



Asthma in later life: challenges and opportunities

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Conflicts of Interest

- I currently hold grant funding from Pfizer International
- I have previously worked for Ortho-McNeil Inc, and The Upjohn Company of Canada
- The slides from GINA and GOLD are used with permission.

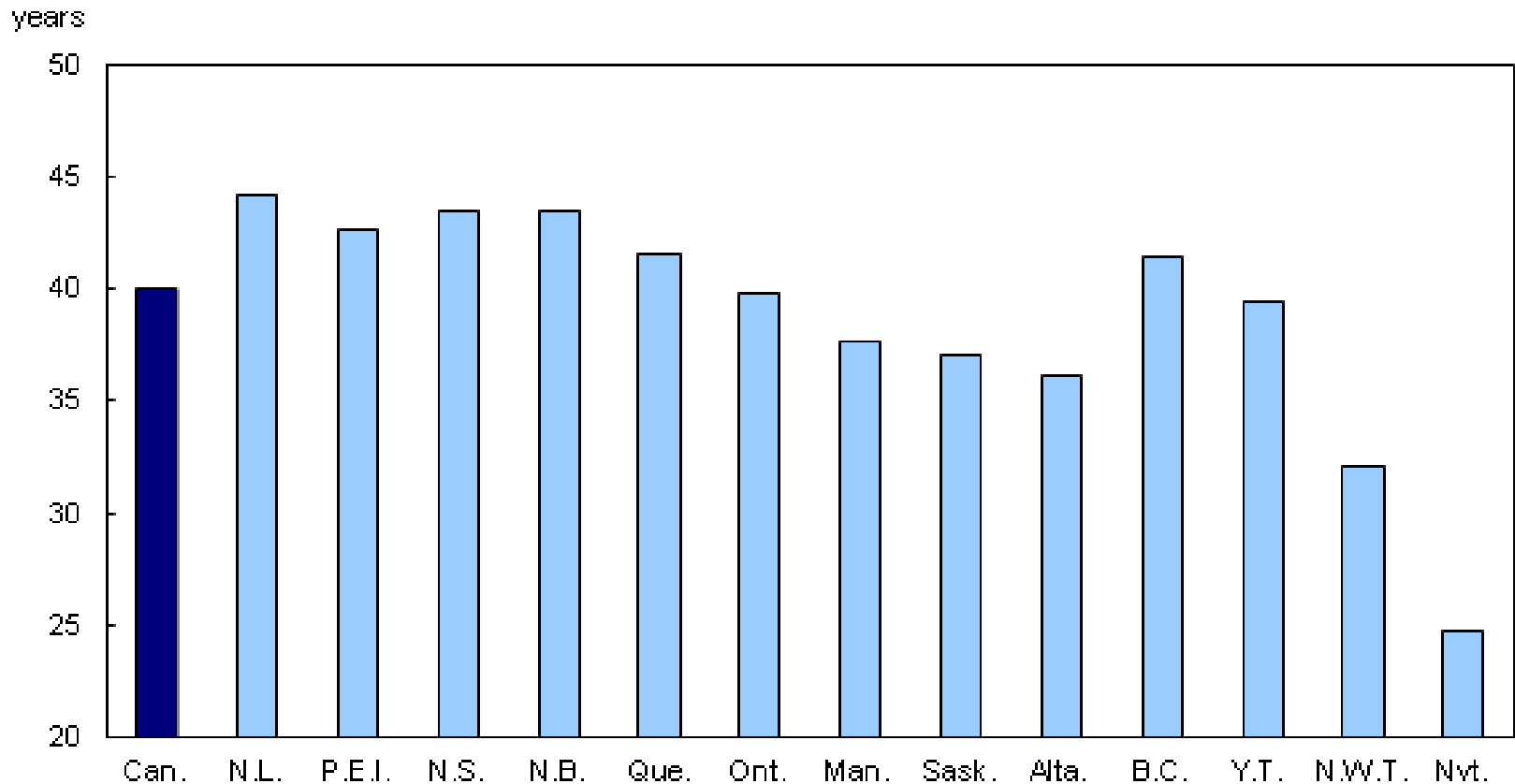
Why I am here



Outline

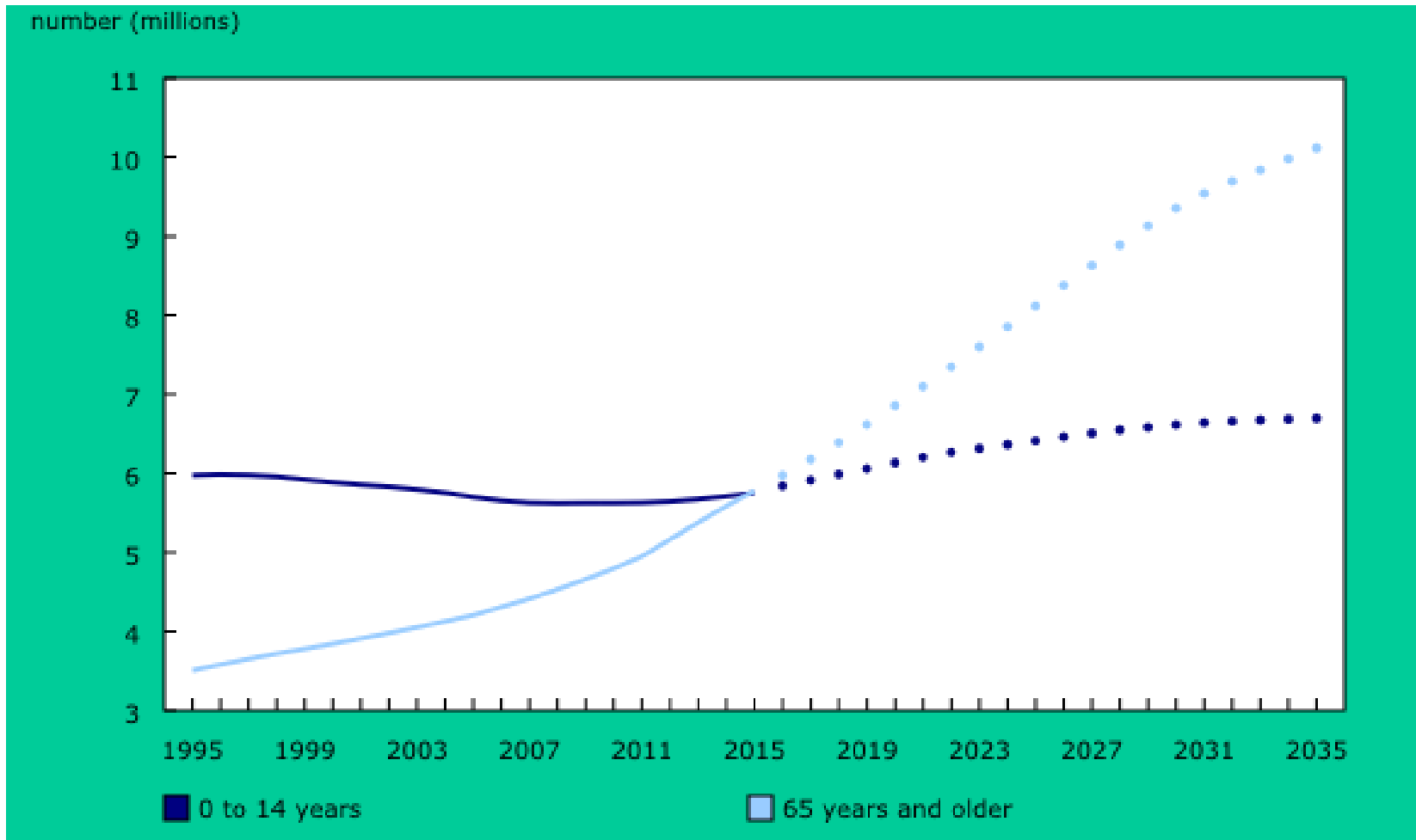
- Demographics
- Presentation
- Epidemiology
- Multimorbidity
- Inhaler technique
- Product design
- Interventions

