phenobarbital Phenytoin Pregabalin	Rufinamide Topiramate Valproic acid Vigabatrin

ANTIHYPERTENSIVES		
Diuretics		Centrally-acting
Furosemide Hydrochlorothiazide Lidocaine Metolazone Spironolactone		Clonidine Methyldopa
Beta-blockers		Vasodilators
Carvedilol Diltiazem Esmolol		Hydralazine Lacosamide Nitroglycerin

ANTIPYRETICS			
First Generation NSAIDs		Second Generation NSAIDs	
Celecoxib Ibuprofen Flurbiprofen Haloperidol Pericyazine	Etoricoxib Sulpiride Thiomersol Zalcitabine	Amoxicillin Brufen Lorsalene	Cyclo-oxygenase Inhibitors Paliperidone Citalopram Risperidone Ziprasidone

BENZODIAZEPINES			SEBATIVE AND HYPNOTICS (CORUOS)
Alprazolam Bromazepam Clonazepam	Clenazepam Clonazepam Lorazepam	Mizalepam Nitrazepam Triazolam	Zolpidem Zopiclone

ANTICOAGULANTS	
Sedative Anticoagulants	
Chlorzoxiprone Dextropropriofen Dextropropriofen	Cimetidine Dextropropriofen Thylophorone Promethazine

Anticholinergics		Skeletal muscle relaxants
Atracurium Mivacurium Hydralazine Oxytocin	Sildenafil Tolterodine Triazolam	Baclofen

UROLOGICAL ALPHA-BLOCKERS	
Alfuzosin	



IDENTIFY CONTRIBUTING MEDICATIONS

Quick reference guide for recognizing drugs associated with increased fall risk.




ENHANCE FALL RISK ASSESSMENTS

Integrate medication review with comprehensive clinical assessment protocols.

Methodology: To identify patients' fall risk through using the FRIDs assessment tool

Physical & System Deployment



 **Hard copies provided**
placed near CMS station and
and medication trolley

 **CMS Screen Saver**


Nursing Cue Card for Fall Risk Increasing Drugs (with QR Code)

Fall Prevention

Frequency of Assessment

5 moments:

- **Final assessment:**
- 1. Admission
- 2. After transferring from other dept./ ward
- 3. Discharge
- **Re-assessment:**
- 1. Regularly
- 2. After fall
- 3. Change of condition


Scan QR code
For Morse Fall Scale Information

TIPS of Preventive Measures to Fall

4M

Many Falls History of fall in recent 3 months

Mobility Problem Weak or impaired gait, weak muscle, lower limb weakness

Medications Poly-pharmacy (≥ 4) or taking high risk medicines that could cause sedation, confusion, impaired balance, orthostatic blood pressure changes


Mental Status Patient with delirium, dementia or psychosis

3E

Elimination Needs Urinary / bowel frequency or urgency

Eye Vision impairment

Environmental Hazards Surrounding environment

 Scan QR code
Q&S Fall Risk Assessment
3 Mins Tips Video

Always ask patients if they need any help after each approach to patients !


Fall Risk Increasing Drugs (FRIDs) commonly prescribed in OMI

- Legends - Potential side effects of FRIDs on fall risk -

Dizziness / Drowsiness	Confusion	Hyponatremia	Movement Disorder	Postural Hypotension / Hypertension
ANTI-DEPRESSANTS				
Tricyclic Antidepressant (TCA)		Selective Serotonin Reuptake Inhibitor (SSRI)		Serotonin/Norepinephrine Reuptake Inhibitor (SNRI)
Amitriptyline Clomipramine Dothiepin Doxepin	Imipramine Nortriptyline Trimipramine	Citalopram Escitalopram Fluoxetine	Fluvoxamine Paroxetine Sertraline	Desvenlafaxine Duloxetine Venlafaxine
Tetracyclic Antidepressants		Monoamine-Oxidase Inhibitors (MAOI)		Other Antidepressant Drugs
Mianserin Mirtazapine	Moclobemide	Agomelatine	Trazodone Vortioxetine	
OPIODS				
Codone Dihydrocodeine Fentanyl Morphine Morphine Morphine	Buprenorphine Carbamazepine Ethinacridine Tramadol	Lacosamide Lamotrigine Lidocaine Oxcarbazepine	Perampanel Phenobarbital Phenytoin Pregabalin	Rufinamide Topiramate Vaginate Vigabatrin
ANTI-HYPERTENSIVES				
Diuretics		Centrally acting		
Amlodipine Bumetanide Eplerenone Furosemide Furosemide	Fusaric acid Hydrochlorothiazide Indapamide Medazepam Sporidolactone	Diazepam (Tramadol) Hydrochlorothiazide Mebutal (Amitriptyline) Hydrochlorothiazide	Clonidine Methyldopa	
Alpha Blockers		Nitrites		Vasodilators
Doxazosin Phentolamine	Phenoxybenzamine Prazosin Terazosin	Glycerol trinitrate Isosorbide dinitrate Isosorbide mononitrate	Hypotensive Minoxidil Nitroglycerin	
ANTIPSYCHOTICS				
First Generation Antipsychotics (FGAs)		Second Generation Antipsychotics (SGAs)		
Chlorpromazine Flupenthixol Haloperidol Pericyazine	Pinoclide Sulpiride Toluperazine Zuclopentixol	Aripiprazole Asipiprazole Brexpiprazole Clozapine Lurasidone	Olanzapine Paliperidone Quetiapine Risperidone Ziprasidone	
BENZODIAZEPINES				
Alprazolam Bromazepam Clonazepam Clobazam	Carbamazepine Diazepam Furazepam Lorazepam	Midazolam Nitrazepam Triazolam	Zolpidem Zopiclone	
ANTICHOLINERGICS				
Sedative Anticholinergics		Skeletal muscle relaxants		
Chlorpheniramine Cyclopentolate Dicyclanil Dicyclanil Antimuscarinics	Dimethylhydrate Dicyclanil Hydroxyzine Promethazine	Alprazolam Baclofen Baclofen Baclofen Tizanidine Tizanidine Tizanidine	Baclofen	
UROLOGICAL ALPHA-BLOCKERS				
Alfuzosin Tamsulosin				

