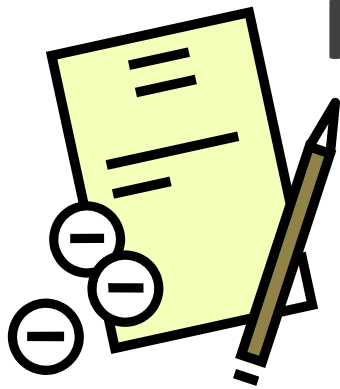




People Accessing Spectrum Care

Residential Services

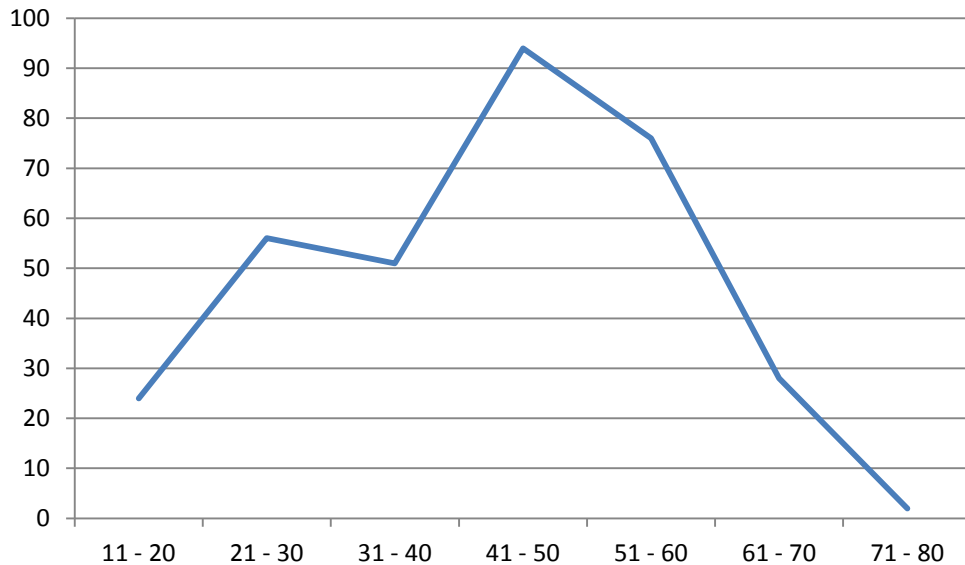
Polypharmacy Review



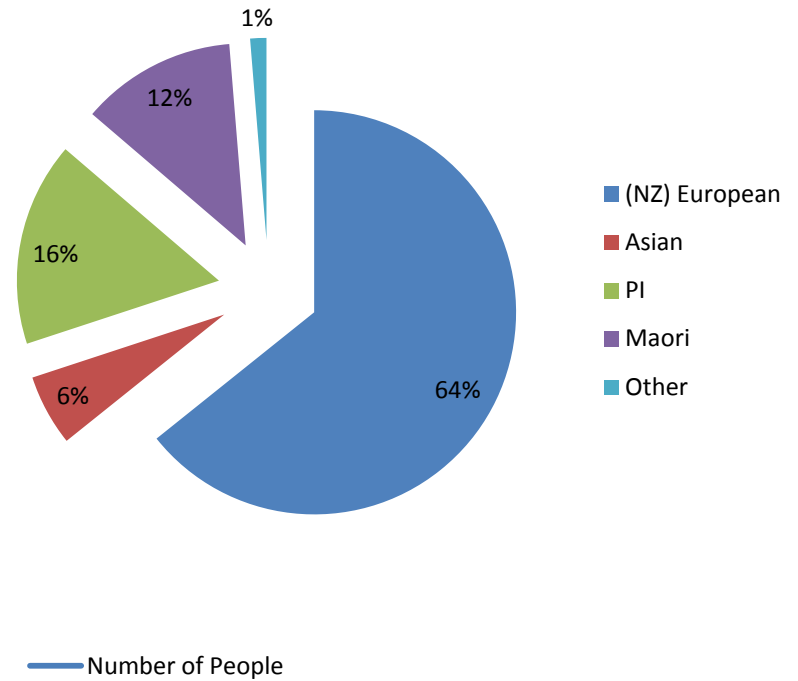
Demographics

Male = 70%
Female = 30%

Age Range



Cultural Mix



What is Polypharmacy?

