Medication Without Harm – rising to the challenge

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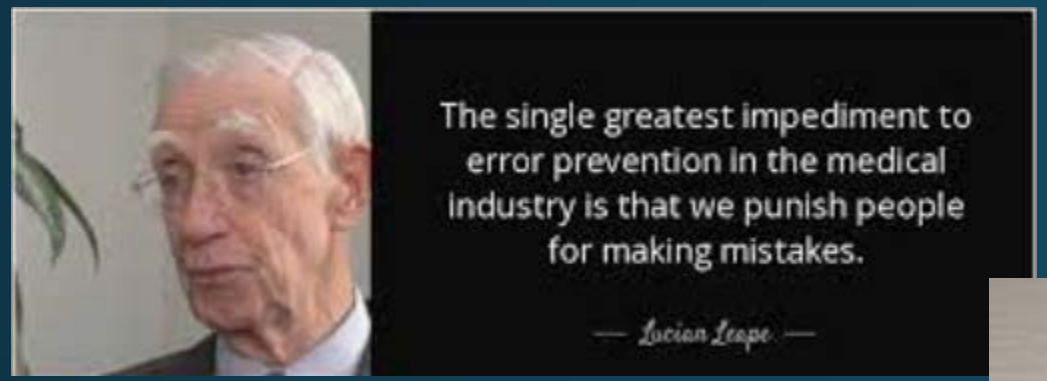
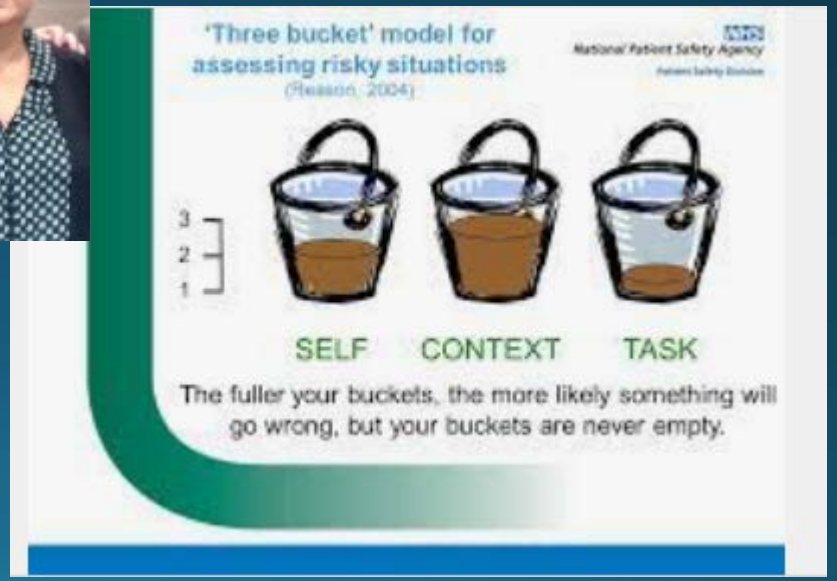

The single greatest impediment to error prevention in the medical industry is that we punish people for making mistakes.
— Lucian Leape —


'Three bucket' model for assessing risky situations
(Reason, 2004)
National Patient Safety Agency
3
2
1
SELF
CONTEXT
TASK
The fuller your buckets, the more likely something will go wrong, but your buckets are never empty.

