



Are you making a difference?

Measuring Performance in Medication Reconciliation

Helen Stark, *Senior Project Officer,
Australian Commission on Safety and
Quality in Health Care*

Objectives



- ✓ Why measure success/progress in medication reconciliation?
- ✓ What measures and tools are available?
- ✓ How can the Commission assist with this?

Medication Reconciliation is a BIG CHANGE



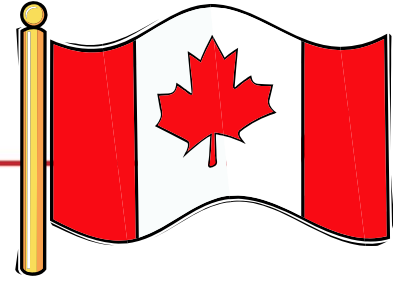
- ✓ After initial implementation, auditing is critical to assess adoption and uptake
- ✓ Staff involved need feedback on performance
- ✓ Can be done in many different ways
 - Audits can be conducted electronically or manually
 - Prospectively or retrospectively
 - Quantity versus quality audits – both are important
- ✓ All points of transition are important
- ✓ Auditing is usually labour intensive, requires a phased, strategic approach

Available Performance Measures and Tools



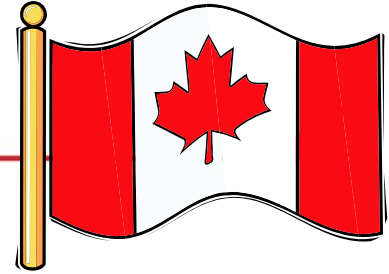
- ✓ Number of measures and measurement tools available
 - Canada, USA and UK
 - Limited number of Australian measures

Safer Healthcare NOW! campaign



- ✓ Med Rec initiative commenced in 2005 in acute care facilities, at admission
- ✓ Campaign now focused on discharge
- ✓ Expanded to include med rec programs also in long-term care and home care
- ✓ 2010: close to 500 teams but much smaller numbers reporting data
- ✓ Lead country for WHO High 5s medication reconciliation initiative

Measures for acute teams



- ✓ Mean number of undocumented intentional discrepancies
- ✓ Mean number of unintentional discrepancies
- ✓ Medication reconciliation success index
- ✓ % patients with BPMDDP at discharge
- ✓ % patients reconciled on admission (Accreditation Canada measure)



A Medication Reconciliation Allegory (or metaphor!)

By Mark Kearney, Pharmacist,
Queensway Carleton Hospital

Imagine

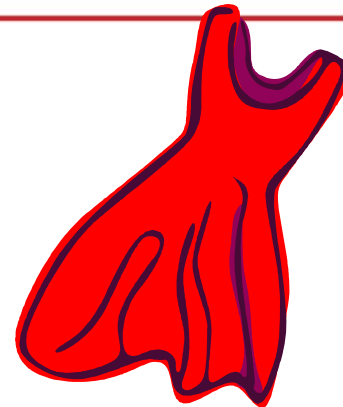


You come into the hospital
wearing size 32 grey pants,
a red shirt, blue shoes,
and a black belt....



You leave the hospital

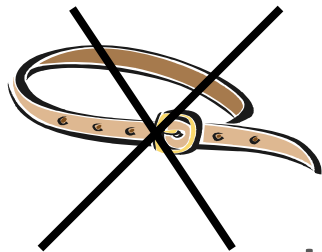
...wearing a red dress



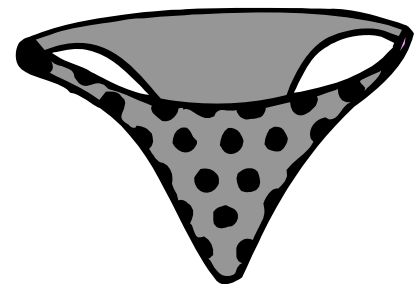
A blue shirt ...



No belt



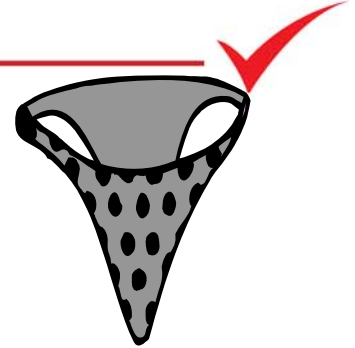
... and a size 32 grey thong!



What happened?

