Just a spoonful of sugar…

Lessons learnt on the road to Medication Management

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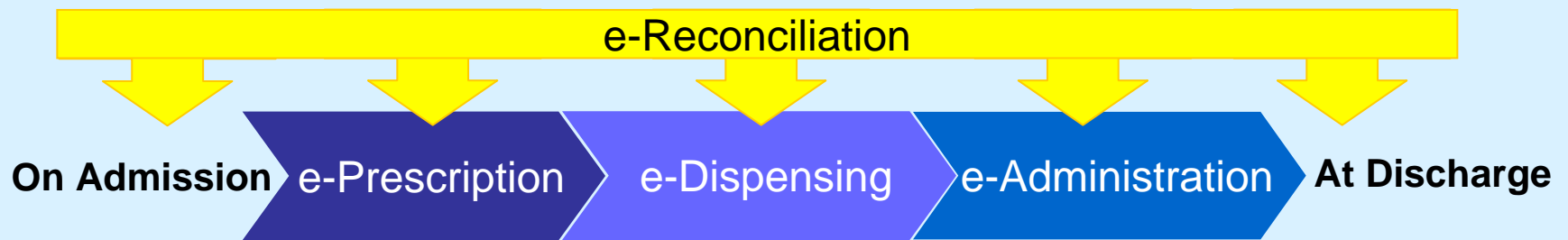
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- Provide a definition of Medication Management.

- Review our initial attempts to introduce inpatient e-Prescribing in 2003 and again in late 2004.

- Briefly describe outcomes, lessons learnt & subsequent improvements resulting in decreased medication errors.

- Share innovative developments on the road to introducing Medication Management using the ORION Health cOrders 3.0 Module.

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Definition

The Medication Management Process

e-Reconciliation

On Admission → e-Prescription → e-Dispensing → e-Administration → **At Discharge**

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Process

- The Concerto™ MAP CIS in use for discharge e-prescribing since 2002.

- Initial e-Prescribing pilot commenced on one Medical Unit in July 2003 using Soprano Order Entry 1.2.

- e-Prescribing ONLY.

- Once prescribed, a computer generated chart was printed on ward.
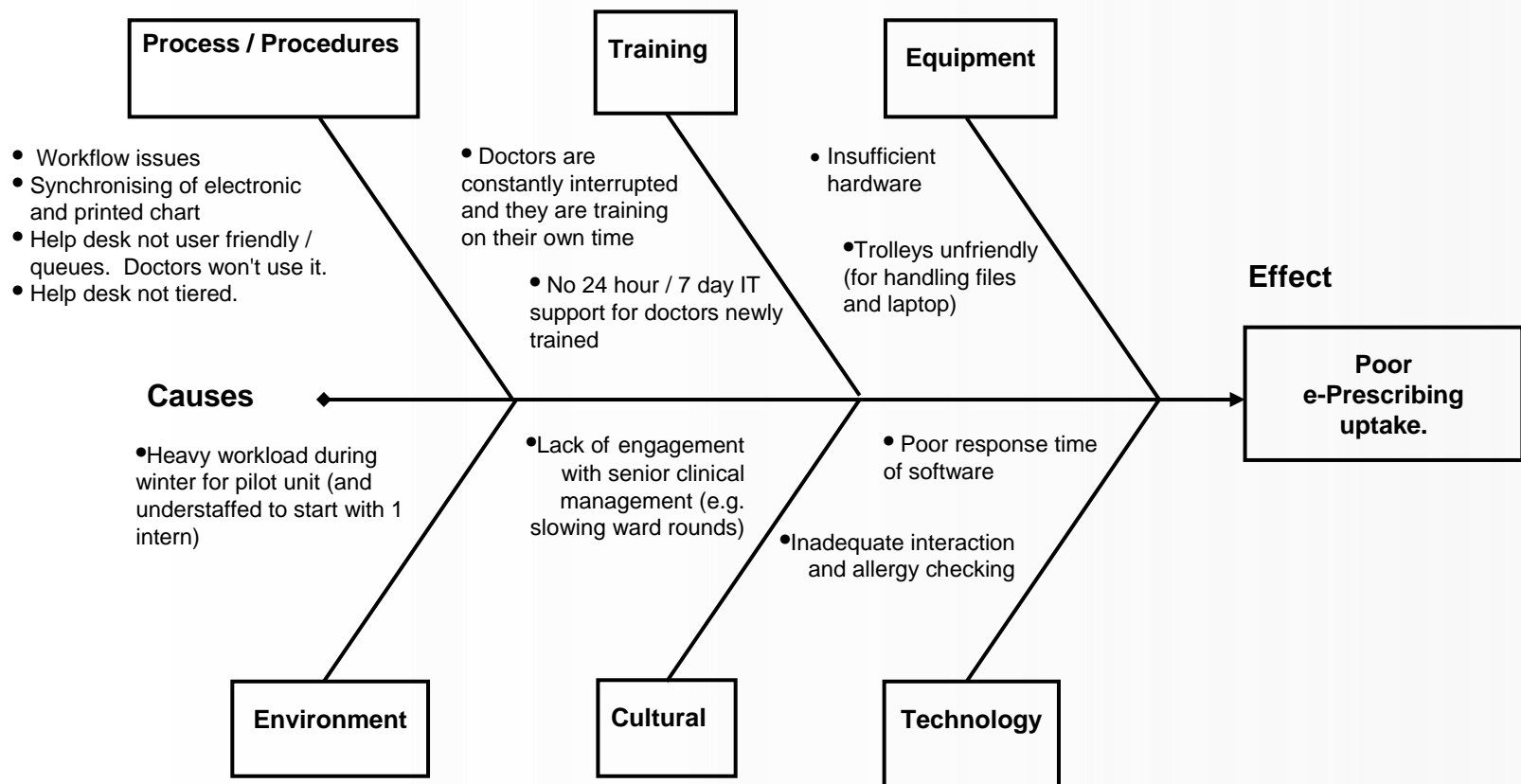
- Asynchronous.