WHO Global Patient Safety Challenges

1. Clean Care is Safer Care
   - Alcohol handrub
   - 5 Moments

2. Safe Surgery Saves Lives
   - Surgical safety checklist

3. Medication Without Harm

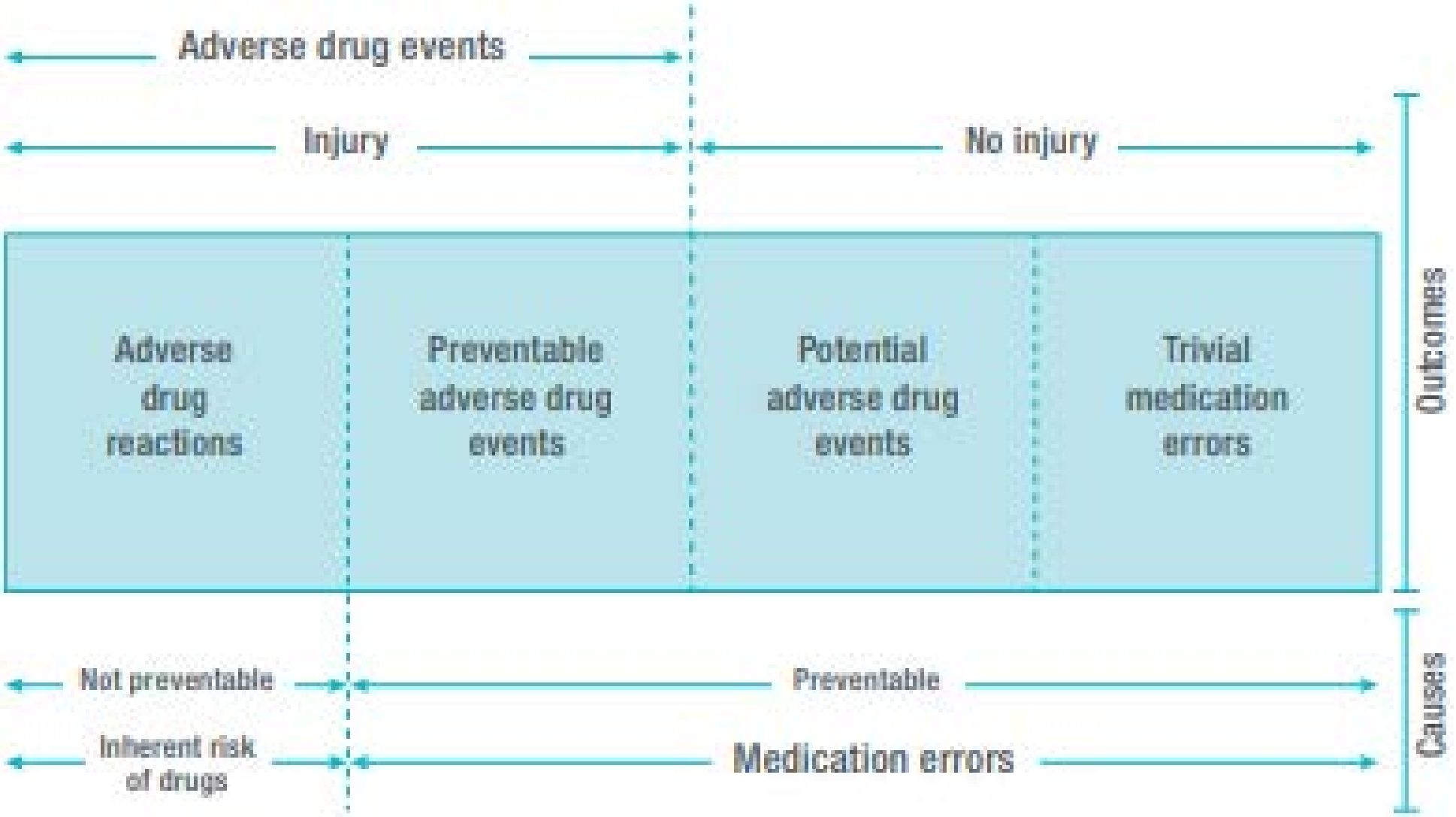
Medication Without Harm

- Reduce serious, avoidable medication-related harm by 50% over 5 years

Why Medication Without Harm?

- Medication accounts for 50% of the overall preventable harm in medical care
  - WHO, 2022
  - https://www.who.int/campaigns/world-patient-safety-day/2022

- 8.8% of general emergency admissions to an Irish hospital were related to medication harm. 57% were potentially preventable.
  - *Ahern F et al. Emerg Med J 2014 31(1)*



Source: Reproduced, with the permission of the publisher, from Otero and Schmitt (6).

People at greater risk of harm…
…and the priorities for improvement

- Polypharmacy
- Transitions of care
- High-risk medication (A PINCH)
  - Antimicrobials, Potassium/electrolytes IV, Insulins, Narcotics (opioids), Chemotherapy including methotrexate, Heparins and anticoagulants; Diuretics?, NSAIDs?
- High-risk patients (e.g. renal impairment, age, critically ill, cognitive impairment…)

Saedder et al. Br J Clin Pharmacol 2015
Krahenbuhl-Melcher A et al. Drug Saf 2007; 30:379-407
Hakkarainen KM et al. PLoS One 2012; 7: e33236
Muehlberger N et al. Pharmacoepidemiol Drug Saf 1997

Tegeder I et al. Br J Clin Pharmacol 1999; 47: 557-64
Beijer HJ et al. Pharm World Sci 2002; 24: 46-54
Rodriguez-Monguio R et al Pharmacoeconomics 2003; 21: 623-50
de Vries EN, et al. Qual Saf Health Care 2008; 17: 216-23

Kongkaew C et al. Ann Pharmacother 2008; 42: 1017-25
Krahenbuhl-Melcher A et al. Drug Saf 2007; 30: 379-407
Lazarou J, Pomeranz BH, Corey PN. JAMA 1998; 279: 1200-5

THE IRISH TIMES

Mon, Sep 9, 2019

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HSE apologises after woman left without medication suffered major stroke