Polypharmacy is the use of multiple medications

Polypharmacy concerns include:

- **decreased quality of life**
- **decreased mobility**
- **decreased cognition**
- **increased risk of falls in the elderly**
- **increased [adverse drug reactions](#)**
- **increased drug-drug interactions**
- **prescribing proliferation**
- **higher health/pharmacy costs**

Polypharmacy impacts on:

- **People**
- **Healthcare costs**
- **Funder costs**

Polypharmacy studies mainly focus on psychoactive drugs

The polypharmacy issue is compounded by people with ID living longer and developing age related conditions

- **What is the polypharmacy risk?**
- **Understanding medication mixes**
- **Can we manage polypharmacy better?**

- **350 medication sheets collected**
- **Information databased**
- **Who was on what medication**
- **Age and gender data also collected**

What is the Polypharmacy Risk?



Extent of Polypharmacy

Routine Medications

51% five or less medications per day

49% six or more medications per day.

Plus PRN

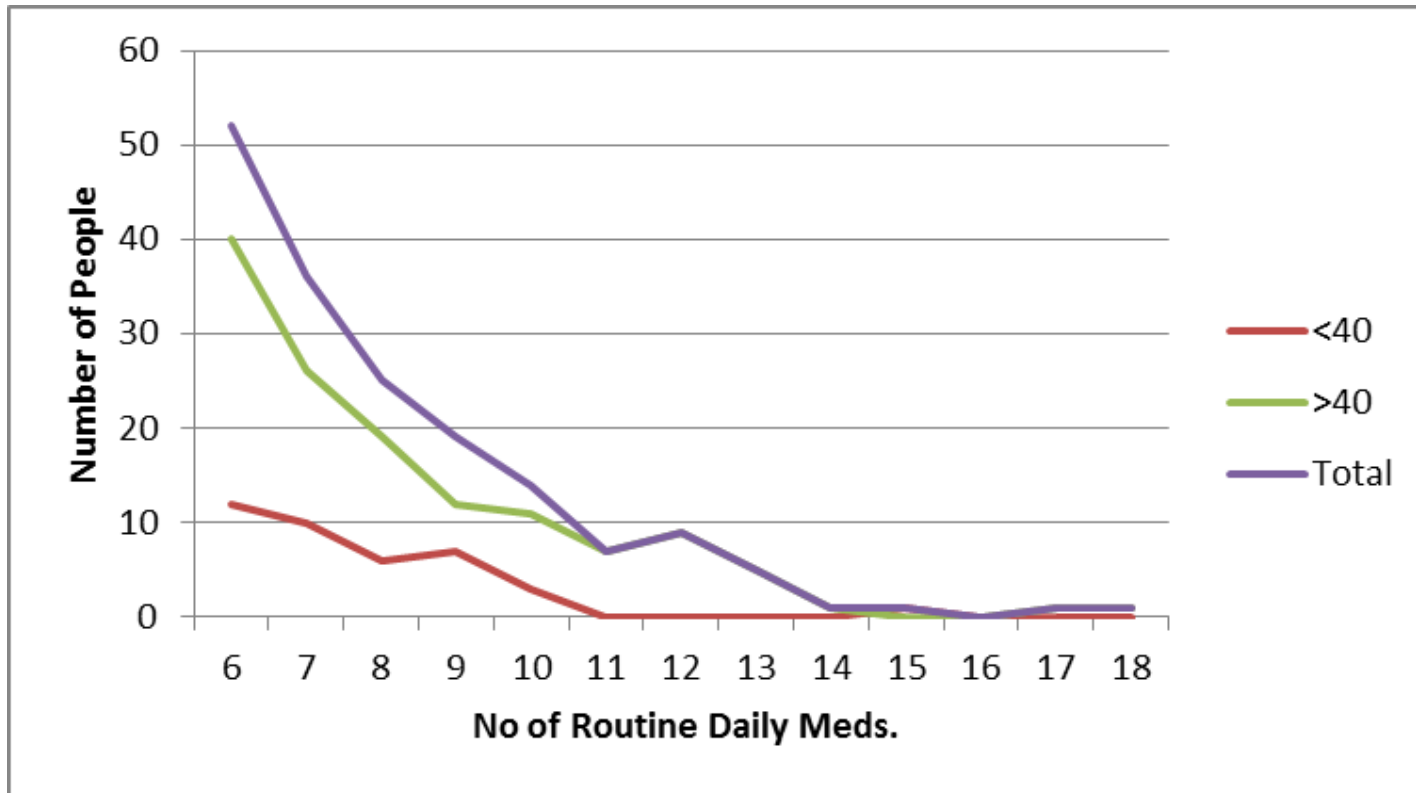
27% five or less medications per day

73% six or more medications per day

Meds/Day excluding PRN		Meds/Day Including PRN
5 or less	51%	27%
6 or more	49%	73%

