Institute *for* Healthcare Improvement

Mid-East Forum

2016

Medication Safety

Faculty

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Description

"Medicines have proven to be very beneficial for treating illness and preventing disease. This success has resulted in a dramatic increase in medication use where medicines have become the most common form of therapeutic intervention in healthcare. There are a number of discrete steps in using medication: prescribing, preparation, administration and monitoring. There are a variety of ways that error can occur at each step. Doctors, nurses, pharmacists and patients all have a role in these steps and they all have a responsibility to work together to minimize errors and patient harm caused by medication use. During this session, the faculty will describe the nature of medication errors, how they can occur and what can be done to make medication use safer. "

Objectives

- List sources of information about medication errors and patient harm
- Describe steps to improve medication safety throughout the medication use process
- Discuss the benefits and dangers associated with the introduction of technology in the medication use process

What does Medication Safety mean to you?

Medication Safety

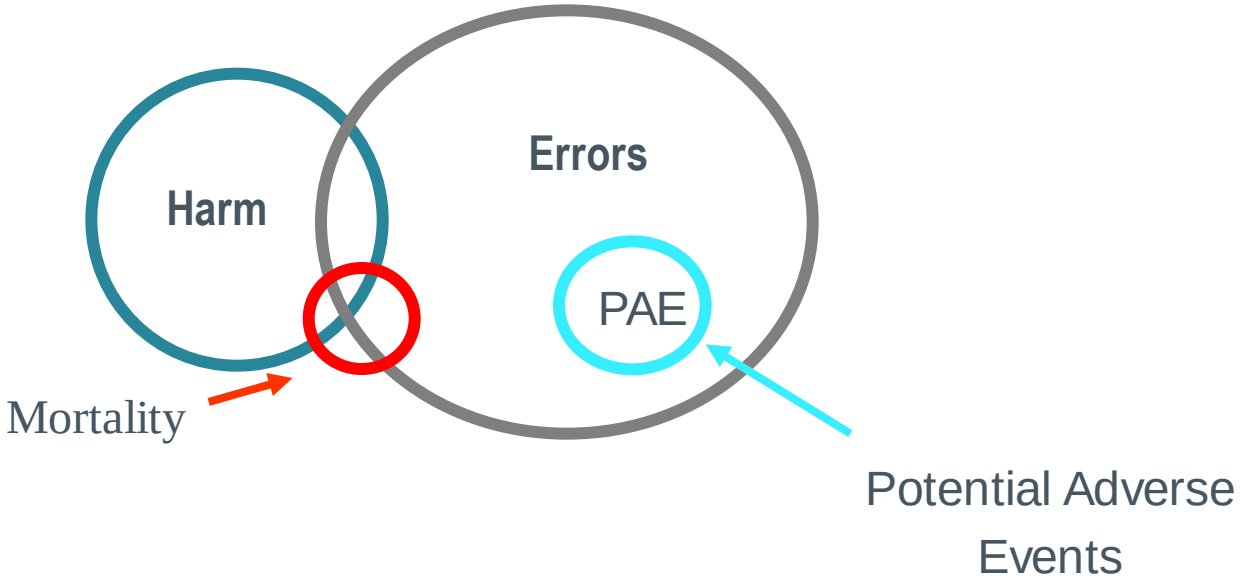
- No errors
- No ADEs
- No Harm

Definition of Harm

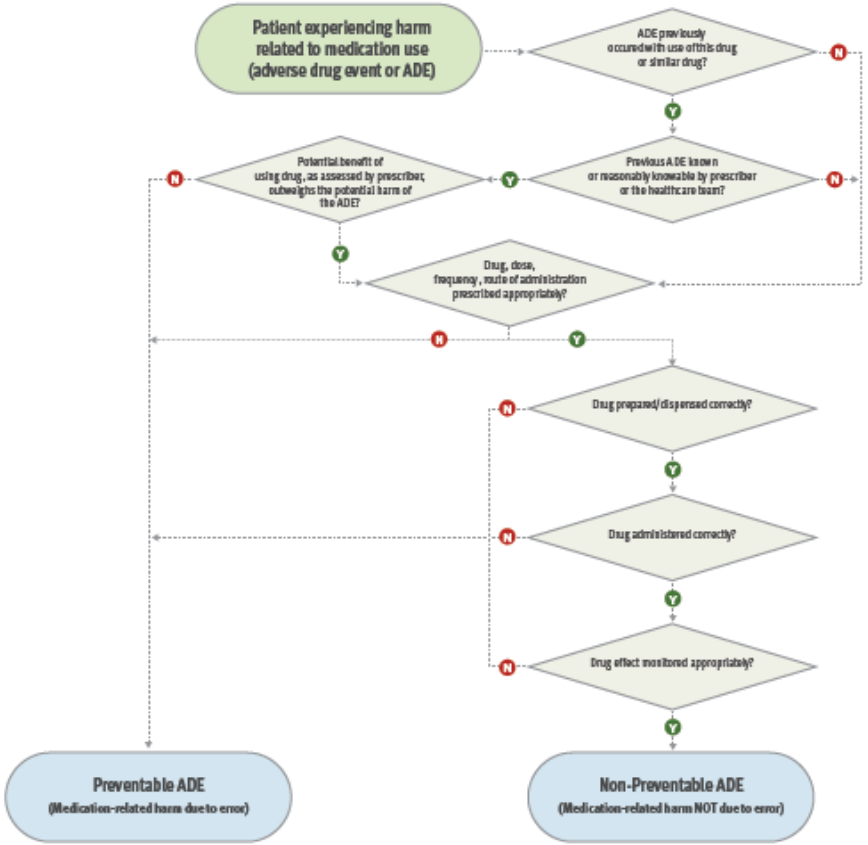
In the IHI Global Trigger Tool, the definition used for harm is as follows:

Unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment or hospitalization, or that results in death.

