Slide 1

Polypharmacy and The Frail Elderly

Brian Steeves, MD

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Partnership between

- PATH (Palliative and Therapeutic Harmonization)
- Drug Evaluation Alliance of Nova Scotia
- Dalhousie Academic Detailing Service
- Dr. Brian Steeves, Dr. Cheryl Smith (DNP)

To improve medication appropriateness for the frail elderly

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Disclaimer

No Conflict of Interest

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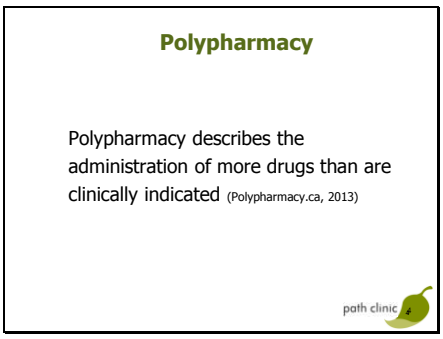
Slide 4



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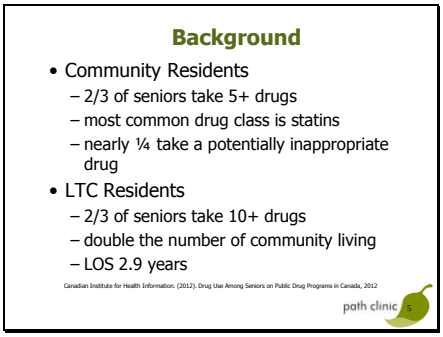

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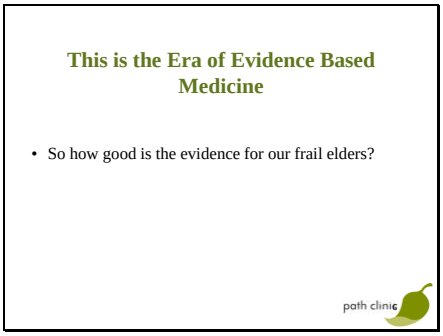

These characteristics impact treatment outcomes and should be considered when making treatment decisions.

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Methods: Evidence Informed Guidelines

- Elders living in Long Term Care (LTC) are systematically excluded from drug trials.
- Are treatment recommendations based on randomized control trial evidence or consensus opinion?
  - 47% of CPG recommendations are based on low level evidence (American Heart Association)

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This presentation is directed to Elders living in LTC with severe frailty. It also applies, to a lesser degree, to the very frail living at home.

So who are they and how do we recognize them?

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- In the Canadian experience, 70% - 80% of Elders living in LTC have moderate to severe frailty and dementia.
- I expect the numbers are similar in the United States.
- Frailty is important for many reasons. Today, I will show how to recognize and grade frailty and show how this informs decisions on reducing polypharmacy.

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- Frailty and multiple co-morbidities are the big killers in our world with cancer making a significant but smaller contribution.
- Frailty is our future. Frailty is an expression of population ageing and is associated with dementia, poor health outcomes and is a predictor of morbidity and mortality. Frailty is quantifiable using a frailty scale or gait speed.
- The system is weighted against elderly non-cancer patients.

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Geriatricians in Halifax, Nova Scotia, led by world renowned researcher, Dr. Ken Rockwood, have developed a frailty scale.

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Clinical Frailty Scale

	CFS	Stage	
1	Very Fit	No subjective decline	
2	Well	Subjective, no objective decline	
3	Well with treated co-morbid disease	Subjective and objective decline	
4	Vulnerable	MCI	Help with high level tasks
5	Mildly Frail: need help with some IADLs	Mild	Help with some IADLs, Forget current events
6	Moderately Frail	Moderate	Help with all IADLs, cuing, Forget current events
7	Severely Frail	Severe	Need help with all BADLs, Forget close relatives
8	Very Severely Frail	Very Severe	Non verbal, non-ambulatory
9	Terminally Ill: Regardless of frailty category		

Reisberg B. Functional assessment staging (FAST). Psychopharmacol Bull. 1988;24:653-659.
Rockwood K, Song X, MacKnight C et al. A global clinical measure of fitness and frailty in elderly people. CMAJ. 2005;173:489-495.

