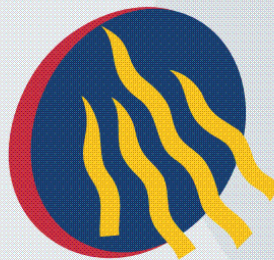


Extending the Reach of the Pharmacist: Using telepharmacy to provide remote pharmaceutical review in rural hospitals

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2. Toowoomba Health Service
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Queensland Government

Queensland Health

The Telepharmacy Project

- Aims and Objectives
- Background
- Method
- Results
- Pilot into practice
- Lessons Learnt
- Conclusion

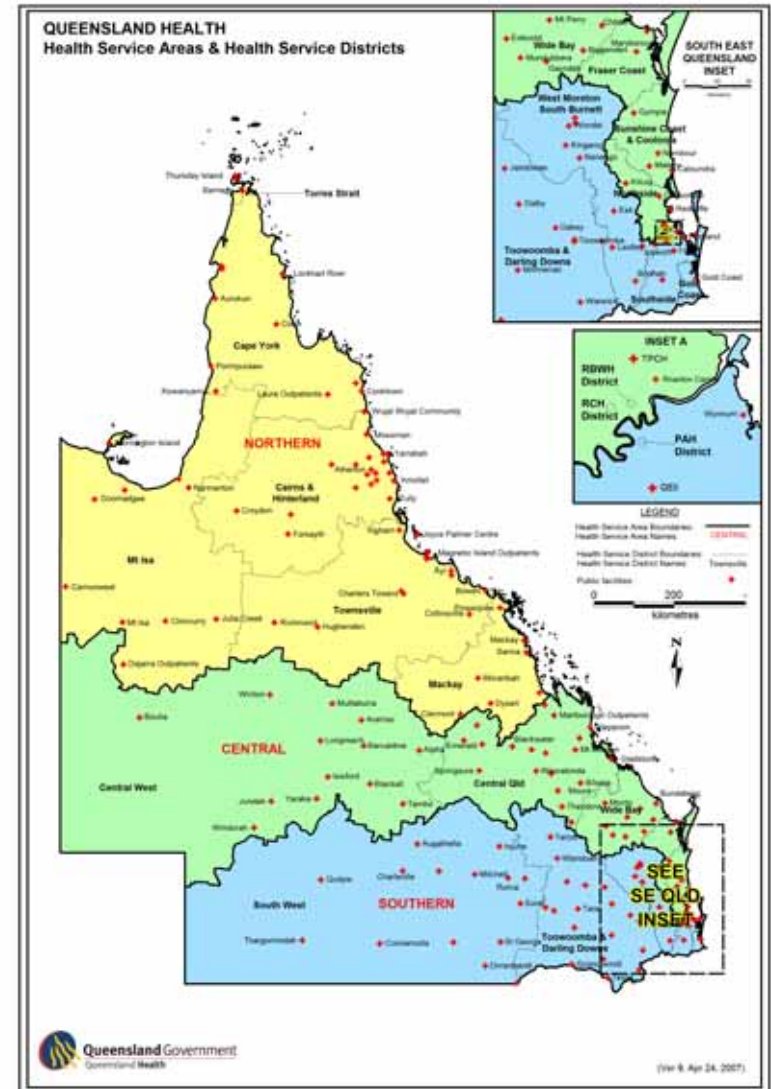


Aims and Objectives

- To design, assess and evaluate a model for the provision of pharmaceutical review through the use of telepharmacy, to Queensland Health (QH) facilities who currently rely on nurses to supply all their pharmaceutical needs.