- Unintentional Discrepancy

- Ordered a grey thong instead of grey pants
- Forgot to reorder your belt



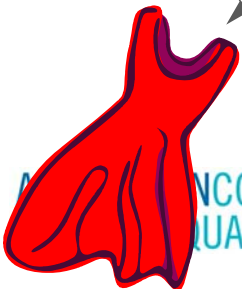
- Undocumented Intentional Discrepancy

- Blue a better colour for you so substituted in place of red shirt but nobody was told

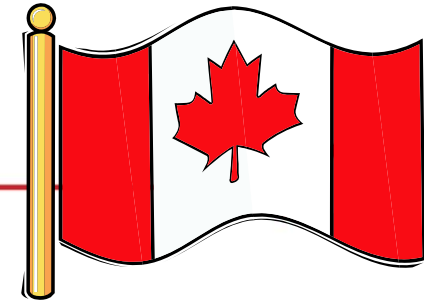


- Intentional Discrepancy

- Everyone told you that you had the legs for a dress so we replaced your pants

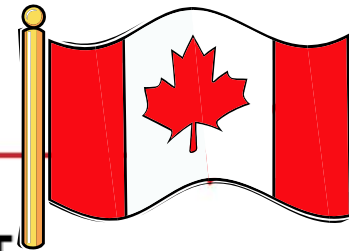


Measures for acute teams



- ✓ Mean number of undocumented intentional discrepancies
- ✓ Mean number of unintentional discrepancies
- ✓ Medication reconciliation success index
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Automated Excel tool