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Frailty

- Identified by Changes in:
  - Memory (thinking)
  - Ability to handle day to day tasks
  - How one stands from a chair or walks
  - Unmanageable symptoms (such as shortness of breath)
- Frailty means:
  - Health is precarious
  - The Elder is more likely to have poor outcomes when stressed by tests, drugs, surgery.
  - More at risk for medication side effects
  - Shortened life expectancy

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- When frailty is not recognized it leads to the overuse of interventions and drugs. This very much impacts on the quality of life for Elders, often in very serious ways.

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Staging Frailty

Stage	Memory		Function	
Mild	C	Current news/ events	I	IADLs
Moderate	U	US President/ Prime Minister	R	Rewearing clothes
Severe	R	Relatives (1st degree)	A	ADLs impaired,such as dressing, bathing, eating
Very Severe	E	Everything	N	Non verbal Non ambulatory

Based on Rockwood K. CMAJ 2005;173:489-95; Reisberg B. Psychopharmacol Bull 1988;24:629-36

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The Archives of Internal Medicine published a study by Drs. Doran Garfinkel and Derelie Mangin in October 2010.

- 70 Community dwelling Elders
- Mean age 82.8 years
- 61% had 3 or more co-morbidities
- 26% had 5 or more co-morbidities
- Mean medication per Elder 7.7
- 58% of medications were stopped
- 88% of Elders reported global improvement in health
- No significant adverse events or death

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Intensive therapy leads to:

Decreased photocoagulation, (no difference in vision)
Decreased albuminuria, (no difference in measures of creatinine or progression to ESRD requiring intervention)
Decreased rates of neuropathy, based on:

knee and ankle reflexes
biothesiometer readings at lateral malleolus and big toe
Measures threshold of appreciation of vibration
R-R intervals on EKG

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What About Type 2 Diabetes?

Is tight control of blood sugar of benefit?

Are there harms?

What does the science show?

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What is the Harm from Tight Control?

- Hypoglycemia has immediate consequences:
  - Falls
  - Hospitalization
    - Dementia increases the risk for hypoglycemia and hospitalization due to hypoglycemia[1]
  - Hypoglycemia unawareness
- The cost and human resources needed to measure and maintain tight control is significant

1. Yaffe K. JAMA Intern Med. 2013 Jun 10:1-6

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Four Major Studies on the tight control of blood sugar in Type 2 diabetes had the following conclusions (Note: Much younger population with mean age in 60's):

UKPDS – after 7 years….decreased photocoagulation
- after decades…possible macrovascular benefit (less strokes, heart attacks)

ADVANCE – after 5 years less albuminuria (less protein in urine)

ACCORD – after 2 years…increased all cause mortality

VADT – No benefit

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Targets for Glycemic Control

Random Blood Glucose	Treatment
Less than 7	Decrease diabetes treatment
7 – 9.9	May be acceptable, but risk of hypoglycemia
10 – 20	Acceptable if there are no symptoms
Frequent Values Greater Than 20	Increase treatment

Source: Diabetes Care Program of Nova Scotia. Diabetes Guidelines for Elderly Residents in Long-Term Care Facilities (Pocket Reference). April 2010.

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Targets for HbA1c

HgbA1c, %	Treatment
< 8	Decrease or discontinue diabetes treatment
> 8 to < 12	Acceptable if asymptomatic, i.e, individualized target
> 12	Consider increasing diabetes treatment

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Other liberating clinical pearls

- Most oral medications decrease HbA1c by 1%
  - Opportunities to discontinue oral meds or insulin
- No need for routine testing if on oral hypoglycemic medications alone or stable doses of basal insulin
- Use NPH over Lantus and Detemir (cheaper and similar)
- Can usually get away with basal insulin alone
  - This will avoid hypoglycemia due to variable oral intake

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Dietary Restrictions

"Let them eat cake"

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CPG for treatment of Hypertension in Frailty

Partnership between:

PATH

Dalhousie Academic Detailing Service

Drug Evaluation Alliance of Nova Scotia (DEANS)