Changing the Conversation



NCCMERP
National Coordinating Council for Medication Error Reporting and Prevention



NCCMERP.org

What keeps you up at night when it comes to medication safety?

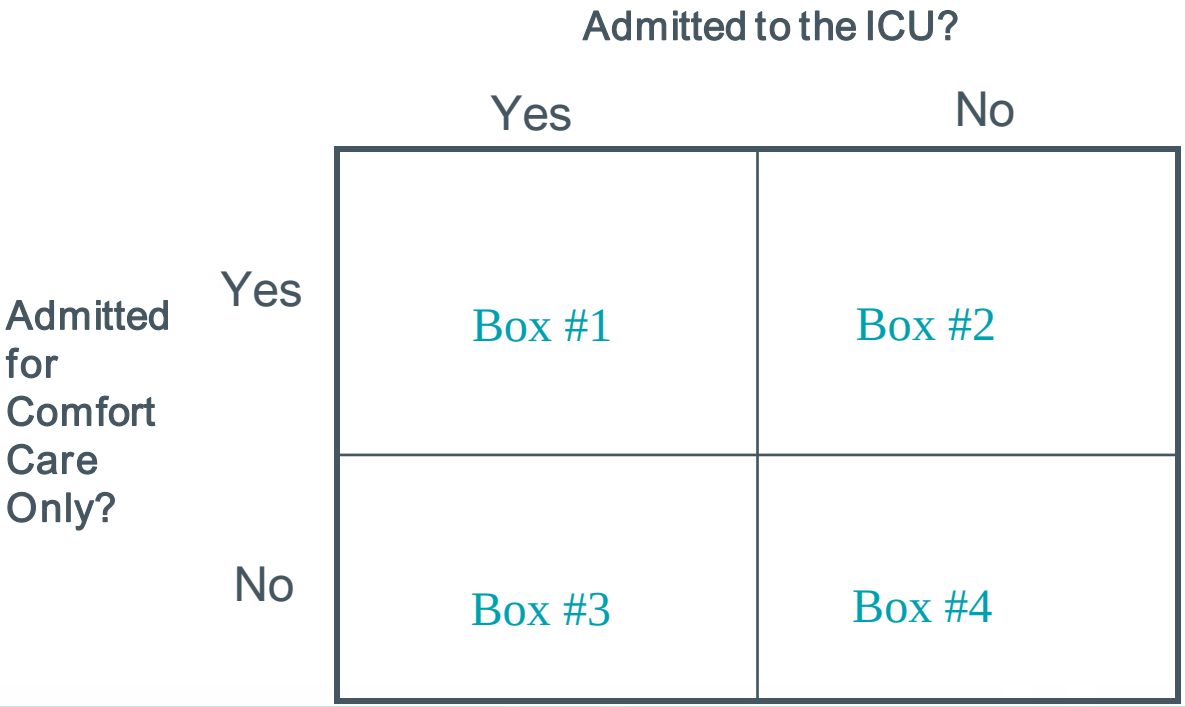
Medication Risks

- High-alert medications
- Pediatrics
- Geriatrics
- Multiple co-morbidities
- Complex medication regimens
- Polypharmacy
- Deteriorating patient
- Other emerging risks e.g. new technology

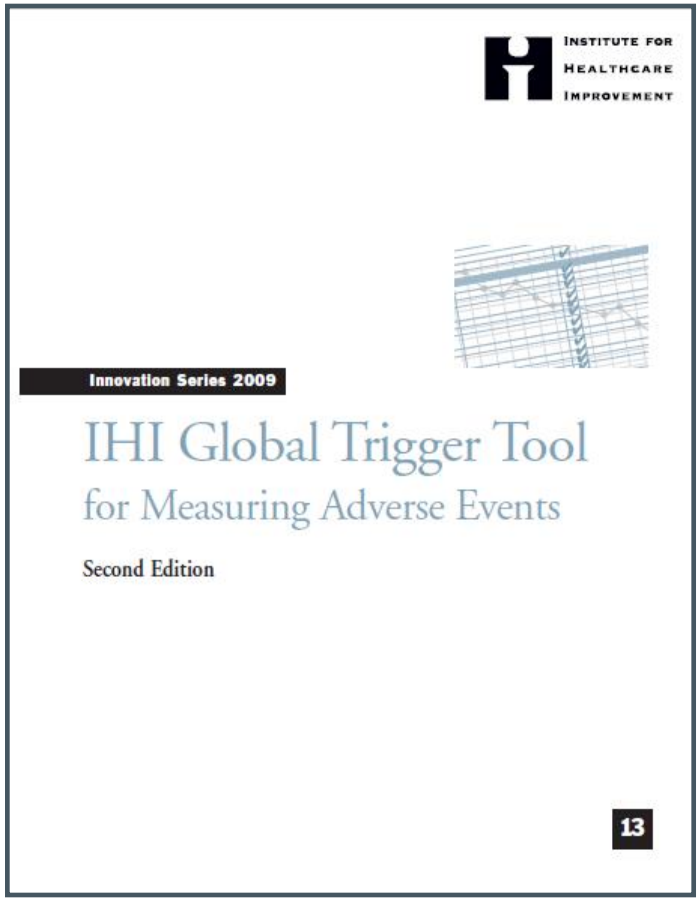
Sources of Information

- **Mortality Review**
- **Trigger tools/medical records review**
- Concurrent review
- **Incident Reports**
- **Self-Assessments**
- **Observation**
- **Pharmacist Interventions**
- Patient Complaints
- KPI and Reliability of processes
- Culture of safety assessment