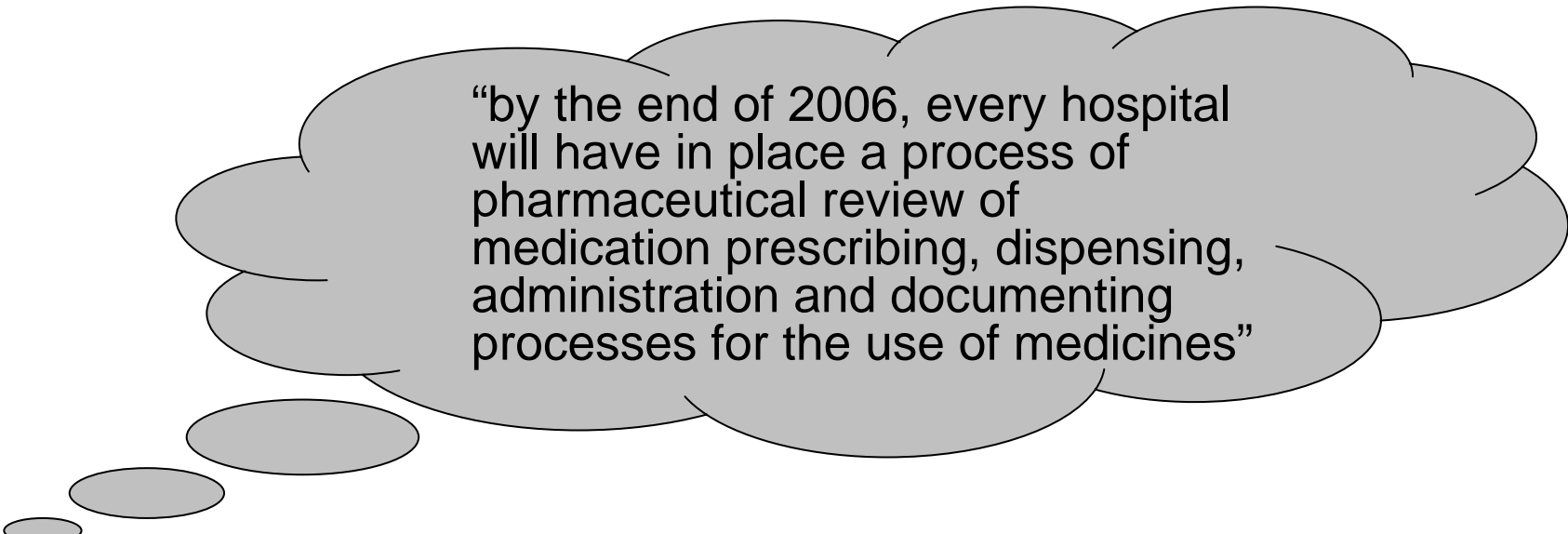
Pharmacy services across the state

- 116 acute QH hospitals
 - 42 have pharmacist/s employed on site
 - 16/42 sole pharmacist
- 74 acute hospitals with **no** pharmacist/s
 - 16 have limited pharmacist support (e.g. regular visits, outreach service)



Background

- In 2004, seven major national targets for quality & safety in public hospitals were released. One of these stated:



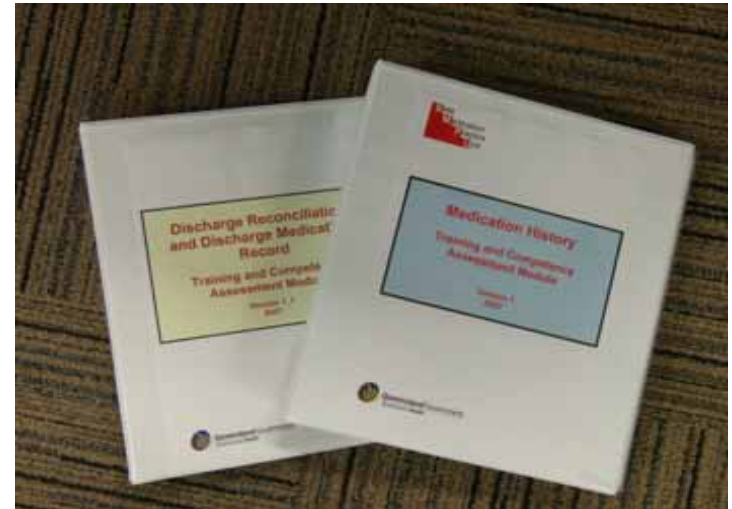
“by the end of 2006, every hospital will have in place a process of pharmaceutical review of medication prescribing, dispensing, administration and documenting processes for the use of medicines”

Methods (1)

- Two rural nurse only sites recruited; Laidley and Gatton
- All inpatients (public and private) admitted >24 hours, with a completed medication chart were included

- *Pre-implementation*

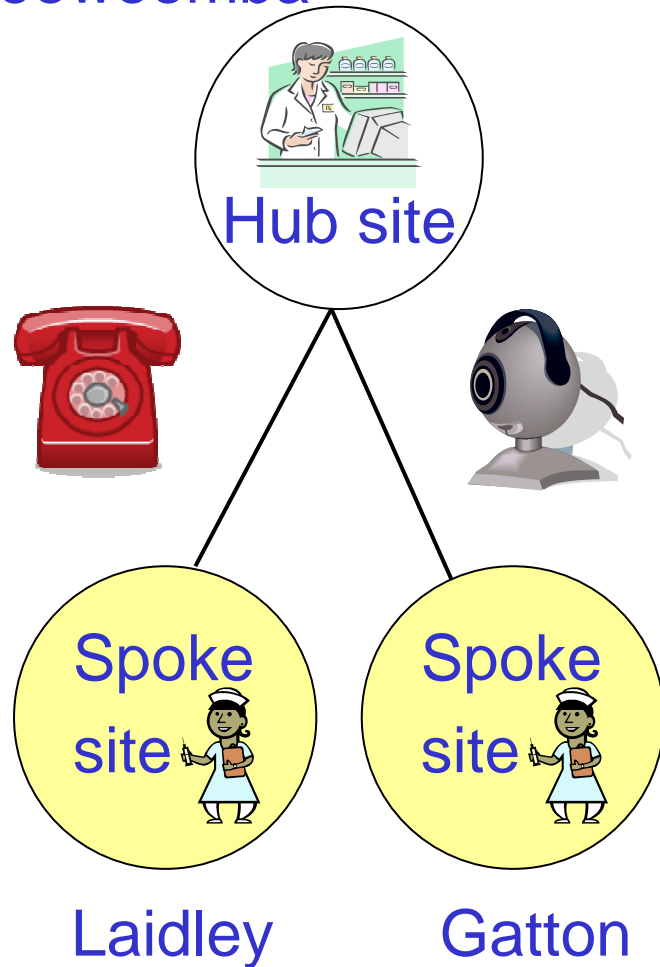
- 8 week baseline data collection
- Pharmacist visited sites weekly;
 - Pharmaceutical review on inpatients (all activities documented)
 - Medication chart prescribing audit
 - Retrospective discharge audit
- Training provided for nursing staff on:
 - Medication History Taking*
 - Discharge Medication Records (DMR)*
 - Use of Medication Action Plan and Handover Form (MAP)*