Reference: Fall Risk Increasing Drugs (FRIDs) Commonly Prescribed in Hospital Authority, Chief Pharmaceutical Officer (Oct 2012)
Prepared by Pharmacy Department, Oct 2012

Methodology: To identify patients' fall risk through using the FRIDs assessment tool

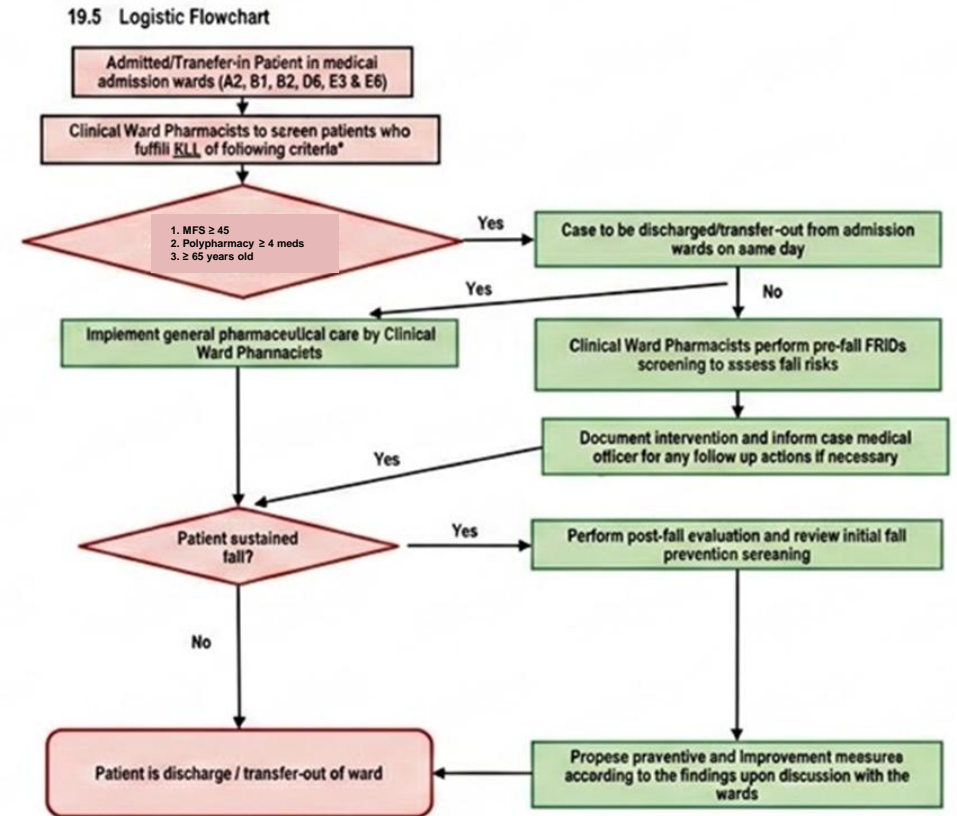


醫院管理局
HOSPITAL
AUTHORITY

Hong Kong West Cluster Guideline on Patient Falls Prevention and Management

Version	Effective Date
2.0	19/03/2026

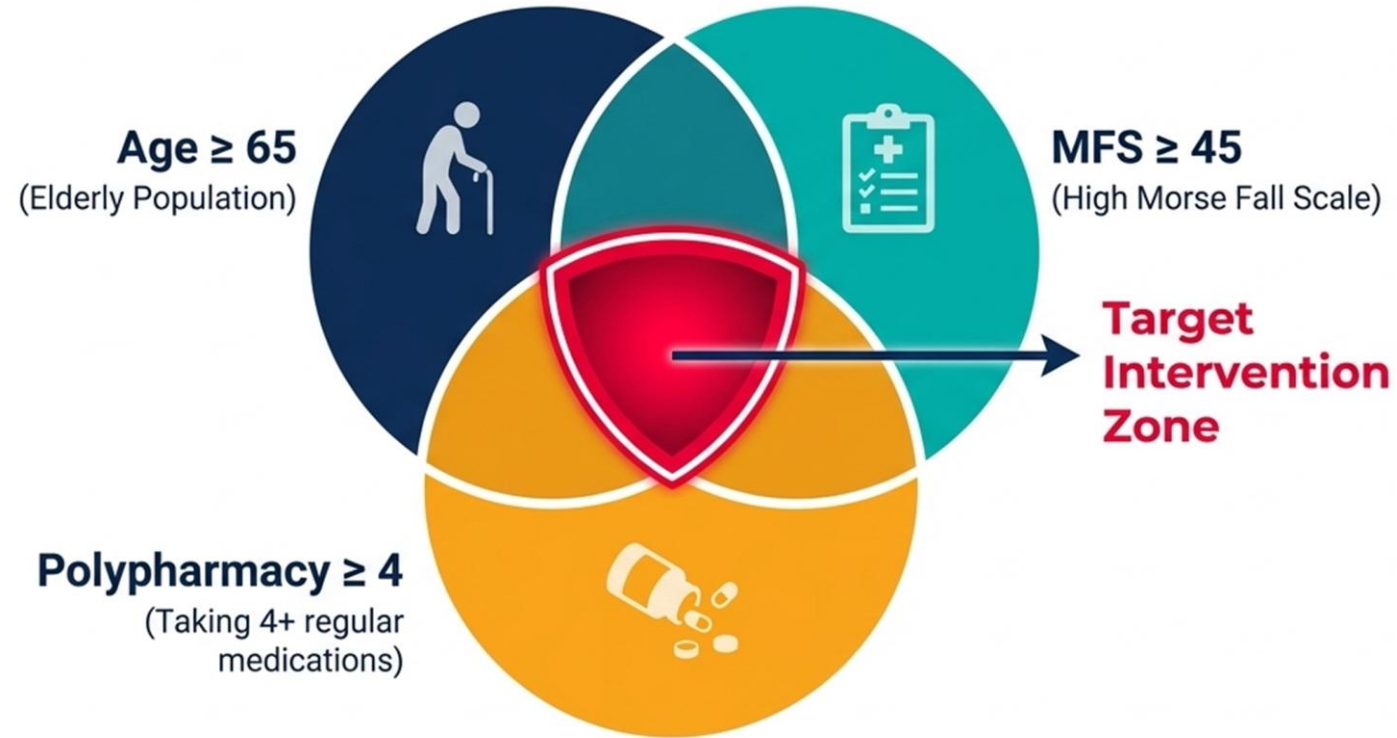
Document Number	HKWC-CQS-GL-CQS-015-v02
Author	HKWC Patient Falls Prevention and Management Committee
Custodian	Secretary of HKWC Patient Falls Prevention and Management Committee
Approved By	HKWC Quality & Safety Committee
Approval Date	18/03/2026
Distribution List:	HKWC All staff



* Nurses may refer to doctors and /or Clinical Ward Pharmacists when encountering high-risk patients with symptoms listed in the FRIDs Table.

Methodology: To provide medication reviews of symptoms associated with FRIDs

- To optimize the use of FRIDs Table, a 3-month prospective pilot study (Oct 2 - Dec 31, 2025) across 6 medical admission wards was conducted



Methodology: To provide medication reviews of symptoms associated with FRIDs

- If a patient is presenting with the symptoms, doctors / nurses may trace for any possible culprit drugs with the color from the table
- Nurses may refer case to the case Medical Officers for medication review and potential medication adjustment
- Case Medical Officers may make further referral to Clinical Ward Pharmacists to seek for possible alternative treatment option



Results

- During the study period, 348 patients in the 6 medical admission wards were screened by Clinical Ward Pharmacists

Intervention Analysis (N=17)