Mortality Diagnostic – The 2 x 2 Matrix



Move Your Dot™: Measuring, Evaluating, and Reducing Hospital Mortality Rates (Part 1). IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. (Available on www.IHI.org)



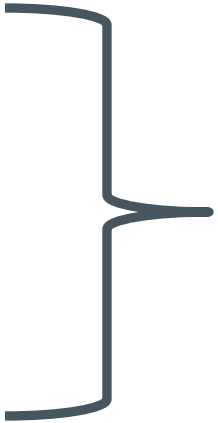
Griffin FA, Resar RK. *IHI Global Trigger Tool for Measuring Adverse Events (Second Edition).* IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2009. (Available on www.IHI.org)

Why Use Trigger Tools?

- Traditional reporting of errors, incidents, or events does not reliably occur in the best of health care cultures
- Voluntary methods markedly underestimate adverse events
- Events can be reliably detected without resorting to as yet unproven electronic surveillance methods
- Can be integrated into a good sampling methodology to follow event rates over time

IHI Global Trigger Tool Results

- 40 harm events per 100 admissions
- 50% medication related
- Common harm:
  - Bleeding
  - Hypotension
  - Hypoglycemia
  - Delirium,
  - Lethargy, and
  - Bradycardia



Anticoagulants
Insulin
Narcotics/Opiates
Sedatives

*http://www.ihi.org/knowledge/Pages/IHIWhitePapers/IHIGlobalTriggerToolWhitePaper.aspx

How Much Harm

‘Global Trigger Tool’ Shows That Events in Hospitals May Be Ten Times Greater Than Previously Measured

Classen DC, Resar R, Griffin F, et al. Global Trigger Tool shows that adverse events in hospitals may be ten times greater than previously measured. Health Affairs. 2011 Apr;30(4):581-589

Incident Reports

Advantages

- Report process errors
- Proxy for culture of safety

Disadvantages

- Cumbersome
- Fear of retribution
- Must know and recognize an error
- Not used by all clinicians

Incident Reports

Five key challenges emerged to explain why incident reporting has not reached its potential:

- Poor processing of incident reports
  - (triaging, analysis, recommendations),
- Inadequate engagement of doctors,
- Insufficient subsequent visible action,
- Inadequate funding and institutional support of incident reporting systems and
- Inadequate usage of evolving health information technology.

Mitchell I, et al. BMJ Qual Saf 2015;0:1–8. doi:10.1136/bmjqs-2015-004405

Self-Assessments

ISMP SELF ASSESSMENTS

The Institute for Safe Medication Practices (ISMP) is pleased to provide healthcare organizations with the ISMP Medication Safety Self Assessments®.

These tools will help you assess the medication safety practices in your institution surrounding the use of medication therapy, identify opportunities for improvement, and compare your experience with the aggregate experience of demographically similar organizations.

The self assessments contain items that address the use of medications in the clinical setting, many of which are on the ISMP list of high-alert medications. Many of the items included represent system improvements and safeguards that ISMP has recommended in response to analysis of medication errors reported to the ISMP Medication Errors Reporting Program, problems identified during on-site consultations with healthcare organizations, and guidelines in the medical literature.

- **ISMP Medication Safety Self Assessment® for Hospitals**
  - 2011 Self Assessment
  - 2004 Self Assessment
  - 2000 Self Assessment
- Automated Dispensing Cabinets
- Antithrombotic Therapy
- Bar Coding Assessment
- Community/Ambulatory Pharmacy
- Physician Practices

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all areas
D	Fully implemented in some areas
E	Fully implemented throughout

II. DRUG INFORMATION

Core Characteristic #2

Essential drug information is readily available in useful form and considered when prescribing, dispensing, and administering medications, and when monitoring the effects of medications.

		A	B	C	D	E
28	A complete drug history, including a current list of prescription and over-the-counter medications (with dose, frequency, route, time of last dose taken, indication), vitamins, herbal products, illicit drugs, and alcohol and tobacco use is obtained for every inpatient and outpatient upon admission or initial encounter (including during the pre-admission process).					
29	A process is in place in both inpatient and outpatient units (e.g., ED, ambulatory surgery, outpatient radiology) to obtain a list of the medications that the patient has been taking at home before admission or outpatient encounter and compare (reconcile) the list to the medications prescribed upon admission, during the encounter, upon transfer within the hospital, and upon discharge, to identify and resolve discrepancies (e.g., omissions, duplications, contraindications, unclear information).					
30	All drug reference texts, including commercially available charts and guidelines in the organization are checked annually; all outdated reference materials are removed from use and replaced as necessary. (Reference materials are outdated after 1 year of publication or whenever the next edition is available).					
31	Pharmacists and pharmacy technicians have easy access (e.g., on each computer terminal, electronic handheld devices) to user-friendly, up-to-date, computerized drug information systems, which include information on over-					

Observation Method

- These data show that direct observation detected administration errors at a much higher rate and more accurately than either chart review or incident report review.