Mary Moss continued 'unknowingly for six weeks' without her anti coagulants

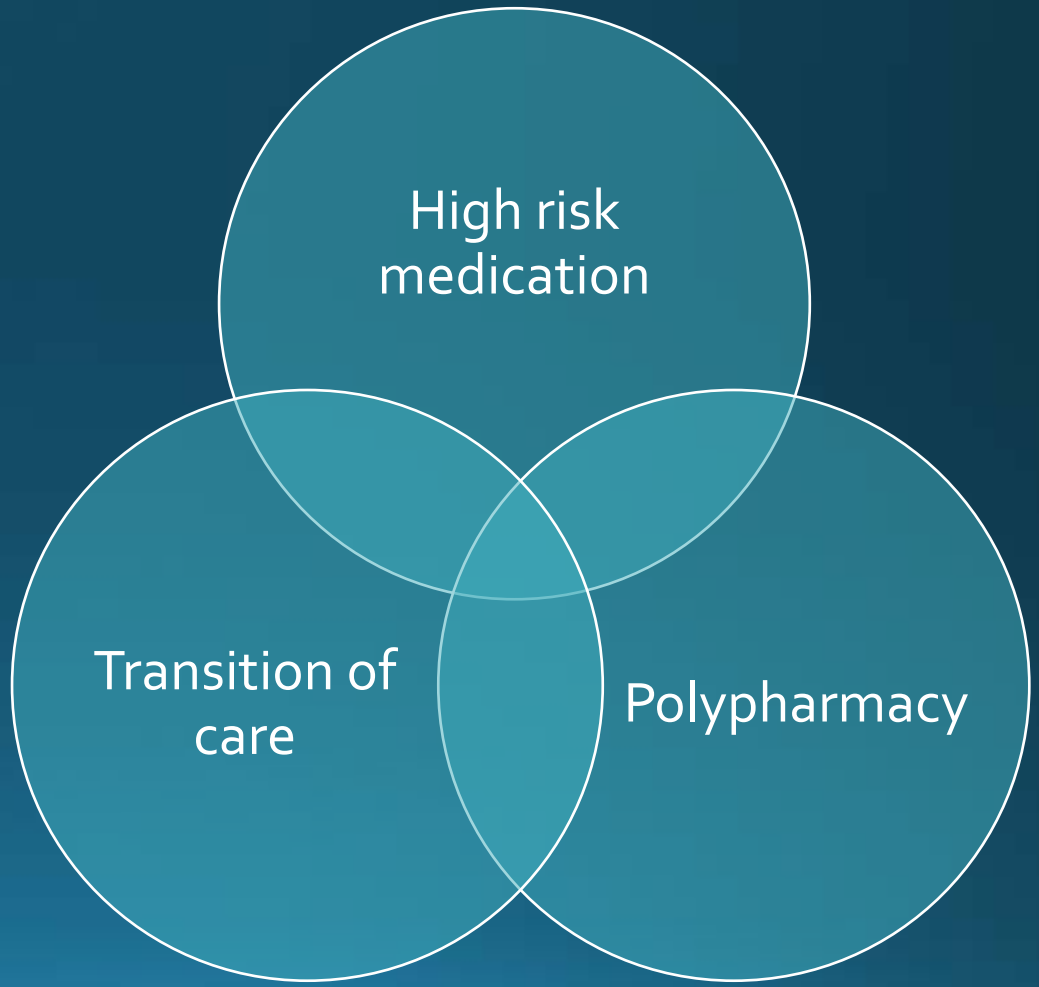
Wed, Jul 24, 2019, 15:27

Mary Carolan

Kate and Leanne Moss, daughters of the Mary Moss, outside the Four Courts. Photograph: Collins

The HSE has apologised at the High Court to a 69-year old woman who suffered a major stroke after she was discharged from a hospital without her blood thinning medication. Mary Moss, her counsel said, continued "unknowingly for six weeks" without her anti coagulants, had a major stroke and is now disabled.

- Anticoagulant omitted at hospital discharge



WHO invites countries to

- **Pledge** by Minister to participate and prioritise medication safety at the national level
- Appoint a national **coordinator** to spearhead the Challenge
- Convene experts, leaders and practitioners, patients and other key **stakeholders** to produce **guidance and action plans** for each of the targeted domains
- Make strong commitments, prioritise & take early action to protect patients from harm with:
  - Transitions of care
  - High-risk situations
  - Polypharmacy
- Assess progress regularly