Polypharmacy and Ageing

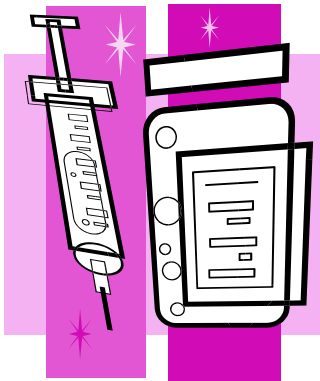
**171 people on 6 or more routine medications per day - 23% <40
- 77% >40**



10 or more routine medications per day
40-49 – 20%
50-59 – 30%
60+ - 33%



Understanding Medication Mixes



Developing Profiles

Drugs	Chlorsig eye drops	Cholecalciferol	Coloxyl & Senna	Ensure Plus	Epilim	Foban	Konsol	Lorazepam	Metronidazole	Microlax	Omeprazole	Paracetamol	Polycal	Prozasin	Tegretol	Waxsol Ear drops	PRN - Fatty Cream	PRN - Micreme	PRN - Stesolid
Chlorsig eye drops	Grey																		
Cholecalciferol		Grey																	
Coloxyl & Senna			Grey																
Ensure Plus				Grey	Green							Green							Green
Epilim				Green	Grey			Orange				Green			Green				Green
Foban						Grey									Yellow				
Konsol							Grey												
Lorazepam					Orange			Grey			Green								
Metronidazole									Grey										
Microlax										Grey									
Omeprazole								Green			Grey				Green				Green
Paracetamol					Green						Grey		Green		Green				Green
Polycal					Green						Green		Grey						Green
Prozasin														Grey					
Tegretol					Green		Yellow				Green	Green			Grey				Green
Waxsol Ear drops																Grey			
PRN - Fatty Cream																	Grey		
PRN - Micreme																		Grey	
PRN - Stesolid				Green	Green						Green	Green	Green		Green				Grey

Key	
Red	Avoid
Orange	Adjust
Yellow	Monitor
Green	Information
Grey	No Action

Medication Profiling

Drugs	Chlorsig eye drops	Cholecalciferol	Coloxyl & Senna	Ensure Plus	Epillim	Foban	Konsol	Lorazepam	Metronidazole	Microlax	Omeprazole	Paracetamol	Polycal	Prozasin	Tegretol	Waxsol Ear drops	PRN - Fatty Cream	PRN - Micreme	PRN - Stesolid	
Chlorsig eye drops	Grey																			
Cholecalciferol		Grey																		
Coloxyl & Senna			Grey																	
Ensure Plus				Grey	Green							Green								Green
Epillim					Green			Orange					Green		Green					Green
Foban						Grey														
Konsol							Grey													
Lorazepam								Orange			Green									
Metronidazole									Grey											
Microlax										Grey										
Omeprazole											Grey									
Paracetamol												Grey	Green							Green
Polycal													Green							Green
Prozasin														Grey						
Tegretol															Grey					Green
Waxsol Ear drops																Grey				
PRN - Fatty Cream																	Grey			
PRN - Micreme																		Grey		
PRN - Stesolid																			Grey	

Carbamazepine toxicity was seen in one patient after miconazole was added to treatment. Note that at the maximum doses miconazole oral gel is sufficiently absorbed to potentially have systemic effects.

Valproate increases lorazepam exposure and might increase its sedative effects.

Increased benzodiazepine adverse effects have been reported after omeprazole was given with lorazepam.

Medication Profiling – cont.

Daily Doses	Dose	Amount	AM	Midday	PM	Night	Total Daily Doses
Chlorsig eye drops		2	1	1	1		3
Cholecalciferol	50000iu	1/12					0
Coloxyl & Senna		2			1		1
Ensure Plus		1	1		1		2
Epilim		3	1		1		2
Foban		1	1	1	1		3
Konsol		2	1		1		2
Lorazepam	1mg	1	1	1	1		3
Metronidazole	0.75	1	1		1		2
Microlax		1			1		1
Omeprazole		1	1				1
Paracetamol	500mg	2	1	1	1	1	4
Polycal		1	1		1		2
Prozasin		1				1	
Tegretol		1	1		1		2
Waxsol Ear drops			1			1	2
							30

**How much?
How often?
When and
what with?
and
most of all
Why?**

Risks Identified

- Medications of all types added to mix
- PRN or short term meds charted as routine
- Anti-depressives +++
- Old generation drugs
- Women on depo provera long term

Can We Manage Polypharmacy Better?



