



Going Back to Basics with Medication Safety at Starship



5R's Campaign

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Medication Safety
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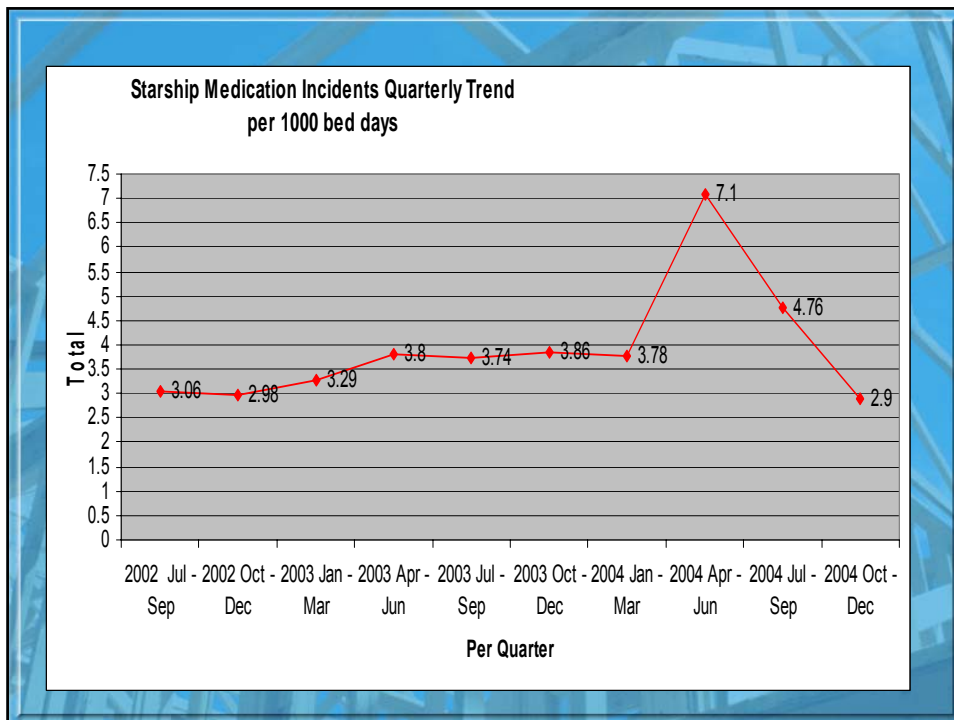
"the right medicine in the right dose by the right route at the right time gets to the right patient".

Background

- 8 serious events Dec 03 – Apr 04
- RCA's showed lapses in medicine administration process

Prescribing → Ordering → Dispensing/Supply → Administration

Medication Administration Process "Swiss Cheese Model"



Don't fix what's not broken

- 1st time initiative
- Sensitive subject
- Strategy needs to be broad
- Baseline data for verification
- Staff empowerment

Mission of Campaign

- **To empower staff to go “back to the basics” with the medication administration process so they question, check and challenge the medicine administration systems**

Objective 1

- **To determine if root causes and stakeholder feedback is representative of medication safety issues at SCH by baseline data collection**
 - **prescribing and administration documentation quality**
 - **pharmacists “near misses” interventions**
 - **culture of reporting errors**



Objective 2

- **To promote and educate on the five rights of medication administration to staff, patients and their parents.**



Objective 3

- **To create an open and non punitive environment by revealing the medication safety issues facing the organisation, their complexity and the impact it has on both patients and staff.**



Objective 4

- **To identify four key changes to medication administration systems that will result in positive improvement based on data captured during the campaign and the information from the RCA's**



**So what did we find
in the data
collection?**

The Results

Prescribing and Administration documentation audit

Objectives

1. To assess the compliance of prescribing/administration documentation to set policies and guidelines on prescribing and administration best practice.
2. To determine the % of medicine types administered as expected i.e. within 1 hr each way of prescribed frequency or time.
3. To determine what aspects of the medication chart may be contributing to errors and near misses.

Audit results

- 33% overall prescribing requirements
- 28% non IV administration requirements
- 11% IV administration requirements

Set parameters measured	2004		2000
	Pre	Post	
Demographics			
Number of wards	10	10	7
Number of teams	7	7	Unknown
Number of charts	105	98	35
Number of individual scripts	537	522	232
Number of administrations	835	772	Not collected
Prescribing requirements			
Name	99%	100%	Not collected
NHI	98%	100%	Not collected
DOB	99%	100%	Not collected
Allergies /Hypersensitivities	62%	60%	69%
Weight	92%	76%	Not collected
Prescription requirements			
Commencement date	88%	91%	95%
Generic name of medicine	86%	85%	92%
Dose specified in appropriate units	82%	73%	73%
intended dose/weight stated	2%	1%	Not collected
Decimal point used correctly	100%	95%	67%
Route written clearly and in policy standard abbreviations*	98%	98%	96%
Frequency written clearly and in policy standard abbreviations*	91%	92%	81%
PRNs has minimum dosing interval and /or maximum dosage in 24 hours	80%	90%	90%
Stop date, initials and straight line for discontinuation and alterations	40%	24%	47%
Full identifiable signature of prescriber*	43%	36%	0%
Full identifiable signature of prescriber and matched prescriber details section	0%	0%	Not in existence
Overall prescription compliance	33%	30%	Not collected
Other ADHB requirements			
Prescriber details on back	7%	13%	Not in existence
Administrator details on back	76%	56%	Not in existence
Administration requirements			
Time stated only	90%	88%	Not collected
Dose and unit stated only	89%	87%	Not collected
Time, dose, unit stated	60%	59%	Not collected
IV meds – 2 sets of initials	81%	79%	Not collected
IV meds – 2 sets initials and matched administrator details section	6%	5%	Not collected
Non IV meds – initials	96%	89%	Not collected
Non IV meds – initials and matched administrator details	26%	27%	Not collected
Non IV – total requirements	25%	31%	Not collected
IV – total set requirements	11%	12%	Not collected