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	Study	Subjects N	Duration Yrs	Achieved SBP		Benefit
				Contro l	Active	
DRUG RX TRIALS	EW	840	4.6	172	150	Yes
	CW	884	4.4	180	162	Yes
	SHEP	4736	4.5	170	143	Yes
	STOP	1627	2.1	186	167	Yes
	MRC-E	4396	5.8	165	156	Yes
	S Eur	4695	2.0	161	151	Yes
	S-Ch	2394	3.0	160	151	Yes
	SCOPE	4937	3.7	148	145	Partial
	HYVET	3845	2.1	159	144	Yes
TAR-GET	JATOS	4418	2.0	146	136	No
	VALISH	3079	3.7	142	137	No

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Guidelines

1. Use seated BP for tx decisions
   - Check for orthostasis (lying and standing BP) and ask about sxs
2. STOP:
   - if SBP < 140 taper decrease or d/c, unless other indications
   - the decision to discontinue treatment in patients with a history of previous stroke should be made on an individual basis.
3. START: if SBP >/= 160
   - Target is 140-160 unless orthostasis or ADEs
   - Very severely frail: Target 160-190 is reasonable
   - No changes with DM
   - In general use </= 2 meds
   - For those with previous stroke, see above

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CPG for treatment of Hyperlipidemia in Frailty

Partnership between:

PATH

Dalhousie Academic Detailing Service

Drug Evaluation Alliance of Nova Scotia (DEANS)

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Recommendations for statin use with severe frailty

Primary Prevention	Secondary Prevention
Statins not needed	Statin use in severe frailty is probably not necessary There may be extenuating individualized circumstances that shift the risk/benefit ratio

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Recommendations

- **Heart failure**: There is no reason to start or continue statins for heart failure
- **Ezetimibe**: There is no reason to start or continue ezetimibe for primary or secondary prevention
- **Combination therapy with statins**: There is no reason to start or continue other lipid lowering drugs in conjunction with statins
- **Statin dosing**: If statins are to be used, use lower doses.

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JUPITER Outcomes	NNT, 2 yrs	95% CI
Primary outcome: *non-fatal MI, non-fatal stroke, hospitalization for UA, revascularization, CV death)*	62	39 to 148
Myocardial infarction	211	106 to 32,924
Revascularization or hospitalization for UA	102	62 to 292
Stroke	161	86 to 1192

We do not know what proportion of MI or strokes were symptomatic

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PROSPER

- The only RCT which exclusively studied the elderly (ages 70-82)
- Pravastatin 40 mg versus placebo
- Included patients requiring both primary and secondary prevention
- Then each population evaluated separately
- No statistically significant benefit in any outcome:

Primary: CHD death, non fatal MI, fatal or non fatal stroke

Secondary: Fatal/non fatal MI, fatal/non fatal stroke or TIA

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Case – in review

- 90 year old female admitted to a nursing home
- Dx
  - weakness, severe stage dementia, HTN, Type 2 DM, Depression
- Past Medical Hx
  - PUD, anxiety and insomnia after the loss of spouse 5 years ago (resolved)
- Objective data
  - Blood Pressure 120/80, Heart Rate 80
  - Fasting Blood Sugar 6mmol/L; HbA1C 7.5%

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- Acetaminophen 1gm qid
- Amlodipine 7.5 mg hs
- Metoprolol 50mg bid
- Zopiclone 7.5mg hs
- Sertraline 50mg hs
- Calcium 500mg tid
- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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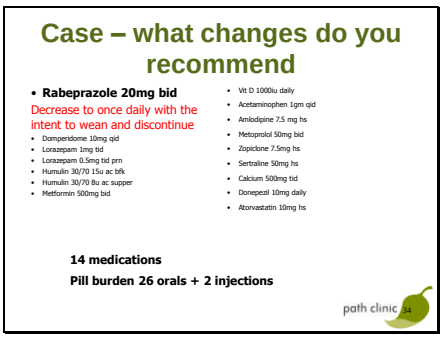

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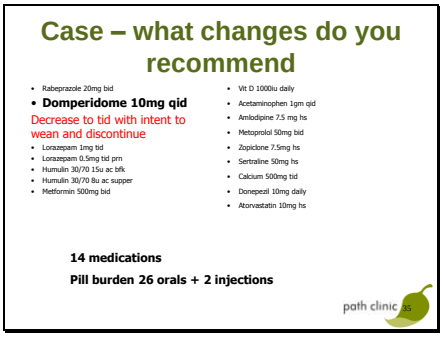

