



# **Advanced Clinical Pharmacy Services in Aged Residential Care**

**At the interface of primary and secondary care**

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# Introduction

Project Scope

Pharmacy Services in New Zealand

Waitemata DHB

Implementation

Results

The Future



# Project Scope

Deliver advanced clinical pharmacy services to aged residential care facilities

DHB funded

Increase primary/secondary link & info

Cost savings

Medicine Reviews, Information, Education

Review of Medicine Management System

Two year pilot



# Pharmacy Services in NZ

No standard service delivery model

Delivered by dispensing pharmacy

Varying standards of service & information

No specific government funding



# Waitemata DHB

Largest DHB

North Shore

West Auckland

Rodney district

3 private hospitals

25% PG residents



# Establishing the Role

Research other service models

Meet care facility staff including GPs

Staff survey

Get started!!



# Medicine Reviews

Transfer of care/ 6monthly MDT review

## Primary Care - Care Facility

- clinical notes
- obs chart, drug chart, medicines
- written and verbal nursing handover

## Secondary Health

- clinical notes
- discharge letters
- clinic letters from secondary services
- advice from geriatricians, psychiatrists, treating physicians





## Resident Management

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### Resident Information

Last Name \*

First Name \*

NHI \*

Date of Birth \*  (day/month/year)

Gender  Male  Female

### Medical Conditions

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> #NOF                         | <input type="checkbox"/> Cataracts                | <input type="checkbox"/> Epilepsy                 | <input type="checkbox"/> PE                           |
| <input type="checkbox"/> #NOH                         | <input type="checkbox"/> Cerebral bleed           | <input type="checkbox"/> Excessive EtOH intake    | <input type="checkbox"/> Peripheral vascular disease  |
| <input type="checkbox"/> Anaemia                      | <input type="checkbox"/> CHF                      | <input type="checkbox"/> Falls                    | <input type="checkbox"/> Permanent pacemaker          |
| <input type="checkbox"/> Angina                       | <input type="checkbox"/> Chronic pain syndrome    | <input type="checkbox"/> GI bleed                 | <input type="checkbox"/> Polymyalgia rheumatica       |
| <input type="checkbox"/> Anxiety                      | <input type="checkbox"/> Chronic renal failure    | <input type="checkbox"/> GI ulcer                 | <input type="checkbox"/> Postural hypotension         |
| <input type="checkbox"/> Asthma                       | <input type="checkbox"/> Chronic ulcer            | <input type="checkbox"/> Glaucoma                 | <input type="checkbox"/> Pulmonary hypertension       |
| <input type="checkbox"/> Atrial fibrillation          | <input type="checkbox"/> Cognitive impairment     | <input type="checkbox"/> GORD                     | <input type="checkbox"/> Recurrent UTIs               |
| <input type="checkbox"/> Atrial flutter               | <input type="checkbox"/> Constipation             | <input checked="" type="checkbox"/> Gout          | <input type="checkbox"/> Rheumatoid arthritis         |
| <input type="checkbox"/> Benign prostatic hyperplasia | <input type="checkbox"/> COPD                     | <input type="checkbox"/> Hearing loss             | <input type="checkbox"/> Schizoaffective disorder     |
| <input type="checkbox"/> Bipolar affective disorder   | <input checked="" type="checkbox"/> CVA/TIA       | <input type="checkbox"/> Hypertension             | <input type="checkbox"/> Schizophrenia                |
| <input type="checkbox"/> CABG                         | <input checked="" type="checkbox"/> Dementia      | <input type="checkbox"/> Hyperthyroidism          | <input type="checkbox"/> Spinal stenosis              |
| <input type="checkbox"/> Cancer - Bladder             | <input type="checkbox"/> Dementia - Alzheimers    | <input type="checkbox"/> Hypothyroidism           | <input type="checkbox"/> Subarchnoid haemorrhage      |
| <input type="checkbox"/> Cancer - Breast              | <input type="checkbox"/> Dementia - Lewy Body     | <input type="checkbox"/> Incontinence             | <input type="checkbox"/> Subdural haematoma           |
| <input type="checkbox"/> Cancer - Cervical            | <input type="checkbox"/> Dementia - Parkinson's   | <input type="checkbox"/> Indwelling catheter      | <input type="checkbox"/> Supranuclear palsey          |
| <input type="checkbox"/> Cancer - Colon               | <input type="checkbox"/> Dementia - Vascular      | <input type="checkbox"/> Ischaemic heart disease  | <input type="checkbox"/> Supraventricular tachycardia |
| <input type="checkbox"/> Cancer - Liver               | <input type="checkbox"/> Dementia with BPSD       | <input type="checkbox"/> Lymphoma                 | <input type="checkbox"/> Temporal arteritis           |
| <input type="checkbox"/> Cancer - Lung                | <input type="checkbox"/> Depression               | <input type="checkbox"/> Multiple sclerosis       | <input type="checkbox"/> THJR                         |
| <input type="checkbox"/> Cancer - Melanoma            | <input type="checkbox"/> Diabetes mellitus Type I | <input type="checkbox"/> Myelodysplastic syndrome | <input type="checkbox"/> TKJR                         |