*Modules developed by SMPU, Brisbane

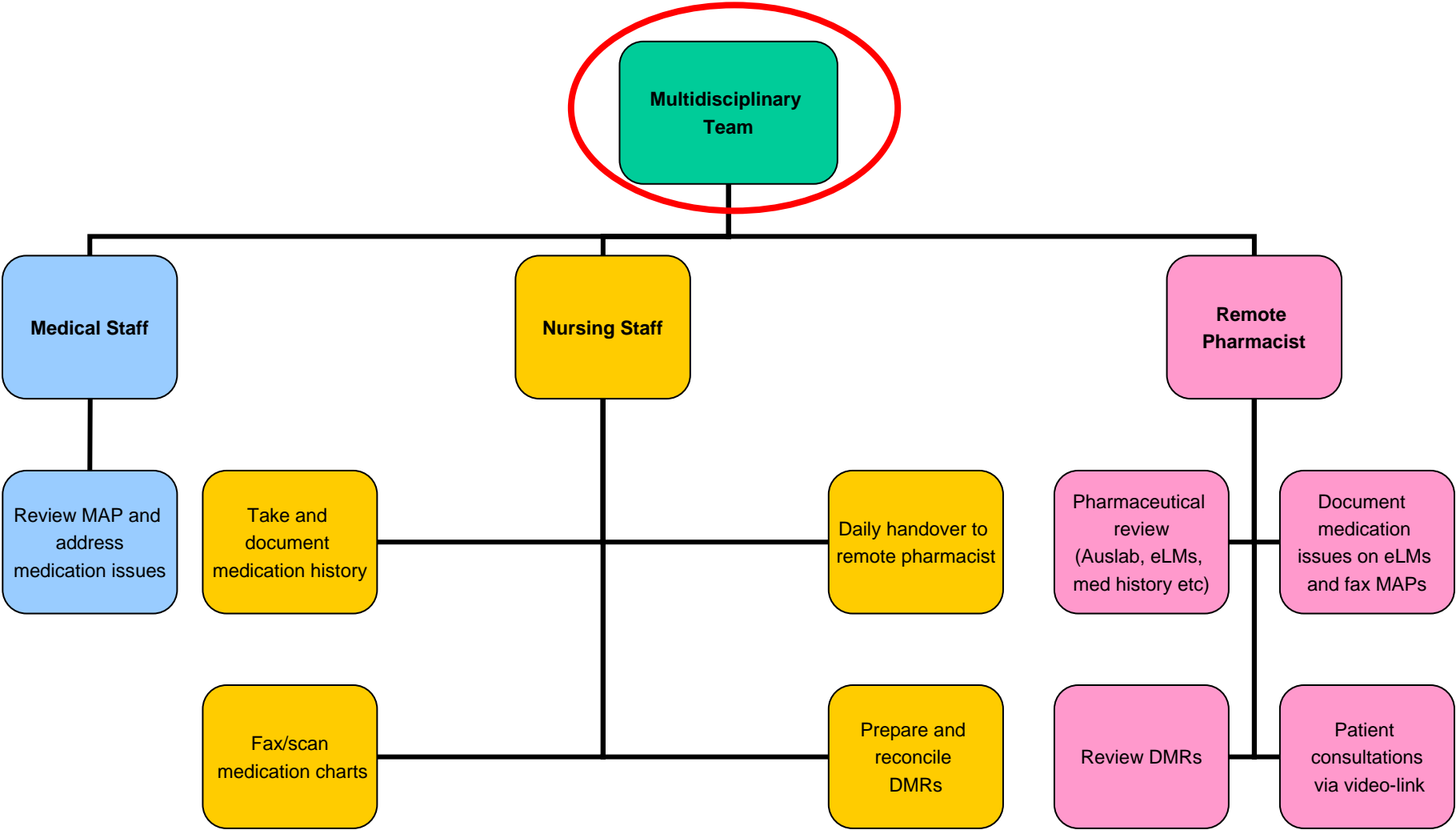
Methods (2)

Toowoomba



- *Post Implementation*
 - 16 week data collection
 - Pharmacist performed daily remote pharmaceutical reviews using audio/video technology
 - All activities documented
 - Medication chart prescribing audit
 - Prospective discharge audit

