

# Implementing a podiatry prescribing mentoring program in a public health service: a cost-description study

Department of Health – Advanced Practice Allied Health Grant

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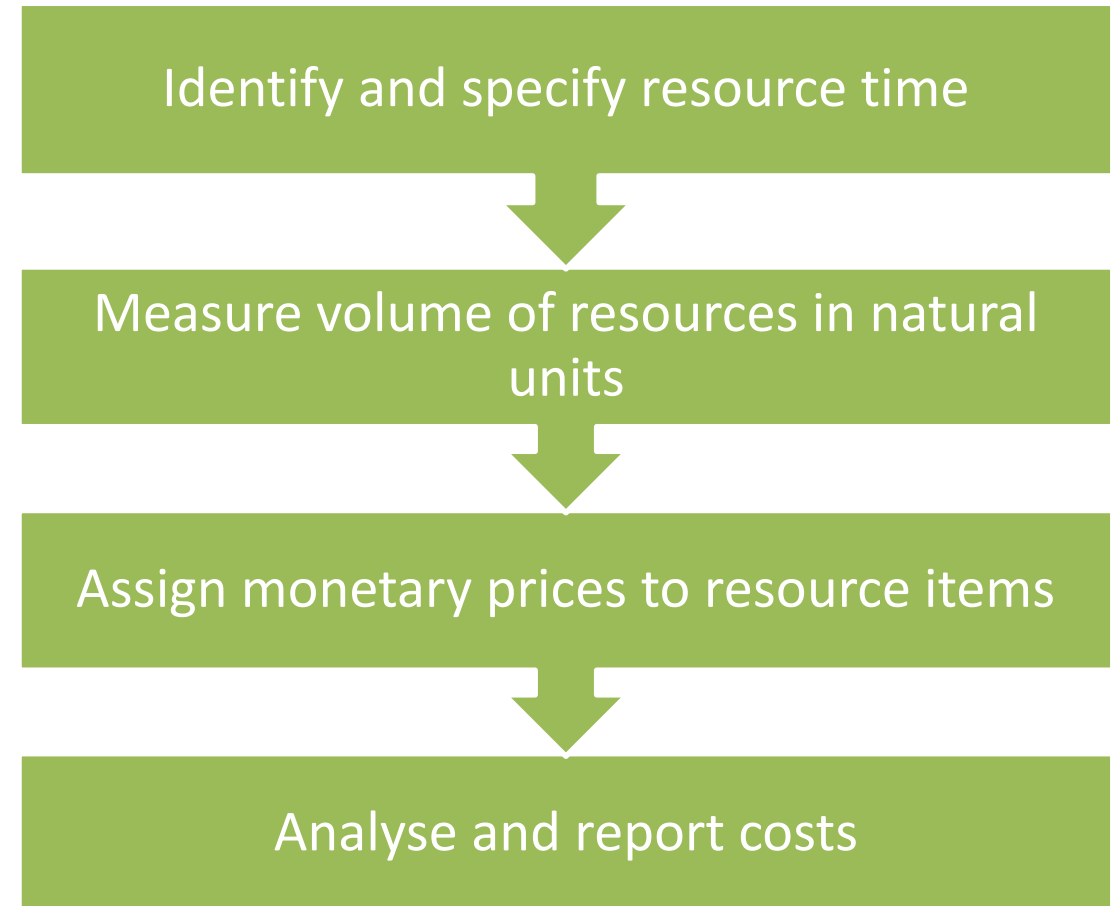
# Background

- Non medical prescribing present for 10 years in Australia
- A recent Cochrane reported there appeared to be greater patient adherence to their medications in models with non-medical prescribers and little differences in adverse drug reactions (Weeks G, George J, Maclure K and Stewart D. 2016)
- Diabetic foot disease is the leading cause of amputation, a top 20 cause of hospitalisation and costs an estimated \$1.6billion to the Australian health system each year.
- 60% of lower limb amputations are directly related to diabetes complications
- More than 40% of diabetes related foot ulcers will become infected at some point, more than half of those require hospitalisation, many will result in amputation.