Patients and the public
Public awareness & medication literacy
Patient engagement
Reporting by patients
Involvement of patient organizations
Health care professionals
Education & training
Communication & teamwork
Capability at point of care
Incident reporting & learning
Medicines
Product quality & safety
Naming, labelling & packaging
Logistics, storage & disposal
Right product at point of care
Systems and practices of medication
Leadership & governance
Prescribing, preparation & dispensing
Administration & patient monitoring
Monitoring & evaluation
KEY ACTION AREAS
Polypharmacy
Transitions of care
High-risk situations
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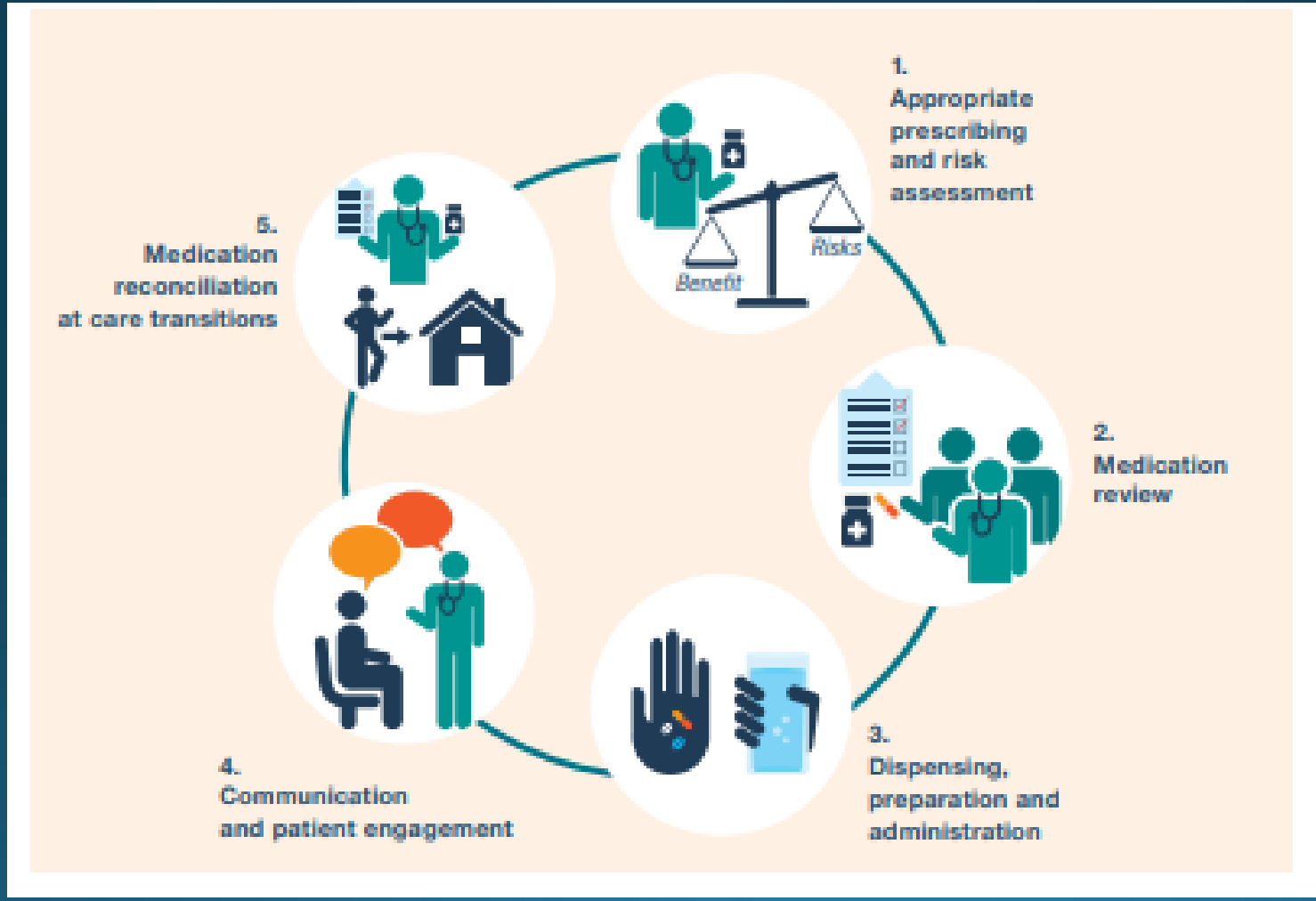
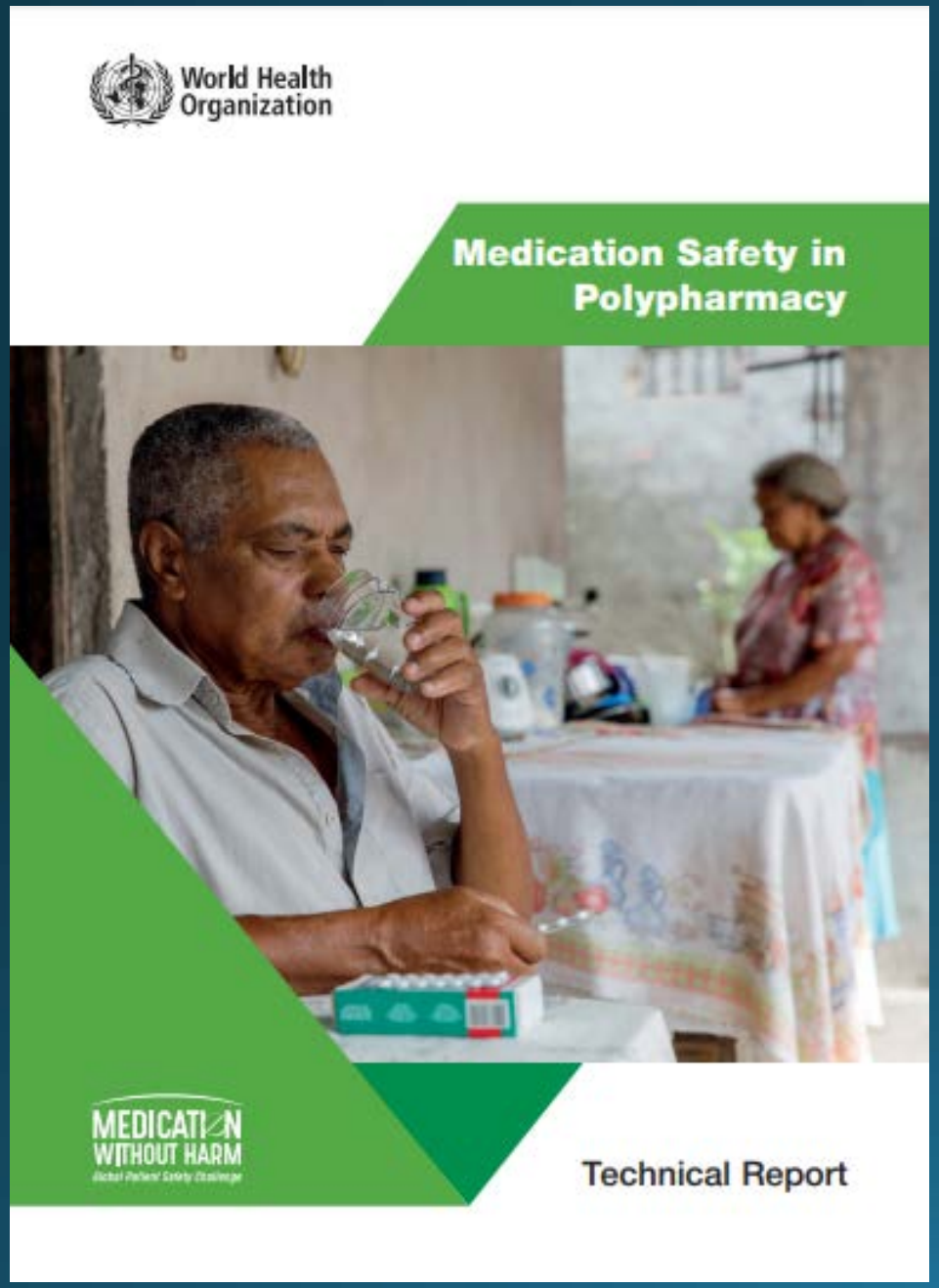
Global Patient Safety Challenge
World Health Organization

