

A script for success: Pharmacist prescribing to optimise asthma management in community practice

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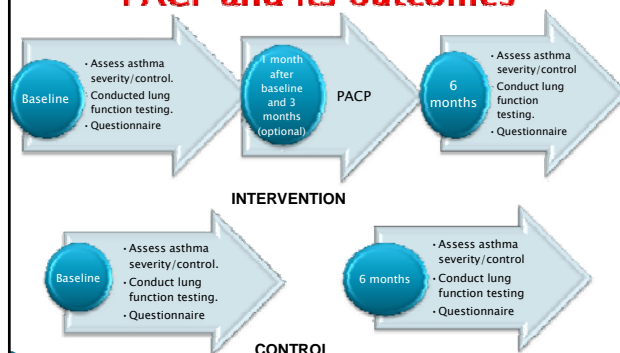
Why Asthma?

- ▶ Prevalence in Australia is high by international standards.⁵
- ▶ Affects over 2 million Australians.⁵
- ▶ Financial burden.⁶
- ▶ Positive outcomes achieved by pharmacist asthma disease state services.⁷



5. Australian Bureau of Statistics. National Health Survey: Summary of Results. <http://www.austlii.abc.gov.au/Ausstats>
6. McGhan WF, Stimmel GL, Hall TG, et al. A comparison of pharmacists and physicians on the quality of prescribing for ambulatory hypertensive patients. Medical Care. 1983;21(4):435-444.
7. Armour C, Bosnic-Anticevich S, Brilliant M, et al. Pharmacy Asthma Care Program (PACP) improves outcomes for patients in the community. Thorax. 2007 Jun;62(6):496-502.

PACP and its outcomes



7. Armour C, Bosnic-Anticevich S, Brilliant M, et al. Pharmacy Asthma Care Program (PACP) improves outcomes for patients in the community. Thorax. 2007 Jun;62(6):496-502.

Pharmacist prescribing can improve the quality of prescribing in chronic disease

Outcomes:

A Comparison of Pharmacists and Physicians on the Quality of Prescribing for Ambulatory Hypertensive Patients

8. McGhan WF, Stimmel GL, Hall TG, et al. A comparison of pharmacists and physicians on the quality of prescribing for ambulatory hypertensive patients. Medical Care. 1983;21(4):435-444.

Results of the study

TABLE 7. Comparison of the Mean Blood Pressure of Patients on Posttrial

Variable	Posttrial Groups	
	Pharmacist (n = 31)	Physician (n = 32)
Mean systolic blood pressure (mmHg)	134.6 (±16.5) ^{ab}	135.5 (±27.5)
Mean diastolic blood pressure* (mmHg)	79.1 (±9.5)	83.2 (±8.5)

Scale	Pharmacist Score (n = 169)	Physician Score (n = 157)	df	t	p <
(A) Is chosen drug appropriate for diagnosis?	1.57 (±1.01)	1.93 (±1.11)	324	-2.61	0.01

8. McGhan WF, Stimmel GL, Hall TG, et al. A comparison of pharmacists and physicians on the quality of prescribing for ambulatory hypertensive patients. Medical Care. 1983;21(4):435-444.

Recent study in pharmacist prescribing

Respiratory Disease Management in Primary Care: Impact of Independent Prescribing Pharmacist-Run Asthma and COPD Clinic on Outcomes

- ▶ Independent model
- ▶ Reduced hospital admissions ($p < 0.001$)
- ▶ Improved patient's breathing ($p < 0.001$)
- ▶ Well accepted ($p = 0.001$)

9. Siabi N, Dhillon S, Kostzewski A, et al. Respiratory disease management in primary care: Impact of independent prescribing pharmacist-Run asthma and COPD clinic and outcomes. In Press 2010

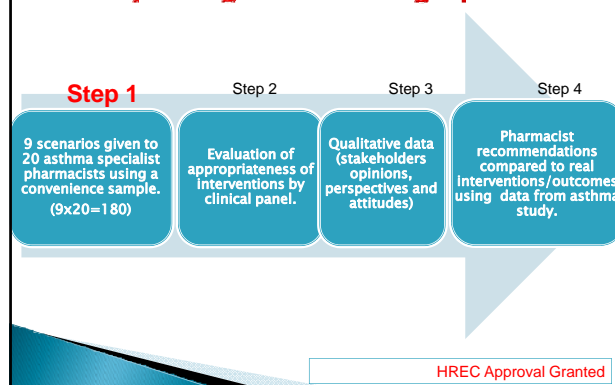
AIMS of this study:

1. To measure the quality and appropriateness of prescribing in asthma by pharmacists
2. To test the feasibility of prescribing for asthma in primary care by community pharmacists in future

- ▶ Fulfill research gap in Australian practice
- ▶ Address gap in asthma management
- ▶ Widen scope of practice for Australian community pharmacists



Study design– Four stage process



Interventional scenarios (n=9)

- Prescribing a preventer when patient is only using a reliever.
- Prescribing a LABA for patient on an inhaled corticosteroid and symptomatic.
- Increasing dosage of inhaled corticosteroid.
- Removal of inappropriate medication.
- Prescribing an oral corticosteroid.
- Reduce corticosteroid dosage

Scenarios: Expected prescribing interventions according to current guidelines

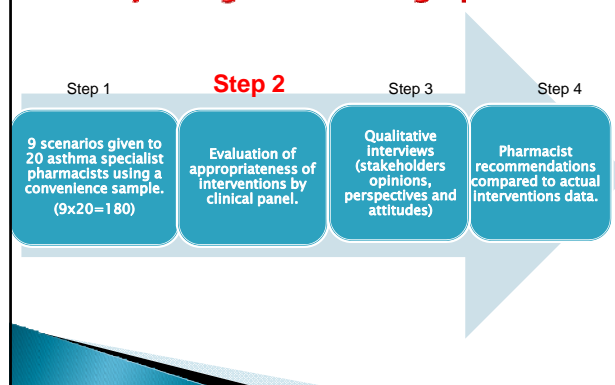
SCENARIO	Expected prescribing interventions
1	Prescribing a non-combined inhaled steroid
2	Prescribe a long acting beta agonist or combination inhaled steroid
3	Increase dose of inhaled steroid
4	No action
5	Removal of secondary reliever
6	Removal of nebule medication
7	Prescribe an oral steroid
8	Remove long acting beta agonist
9	Reduce inhaled steroid dose

Justification of study design

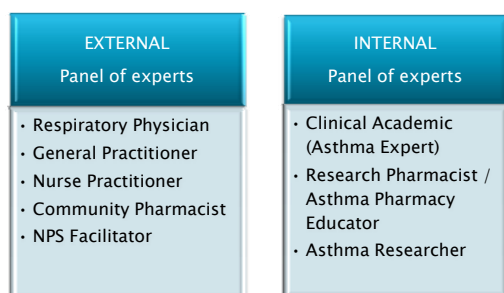
UNIVERSITY OF SYDNEY FACULTY OF PHARMACY		Pharmacist Prescribing in Warfarin Therapy: Exploring its Clinical Utility in the Hospital Setting		DATA COLLECTION FORM
PART B: SIMULATED PRESCRIBING SCENARIOS				
SCENARIO	POTENTIAL CLINICAL INTERVENTION(S) based on available information	USEFULNESS of prescribing functions in this scenario	CONFIDENCE in own ability to carry out intervention	(OFFICE USE ONLY) APPROPRIATENESS
1. Mrs. AB, a 64-year old diabetic with atrial fibrillation (AF) has been on warfarin for 3 years. Metronidazole has been ordered today, 400mg tds for 7 days, for bacterial vaginosis. Metronidazole decreases liver metabolism of the S-enantiomer of warfarin.	Is a prescribing function required? If Yes → please rate the usefulness of prescribing functions in this scenario	<input type="checkbox"/> Useful <input type="checkbox"/> Neutral <input type="checkbox"/> Not useful	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Unsure <input type="checkbox"/> Somewhat unconfident <input type="checkbox"/> Not at all confident	<input type="checkbox"/> Completely appropriate <input type="checkbox"/> Relatively appropriate <input type="checkbox"/> Minimum intervention achieved <input type="checkbox"/> Relatively inappropriate <input type="checkbox"/> Completely inappropriate Comments:
2. Mrs. FR, 67, who has AF, has been on your ward for 6 days. She has been stabilised on warfarin, 5mg qd, for 2 months. You view her chart and realise her daily dose administered at 5pm has yet to be charted. It is now 5pm. The most recent INR (2.4) documented is over 2 weeks old.	Is a prescribing function required? If Yes → please rate the usefulness of prescribing functions in this scenario	<input type="checkbox"/> Useful <input type="checkbox"/> Neutral <input type="checkbox"/> Not useful	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Unsure <input type="checkbox"/> Somewhat unconfident <input type="checkbox"/> Not at all confident	<input type="checkbox"/> Completely appropriate <input type="checkbox"/> Relatively appropriate <input type="checkbox"/> Minimum intervention achieved <input type="checkbox"/> Relatively inappropriate <input type="checkbox"/> Completely inappropriate Comments:
3. Mr. DS, 35, was initiated on warfarin after undergoing a mitral valve replacement operation. He has been stabilised on 4mg warfarin d for 2 weeks whilst in hospital. He now requires a discharge prescription for warfarin, but the doctor is not yet available.	Is a prescribing function required? If Yes → please rate the usefulness of prescribing functions in this scenario	<input type="checkbox"/> Useful <input type="checkbox"/> Neutral <input type="checkbox"/> Not useful	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Unsure <input type="checkbox"/> Somewhat unconfident <input type="checkbox"/> Not at all confident	<input type="checkbox"/> Completely appropriate <input type="checkbox"/> Relatively appropriate <input type="checkbox"/> Minimum intervention achieved <input type="checkbox"/> Relatively inappropriate <input type="checkbox"/> Completely inappropriate Comments:

10. Nguyen N and Bajorek B. Prescribing in warfarin therapy-Exploring its clinical utility in the hospital setting. [Honours project]. In press 2006.

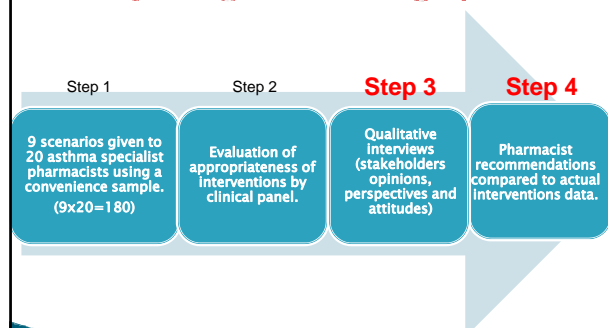
Study design– Four stage process



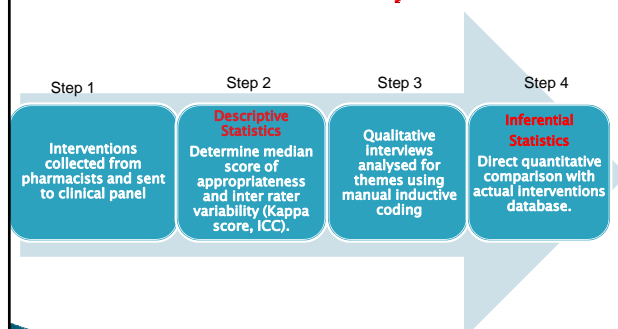
Study design



Study design– Four stage process



Data Analysis



Results

N=18 Pharmacists

Completing 9 scenarios

- ▶ Overall, pharmacists indicated that:
 - a prescribing intervention / function would be **useful** in the management of each scenario
 - they were **confident** in undertaking the stated prescribing interventions
- ▶ Prescribing 'appropriate' in 78% of interventions:
 - therapeutically appropriate, but 'execution' lacking

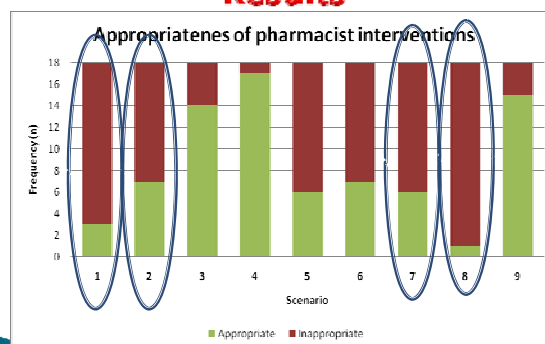
Results

Pharmacist rating of 'confidence' and 'usefulness' regarding prescribing intervention (median score)

SCENARIO	CONFIDENCE IN PRESCRIBING INTERVENTION	USEFULNESS OF PRESCRIBING FUNCTION
1	4	3
2	4.5	3
3	4	2.5
4	4	2
5	4	2.5
6	4	2.5
7	4	3
8	4	2
9	5	3

1= not at all confident → 5=very confident
1= not useful, 2= useful, 3=very useful