Pharmacist Interventions

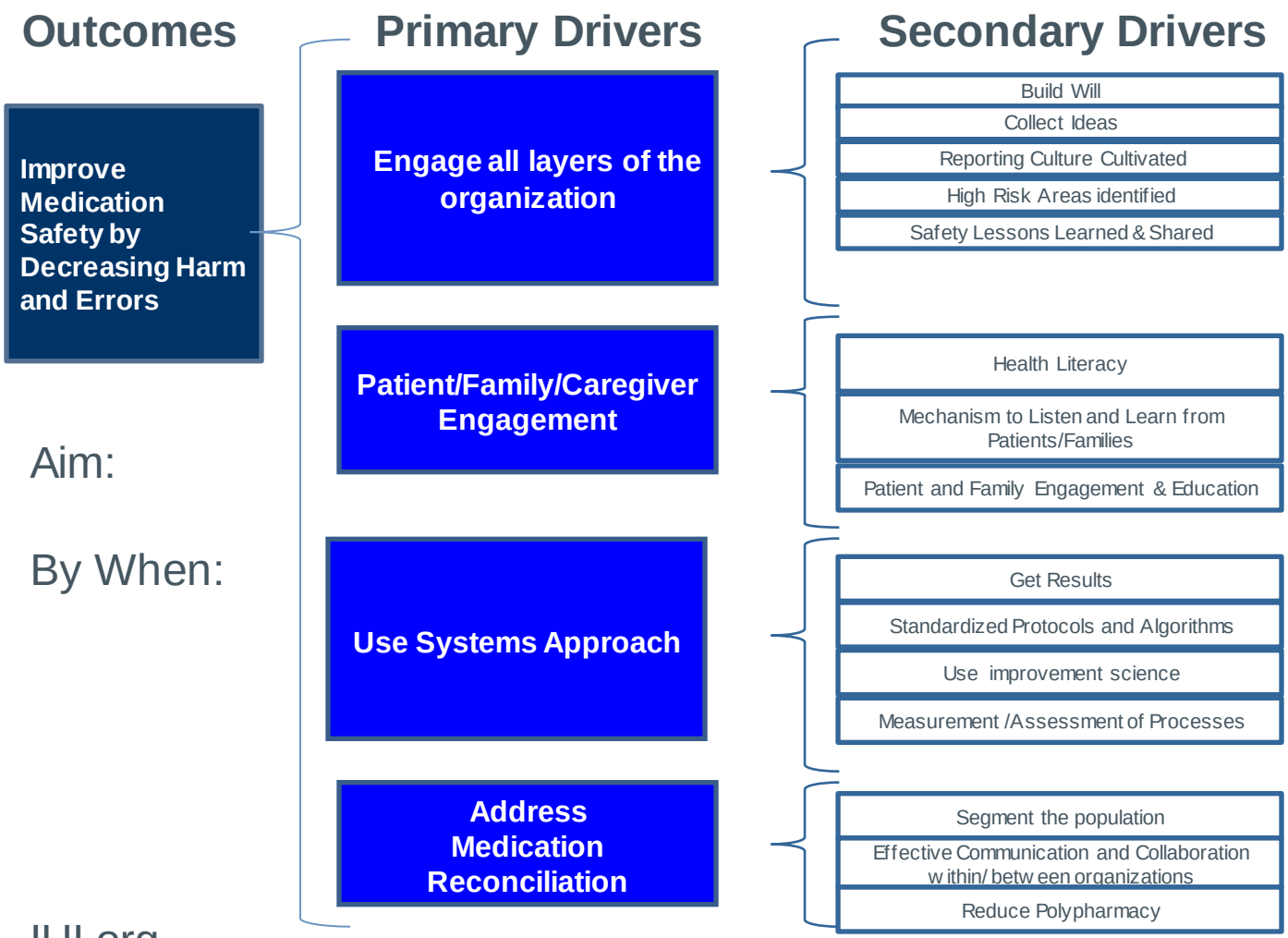
CONCLUSIONS: Clinical pharmacy services can and do create significant value by enhancing the achievement of positive patient outcomes and by avoiding negative outcomes.

Value of community pharmacists' interventions to correct prescribing errors.
Annals of Pharmcotherapy 1992 Dec;26(12):1580-4.

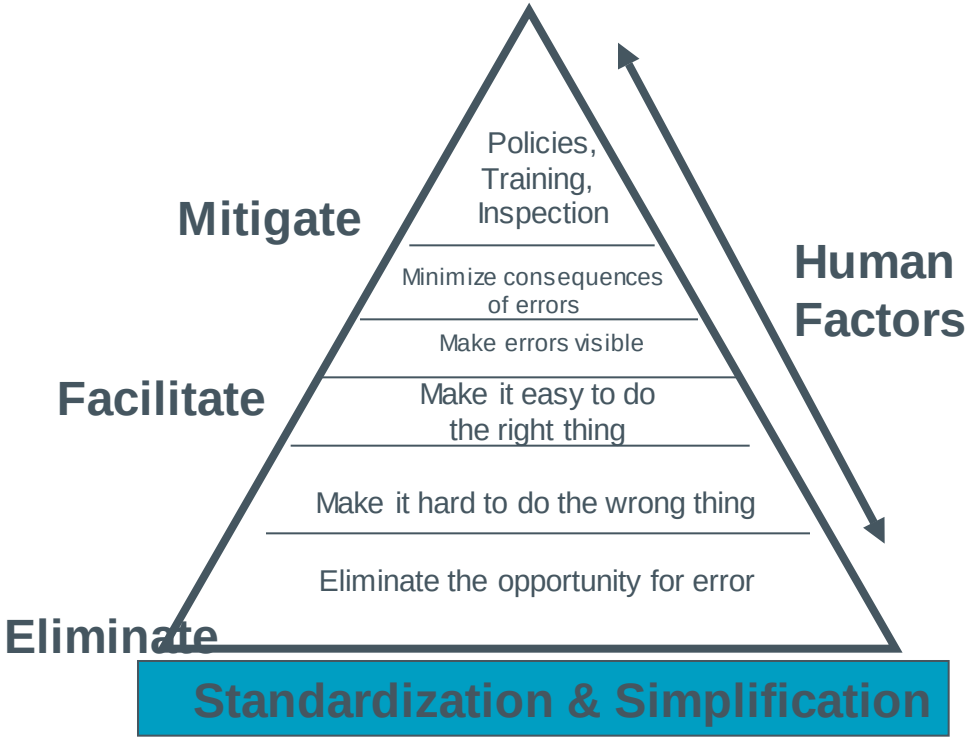
Reflection
Which of these data sources do you use?