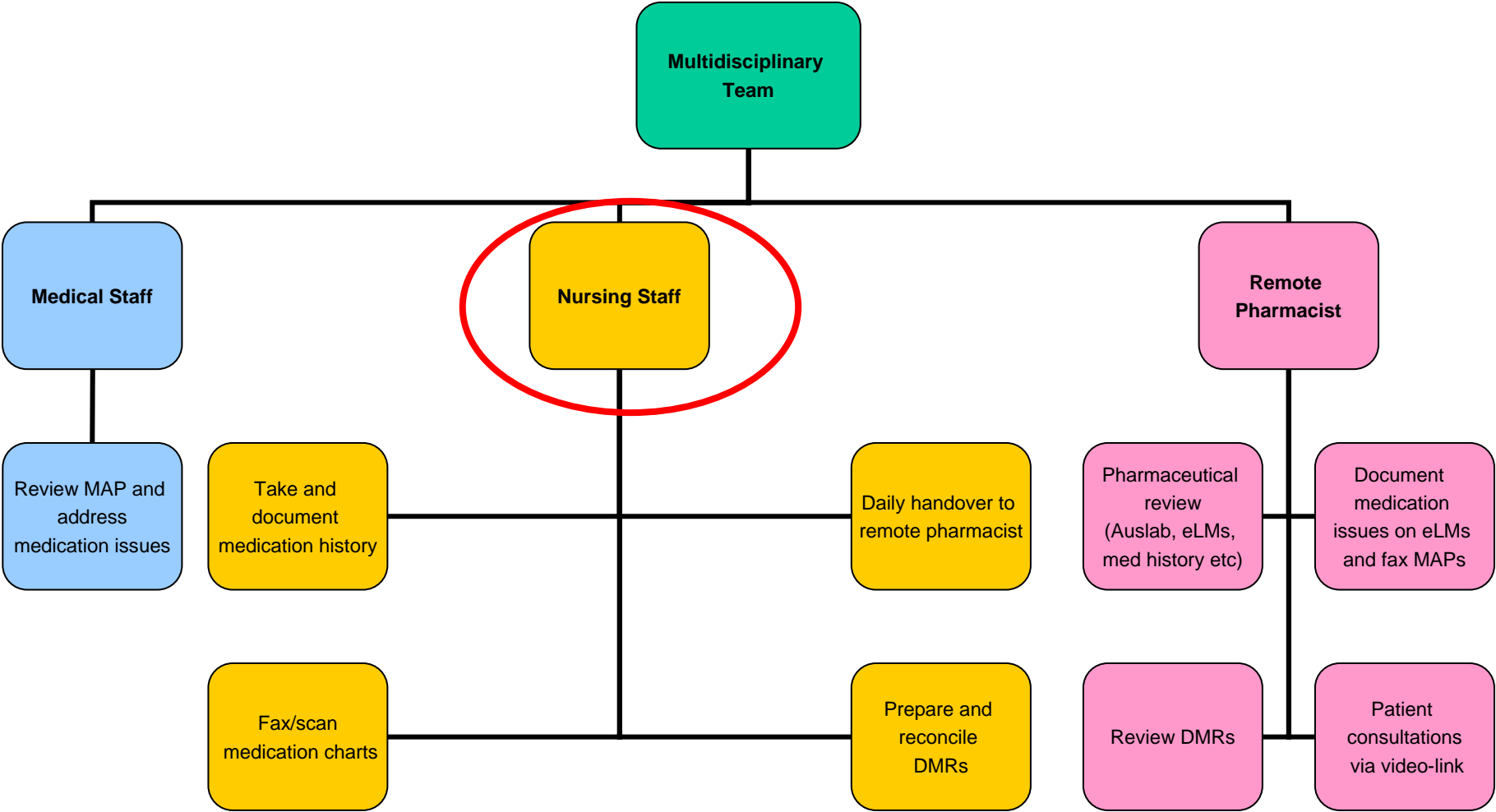
The Telepharmacy Process



Participation in multidisciplinary meetings at Laidley Hospital via video link



The Telepharmacy Process



If you have any questions, please phone (07) 3240 2557 and ask for the pharmacy department.

DISCHARGE MEDICATION RECORD FOR PETER PAGE

Pharmacist: Jennie McKay

Date: Wednesday, 3 May 2006

Medicine Names	Brand Name	Used for	Directions	Daily Time Table				Changes
				Morning	Noon	Evening	Night	
Aspirin 100mg Tablets	Cardiprin 100	Prevent blood clotting	Take 1 tablet in the MORNING	1				Restarted
Insulin Neutral / Isophane 30/70, 3mL Pen	Mixtard 30/70 InnoLet	Treat diabetes	Use 10 units in the MORNING and Use 8 units in the EVENING with dinner	10 units		8 units		Changed - Decreased dose
Frusamide 40mg Tablets	Lasix Uremide	Remove excess fluid	Take 1 tablet in the MORNING	1				Unchanged
Temazepam 20mg Capsules	Temaze	Assist sleep	Take 1 capsule at NIGHT when required	Take 1 capsule at NIGHT when required				Unchanged
Oxycodone 5mg Tablets	Endone	Treat pain	Take 1 tablet FOUR times a day when required	Take 1 tablet FOUR times a day when required				New - Temporary