Key steps for ensuring medication safety





- Rising (inappropriate) polypharmacy
- Patients with multimorbidity treated with single-disease guidance
- Change management and implementation to redesign care processes and services

7 steps to appropriate polypharmacy

- Polypharmacy management needs the multidisciplinary team and systematic involvement, engagement and empowerment of patients

- At initiation, medicines reviews
- www.isimpathy.eu
- https://managemeds.scot.nhs.uk/

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5 Moments for Medication Safety

Starting
a medication

- What is the name of this medication and what is it for?
- What are the risks and possible side-effects?

Taking
my medication

- When should I take this medication and how much should I take each time?
- What should I do if I have side-effects?

Adding
a medication

- Do I really need any other medication?
- Can this medication interact with my other medications?

Reviewing
my medication

- How long should I take each medication?
- Am I taking any medications I no longer need?

Stopping
my medication

- When should I stop each medication?
- If I have to stop my medication due to an unwanted effect, where should I report this?

Introducing Mobile Application on 5 Moments for Medication Safety

Download on the App Store

GET IT ON Google Play

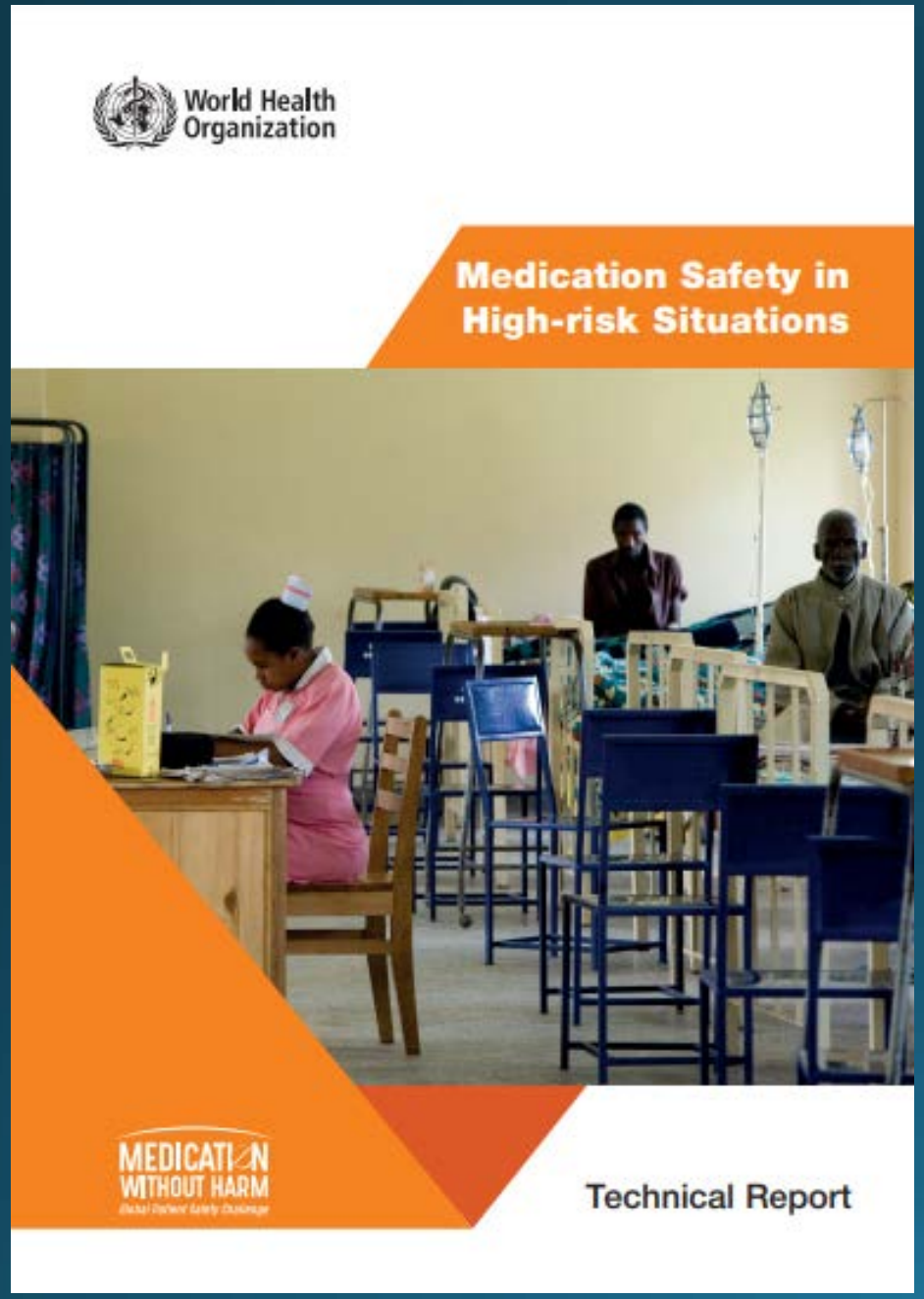
World Health Organization

WHO medsafe

WHO medsafe app

Will guide you through the 5 key moments where your action can reduce the risk of medication-related harm.

Ask your health care professional important questions, keep the answers in a structured way to better manage your medications. Stay Healthy!



- Medication factors
  - High-risk / high-alert medications
  - High risk of significant patient harm
- Provider and patient factors