### Resident Review

[Back to Reviews](#)

Current Resident: a, a (nhh0014)

#### Medicine Management

Medicine \*

Form

Dose \*  %

Dispensed Correctly  Yes  No

Route  ears  IM  IV  PO  PV  sublingual  
 GUTT  INH  nasal  PR  subcut  TOP

Frequency \*

Type \*  Regular  PRN

Started  (day/month/year)

Comments

#### Medicine List

Medicine	Dose	Frequency	Started	Type	
Lorazepam	0.50 mg	BD		PRN	<a href="#">Edit</a> <a href="#">Remove</a>
Quetiapine fumarate	50.00 mg	mane			<a href="#">Edit</a> <a href="#">Remove</a>
Quetiapine fumarate	25.00 mg	Nocte			<a href="#">Edit</a> <a href="#">Remove</a>
Zopiclone	15.00 mg	Nocte			<a href="#">Edit</a> <a href="#">Remove</a>
Zuclopenthixol	5.00 mg	BD			<a href="#">Edit</a> <a href="#">Remove</a>



## Resident Review

[Back to Reviews](#)

Current Resident: a, a (nhh0014)

### Recommendation Management

#### Recommendation

Type \*

Status \*

Comments

#### Recommended Medicine

Medicine

### Recommendation List

Type	Status	Medicine	
Decrease dose	Accept	Zopiclone	<a href="#">Edit</a> <a href="#">Remove</a>



# Pharmaceutical Care Plan

<b>Drug Related Problem/Recommendation:</b> Consider adding calciferol 50,000IU monthly to therapy	<input checked="" type="checkbox"/> Medical <input checked="" type="checkbox"/> Nursing <input type="checkbox"/> Pharmacy
<input type="checkbox"/> Accept <input type="checkbox"/> Decline <input type="checkbox"/> Accept with modifications                    Sign _____ Date _____	
<b>Therapeutic Goal:</b> Reduce risk of fracture – in residential care and on long term steroids	



<b>Drug Related Problem/Recommendation:</b> Prescribe olanzapine dose on drug chart – currently states 1 tablet (available as 2.5, 5 and 10mg) and may cause confusion if care is transferred.	<input checked="" type="checkbox"/> Medical <input type="checkbox"/> Nursing <input type="checkbox"/> Pharmacy
<input type="checkbox"/> Accept <input type="checkbox"/> Decline <input type="checkbox"/> Accept with modifications                    Sign _____ Date _____	

<b>Pharmaceutical Care Plan</b>	
<b>Drug Related Problem/Recommendation:</b> Consider stopping dipyridamole and starting clopidogrel 75mg daily monotherapy. Requiring meds to be crushed – dipyridamole should not be crushed because of dose dumping. It appears dipyridamole was started in 2006 when warfarin was stopped due to compliance issues. Aspirin should have ideally been started at this time also as evidence suggests that dual antiplatelet therapy with aspirin and dipyridamole (A+D) is more effective. However, if clopidogrel is started then monotherapy with this agents is as effective as A+D.	<input checked="" type="checkbox"/> Medical <input checked="" type="checkbox"/> Nursing <input type="checkbox"/> Pharmacy <input type="checkbox"/> Clinical Team
<input type="checkbox"/> Accept <input type="checkbox"/> Decline <input type="checkbox"/> Accept with modifications                    Sign _____ Date _____	
<b>Therapeutic Goal:</b> Use medicines appropriate to be crushed	
<b>Monitoring Plan:</b>	
<b>Result of Intervention:</b>	

# Results – 147 reviews

Review period	Nov 10-Jan 11
Age	80.5 y (57-101)
Gender	52.3% female
PG ward	31%
Medicines	9.76 (1-22)
Regular	7.76
PRN	2.0