Principles of a Safe System

- Prevent errors and harm
  - Use change concepts such as simplification and standardization
- Identify (detect) and mitigate
  - Improved monitoring
  - Readily available therapies to ameliorate harm
- Patient/Family Involvement


Outcomes
Primary Drivers
Secondary Drivers
Improve Medication Safety by Decreasing Harm and Errors
Engage all layers of the organization
Build Will
Collect Ideas
Reporting Culture Cultivated
High Risk Areas identified
Safety Lessons Learned & Shared
Patient/Family/Caregiver Engagement
Health Literacy
Mechanism to Listen and Learn from Patients/Families
Patient and Family Engagement & Education
Use Systems Approach
Get Results
Standardized Protocols and Algorithms
Use improvement science
Measurement /Assessment of Processes
Address Medication Reconciliation
Segment the population
Effective Communication and Collaboration within/ between organizations
Reduce Polypharmacy
Aim:
By When:
IHI.org

Error and Harm Reduction Overview: Hierarchy of Controls



Adapted by D. Bonacum KP

Dynamic Risk

- Must be aware that patient conditions will change
- Patients with co-morbid conditions may be difficult to manage
- Ensure you have systems to identify emerging risks
- Ensure that you have an action plan for these situations

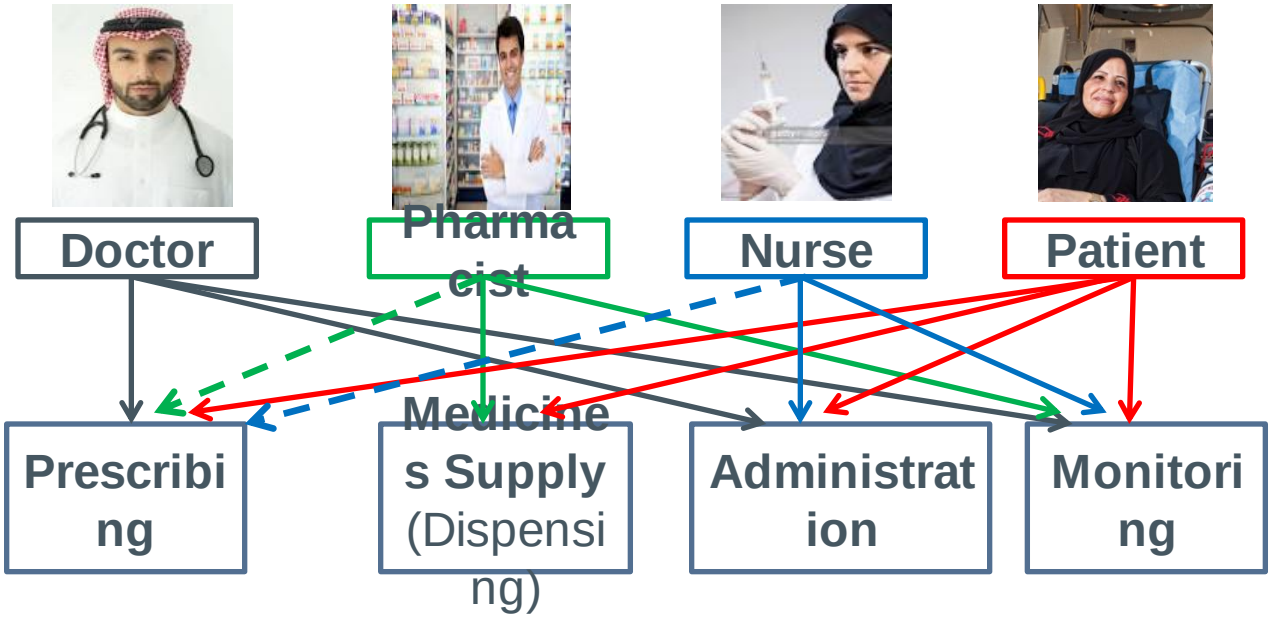
Role of Technology

Technology

- Introduces its own problems
- Alert-fatigue
  - Computer alerts
  - Alarms
- Selecting wrong medication from menu
- Locked into a protocol even when do not consider medication appropriate
- Decision support not effective
- Bar Code Readers that do not work
- Overrides of automated dispensing cabinets