GENERAL TOUR OF THE EXCEL MEASUREMENT WORKSHEET

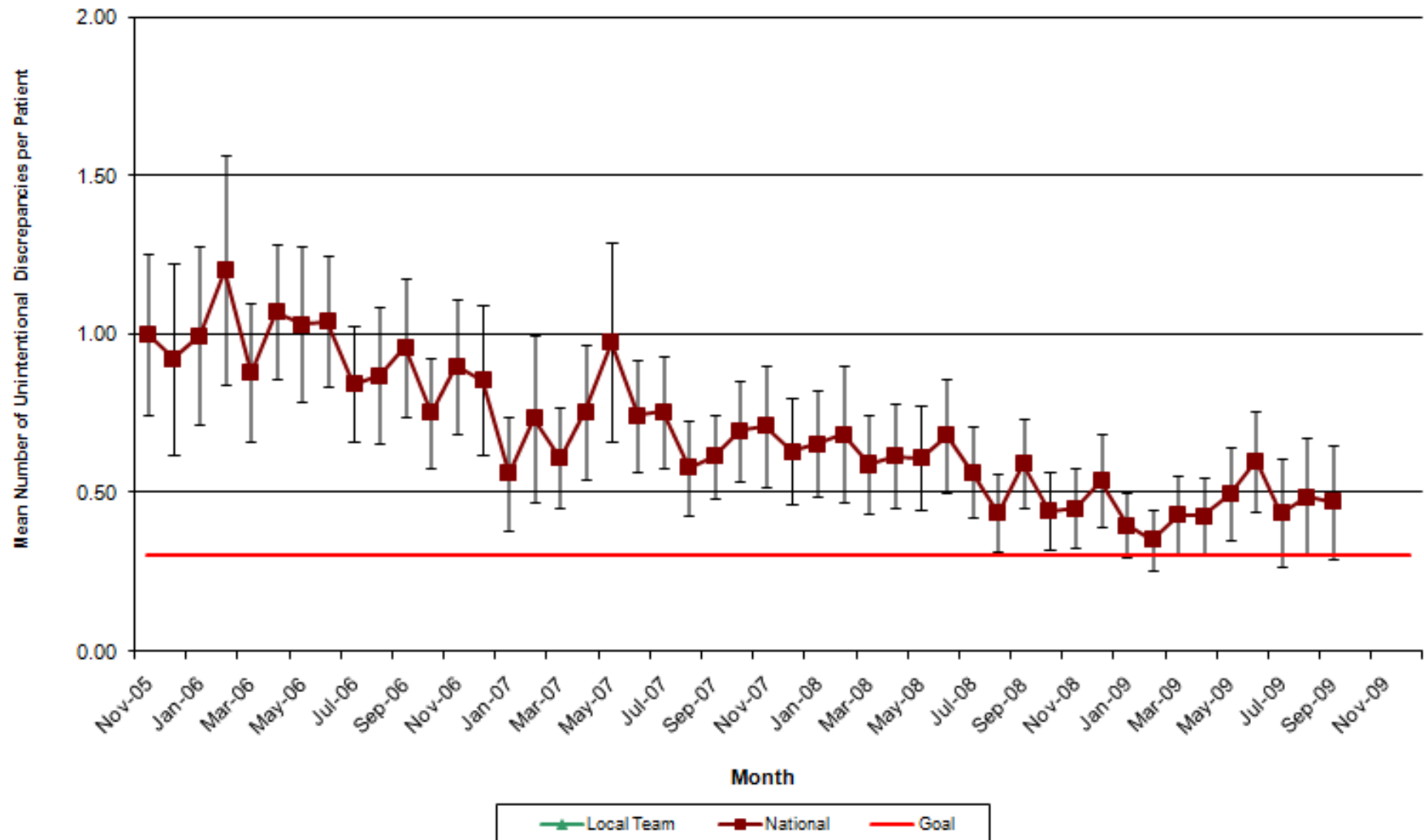
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC		
1	1.0 Mean Number of Undocumented Intentional Discrepancies - Measurement Worksheet																														
2	Prevention of Adverse Drug Events Through Medication Reconciliation																														
3	Intervention	Prevention of Adverse Drug Events (Medication Reconciliation)																													
4	Definition	An undocumented intentional discrepancy has occurred when the physician has made an intentional choice to add, change or stop a medication however this choice was not clearly documented in the patient chart.																													
5	Goal	Decrease the rate of undocumented intentional discrepancies by 75% in one year																													
6	Data Collection Details																														
7	Hospital Name																Team #														
8	Health Region																Point of Transfer														
9	Patient Sample	Describe the source of the patient sample e.g., Patients admitted through ED > 75 yo; Patients admitted through ED with >4 pre-admit needs etc.																													
10																															
11																															
12																															
13																															
14	Calculation of Denominator																														
15	Complete a SHH Individual Medication Reconciliation Audit Tool for each patient in the monthly sample(s). Using the information recorded on the audit tool, complete the following cells on the worksheet. Do not																														
16	Implementation Stage																														
17	Collection Method																														
18	1.1 What is the total number of patients in this month's patient sample?																														
19	Calculation of Numerator																														
20	1.2 Add the total number of Type 2 - BPMH Discrepancies recorded for the patients in #1.1 from the Individual BPMH Record and Audit Tools. An individual BPMH Record and Audit Tool should be completed for each patient.																														
21	Final Calculation																														
22	1.3 Divide #1.2 by #1.1.																														
23	GOAL:																														
24	*The goal for this measure is to decrease the rate of undocumented intentional discrepancies by 75% in one year. Using your baseline rate, calculate the target rate of undocumented intentional discrepancies and your goal rate in each of the monthly cells in row 23 above.																														
25	Comments																														
26																															
27																															
28																															