Demographics - Canada



Median age by province, territory – July 2012

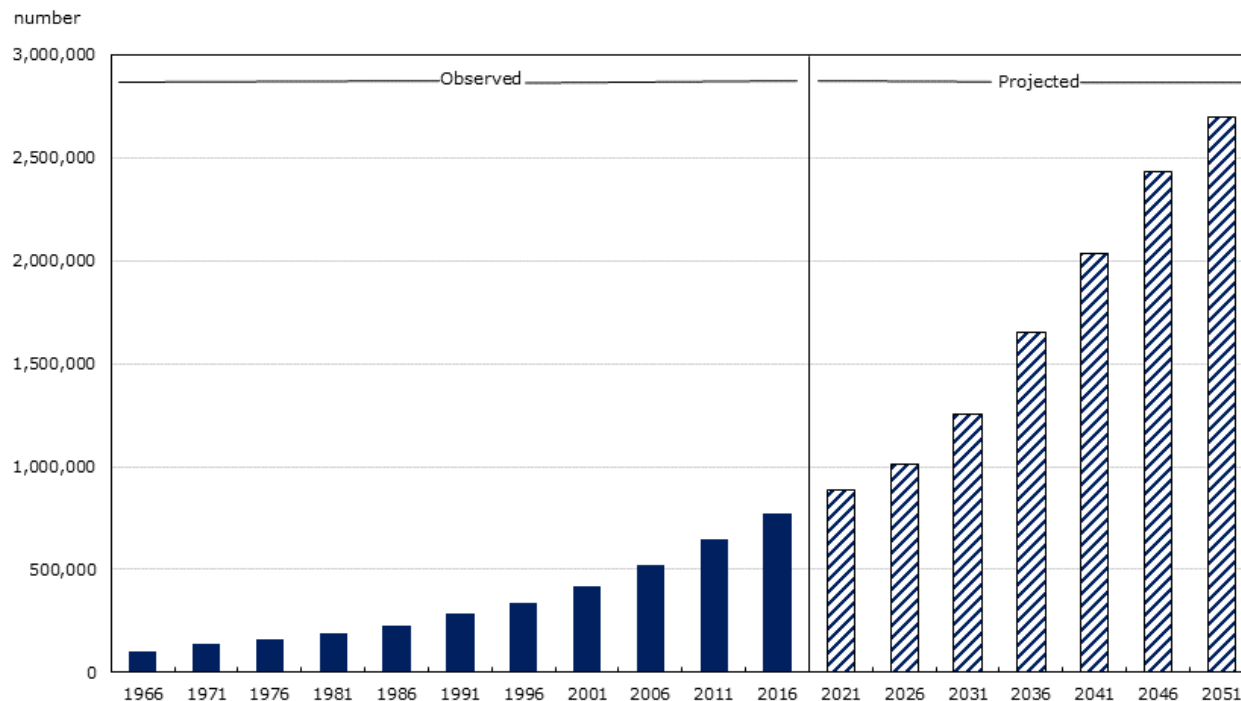
Old vs Young



Number of children aged 14 and under and of people aged 65 and over, Canada, 1921 to 2011

Demographics – 85+

Chart 1
Population aged 85 and older, Canada, 1966 to 2051



Sources: Statistics Canada, Census of Population, 1966 to 2016. Data for 2021 to 2061 are population projections from the M1 medium-growth scenario of national projections. The projection data have as a base population the population estimates based on the 2011 Census, adjusted for net undercoverage. For more information, see the report Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038) (Statistics Canada Catalogue no. 91-520-X).

Presentation in Older Adults

- New terminology
 - ACO
 - No “S” because it is not a unique syndrome
 - ACOS = Asthma and Chronic Obstructive Pulmonary Disease (COPD) Overlap Syndrome
- Recognition that older adults often have both diseases, COPD and asthma



Terminology and Presentation

Asthma

Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation. [GINA 2017]

COPD

Chronic obstructive pulmonary disease (COPD) is a common, preventable and treatable disease that is characterized by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases. [GOLD 2017]

Asthma-COPD overlap [not a definition, but a description for clinical use]

Asthma-COPD overlap (ACO) is characterized by persistent airflow limitation with several features usually associated with asthma and several features usually associated with COPD. Asthma-COPD overlap is therefore identified in clinical practice by the features that it shares with both asthma and COPD.

This is not a definition, but a description for clinical use, as asthma-COPD overlap includes several different clinical phenotypes and there are likely to be several different underlying mechanisms.