Percentage (%) of medicine types administered as expected

Medication Type ¹	% dose (pre)	% dose (post)
Skin	12%	38%
Analgesia (regular)	50%	65%
Respiratory	53%	64%
Alimentary	58%	44%
Central nervous system	70%	67%
Infection	83%	68%
Cardiovascular	84%	69%
Endocrine / Metabolic	84%	59%
Nutrition	89%	100%
Immunology	100%	192% ²
Genito-urinary	100%	100%
Allergy	100%	0%

1. Type based on British National Formulary categories

Pharmacist Near Misses

- Starship pharmacists collected all “near misses” detected on SCH wards during a 20 day period.
- These “near misses” were classified and validated as either as part of normal ‘clinical’ duty of a pharmacist when reviewing a prescription or as reportable or serious based on the definitions of the NZ Sentinel Events Workbook¹.

Results

- Total number of “near misses” made in 20 days = 222
- Total number of “near misses” per day = 11.1
- Total number of “near misses” per day per pharmacist = 2.775

Classification

	Clinical	Reportable	Serious
Before validation	117 (53%)	58 (26%)	47 (21%)
After validation	88 (40%)	65 (29%)	69 (31%)

After validation of interventions by doctors review there was a significant change ($p=0.01$) in the distribution of the classification of errors, this change is in the move to a classification of a more serious nature after doctor review

Near-Misses (Serious and Reportable) versus wards

	PICU	23B	24A	24B	25A	25B	26A	26B	27B
Serious	16	3	3	5	2	1	1	3	13
Reportable	11	3	3	13	1	3	9	8	7
Total	27	6	6	18	3	4	10	11	20
Paracetamol[†]	9 (33)	3 (50)	1	5 (28)	1		1	1	1

Serious Near-Misses: types of high risk medicines vs. ward

	PICU	23B	24A	24B	25A	25B	26A	26B	27B
Paracetamol	9	3	1	3	1		1	1	1
Morphine			1					1	
Cytotoxics*									8
Antimicrobial	3			2					2
Muscle Relaxant	1								
Other	3		1		1	1		1	2
Total	16	3	3	5	2	1	1	3	13
Non-paracetamol	7	0	2	2	1	1	0	2	12

Type of Intervention vs. Severity

Type	Serious	Reportable
Dose	22	32
Frequency	17	4
Discontinuation	2	6
Legibility	2	4
Legality	2	3
Choice		3
Route	1	1
Dispensing error	1	
Duration		1
Initiation		1
Interaction		1
Omission		1
Other		1

Occupational Group / Intervention Type – Serious Near-Misses

	Dose / Freq	Route	Other
House Officer	9 ‡	1	2
Registrar	19 ‡		1 *
Consultant	7 ‡		
Pharmacist			1 ∞
Nurse			1 ‡
Unspecified	4 ‡		2

Notes

- ‡ many registrar errors related to paracetamol prescribing
- ◆ pancuronium charted as .5 mg
- + all related to cytotoxic medications
- ∞ Pneumovax® dispensed instead of Prevenar® by Pharmacy
- ± Paracetamol charted by nurse but not signed for by medical staff
- ‡ Either house officer or registrar

Survey

1. **Assess the current state of the culture of reporting within the organisation**
2. **Raise awareness of the wider implications and scope of medication safety issues**
3. **Identify medication safety issues staff feel strongly about from feedback**

Survey

- **29% response rate**
- **Majority comfortable with reporting errors, believe the environment is blame free and are happy with the support and way errors are dealt with.**
- **3 questions where Drs > Nurses**
 1. **Senior managers at my hospital communicate to me that medication safety is a high priority**
 2. **My department acts on reported information related to medication errors to improve patient safety**
 3. **Individuals are supported for reporting medication errors**

Survey

Feedback

- medication chart
- reporting cumbersome
- no readily accessible information

Limitations

- Number of participants

Comparison of data

RCA	Feedback	Documentation Audit	Pharmacists "Near Misses"	Survey
Design of medication chart not conducive to best practice standards	No training given to junior doctors on prescribing	Illegibility (only 1/3 of all prescriptions met documentation requirements)	96% of near misses doctor related prescribing	Majority comfortable with reporting errors
Lack of single universally used pharmacopoeia	Lack of suitable resources for prescribing	Only 20% meet administration documentation requirements mainly because of space on medication chart	Errors in dose, route and frequency (73% of near misses)	Reporting is cumbersome
Lack of standardised prescription practices	Boxes too small for signing prescription drug chart needs rehaul	Lack of uniform abbreviations used	High risk medicines = paracetamol, cytotoxics and antimicrobials	Information resources not easily accessible

Conclusion

INFORMATION! INFORMATION !

- Management
- Presentation
- Flexibility
- Balance

Proposed 4 changes

- 1. New paediatric designed medication chart**
- 2. One authorised choice for paediatric prescribing text**
- 3. Doctors induction training on specific safe prescribing practice within paediatrics.**
- 4. Development of Paediatric Specific Policy on Safe Medication Practice**

Tribulations

- Willingness of staff to participate.
- Objectives achieved within time frame.
- Work has begun on changes.
- Promotion of medication safety has created awareness and openness, with staff and patients, particularly of how failure in one stage of the medication administration process may impact on the other stages.
- Parents of children previously involved in an adverse medication event sent a letter informing them of the campaign. We received two responses, both responding positively to the commitment shown to medication safety.
- Positive progress with setting a wider framework of patient safety within ADHB.

Challenges

- Momentum
- Measures
- Resources
- Technology
- Integration
- Standardisation
- Balance