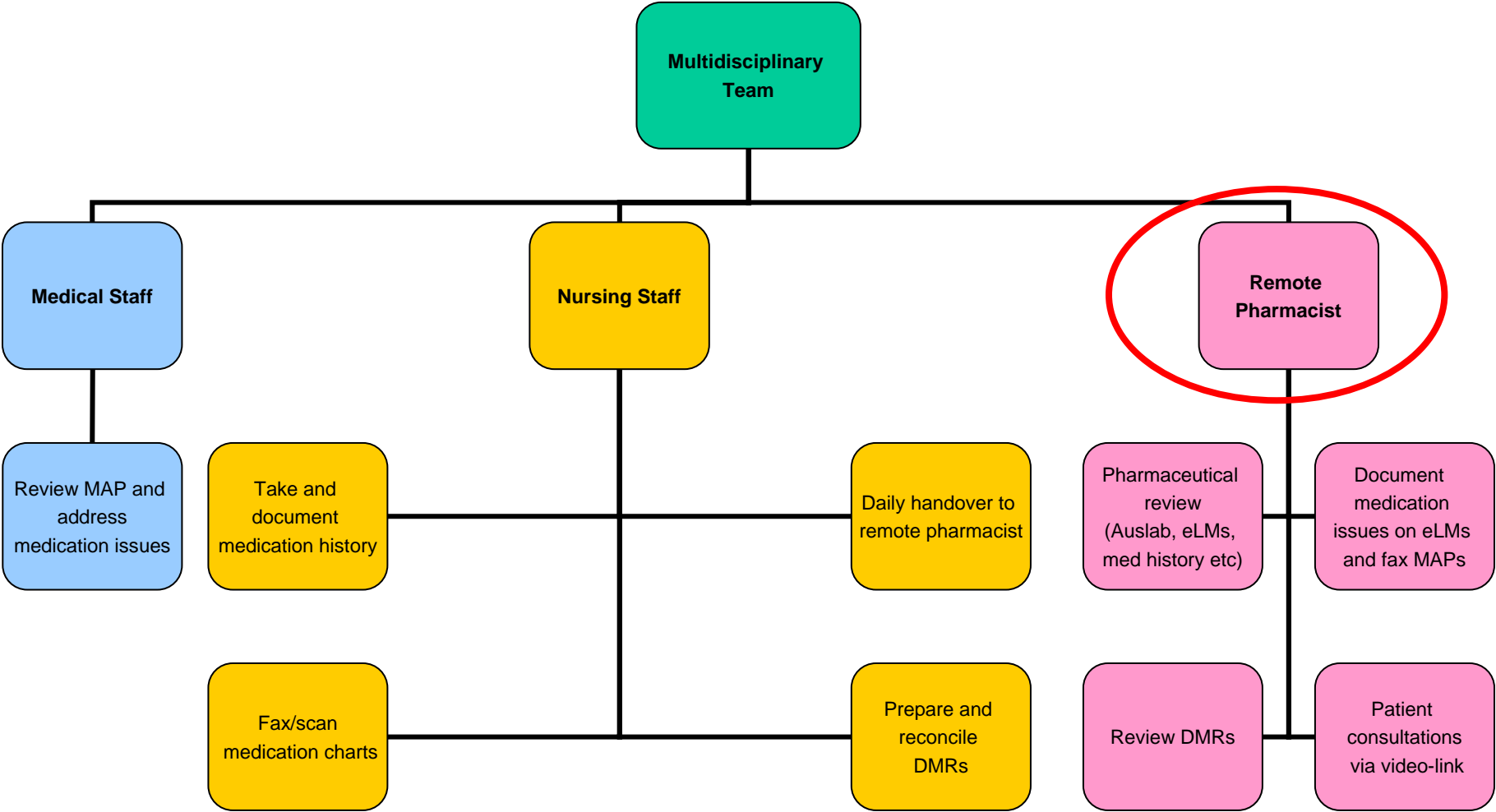
The following medicines were CEASED by your hospital doctor during your hospital visit:

<u>Date Ceased</u>	<u>Medicine</u>	<u>Brand Name</u>	<u>Explanation</u>
01/05/2006	Flucloxacillin 500mg Capsules	Flopen	no longer required

Allergies and Adverse Drug Events:

<u>Medicine</u>	<u>Reaction</u>	<u>Event Date</u>
Tramadol hydrochloride	vomiting	05/11/2003

The Telepharmacy Process



Auslab

Validated

Warfarin Tx

Page 1 / 1

Lab 31443-4371 Ur PA111111 Name TEST AUSLAB DUMMY NU* Sex F

Dob 01-Jan-1983 Wd W4BR~PAH Dr AUSLAB Test Co* c01:30 18-Jan-08

Diff: Automated Specimen: Blood

Hgb : 140 WBC : 9.0

PLT : 23 C : 9.0

RBC : 5.50 H HCT : 0.50 H

MCV : 87 MCH : 33.0

RDW : MCHC :