ACUTE Pilot…withdrawn after 8 wks!

SUB-ACUTE Pilot…

- Successful implementation

- Production of legibile med chart   **Chart Samples**

- Used for 100% of routine medication orders (excludes IV, stat & telephone orders)

- System on-going & now viewed as accepted part of safe clinical practice

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Formal analysis resulted in identification of six separate impediment clusters...

Figure 1. Cause & Effect Diagram

Source; Wooles, J & Allison M. (2003) Inpatient e-Prescribing Workshop Frankston Hospital.

Process / Procedures…

- Failed to understand workflow.

- Lack of convenient space on the wards to store wireless laptops.

Training…

- Training sessions constantly interrupted.

- No round the clock support.

Equipment…

- Insufficient!

- Wireless laptops NOT the answer.

Environmental…

- Lack of convenient space on the wards to store wireless laptops.

Cultural…

- The culture of the ward round (reluctance of SMOs).

- Clinicians reluctant to accept systems that interfere with traditional work flow.

- Adherence to traditional handwritten methods → tension between nursing and medical staff.

Technology…

- Slow and did not support class level allergy checking.

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June – November 2004…

- A subsequent attempt at implementing a full Computerised Provider Order Entry (CPOE) system including…

    - e-Prescribing,

    - Lab & Rad ordering

    - Allied Health

- Underlying Drug Data Base found to be "not fit for purpose".

- Project halted pending identification of alternative.

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Lessons Learnt

- Integration of hospital systems and workflows is a time consuming, highly complex task.

- Critically important to understand clinical workflows

- 'Close the loop'.

- Medication Management must be considered as 'business critical' and have appropriate resources allocated to it.

- Effective change management is paramount!

- Critical to get POCC right (Multi platform approach).

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Subsequent Results

- Medications e-prescribed…↑ from 1,948/month in March '03 to 13,403/month in July '08.

- ↓ of 19% in medication errors achieved using Soprano application for discharge e-prescribing (Lam, 2003).

- Medication errors ↓ from 5.37 /100 items to 4.36 /100 items.

- A recent audit of errors related to Oxycodone dosage forms had ↓ from 3.4% to 1.2%.

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Current Development Process cOrders 3.x

- More systematic analysis (lit reviews, white paper, workflow analysis etc).

- Successful ORION clinical workshops .

- FDB Workshops.

- Use of 'ORION Central' provides a unique development environment using a collaboration & knowledge management tool.

- 'User Stories' to better define application requirements.

- Use of DMZ to access product development

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Medication Management Solution Development

- PBS support is critical.

- Formulary Support (Formulary Vs Non Formulary Medications).

- Barcoding; ~ 90% of products now have EAN barcodes.

- Encounter linking.

- Order Sets & Drug Templates (pre-loaded instructions).

- Complex orders (e.g. tapering Warfarin & Prednisolone).

- Robust Level 2 CDSS (Allergies, Drug/Drug using mapped SMOMED-CT to ICD-10 codification).

- Disaster recovery.

Conclusion

- Several "bitter" experiences!

- Implementing Medication Management is a complex & resource intensive task.

- Results indicate e-Prescribing can be successfully implemented in sub-acute areas.

- CIS vendors need to adopt innovative 'client centric' methods of application development.

- Medication Management is a difficult pill to swallow...requiring a systematic approach to socio/technical, change management, environmental & process issues.

bribbons
Help   Home

Logout

Support Tracker
Common
Online Workshop

Orders Online
Workshop

Welcome, Bob Ribbons   (Log out)   New   Your Stuff   History   Browse

Orders 3.1 Workshop

| All Content (22) | Discussions (5) | Documents (17) | Blog Posts (0) |

✳ ANNOUNCEMENT:
Another new team member   by Dana Thomas at 6/06/2008 09:02
Please welcome Dr. Lloyd McCann (Clinical Consultant). Lloyd is working on the user stories for discharge and outpatient prescribing. He will be posting these for your review shortly.