Presentation



GLOBAL
INITIATIVE
FOR ASTHMA

- For patients with respiratory symptoms, infectious diseases and non-pulmonary conditions need to be distinguished from chronic airways disease
- In patients with chronic airways disease, the differential diagnosis differs by age
 - Children and young adults: most likely to be asthma
 - Adults >40 years: COPD becomes more common, and distinguishing asthma from COPD becomes more difficult
- It is likely that a range of different underlying mechanisms and origins will be identified





Physiological Changes



- Body composition - $\uparrow$ fat
- CV - $\downarrow$ cardiac output, $\downarrow$ beta sensitivity
- Renal - $\downarrow$ GFR, $\downarrow$ nephrons
- GI - $\downarrow$ H^+ , $\uparrow$ gastric emptying time
- Hepatic - $\downarrow$ size, $\downarrow$ blood flow
- Nervous - $\downarrow$ blood flow to CNS
- Pulmonary - $\downarrow$ cilia
- Endocrine - $\downarrow$ hormonal secretions



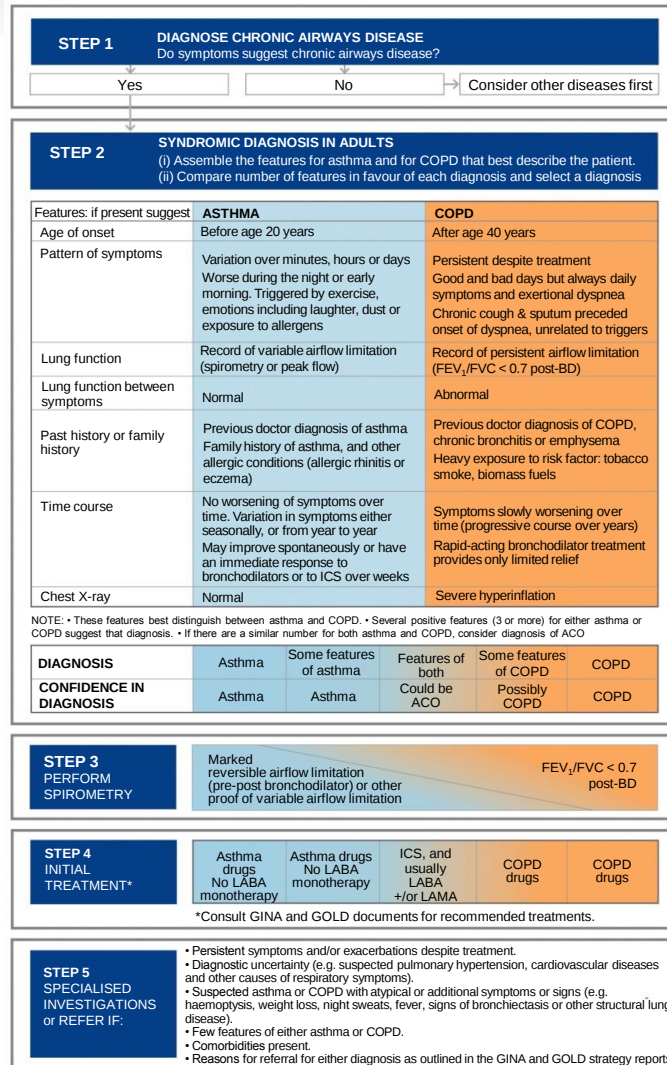
Challenges in Presentation

- ACO worse than asthma or COPD alone
 - Examples: Frequent exacerbations, mortality
- Reported prevalence of overlap varies
 - Concurrent MD-diagnosed asthma and COPD:
15–20% of patients with chronic airways disease
 - Reported rates of overlap are between 15–55% of patients with chronic airways disease, depending on the definitions used, and the population studied
- Most clinical trials and guidelines are focused on asthma or COPD alone



Management of Asthma and ACO

Stepwise approach to diagnosis and initial treatment



For an adult who presents with respiratory symptoms:

1. Does the patient have chronic airways disease?
2. Syndromic diagnosis of asthma, COPD and overlap
3. Spirometry
4. Commence initial therapy
5. Referral for specialized investigations (if necessary)



STEP 4

INITIAL
TREATMENT*

Asthma drugs
No LABA
monotherapy

Asthma drugs
No LABA
monotherapy

ICS and
consider LABA
+/-or LAMA

COPD drugs

COPD drugs

*Consult GINA and GOLD documents for recommended treatments.