  - Complexity, vulnerable to harm (e.g. renal impairment, critical care)
- Systems factors
  - Environment, guidance, tools, workload, safe systems, IT

- High-alert awareness
- Sustainable strategies of proven efficacy
- Systems approach
- Strong safety and reporting culture, education and feedback

Table 1. Some high-risk (high-alert) medications associated with harm when used in error

High risk medicine group	Examples of medicines
A: Anti-infective	Amphotericin Aminoglycosides
P: Potassium and other electrolytes	Injections of potassium, magnesium, calcium, hypertonic sodium chloride
I: Insulin	All insulins
N: Narcotics (opioids) and other sedatives	Hydromorphone, oxycodone, morphine Fentanyl, alfentanil, remifentanil and analgesic patches Benzodiazepines, for example, diazepam, midazolam Thiopentone, propofol and other short term anaesthetics
C: Chemotherapeutic agents	Vincristine Methotrexate Etoposide Azathioprine
H: Heparin and anticoagulants	Warfarin Enoxaparin Rivaroxaban, dabigatran, apixaban
Other	High-risk medicines identified at local health district/facility/unit level which do not fit the above categories

Source: Reproduced, with the permission of the publisher, from State of New South Wales (NSW Ministry of Health) *(11)*.

Designing for safety

Remove the hazard

Forcing functions and constraints

Automate, IT - carefully

Standardise, simplify

Checklists, protocols

Independent double-checking

Improve information access

Decrease transcription & look-alikes

Rules and policies

Education and information

"Try harder"

Based on human factors principles and Veteran's Health Administration Center for Patient Safety Hierarchy

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Medication Safety in Transitions of Care

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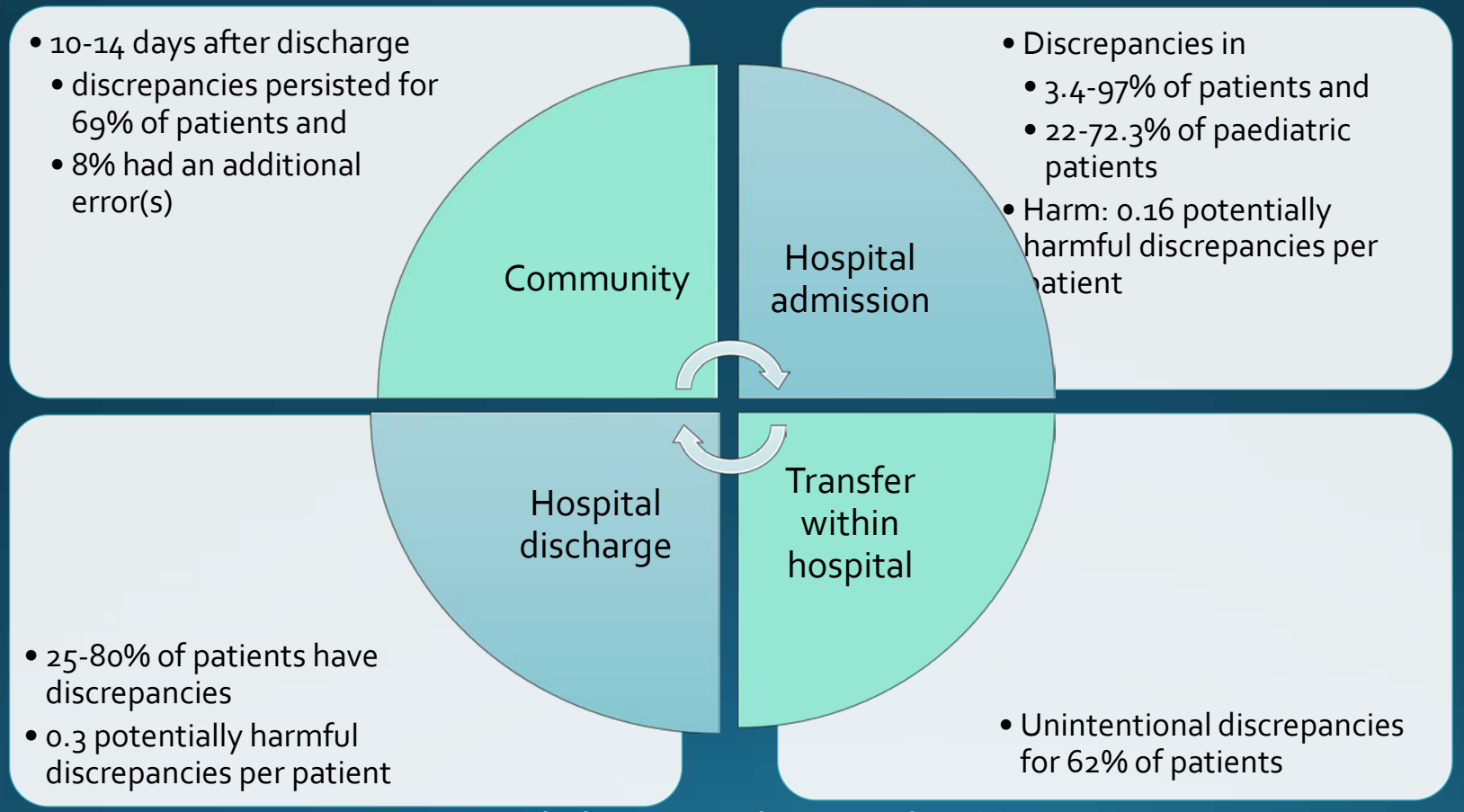
Technical Report