✳ ANNOUNCEMENT:
New team members   by Dana Thomas at 8/05/2008 16:14
Please welcome Wendy Butler (Business Analyst) and Dr. Manoj Patel (Clinical Consultant). Manoj and Wendy will be helping the Orion team complete this development. They will shortly be posting information about 'Medication Chart' and 'Allergies and Alerts' for your review

✳ ANNOUNCEMENT:
Accessing Orders Demo   by Timothy Renouf at 25/03/2008 13:43
For those of us who have misplaced the URL for accessing the Orders demo here they are again (User: "clinician", Password: "password")...
- http://192.168.20.17/concerto/Login.htm (Internal Orion Health URL)
- http://202.37.75.132/concerto/Login.htm (External Client URL)

⊙ Sub-communities

All Content

Filter by tag groups ⓘ

| 📁 Show All | 📁 **User Stories** (3) |

15 ▾ Items per page			1 2 ◀ Previous Next ▶
Author	**Subject**	**Replies**	**Last Activity**
Lloyd McCann	📄 Discharge Prescriptions User Stories	43	2 months ago by Lloyd McCann
Manoj Patel	📄 Medication Chart User Stories	37	2 months ago by Manoj Patel
Wendy Butler	📄 Consolidated User Stories for Allergies and Alerts	2	3 months ago by Wendy Butler

Actions
- Start a discussion
- Create a document

Notifications
- Stop email notifications
- View RSS feeds

Popular Documents
- Discharge Prescriptions User Stories
- Medication Chart User Stories
- Consolidated User Stories for Allergies and Alerts

Popular Tags
medicatio

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KNOWN ADVERSE DRUG REACTION TO FOLLOWING DRUGS

APPROVED ABBREVIATIONS

O = Oral	PV = Per Vagina		
IM = Intramuscular	INH = Inhalation		
SC = Subcutaneous	NG = Nasogastric		
IV = Intravenous	PEG = G - Tube		
PR = Per Rectum		Gastroscopy Tube	
SL = Sublingual	PEJ = J - Tube		
TOP = Topical		Jejunostomy Tube	

DOSE OMITTED CODE

A = Absent from Ward
F = Fasting
L = On leave
N = Medication Not Obtained
R = Refused
V = Vomiting
W = Withheld
X = Doctor's Instruction

a modification required [ ]
vg (oral)
specify: _____
Self Medicating [ ]

Date Commenced _____

DATE	DRUG & FORM (block letters)	DOSE	Route	Freq.	Date Ceased	Doctor's Signature	DATE→ / TIME↓																	
23/4 /04	Digoxin PG	1	O	noce		ÐK	1800																	
23/4	Latanoprost eye drops			1 drop each eye		ÐK	2000																	
24/4	Lansoprazole 30mg caps	T	O	daily		ÐK	0800																	
23/4	Carbamazole 5mg	T	O	mane		ÐK	0800																	
23/4	Haloperidol 0.5mg	T	O	bd		ÐK	1600																	
23/4	Carbocsol 940 0.2%	T	O	bd		ÐK	0800 / 1800																	
23/4	Ferrous Sulphate 325mg	T	O	mane		ÐK	0800																	

CHART 1

DUMMY   000000
FREDERICK   ARTHUR   MR
01/01/1956   48 Y M
10 HEATHERHILL RD
FRANKSTON 3199
9784 7777
J. JORDAN   GPMEDF   **5FN**

Wt: _____kg

DRUG REACTIONS / ALLERGIES
Elastoplast - rash
Pethidine - fitting
Morphine Sulphate

DOSE CODE

A = Absent From Ward	F = Fasting
S = Self Administered	L = On Leave
R = Refused	N = Medication Not Obtainable
V = Vomiting	WH = Withheld
X = Doctor's Instructions	I = No IV Access

		Pharmacy Use	Time	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
Atenolol 50mg Tablets	Take ONE tablet in the MORNING																
13/10/03 Dushyanthi TILAKAWARDENA																	
Morphine SR 20mg Capsules	Take ONE capsule TWICE a day																
13/10/03 Dushyanthi TILAKAWARDENA																	
Aspirin + Codeine 300/8mg Disp. Tablets (Aspalgin)	Take ONE or TWO tablets every SIX hours when needed for pain. Maximum 8 tablets in 24 hours.																
13/10/03 Dushyanthi TILAKAWARDENA																	
Warfarin Tablets	Take according to dosage chart or administration chart																
13/10/03 Dushyanthi TILAKAWARDENA																	
Metoclopramide 10mg Tablets	1 tds prn for nausea																
13/10/03 Dushyanthi TILAKAWARDENA																	
Trimethoprim + Sulfamethoxazole 160/800mg Tablets	1 bd																
13/10/03 Dushyanthi TILAKAWARDENA																	
Levodopa + Carbidopa 250/25mg Tablets	1 tablet at 8am, midday and 8pm																
13/10/03 Dushyanthi TILAKAWARDENA																	

PRESCRIBING MEDICAL OFFICER (SIGNATURE)   **PRESCRIBING MEDICAL OFFICER** Kate Allan

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