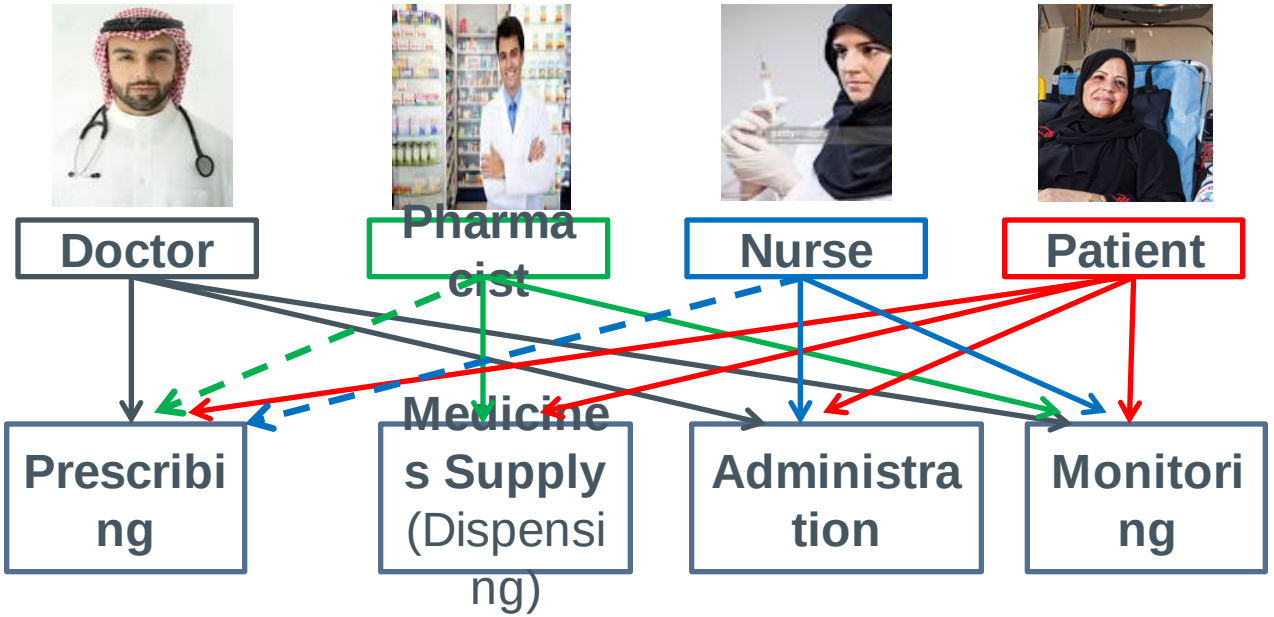
Medication Safety

WHOSE job is it anyway?



Medication Safety

WHOSE job is it anyway?



Healthcare Improvement Scotland

NHS SCOTLAND

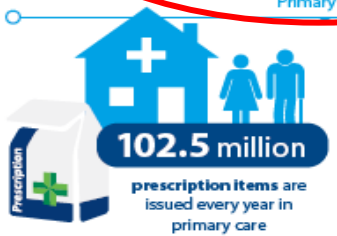
Safer Use of Medicines in NHSScotland

At the heart of future NHS challenges

59%

of patients over 70 years old take five or more medicines.
The majority of these people will have three or more chronic conditions.

Primary care



102.5 million
prescription items are issued every year in primary care

61,000
of non-elective admissions are due to medicines

4.2 million prescribing errors

40,000 (3.4 million) dispensing errors

Classes of medicines causing admission include:

- NSAIDS
- Antiplatelets
- Anticoagulants
- Diuretics
- Anti-hypertensives

Acute care

2.2 million
doses of medicines administered each year in an average 500 bed acute hospital

189,000 administration errors

435,000
inpatient prescription items are prescribed each year in an average 500 bed acute hospital

32,500 prescribing errors with **325** causing patient harm

35-85 dispensing errors

15,000 patients admitted to all acute hospital suffer harm due to medicines

280
preventable deaths across all acute hospitals are due to medicines

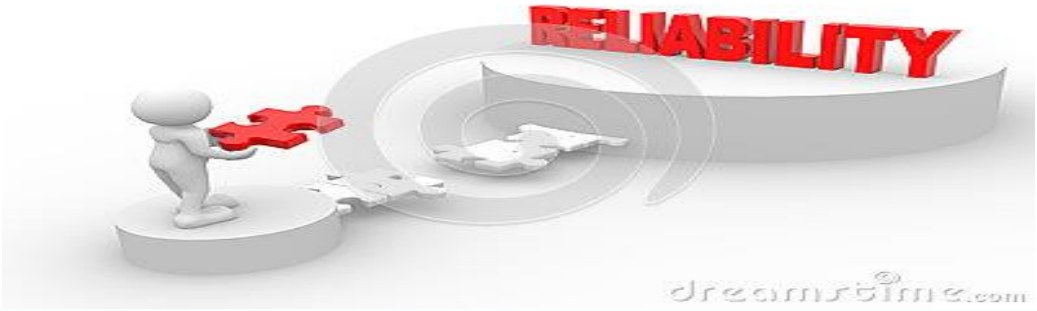
Medication Safety Processes

"Designing **RELIABLE** processes to ensure that the **R**ight patient receives me, via the **R**igh

Reliable Processes

Three stages:

- Common agreement
- Measure how often we get it right
- Make improvements (& measure)



PRESCRIBING

- **Consider individual patient factors**
  - ***Medicines reconciliation***
- Careful with calculations
- Generic prescribing
- Memory aids
- Double checks
- Communicate

PRESCRIBING

- Consider individual patient factors
- **Careful with calculations**
  - ***Narrow Therapeutic Index***
  - ***Paediatrics***
- Generic prescribing
- Memory aids
- Double checks
- Communicate

PRESCRIBING

- Consider individual patient factors
- Careful with calculations
- **Generic prescribing**
  - ***With exceptions***
  - ***Standarised***
- Memory aids
- Double checks
- Communicate

PRESCRIBING

- Consider individual patient factors
- Careful with calculations
- Generic prescribing
- **Memory aids**
  - ***Low threshold for using***
  - ***Readily available***
- Double checks
- Communicate