Large burden of discrepancies and harm



Lehnbom Ann Pharmacother 2014
Salanitro BMC Health Services Research 2013
O'Riordan Int J Clin Pharm 2016

What works?

- Medicines reconciliation with intensive pharmacy staff involvement
  - Mueller SK et al. Arch Intern Med 2012
  - Mekonnen. J Clin Pharm Ther 2016
  - Shekelle PG et al. Ann Intern Med.2013;158:365-368
- Interventions targeted to patients at high risk for adverse drug events
  - Gleason KM et al. J Gen Intern Med 2010
- Emerging evidence:
  - Interventions supporting patient understanding, including post-discharge support
  - Patient-centred medication records
  - Communication between providers
  - Shared electronic health records

Key elements – 1. Empowered patients

- The patient is the one constant in their healthcare
- Patient knowledge and patient-held information hugely aids safe transitions
- Partnering between patients, families and health care professionals
  - shared decision making about proposed medication and changes
  - up-to-date medication list and bring it to healthcare appointments and pharmacy

BEFORE YOU TAKE IT...

KNOW
your medication

CHECK
the dose and time

ASK
your health care professional

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BEFORE YOU GIVE IT...

KNOW
your medication

CHECK
you have the right
- ☑ patient
- ☑ medicine
- ☑ route
- ☑ dose
- ☑ time

ASK
your patient
if they understand

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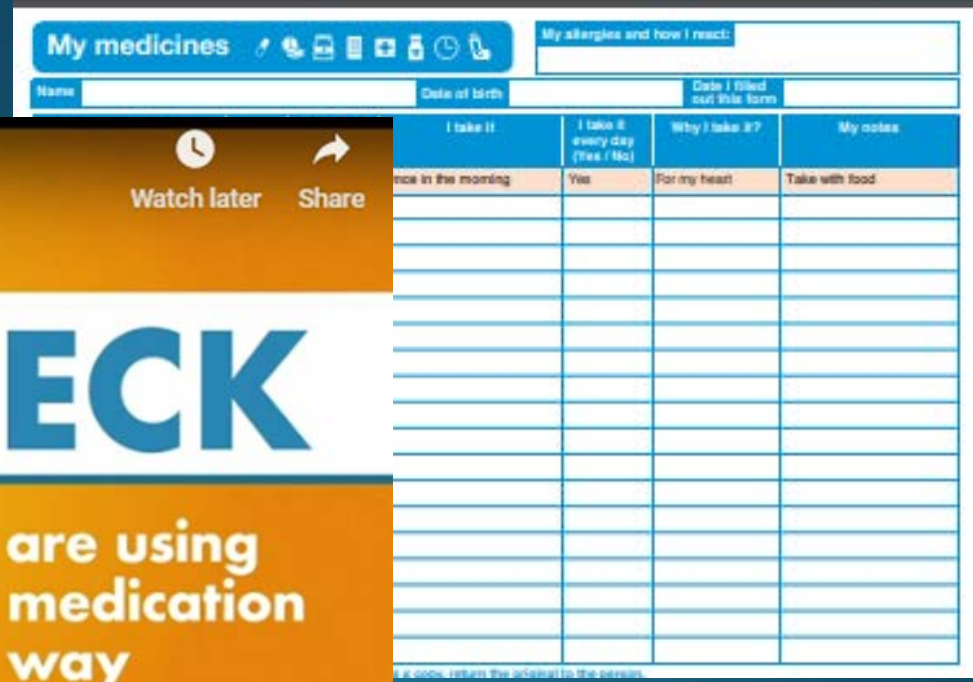
www.safermeds.ie



2. Medication reconciliation

1. Build the Best Possible Medication History
   - **Patient** interview
   - Verify with at least one **reliable** information source
2. Reconcile and update list
3. Communicate about changes with patient and future healthcare providers