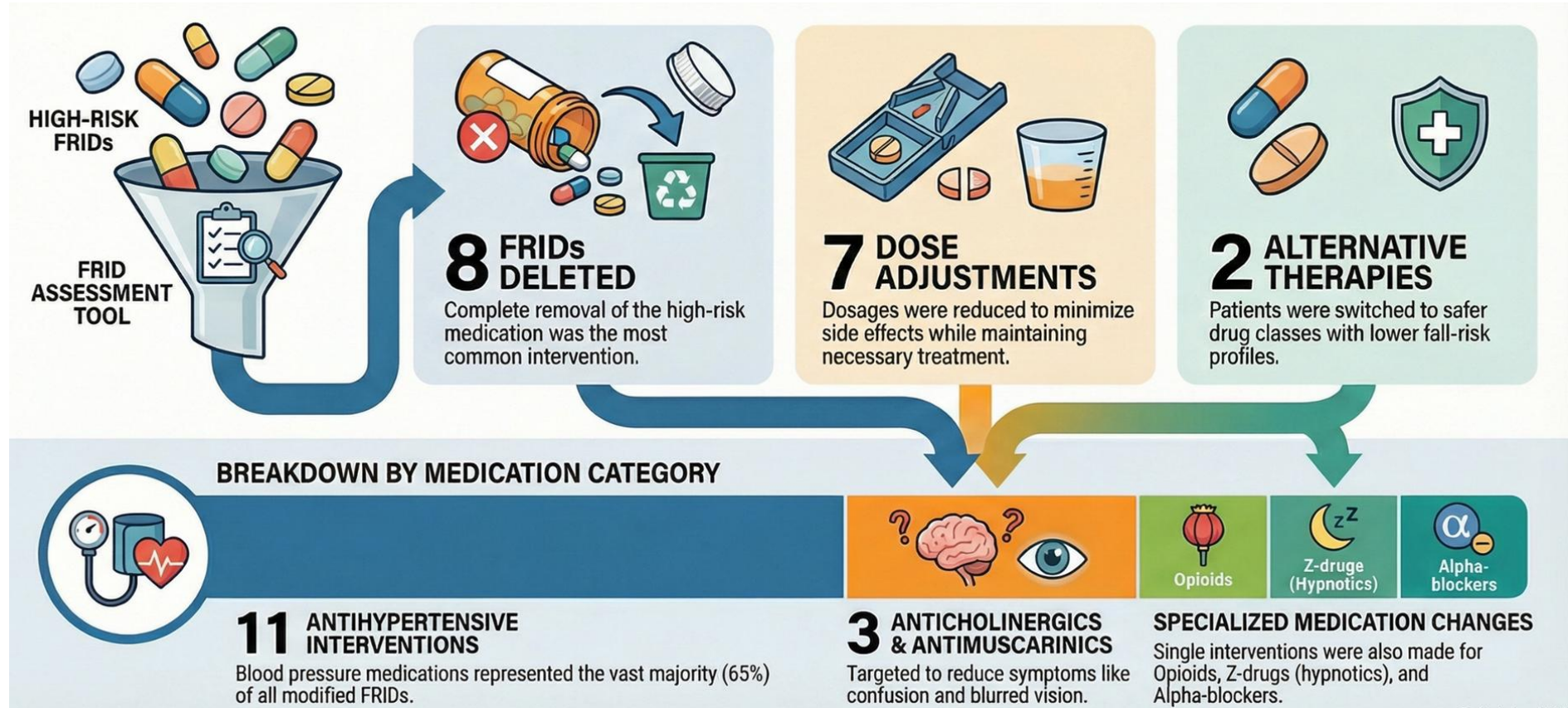
17 Patients

were recommended to case medical officers for medication modification of FRIDs.

Mean Age: 79.8	Gender: 41.2% female
Mean MFS: 67.7	Mean number of drugs: 9.6

Results

- 17 cases were recommended to case medical officers for medication modification of FRIDs by Clinical Ward Pharmacists



Results

100%

Acceptance Rate. 17 out of 17 FRID recommendations were fully accepted by case medical officers.

ZERO

Falls Sustained. None of the high-risk patients reported falls during their hospital stay.

Conclusion

Integrating Clinical Ward Pharmacists into multidisciplinary fall prevention strategies may **enhance patient safety** and **reduce medication-related adverse outcomes of falls** for hospitalized elderly patients.



Acknowledgment



Multi-disciplinary Team



Dr. Patrick Chiu

Consultant, Department of Medicine, QMH



Mr. Howard Wong

Clinical Stream Coordinator Pharmacy/
Department Manager. (Pharmacy), QMH



Ms. Cecilia Kwok

Department Operations Manager,
Department of Medicine, QMH



Ms. Law Tze Ching

Nurse Consultant specializing in Gerontology
Department of Medicine, QMH

Ms. Bonnie Cheung & Mr. Jack Chan

Ward Managers, Department of Medicine, QMH



Ms. Poon Wai Shuen

Deputy Department Operations Manager,
Department of Medicine, QMH