# Methodology

- Cost-description analysis
- Calculation of costs associated with the development and implementation of the program.
- Costs were examined from the perspective of the public hospital and the individual learner
- Costs calculated using the Ingredients Method



# Program Costs

Activity	Resource item	Vol	Price	Cost
Development of advanced clinical practice guidelines	Administrator time	90 hrs	\$56.40/hr	\$5,076
	Endorsed prescriber time	20 hrs	\$76.33/hr	\$1,527
	Senior pharmacist time	4 hrs	\$69.10/hr	\$276
Hospital review of developed guidelines	Committee member time	2 hrs	\$76.33/hr	\$153
Development of learning resources	Senior pharmacist time	90 hrs	\$69.10/hr	\$6,219
			TOTAL	<b><u>\$13,251</u></b>

\* Price includes 25% oncosts

# Hospital Costs

Activity	Resource item	Vol	Price	Cost
Program induction	Endorsed prescriber time	1 hr	\$76.33/hr	\$76
	Learner paid time	4 hrs	\$56.40/hr	\$226
	Librarian time	1 hr	\$67.48/hr	\$67
Rotation education	Learner paid time	188 hrs	\$56.40/hr	\$10,604
Log sheet mentoring	Endorsed prescriber time	30 hrs	\$76.33/hr	\$2,290
	Learner paid time	10 hrs	\$56.40/hr	\$564
Post-mentoring activities	Endorsed prescriber time	20 hrs	\$76.33/hr	\$1,527
	Learner paid time	20 hrs	\$56.40/hr	\$1,128
Program administration	Administrator time	10 hrs	\$56.40/hr	\$564
			TOTAL	<b><u>\$17,046</u></b>

\* Price includes 25% oncosts

# Learner Costs

Activity	Resource item	Vol	Price	Cost
Approved podiatric therapeutics program <sup>1</sup>	Course fee	1	\$4,875.03 <sup>2</sup>	\$4,875
	Learner unpaid time	260	\$22.56 /hr	\$5,866
Web based case studies	Course fee	1	\$250.00	\$250
	Learner unpaid time <sup>3</sup>	2.5 hrs	\$22.56 /hr	\$56
Log sheet preparation	Learner unpaid time	80 hrs	\$22.56 /hr	\$1,805
AHPRA submission	Application fee	1	\$189.00	\$189
			TOTAL	<b><u>\$13,041</u></b>

<sup>1</sup>Only required if learner has not completed an approved program of study within the last 7 years

<sup>2</sup>Based on University of South Australia Advanced Pharmacology for Podiatrists 2017 course fees

<sup>3</sup>Time spent outside of work hours. Calculated at the marginal overtime rate of 50% of usual wage without on-costs (Australian FairWork Commission, 2017a).

# Breakeven Analysis

Scenario	Cost avoided	Overall breakeven	Hospital breakeven
<b>A: Requires ongoing management (e.g. debridement, dressing, antibiotics)</b>	\$21,047	7.62	4.32
<b>B: Minor amputation: toe</b>	\$20,240	1.49	0.84
<b>C: Major amputation: below knee or trans-metatarsal</b>	\$92,043	0.33	0.19

The cost of a patient event is based on actual costs incurred from foot ulcers by two Victorian Health Services (inclusive Peninsula Health) over 2016-17.



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# Sensitivity Analysis Scenarios

Scenario	Description
<b>1) Includes hospital cost for rotation education</b>	Estimates the cost to the hospital of conducting rotation education according to the average cost of medicine trainees of \$4,376/month with 40 hour weeks (Independent Hospital Pricing Authority, 2016).
<b>2) Uses house medical officer as endorsed prescriber</b>	Estimates the program cost if the endorsed prescriber role is filled by a year 3 House Medical Officer at an hourly rate of \$38.66, with a 4% pay increase to 2017 values, and 25% on-costs (Australian Medical Association, 2013).
<b>3) Uses medical officer as endorsed prescriber</b>	Estimates the program cost if the endorsed prescriber role is filled by a year 5 Medical Officer at an hourly rate of \$58.99, with a 4% pay increase to 2017 values, and 25% on-costs (Australian Medical Association, 2013).
<b>4) Graduated from a recognised program in the last 7 years</b>	AHPRA require endorsed prescriber trainees to have completed a recognised therapeutics program in the last 7 years. Those who satisfy this requirement do not have to do an additional podiatric therapeutics course, therefore creating a cost saving.
<b>5) Increase 20%</b>	Increases all implementation costs by 20%.
<b>6) Decrease 20%</b>	Decreases all implementation costs by 20%.