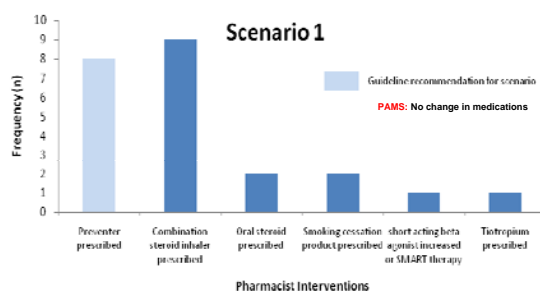
Results



Overall Appropriateness:
Therapeutic recommendation + Prescribing Accuracy

Results

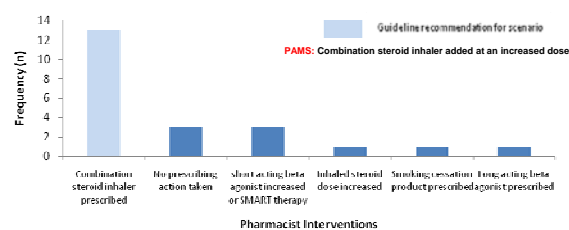
Scenario 1



• guideline recommended Rx – 2nd most common intervention

Results

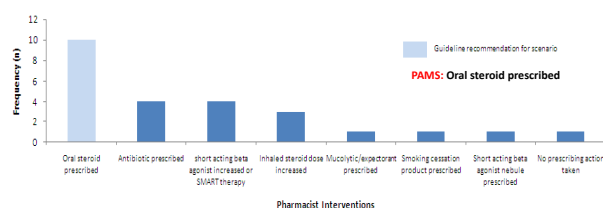
Scenario 2



• guideline recommended Rx – most common intervention

Results

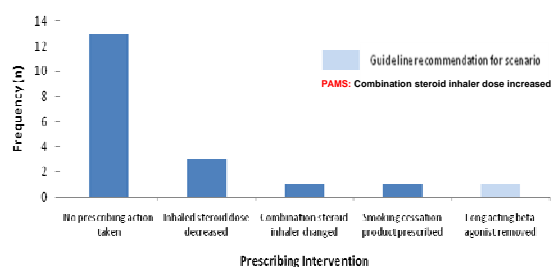
Scenario 7



• guideline recommended Rx – most common intervention

Results

Scenario 8



• Most common intervention – no prescribing decision (inappropriate prescribing intervention)
- Issues in discontinuation of therapy?

Results

Feedback from External Panel

- ▶ Traditional "medical model" of practice: self-acknowledged 'medical resistance'
- ▶ Focus on "risks" and 'diagnostic' component of prescribing; non-collaborative
- ▶ Poor understanding of 'pharmacy practice', training

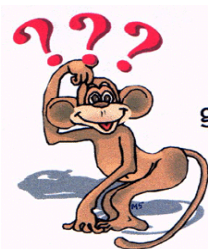
BUT...

- ▶ Obvious benefits for patients
- ▶ Acknowledged deficiencies in medical management (eg GPs)
- ▶ Apparent 'lack of agreement' re: patient mgmt
- ▶ Pharmacists more 'holistic' in their prescribing approaches; 'inappropriate' interventions closely mirror those of GPs (eg antibiotics)

Discussion

- ▶ Pharmacist prescribing is feasible in asthma management but needs:
 - Specific training / coaching regarding the execution of prescribing interventions
 - Clarifying definitions of prescribing with medical prescribers, and defining scope of practice
 - Reinforcement of 'pharmacist' expertise within the prescribing function
 - Prospective 'real life' trial → clinical outcomes

QUESTIONS



Questions
are
guaranteed in
life;
Answers
aren't.

Non-Medical prescribing

- ▶ Nurse practitioners, optometrists, podiatrists, physiotherapists and pharmacists.¹
- ▶ Relieves burden placed on physicians.
- ▶ Facilitates continuity of care.
- ▶ Exists in Australia via nurse practitioners and optometrists.²

1.Kay O, Bajorek B, Brien J. Pharmacist Prescribing Activities-an Electronic Survey on the Opinions of Australian Pharmacists. *Journal of Pharmacy Practice and Research*. 2006;36(3):199-203.
2.Medicare Australia. Optometrist PBS prescribing.

Pharmacist prescribing

- ▶ Common practice in a number of countries excluding Australia.¹
- ▶ Why pharmacists?^{1, 3,4}
- ▶ Operates under two broad dependent and independent prescribing.



1.Kay O, Bajorek B, Brien J. Pharmacist Prescribing Activities-an Electronic Survey on the Opinions of Australian Pharmacists. *Journal of Pharmacy Practice and Research*. 2006;36(3):199-203.
3. Hanes C, Bajorek BV. Pharmacist Prescribing: Views of Australian Hospital Pharmacists. *Journal of Pharmacy Practice and Research*. 35:178-180, 2005.
4.Vitacar D, Bajorek B. Australian General Practitioners' Views on Pharmacist Prescribing. *Journal of Pharmacy Practice and Research*. 38(2):96-102.

Current prescribing models