3 Worksheet tabs

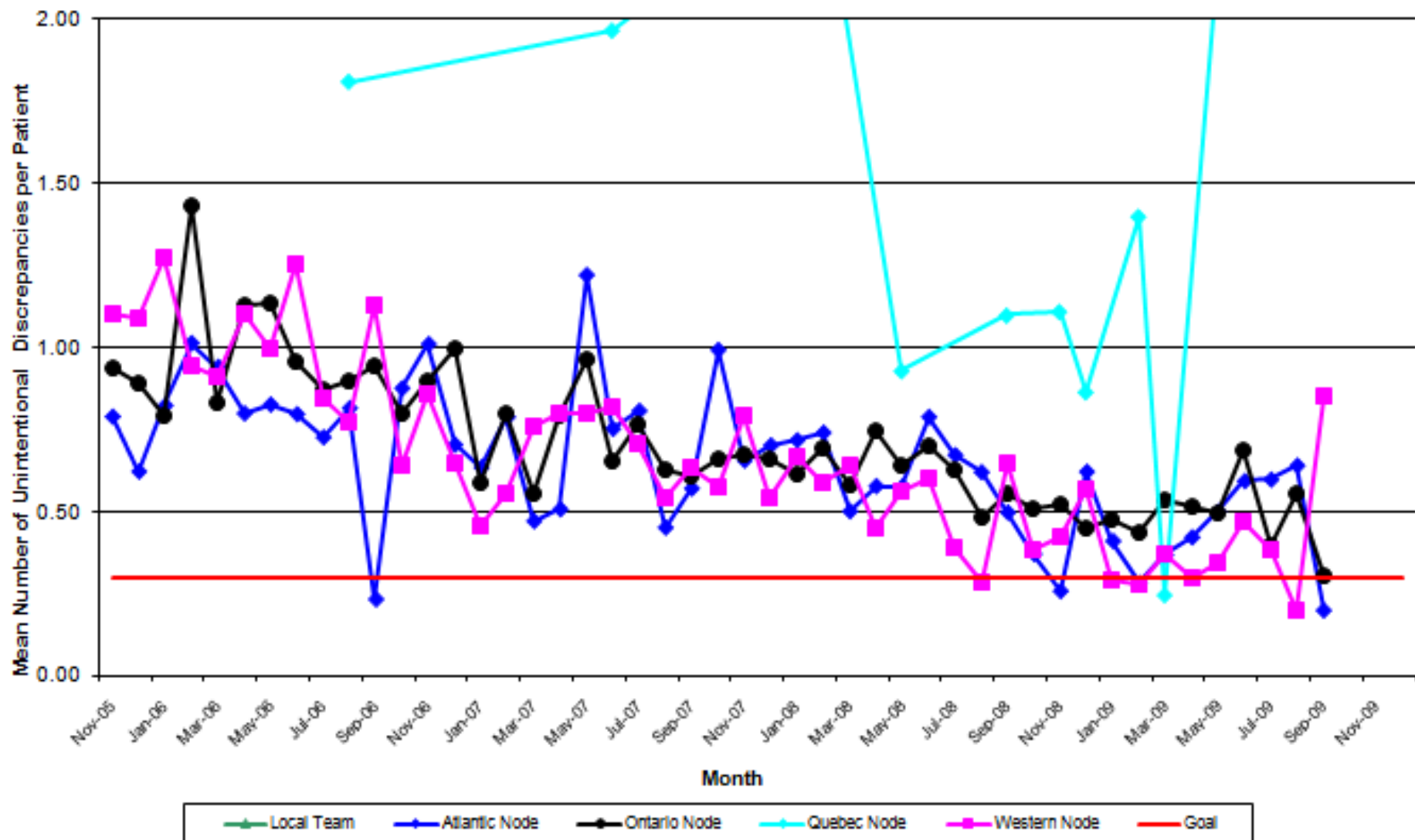
Worksheet: Data Entry Sheet Submitted By

INTERVENTION - MEDICATION RECONCILIATION MEASURE: 2.0 Mean Number of UNINTENTIONAL Discrepancies

The "whiskers" depict the 95th% CI of the National Mean. Your mean is statistically higher if it is above the "whiskers"; it is the same as the National Mean if it is within the "whiskers"; and it is statistically lower if it is below the "whiskers".



INTERVENTION - MEDICATION RECONCILIATION MEASURE: 2.0 Mean Number of UNINTENTIONAL Discrepancies



A word about the High 5s Med Rec Project



5 year project, international effort

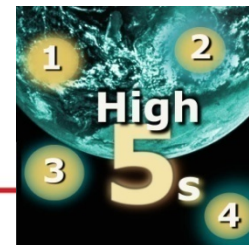
- ✓ **Phase 1:** Formal measurement activity focused on admission medication reconciliation for patients 65 years and over admitted through ED to an inpatient ward
- ✓ Subsequent phases will extend scope
- ✓ Significant commitment

High 5s Objectives



- ✓ Test feasibility of implementing a standardised med rec protocol within a group of countries
- ✓ Demonstrate effectiveness of standardisation in reducing the risk of adverse drug events in participating hospitals across countries

Measurement for High 5s



- ✓ Hospitals required to implement SOP as written and measure performance in implementing the SOP and in achieving success in reducing or eliminating ADEs
- ✓ Multi-faceted measurement approach – qualitative and quantitative components
- ✓ Similar measures to Safer Healthcare NOW! initiative but with tighter indicator definitions and formalised data quality management approach

Institute for Healthcare Improvement (IHI)



- ✓ *5 Million lives Campaign* - national collaborative from Dec 2006 to Dec 2008
- ✓ Built on *100,000 Lives Campaign*, a national, IHI-led initiative that ran from Dec 2004 to June 2006