Press shift-insert to view reference ranges

Neut (%):

Lymph (%):

Mono (%):

Eosin (%):

Baso (%):

WFLG

RFLG

PFLG

Comment: Patient Age: 25 years Val:

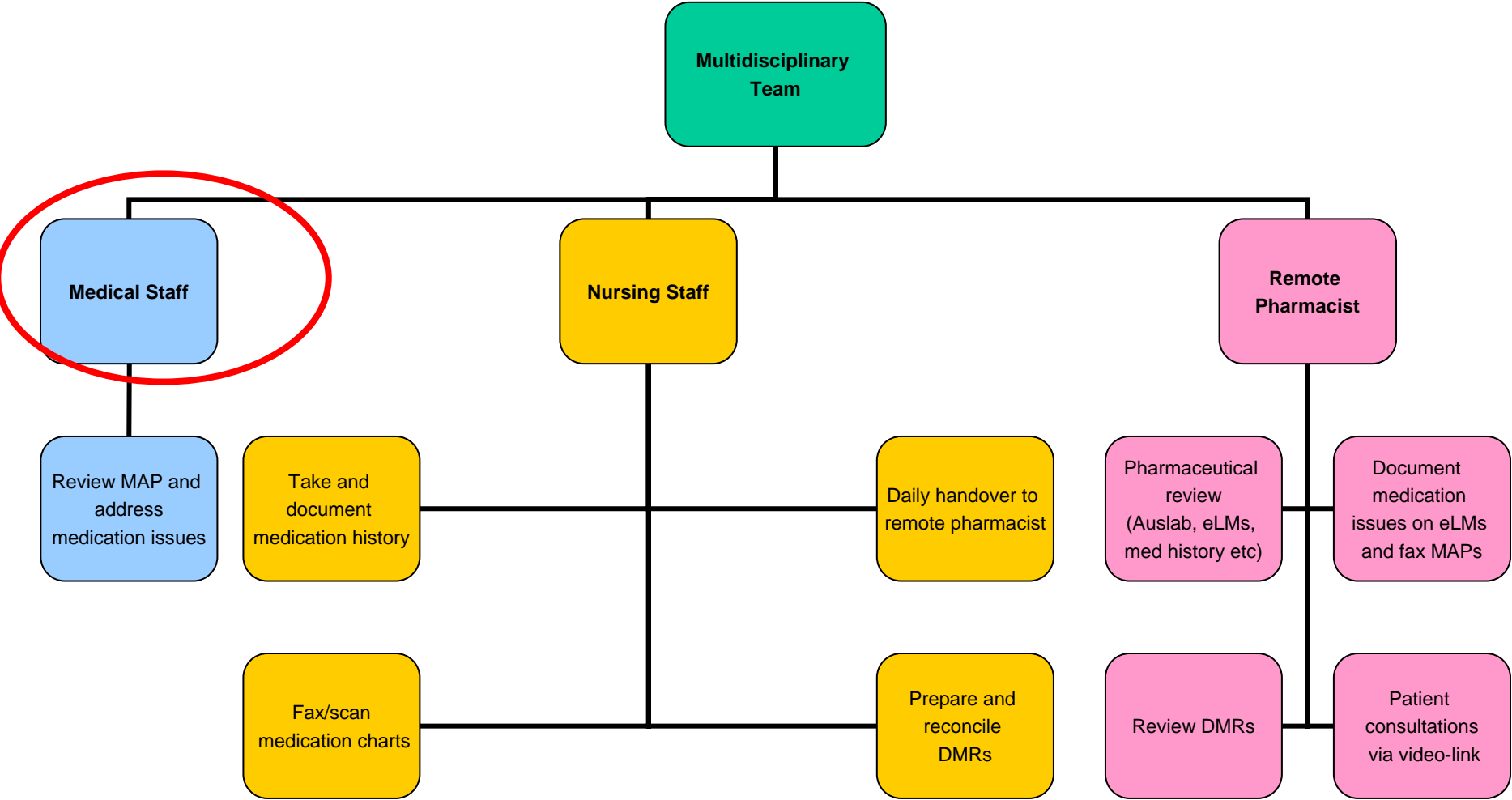
F5 Counter

F8 Notes

SF8 Audit

TRAINING

The Telepharmacy Process



Results (1)

- Reviewed 48 patients pre and 97 post implementation
 - Median age 74 yrs
 - 46% male
 - Average no. prescription meds on admission = 6 (0-16)
 - Most common presenting complaints; infection and gastrointestinal
 - Most common co-existing chronic conditions; cardiac and musculoskeletal

Results (2): Pharmaceutical Review Activities

- Pre-telepharmacy (weekly pharmacist visit)
 - 138 pharmaceutical activities performed (over 8 weeks) (mean 2.9 per patient)
 - 78 therapy change recommendations
47 (60%) adopted
 - 8% major interventions¹
- Post telepharmacy (remote pharmacist)
 - 232 activities were performed (over 16 weeks) (mean 2.4 per patient)
 - 140 therapy changes recommended
74 (53%) adopted
 - 14% major interventions¹

1. Alderman CP, Farmer C. A brief analysis of clinical pharmacy interventions undertaken in an Australian teaching hospital. J Qual Clin Pract 2001;21:99-103.