Step 4 – Commence initial therapy



- Initial pharmacotherapy choices are based on both efficacy and safety
- If syndromic assessment suggests asthma as single diagnosis
 - Start with low-dose ICS
 - Add LABA and/or LAMA if needed for poor control despite good adherence and correct technique
 - Do not give LABA alone without ICS
- If syndromic assessment suggests COPD as single diagnosis
 - Start with bronchodilators or combination therapy
 - Do not give ICS alone without LABA and/or LAMA
- If differential diagnosis is equally balanced between asthma and COPD, i.e. **asthma-COPD overlap**
 - **Start treatment as for asthma, pending further investigations**
 - Start with ICS at low or moderate dose
 - Usually also add LABA and/or LAMA, or continue if already prescribed

Step 4 – Commence initial therapy



- For all patients with chronic airflow limitation:
 - Treat modifiable risk factors including advice about smoking cessation
 - **Treat comorbidities**
 - Advise about non-pharmacological strategies including physical activity, and, for COPD or asthma-COPD overlap, pulmonary rehabilitation and **vaccinations**
 - Provide appropriate self-management strategies
 - Arrange regular follow-up

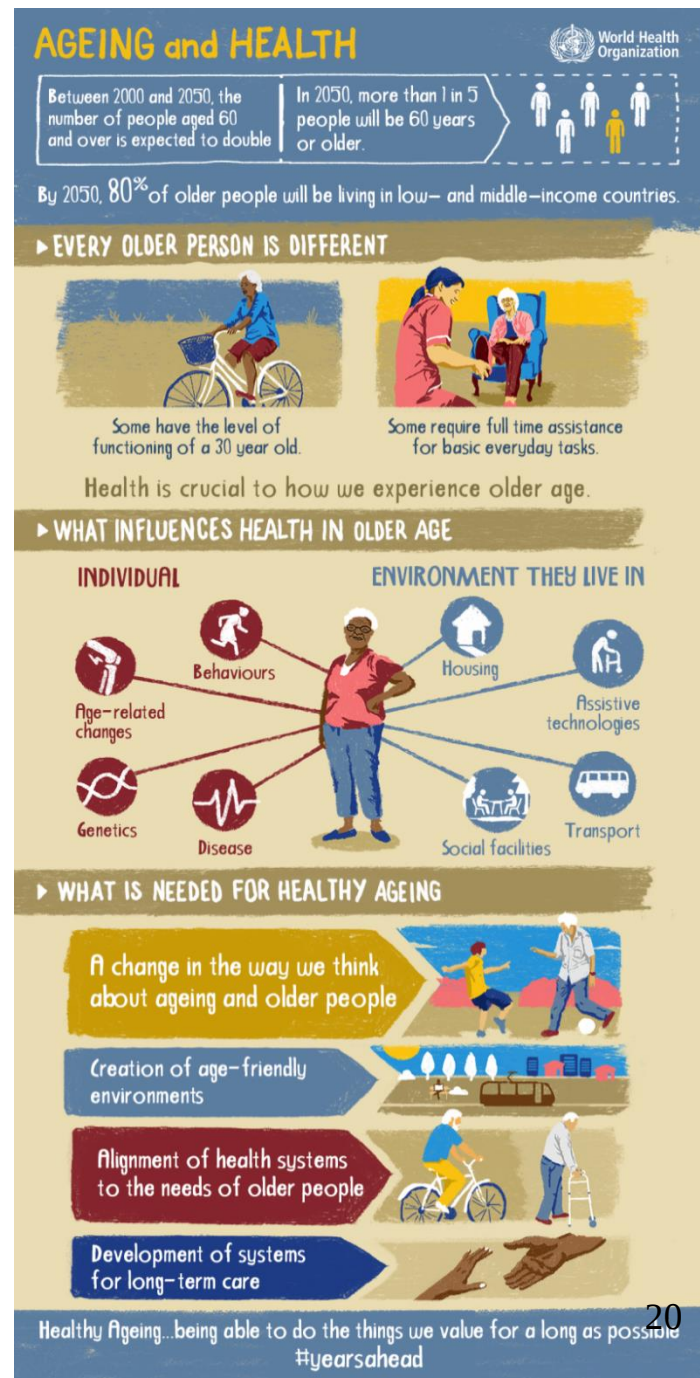


STEP 5

SPECIALISED INVESTIGATIONS or REFER IF:

- Persistent symptoms and/or exacerbations despite treatment.
- Diagnostic uncertainty (e.g. suspected pulmonary hypertension, cardiovascular diseases and other causes of respiratory symptoms).
- Suspected asthma or COPD with atypical or additional symptoms or signs (e.g. haemoptysis, weight loss, night sweats, fever, signs of bronchiectasis or other structural lung disease).
- Few features of either asthma or COPD.
- **Comorbidities present.**
- Reasons for referral for either diagnosis as outlined in the GINA and GOLD strategy reports.

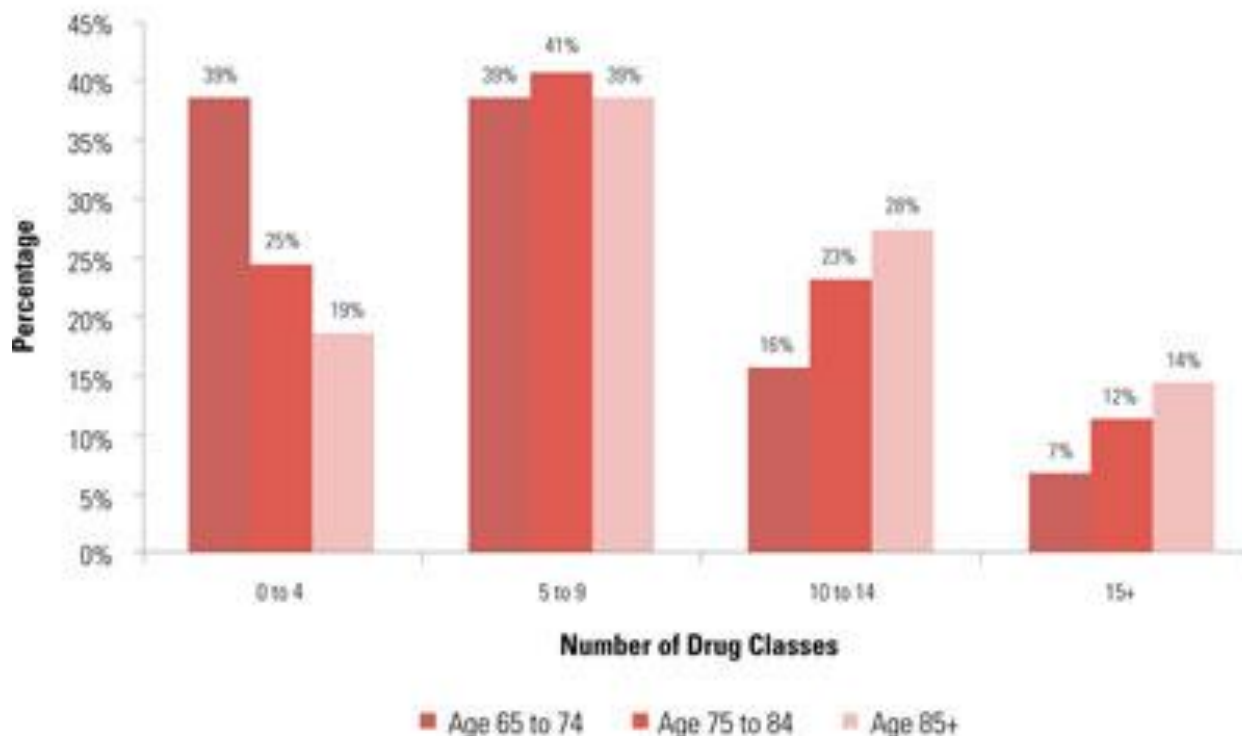
The Complexity of Caring for Older Adults



Pharmacoepidemiology

FIGURE 2.

Percentage of claims for different drug classes among seniors on public drug programs, by age groups, 2010–2011*



* The seven provinces submitting data to the National Prescription Drug Utilization Information System Database as of March 2011: Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia and Prince Edward Island.
Source: National Prescription Drug Utilization Information System Database, Canadian Institute for Health Information, 2010–2011.