PRESCRIBING

- Consider individual patient factors
- Careful with calculations
- Generic prescribing
- Memory aids
- **Double checks**
  - ***Individual (habit)***
  - ***Team***
- Communicate

PRESCRIBING

- Consider individual patient factors
- Careful with calculations
- Generic prescribing
- Memory aids
- Double checks
- **Communicate**
  - ***MDT***
  - ***PATIENT***

Opioids

- Consider individual patient factors
  - Allergies, Med Rec, Renal function
- Careful with calculations
  - Standard dosing (PCA & Epidural)
- Generic prescribing
- Memory aids
  - Standard Rx form
- Double checks
  - MDT
- Communicate
  - additional Rx

Administration

- **Availability**
  - ***Omissions***
- Double checks
- Ask, don't tell
- Avoid distraction
- Ask for help
- Never make Assumptions
- Communicate
- SAM

Administration

- Availability
- **Double checks**
  - ***Silent checks***
- Ask, don't tell
- Avoid distraction
- Ask for help
- Never make Assumptions
- Communicate
- Self-administration

Administration

- Availability
- Double checks
- **Ask, don't tell**
  - ***Multiple sources***
- Avoid distraction
- Ask for help
- Never make Assumptions
- Communicate
- Self-administration

Administration

- Availability
- Double checks
- Ask, don't tell
- **Avoid distraction**
  - ***Staff & PATIENTS***
- Ask for help
- Never make Assumptions
- Communicate
- Self-administration

Administration

- Availability
- Double checks
- Ask, don't tell
- Avoid distraction
- **Ask for help**
  - ***Time of Rx***
- Never make Assumptions
- Communicate
- Self-administration

Administration

- Availability
- Double checks
- Ask, don't tell
- Avoid distraction
- Ask for help
- **Never make Assumptions**
  - ***Double checks***
- Communicate
- Self-asdministration

Administration

- Availability
- Double checks
- Ask, don't tell
- Avoid distraction
- Ask for help
- Never make Assumptions
- **Communicate**
  - ***Double dosing***
- Self-administration

Administration

- Availability
- Double checks
- Ask, don't tell
- Avoid distraction
- Ask for help
- Never make Assumptions
- Communicate
- **Self-administration**
  - ***Risk Assessment & Training***

Opioids

- Availability
  - Daily checks & Ordering
- Calculations
  - Standard pre-made dose units
- Double checks
  - Silent checks
- Ask, don't tell
- Avoid distraction
  - Private prep area
- Communicate
  - Hand over

Monitoring

- **WHAT?**
  - ***Effectiveness***
  - ***Adverse events***
  - ***Duration***
  - ***Completion***
  - ***Drug levels***
- Communication
- Team work

Monitoring

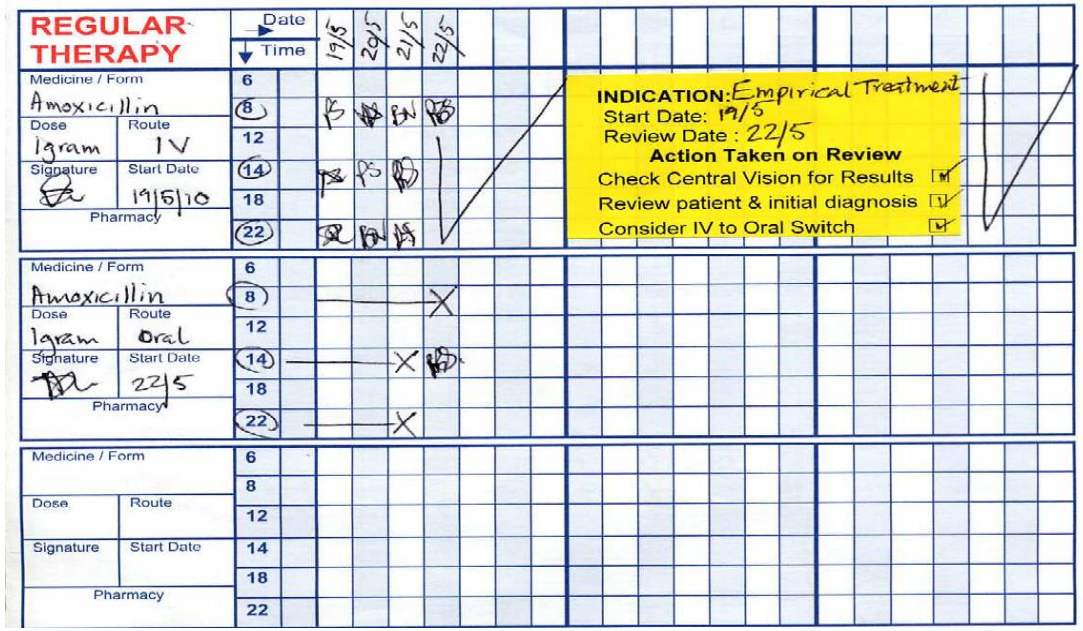
- WHAT?
- **Communication**
  - ***Change of care providers***
  - ***Change of clinical area***
  - ***Built into care pathway***
- Team work