Three measures

- ✓ Percent of unreconciled medications per 100 admissions (check)
- ✓ Unreconciled medications per 100 admissions
- ✓ ADEs per 100 admissions (trigger tool)



Other IHI measures



Outcome Measures

- ✓ Errors from Unreconciled Medications per 100 Admissions
- ✓ ADEs per 1,000 Doses
- ✓ % Admissions with an ADE
- ✓ High-Risk ADEs per 1,000 Doses

Process Measures

- ✓ Percent of Unreconciled Medications
- ✓ Number of Self-Reported Medication Errors
- ✓ Pharmacy Interventions per 100 Admissions
- ✓ Risk Priority Number (from Failure Modes and Effects Analysis)

IHI Improvement Tracker



IHI.org | A resource from the
Institute for Healthcare Improvement

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More Search Options

Home > Workspace > Improvement Tracker

Improvement Tracker

The Improvement Tracker allows you to track any of the measures currently available in the Topics area of IHI.org. Just select the measure you want to track (or create your own custom measure), set your aim, and enter your data. The Improvement Tracker automatically graphs your data. It lets you create reports, and even customize them for various audiences — your team, your CEO, your community.

Improvement Tracker allows you to track predefined standard measures in several topic areas, with more being added periodically. Additionally, you can create your own custom measures to track any data you want!

- [View all Improvement Trackers that others have set up](#)
- [Manage my Improvement Trackers](#)
- [Create a new Improvement Tracker](#)

[>> Tour the Improvement Tracker](#)

Using the Improvement Tracker

**Iowa Health System
Des Moines, Iowa, USA**
The team at Iowa Health System is using the Improvement Tracker to see if the changes they are making are leading to a reduction in adverse drug events.

Percent of Admissions with an ADE

Date	Percent
01/31/02	25.00
04/30/02	15.00
07/31/02	12.00
10/24/02	10.00

[See some great results this team is achieving.](#)

Measures That You Can Track

email this page
print this page

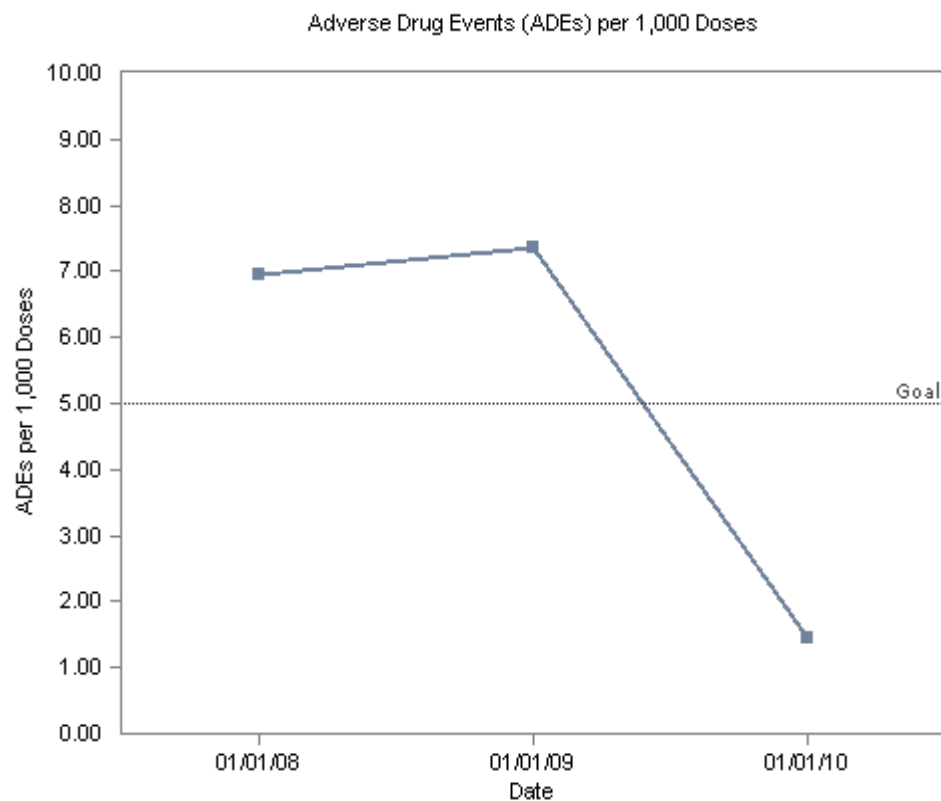
Connect with IHI
f t in



Adverse Drug Events (ADEs) per 1,000 Doses

Rhode Island Hospital
Providence, Rhode Island, United States
Hospital-Teaching

Aim: To know what our unit medication error rate is and to minimize it as much as possible