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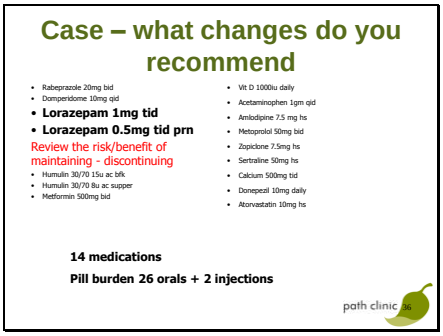

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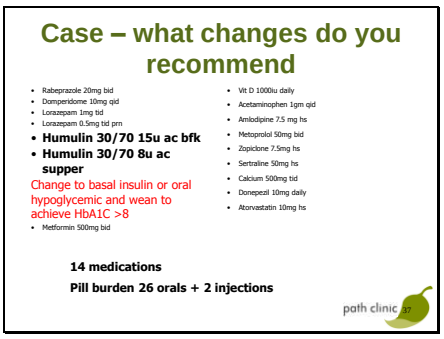

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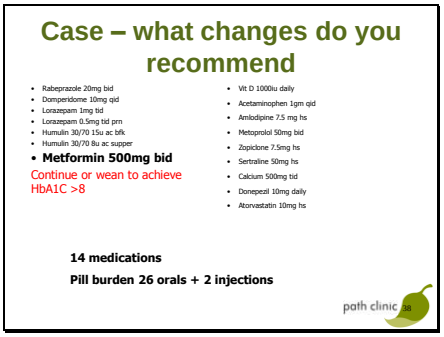

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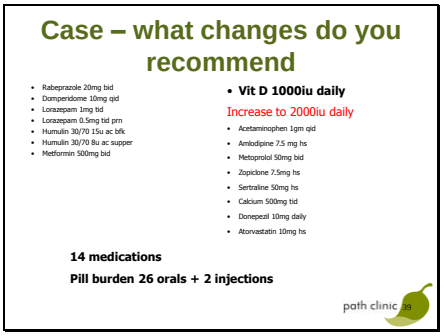

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- **Acetaminophen 1gm qid**

Re-assess; decrease if able or change to tid dosing (LA)

- Amlodipine 7.5 mg hs
- Metoprolol 50mg bid
- Zopiclone 7.5mg hs
- Sertraline 50mg hs
- Calcium 500mg tid
- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- Acetaminophen 1gm qid
- **Amlodipine 7.5 mg hs**

Wean to achieve sitting SBP >140mmhg

- Metoprolol 50mg bid
- Zopiclone 7.5mg hs
- Sertraline 50mg hs
- Calcium 500mg tid
- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- Acetaminophen 1gm qid
- Amlodipine 7.5 mg hs
- **Metoprolol 50mg bid**

Wean and discontinue to achieve sitting SBP >140mmhg

- Zopiclone 7.5mg hs
- Sertraline 50mg hs
- Calcium 500mg tid
- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- Acetaminophen 1gm qid
- Amlodipine 7.5 mg hs
- Metoprolol 50mg bid
- **Zopiclone 7.5mg hs**

Wean to discontinue.

Consider sleep hygiene

- Sertraline 50mg hs
- Calcium 500mg tid
- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- Acetaminophen 1gm qid
- Amlodipine 7.5 mg hs
- Metoprolol 50mg bid
- Zopiclone 7.5mg hs
- **Sertraline 50mg hs**

Reassess need

- Calcium 500mg tid
- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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Case – what changes do you recommend

- Rabeprazole 20mg bid
- Domperidome 10mg qid
- Lorazepam 1mg tid
- Lorazepam 0.5mg tid prn
- Humulin 30/70 15u ac bfk
- Humulin 30/70 8u ac supper
- Metformin 500mg bid
- Vit D 1000iu daily
- Acetaminophen 1gm qid
- Amlodipine 7.5 mg hs
- Metoprolol 50mg bid
- Zopiclone 7.5mg hs
- Sertraline 50mg hs
- **Calcium 500mg tid**