# Sensitivity Analysis

Scenario	Total implement cost	Hospital cost	Learner cost	Overall breakeven <sup>1</sup>
Original	\$30,087	\$17,046	\$13,041	<b>0.40</b>
1) Includes rotation education cost	\$50,654	\$37,613	\$13,041	0.68
2) Hospital medical officer as endorsed prescriber	\$28,757	\$15,716	\$13,041	0.38
3) Medical officer as endorsed prescriber	\$30,105	\$17,064	\$13,041	0.40
4) Recent graduate from recognised program	<u>\$19,346</u>	<u>\$17,046</u>	<u>\$2,300</u>	<b><u>0.26</u></b>
5) Increase 20%	\$36,104	\$20,455	\$15,649	0.48
6) Decrease 20%	\$24,070	\$13,637	\$10,433	0.32
<sup>1</sup> Using breakeven scenario A: ulcer resolved				



# Hospital Costs New Program

Activity	Resource item	Vol	Price	Cost
Program induction	Endorsed prescriber time	1 hr	\$76.33/hr	\$76
	Learner paid time	4 hrs	\$56.40/hr	\$226
	Librarian time	1 hr	\$67.48/hr	\$67
Rotation education	Learner paid time	70 hrs	\$56.40/hr	\$3,948
Log sheet mentoring	Endorsed prescriber time	20 hrs	\$76.33/hr	\$1526
	Learner paid time	20 hrs	\$56.40/hr	\$1128
Post-mentoring activities	Endorsed prescriber time	10 hrs	\$76.33/hr	\$763
	Learner paid time	20 hrs	\$56.40/hr	\$1,128
			TOTAL	<b><u>\$8862</u></b>

\* Price includes 25% oncosts



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# Learner Costs New Requirements

Activity	Resource item	Vol	Price	Cost
Approved podiatric therapeutics program <sup>1</sup>	Course fee	1	\$4,875.03 <sup>2</sup>	\$4,875
	Learner unpaid time	260	\$22.56 /hr	\$5,866
Web based case studies	Course fee	1	\$250.00	\$250
	Learner unpaid time <sup>3</sup>	2.5 hrs	\$22.56 /hr	\$56
Log sheet preparation	Learner unpaid time	30 hrs	\$22.56 /hr	\$676.80
Portfolio preparation	Learner unpaid time	70 hrs	\$22.56/hr	\$1579
AHPRA submission	Application fee	1	\$189.00	\$189
			TOTAL	<b><u>\$13491</u></b>

<sup>1</sup>Only required if learner has not completed an approved program of study within the last 7 years

<sup>2</sup>Based on University of South Australia Advanced Pharmacology for Podiatrists 2017 course fees

<sup>3</sup>Time spent outside of work hours. Calculated at the marginal overtime rate of 50% of usual wage without on-costs (Australian FairWork Commission, 2017a).

# Sensitivity Analysis New Program

Scenario	Total implement cost	Hospital cost	Learner cost	Overall breakeven <sup>1</sup>
Original	\$22353	\$8862	\$13,491	<b>0.30</b>
1) Includes rotation education cost	\$50,654	\$37,613	\$13,041	0.68
2) Hospital medical officer as endorsed prescriber	\$28,757	\$15,716	\$13,041	0.38
3) Medical officer as endorsed prescriber	\$30,105	\$17,064	\$13,041	0.40
4) Recent graduate from recognised program	<u>\$11612</u>	<u>\$8862</u>	<u>\$2750</u>	<b><u>0.19</u></b>
5) Increase 20%	\$26,823	\$10,634	\$16,189	0.35
6) Decrease 20%	\$24,070	\$13,637	\$10,433	0.32

<sup>1</sup>Using breakeven scenario A: ulcer resolved



# Significance of the findings to Allied Health

- The economic benefits (savings) created by an endorsed prescribing podiatrist over their career in a public health service are likely to outweigh the costs to train a podiatrist to attain endorsement.
- There is a potential to free up medical prescriber time for other tasks, and allow both to work at the full extent of the capacities, increasing overall system efficiency.
- This study provides a model for other allied health disciplines to calculate potential savings and benefits when implementing non-medical prescribing
- It is crucial that appropriate practice guidelines are developed within established health care infrastructure that support non-medical prescribers in health services.
- This study highlights the importance and benefits of working within a multidisciplinary team



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# The Team

Podiatry Department

High Risk Foot Unit

Pharmacy Department

Plastics Department

Vascular Department

Orthopaedic Department

Pain Management Team

Allied Health Research Unit

Monash University

Royal Melbourne Hospital



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