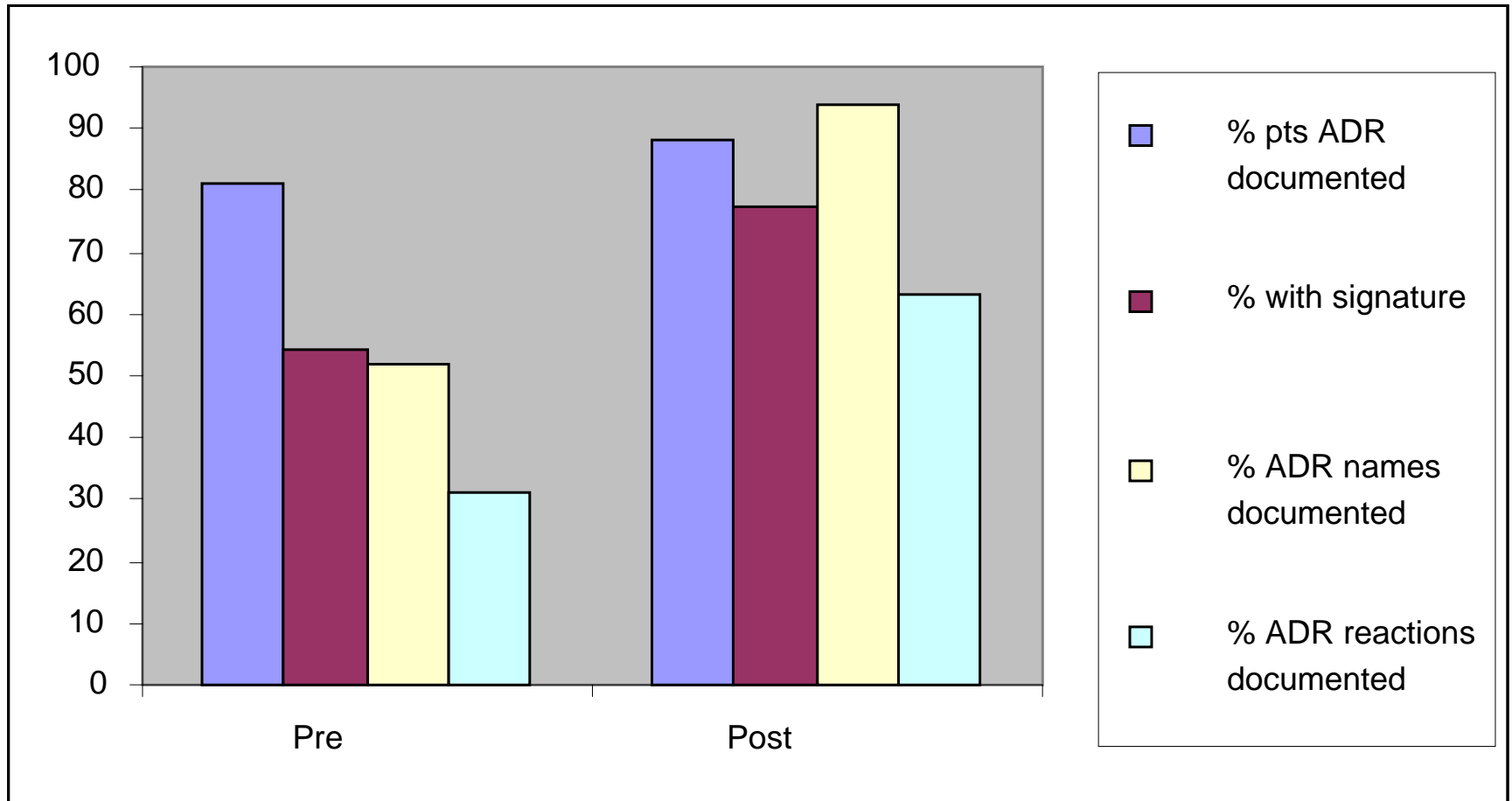
Examples of Pharmaceutical Activities

Pharmaceutical Activity Type	Pre No. (%)	Post No. (%)	Examples
▪Omission	35 (25.4)	54 (23.3)	Patient is usually on warfarin – Dr unaware (add warfarin)
▪Allergy/ ADR	11 (8.0)	7 (3.0)	Patient admitted with jaundice – taking cyproterone (withhold cyproterone)
▪Duplication	1 (0.7)	10 (4.3)	Patient prescribed both ipratropium and tiotropium inhalers (cease one agent)
▪No indication	6 (4.3)	9 (3.9)	Patient prescribed escitalopram – no longer taking at home (cease)
▪Pt monitoring	16 (11.2)	23 (9.9)	Spironolactone dose increased (monitor potassium levels)
▪Pt counselling	3 (2.2)	13 (5.6)	Newly diagnosed COPD (counselled on inhaler technique, smoking cessation, vaccinations)