Discontinue

- Donepezil 10mg daily
- Atorvastatin 10mg hs

14 medications

Pill burden 26 orals + 2 injections

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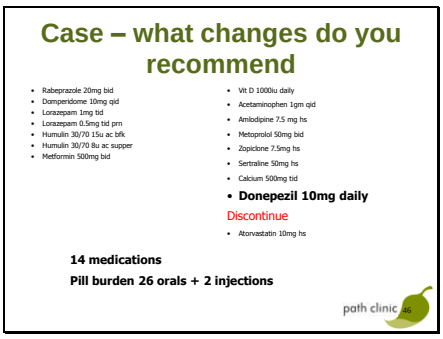

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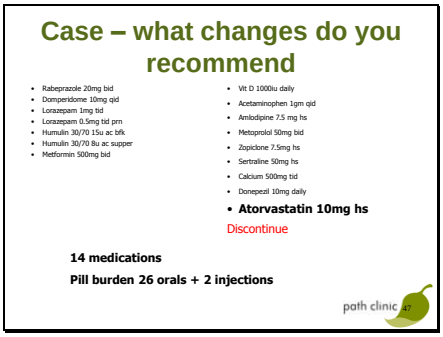

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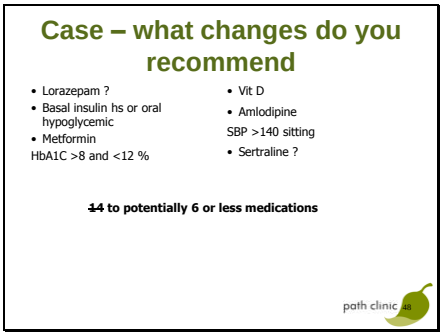

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Psychotropic Pearls

- Elders with a previous psychiatric history on significant psychotropic regimes generally do not tolerate these drugs well as they age past 75.
- Gradually reduce 1 drug at a time starting with the one you think is causing the most side effects.
- Antipsychotics in schizophrenia can generally be tapered and discontinued over 4 to 6 months.
- Relapse is rare – antipsychotics can be restarted if that occurs.

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Psychosis Arising from Dementia

- First onset psychosis in Elders is very rare (I have never seen it). Generally, psychosis is secondary to delirium or advancing dementia. Underlying cause of delirium should be sought and treated.
- No need for an antipsychotic unless the delerious Elder is highly agitated and a risk to self or others. In that case, use low dose risperidone 0.25mg daily – can titrate up to 1mg daily if necessary.
  BUT – wean and discontinue once Elder improves.

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First line treatment should always be psychosocial. Pharmacological treatment should be considered only if a marked risk to self/others or with marked suffering on the Elder's part.

- Risperidone – most potent, least sedating
- Olanzapine – moderate potency, sedating
- Quetiapine – least potent, sedating
- SSRI's can reduce agitation and may be a safer option. One study showed that citalopram was as effective as risperidone in this population – and safer.
- Once the situation settles always attempt a taper toward discontinuing of psychotropic.

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Anxiety

- First line of treatment – psychosocial
- Benzos – predispose to confusion and falls and should be avoided. Cavet – benzos very helpful for end of life palliation.
- If suffering of the Elder is intense and psychosocial interventions fail consider low dose – see dosages under depression.

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Depression

- High percent of Elders in LTC suffer depression – numbers suggest up to 50% or more and undiagnosed/untreated.
- Is this true?
- We suspect depression is being confused with dementia and incidence is not nearly that high.

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- Treatment of severe major depression should include an antidepressent.
- For less severe depression, psychosocial interventions are first-line treatment.
- Appropriate drugs for major depression:
  - Escitalopram – 5 to 10 mg
  - Sertraline – start at 25mg
  - Venlataxine – start at 37.5 mg
  - Buproprion – start at 100mg
  - Mirtazapine – start at 15 mg – can be a good choice in depression with insomnia

Principle – Start Low Go Slow!

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Insomnia

Do we really need to sleep all night?

- Older folks often require less total sleep and wake periodically in the night.
- Do not give night sedation unless absolutely necessary.
- Best Choices:
  - Trazodone – 12.5 to 100 mg hs
  - Zopiclone – 2.5 to 10 mg hs

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Always consider –

Once situation improves try to taper and/or discontinue a psychotropic.

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Special Mention: Major contributors to this presentation"
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