▲ Change: A deliberate alteration introduced into the process in order to achieve

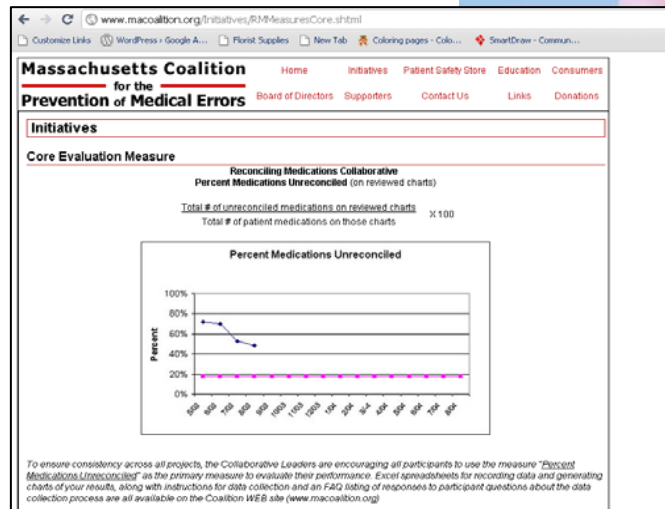
Northwestern Memorial Hospital – Chicago

- ✓ MATCH Medication Reconciliation Toolkit
- ✓ Some suggested measures
- ✓ Authors of the MATCH study

Results of the Medications At Transitions and Clinical Handoffs (MATCH) Study: An Analysis of Medication Reconciliation Errors and Risk Factors at Hospital Admission



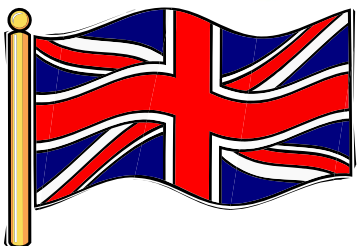
A graphic featuring the United States flag and a checkered racing flag. The US flag is on the left, and the checkered flag is on the right, both appearing to wave. The checkered flag has red and white squares. The US flag has blue, white, and red stripes and stars. The checkered flag is partially overlapping the US flag. The entire graphic is set against a white background.




National Institute for Health and Clinical Excellence



Organisational data collection tool for clinical audit					
Complete one form for each clinical area within the healthcare organisation. For definitions of the standards, please refer to the NICE guidance.					
Organisation:					
Service/unit:					
Date of data collection:					
No.	Data item	Yes	No	NA/ Exceptions	NICE guidance ref.
Patient safety					
1	<p>The following are available in each clinical area:</p> <ul style="list-style-type: none">- a trustwide policy for medicines reconciliation on admission of adults- a local policy for medicines reconciliation on admission of adults. <p>(Data source: Clinical area policy file)</p>	<input type="checkbox"/>	<input type="checkbox"/>		1.1
2	The policy includes the following:				
2.1	<p>Standardised systems for:</p> <ul style="list-style-type: none">• collecting• documenting• verifying information about current medication.	<input type="checkbox"/>	<input type="checkbox"/>		1.2
2.2	A statement that pharmacists should be involved in medicines reconciliation as soon as possible after admission.	<input type="checkbox"/>	<input type="checkbox"/>		1.2




National Institute for
Health and Clinical Excellence

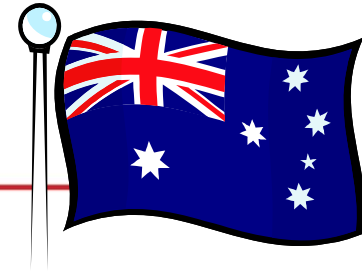
National Patient
Safety Agency

Issue date: 2007

Audit tool

Technical patient safety solutions
for medicines reconciliation on
admission of adults to hospital

Safer systems Saving lives Initiative



- ✓ 2006 national collaborative project
- ✓ Based on IHI 100,000 Lives Campaign
- ✓ 6 bundles of care
 - Preventing ventilator-associated complications
 - Preventing surgical site infection
 - Preventing central venous catheter related-bloodstream infections
 - Implementing a rapid response system
 - **Preventing adverse drug events (med rec)**
 - Improving care for acute myocardial infarction