Monitoring

- WHAT?
- Communication
- **Team work**
  - ***MDT***
  - ***PATIENT***

Antibiotics

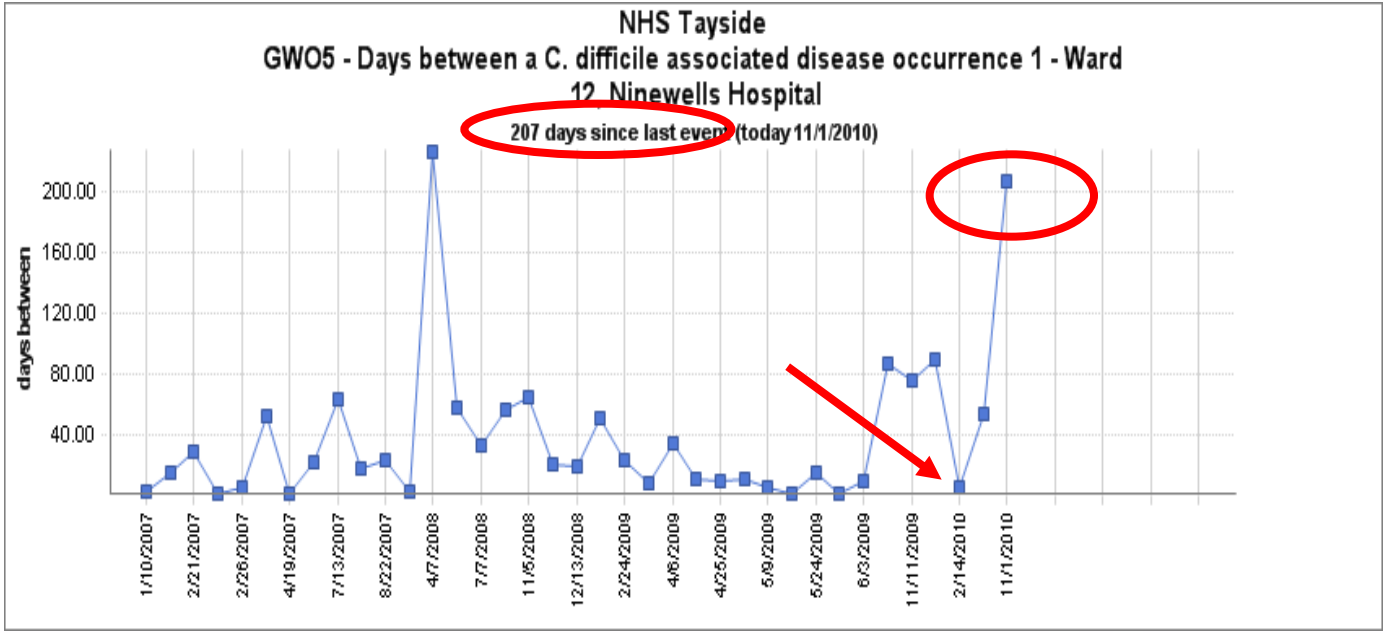
The 3 Day Antibiotic Bundle



Consider IV to Oral Switch

Antibiotics

Vascular Surgery (Ward 12)



Medication Safety Processes

"Designing **reliable** processes to ensure that the **R**ight patient receives the **R**ight drug, at the **R**ight dose, at the **R**ight time, via the **R**ight route with the **R**ight documentation"

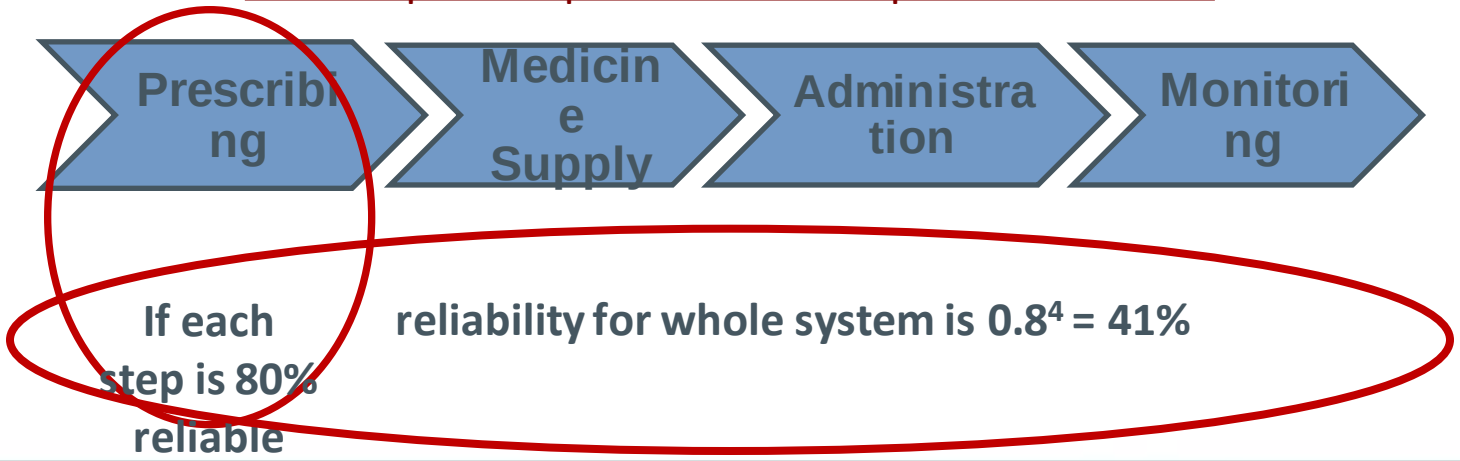
&

The **RIGHT** of **<u>any</u>** staff member, patient or carer to ***question*** the medication order
And to ***report*** any error / near miss for future learning

Summary….

Medication safety is a complex **system** requiring a sequence of events and interactions to occur reliably, linked by pivotal reliance on communication between and within teams.

Each step add equal value to the patient outcome



The application of what we know will have a bigger impact than any drug or technology likely to be introduced in the next decade.

Sir Prof Muir Gray
Director of the NHS Cheif Knowlege Office