Results (3): Medication Chart Audit

Allergies and adverse drug reaction documentation

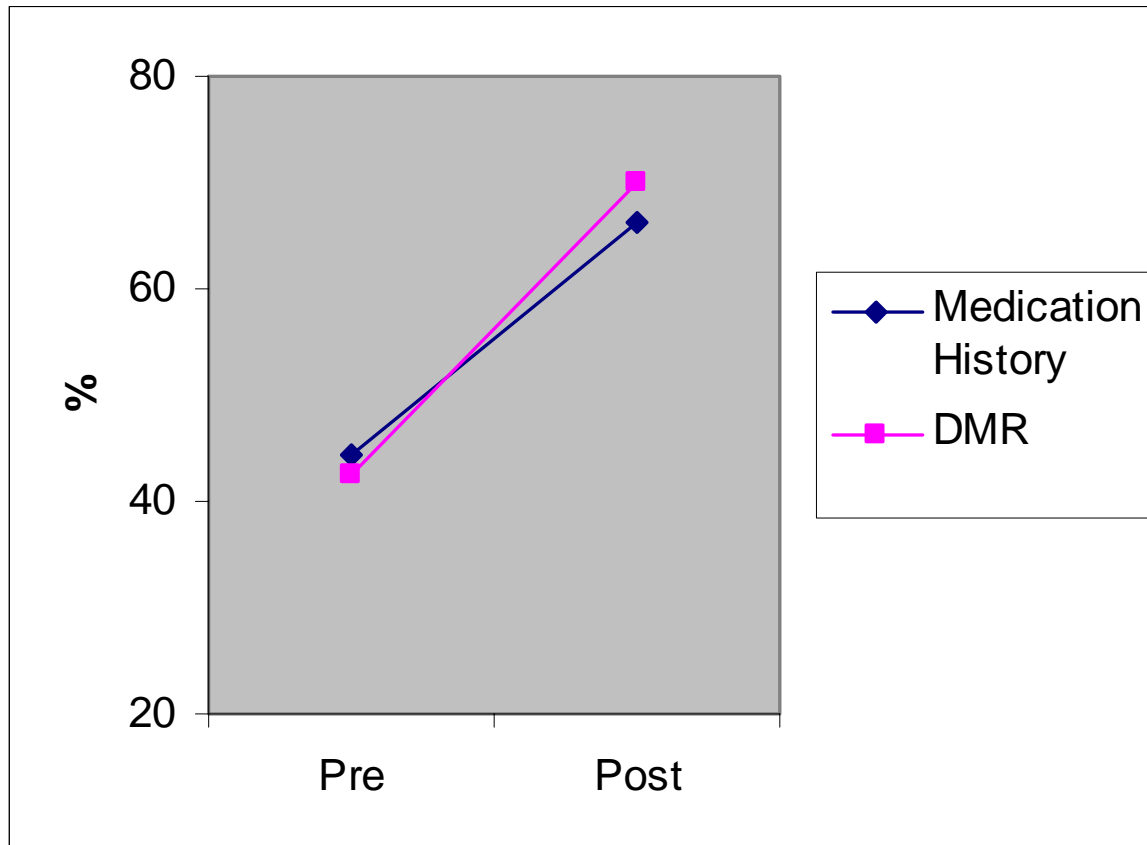
Pre (n = 48); Post (n = 84)



Results (4)

Medication History Pre (n = 48), Post (n = 97)

Discharge Medication Record Pre (n = 37), Post (n = 85)



Telehealth Queensland gave 6 pieces of equipment

- Nurses
- Pharmacists
- The Service Level Agreement
 - Standardised service with a record
- Training
 - Telehealth equipment
 - History, MAP, DMR- eLMS

From Pilot to practice

- Life after the pilot for the telepharmacy model
 - Second Hub Site; Ipswich to existing spoke Laidley started July 2007
 - Cairns hub to Cooktown Spoke started January 2008

Lessons Learnt

Resources

Lesson 1 – Pilot was resourced

The hub was unable to continue funding after the pilot

Director of Medicine perspective

“I was faced with a bill of \$70,000 per year” and priority was own hospital

- **We needed someone with District wide power**

Lessons Learnt

- Lesson 2- Tele-pharmacist was project officer
Unceasingly followed the Service Level agreement
daily calls
Multidisciplinary meetings

Staff change, may not trained to follow the model
procedures

Staff may have other commitments

Lessons Learnt

Lesson 3

Sites which already have some of the processes in place will find it easier

1 site had a culture of creating discharge medication records

Other sites didn't

WORK WITH YOUR STRENGTHS

BE FLEXIBLE

Conclusions

- Telepharmacy uses an integrated model of care and complements the nurse supply model
- Telepharmacy can provide a pharmaceutical review service similar to that provided by a visiting pharmacist
- The telepharmacy project raised awareness of medication safety at the pilot sites.
 - Nursing staff found the pharmacist input valuable and educational
- Pilot to practice is not automatic

Questions?