Health Service

Clinical Area

Data collection period	<div> <div> <div>/</div> <div>/</div> <div>/</div> </div> <div>to</div> <div> <div>/</div> <div>/</div> <div>/</div> </div> </div>																				Total – use this information to identify components which need improving
Patient/Chart number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Medication history	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Confirmation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reconciliation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Medication liaison	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Number of components present																					
Please <input checked="" type="checkbox"/> if 100% bundle compliant																					

To meet bundle compliance

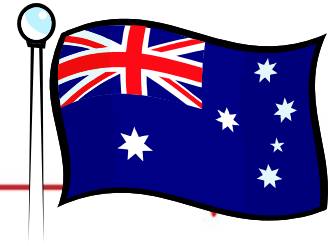
- Medication history: record of formal interview documenting: contact details, source of information, the medications taken by patient generic name, form, dose, frequency duration and indication, whether patient's medications are available, compliance issues and other relevant information.
- Confirmation: record of confirmation with the patient and a second source that medication history is correct.
- Reconciliation: documentation of changes in the orders.
- Medication liaison: documentation of communication the reconciliation results with appropriate medical and other staff.

- ✓ Percentage of patients with all steps of the med rec process documented
- ✓ 20 records per month
- ✓ Hospital sites submitted data using an eform



- Control chart

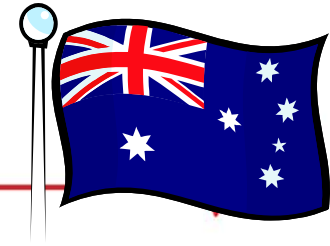
Other Australian initiatives



Queensland

- ✓ Pre and post audit of MAP usage in 2008
- ✓ Statistically significant improvement in completeness of medication histories through use of MAP, ↑ in number of medicines reconciled at admission
- ✓ Plans to include med rec in state-based KPIs
- ✓ Some voluntary KPIs collected

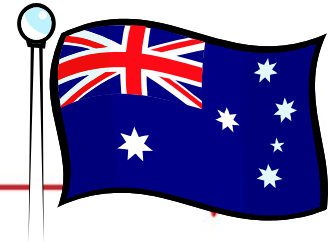
Other Australian initiatives?



Western Australia

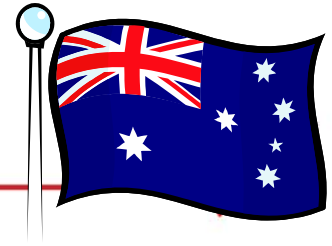
- ✓ SQuIRE program – funding for med rec
- ✓ Few sites have implemented widely
- ✓ Slowly working towards some outcome measures

Other Australian initiatives



South Australia

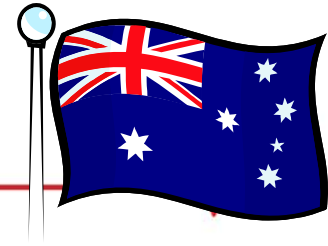
Indicators for Quality Use of Medicines in Australian Hospitals



- ✓ NSW TAG/CEC indicators published in August 2007
- ✓ 30 indicators in six domains of care with limited number relevant to medication reconciliation
- ✓ Tested nationally for validity, measurability, usefulness, and comparability
- ✓ ACSQHC is currently working with NSW TAG to revise and update the indicator manual
- ✓ Available: www.nswtag.org.au



QUM Indicators relevant to med rec



- ✓ 3.1 Percentage of patients whose current medications are documented and reconciled at admission
- ✓ 5.3 Percentage of discharge summaries that include medication therapy changes and explanations for changes
- ✓ 5.5 Percentage of patients with a new adverse drug reaction (ADR) that are given written ADR information at discharge and a copy is communicated to the primary care clinician

Commission's Role



- ✓ Are there benefits in having a national focus for medication reconciliation efforts?
- ✓ Opportunity for medication reconciliation indicators to be reviewed and new ones added to the QUM manual
- ✓ Data collection tools
- ✓ If High 5s style measures then recognise resources and training required





- Electronic audits are an easy and efficient way to show adherence to the medication reconciliation process
- Manual audits are time consuming but help identify the quality of the medication reconciliation process and the potential impact on patient safety
- Prospective audits are ideal for medication reconciliation since interventions can be made if medication reconciliation was not done appropriately