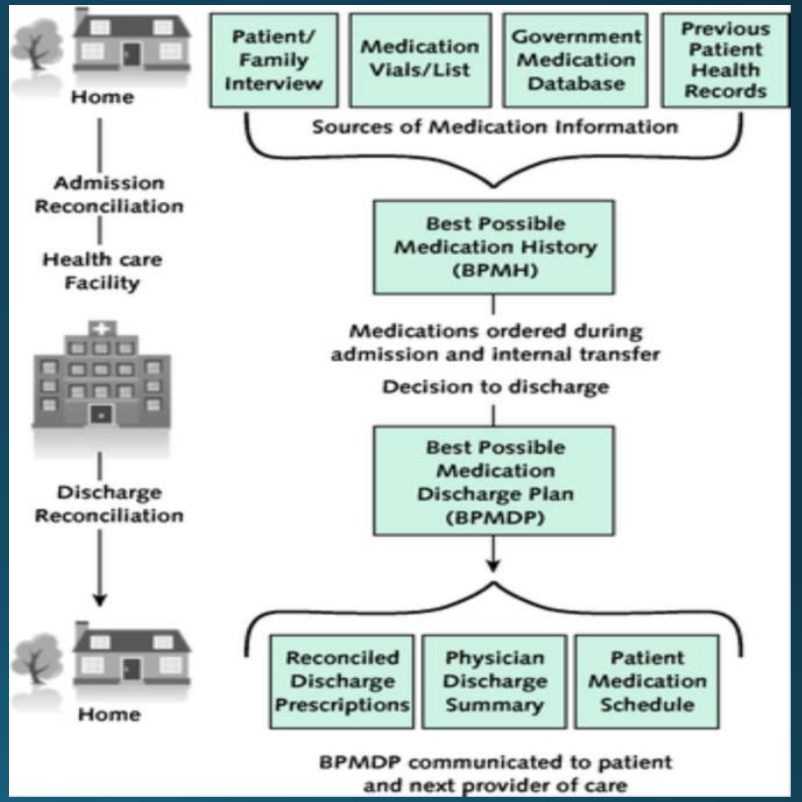


Figure adapted from Fernandes OA. Medication reconciliation. Pharmacy Practice. 2009;25:26
In Kwan et al. Ann Intern Med. 2013; 158(5 Part 2): 397-403. Copyright American College of Physicians

2. Medication reconciliation

- Formal structured processes – admission, discharge, review
- Pharmacy-led, collaborative
  - Plan and invest in increased workforce capacity and capability
  - Prioritize patients at higher risk
- Tools and technology
  - Streamline, improve efficiency
  - Not a replacement for medication reconciliation

3. Use reliable sources to validate history

Table 1. Agreement of sources with GSPAML, percentage

Source	Agreement per inpatient episode		Agreement per medication			
	For the episodes for which it was available; *n*/N (%)	For the study population (N = 97); *n*(%)	For the episodes for which it was available; *n*/N (%)	For the study population (N = 1111); *n*(%)	Mean number of disagreements per episode	Interval, days, median (range, IQR)
Patient's own drugs	0/42 (0)	0 (0)	260/482 (53·9)	260 (23·4)	5·3	18·5 (1–127, IQR 7–26)
GP personal communication	4/32 (6·2)	4 (4·1)	531/752 (70·6)	531 (47·8)	3·4	18 (0–261, IQR 3–55)
GP referral document	1/31 (3·2)	1 (1·0)	151/345 (43·8)	151 (13·6)	6·3	0 (0–1, IQR 0–1)
Community pharmacy personal communication	11/93 (11·8)	11 (11·3)	810/1055 (76·8)	810 (72·9)	2·6	16 (0–132, IQR 6–25)
Previous inpatient kardex	1/27 (3·7)	1 (1·0)	217/363 (59·8)	217 (19·5)	5·4	67 (3–191, IQR 23–145)
Previous discharge summary	1/22 (4·5)	1 (1)	148/320 (46·3)	148 (13·3)	7·8	50·5 (3–185, IQR 23–130)
Nursing home personal communication	8/8 (100·0)	8 (8·2)	113/113 (100·0)	113 (10·2)	0	88·5 (1–363, IQR 19–208)
Nursing home referral document	1/5 (20·0)	1 (1·0)	77/85 (90·6)	77 (6·9)	1·6	
HSE-PCRS	15/90 (16·7)	15 (15·5)	757/1018 (74·4)	757 (68·1)	2·9	33 (7–89, IQR 24–44)

GSPAML Gold Standard Pre-Admission Medication List; GP General practitioner; HSE-PCRS Health Service Executive Primary Care Reimbursement Service.

- GSPAML: the complete and correct list of what the patient was taking before admission
- When available, nursing homes, community pharmacy, PCRS record and GP reliable.

- Grimes T, Fitzsimons M, Galvin M, Delaney T. J Clin Pharm Ther 2013
- Fitzsimons M, Grimes T, Galvin M. International Journal of Pharmacy Practice 2011

Together we can

- Plan, lead, collaborate, improve
- Implement proven safe systems
- Partner with patients
- Improve capacity and capability, collaborate across the multidisciplinary team

- Reduce serious, avoidable medication-related harm by 50% over 5 years

Join us in achieving...

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