High Risk Mitigation

- 67 year old female
- Intellectual disability
- Schizophrenia.
- Heart disease
- Diabetes
- Hard of hearing
- On 18 routine medications per day

Persistent shouting behaviour

Become forgetful and repetitive, and

Requires more assistance with her daily living activities

Medication Profile

Medications	Asprin	Cilazapril	Clopixol	Coloxyl	Ferro-Tab (Iron)	Frusemide	Humalog insulin	Isosorbide Mononitrate	Laxsol	Loratadine	Metformin	Metoprolol	Omeprazole	Paracetamol	Quetiapine	Ranitidine	Simvastatin	PRN - Loperimide	PRN - Cyclizine	PRN - Glucagon	PRN - GTN Spray	
Asprin	Green	Green	White	White	White	Green	Green	White	White	White	Green	Green	White	Green	White	White	White	White	White	White	White	White
Cilazapril	Green	Grey	White	White	White	Green	Green	Green	White	White	Green	Green	White	White	White	White	White	White	White	White	White	White
Clopixol	White	White	Grey	White	White	White	White	White	White	White	Yellow	Green	White	White	White	White	White	White	White	White	White	White
Coloxyl	White	White	White	Grey	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White
Ferro-Tab (Iron)	White	White	White	White	Grey	White	White	White	White	White	White	White	Green	White	White	White	White	White	White	White	White	White
Frusemide	Green	Green	White	White	White	Grey	White	White	White	White	White	White	Green	White	White	White	White	White	White	White	White	White
Humalog insulin	Green	Green	White	White	White	White	Grey	White	White	White	White	Yellow	White	White	White	White	White	White	White	White	White	White
Isosorbide Mononitrate	White	Green	White	White	White	White	Grey	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White
Laxsol	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White	White	White	White	White	White	White	White	White
Loratadine	White	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White	White	White	White	White	White	White	White
Metformin	Green	Green	Yellow	White	White	White	White	White	White	Grey	White	White	White	White	White	White	White	White	White	White	White	White
Metoprolol	Green	White	White	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White	White	White	White	Green	White
Omeprazole	White	White	White	White	White	Green	Green	White	White	White	White	White	Grey	White	White	White	White	White	White	White	White	White
Paracetamol	Green	White	White	White	White	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White	White	White	White
Quetiapine	White	White	Green	White	White	White	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White	White	White
Ranitidine	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White	White
Simvastatin	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	Grey	White	White	White	White	White
PRN - Loperimide	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	Grey	White	White	White
PRN - Cyclizine	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White	Grey	White	White
PRN - Glucagon	White	White	White	White	White	White	White	White	White	White	White	Green	White	White	White	White	White	White	White	White	Grey	White
PRN - GTN Spray	White	White	White	White	White	White	White	White	White	White	White	Green	White	White	White	White	White	White	White	White	White	Grey

Patients taking zuclopenthixol and oral antidiabetics have been reported to need insulin at an earlier stage of their disease than patients not taking antipsychotics

Some beta blockers may delay or prolong the recovery response to hypoglycaemia in diabetics using insulin, but severe hypoglycaemia, hypertension and bradycardia is rare. Beta blockers may also mask some of the warning signs of hypoglycaemia

- **Quetiapine, Risperidone and Zuclopenthixol discontinued**
- **Aripiprazole commenced**
- **Loratadine changed to PRN**
- **Loperimide and Gaviscon discontinued**
- **Routine medications reduced from 18 to 15**

We can't do it Alone

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PODCASTAWAY



The best case scenario...

**One review per month per DHB = five
years to complete the first review
process for 170 people**

**What we want - expedite medication
review process**

**What we need - clinical pharmacist
assistance**

Options

Option one - Contract Clinical Pharmacist expertise into the organisation for a fixed term to:

- **conduct the clinical reviews**
- **explore the feasibility of a long-term 'medicines use review service'**

Option two - Explore partnership potential with a healthcare provider or tertiary institution

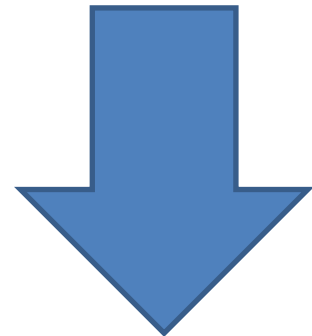
Partnership?

University of Auckland

- School of Medicine
- School of Nursing
- School of Pharmacy

Auckland DHB Pharmacy Department

**Academic
Research &
Practice Unit**



**Investigate ways of managing medications across
continuum of care more efficiently and effectively
including Polypharmacy**