# Results - Medicines

**Top 5**

<b>1</b>	Paracetamol	59.6%
<b>2</b>	Lactulose	56.5%
<b>3</b>	Calciferol	52.4%
<b>4</b>	Docusate&Senna	50.3%
<b>5</b>	Aspirin	44.9%

Antipsychotics	45%
Hypnotics	35%



# Recommendations

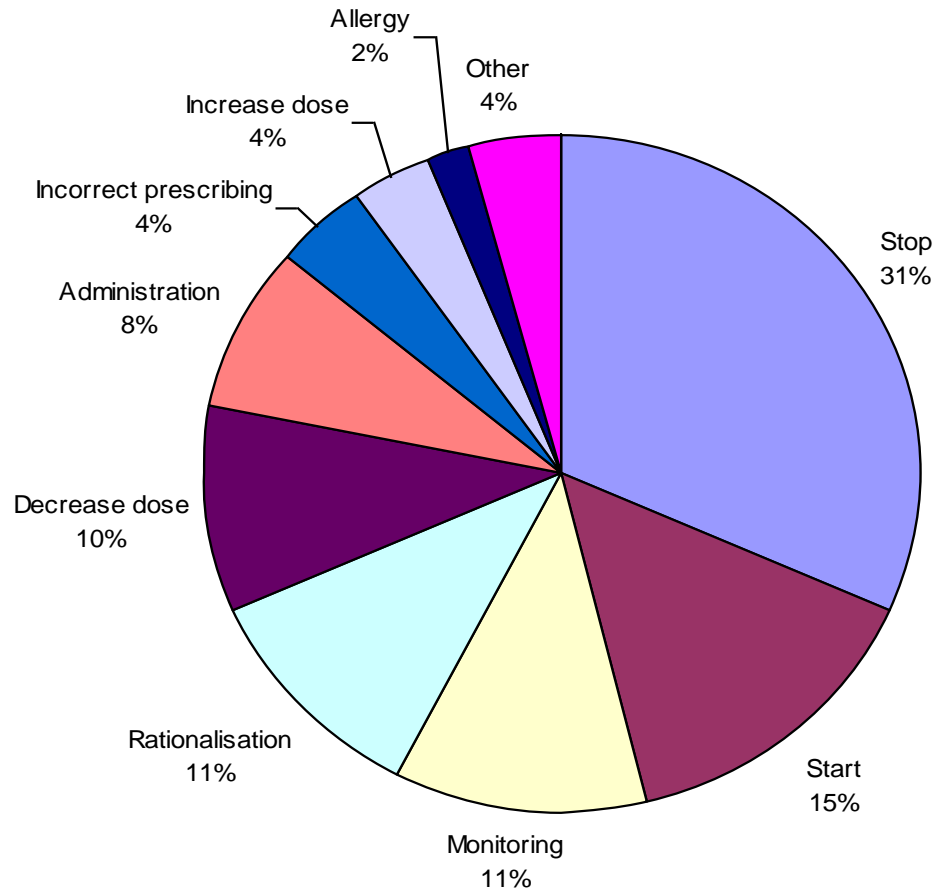
431 recommendations

2.93 per review (0-8)

<b>Top 3 meds</b>	<b>1</b>	Calciferol	8.67%
	<b>2</b>	Risperidone	3.17%
	<b>3</b>	Aspirin	2.75%

<b>Top 3 classes</b>	<b>1</b>	Vitamins & minerals	14.8%
	<b>2</b>	Antipsychotics	8.46%
	<b>3</b>	Laxatives	5.92%

# Type of Recommendations



# Acceptance of Recommendations

69.5% (216/311) acceptance rate

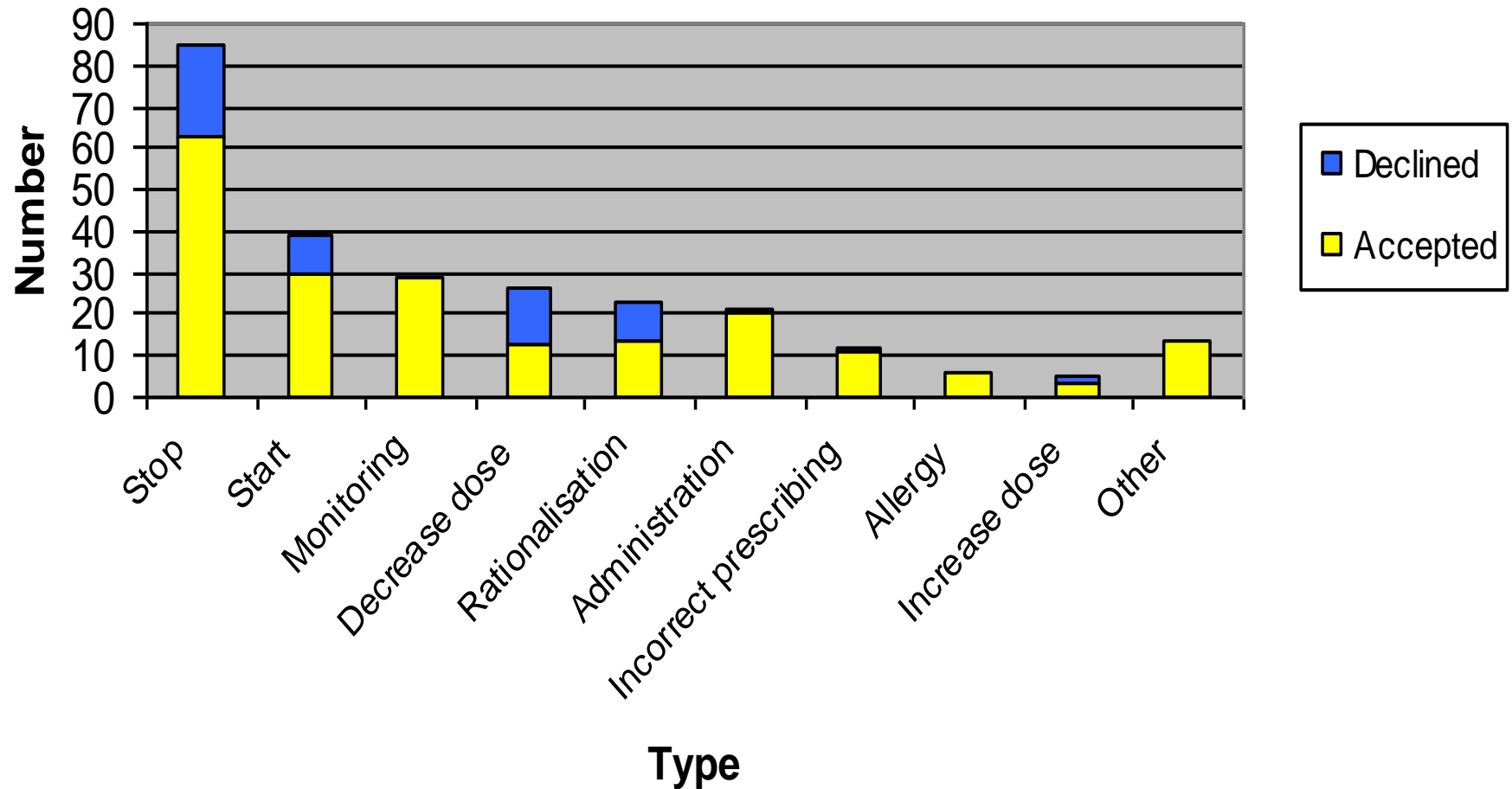
Literature rates

Care facilities – range from 62%, 68% & 75%

GPs – range from 60-100%



# Acceptance of Recommendations



# Results – Transfer of Care

Point of contact

Errors corrected in timely manner

Information still easily accessible

Less potential harm to resident

Understand pressures of both systems  
& liaise between the two

Acute vs. chronic care



# Results – MDT integration

Care facility staff

GPs

Well received – want service to continue

Lead to changes in general practice

“Open to reasoned arguments to adjust prescribing”



# Medicines Education

Education through care plans

Teaching sessions

Working with gerontology nurse specialists

Case reviews

Address different areas at particular facilities

Upskilling myself



# Medicine Management

Survey used to address areas of concern

Medicine errors at care facilities

Liaise with dispensing pharmacy

Care facility requirements

Funding issues

Provision of care plans



# The Hurdles

Assurance of roles

Increase knowledge of clinical pharmacist role

Prioritisation of recommendations

Time pressures

Now part of 'normal' care

Infinite areas for input



# The Future

Continue current service

MDT dementia clinics

Project analysis

Rate of falls, hospitalisation, mortality

Associated costs

District wide implementation



# Waitemata District Health Board



*“Making a healthy difference”*

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