Health System Use

Seniors account for approximately

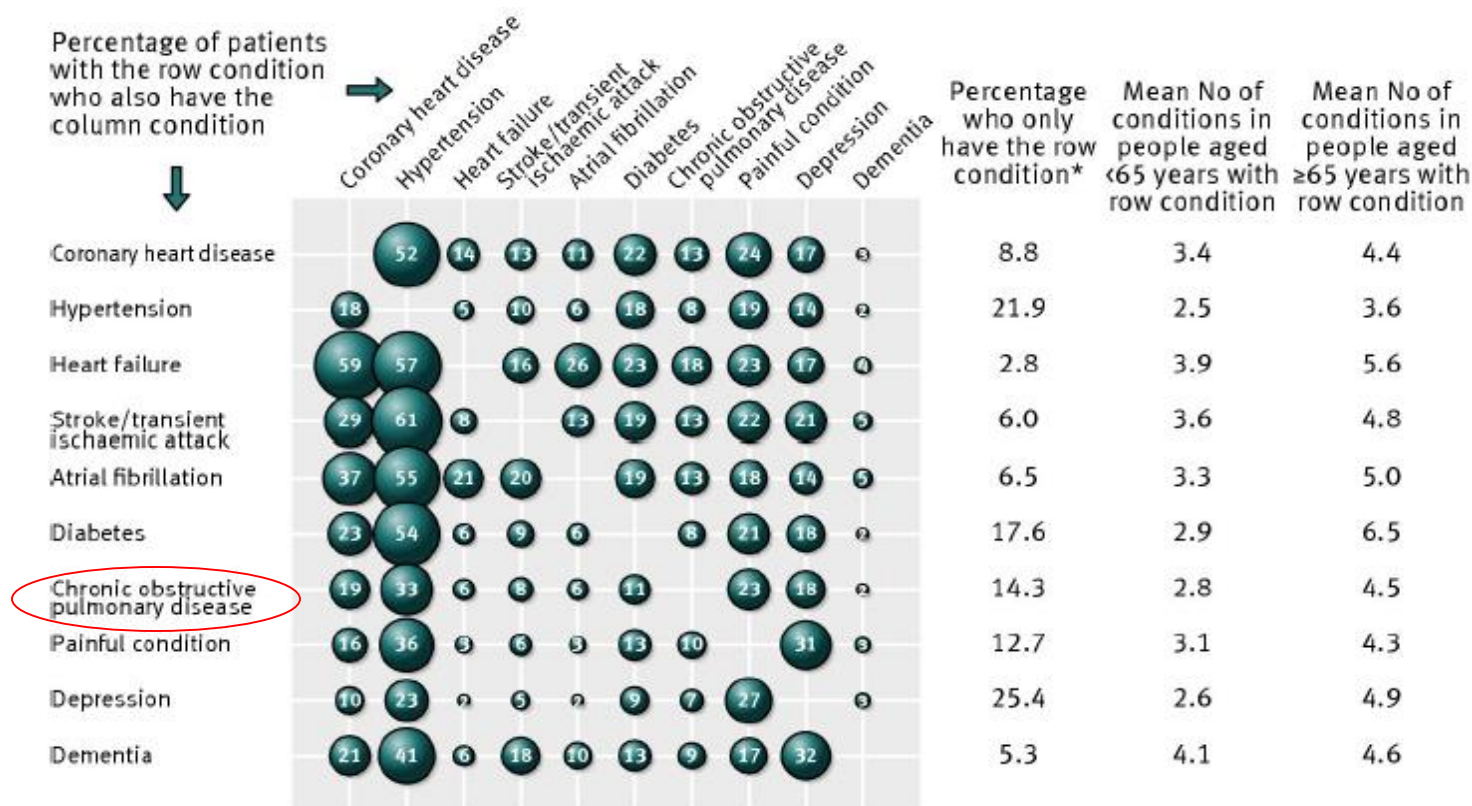
- 16% of the population
- 25% MD visits
- 40% of hospital stays
- 45% of healthcare spending in Canada
- Disproportionate use of public funding for medications

A Example of Polypharmacy



Multimorbidity

Multimorbidity



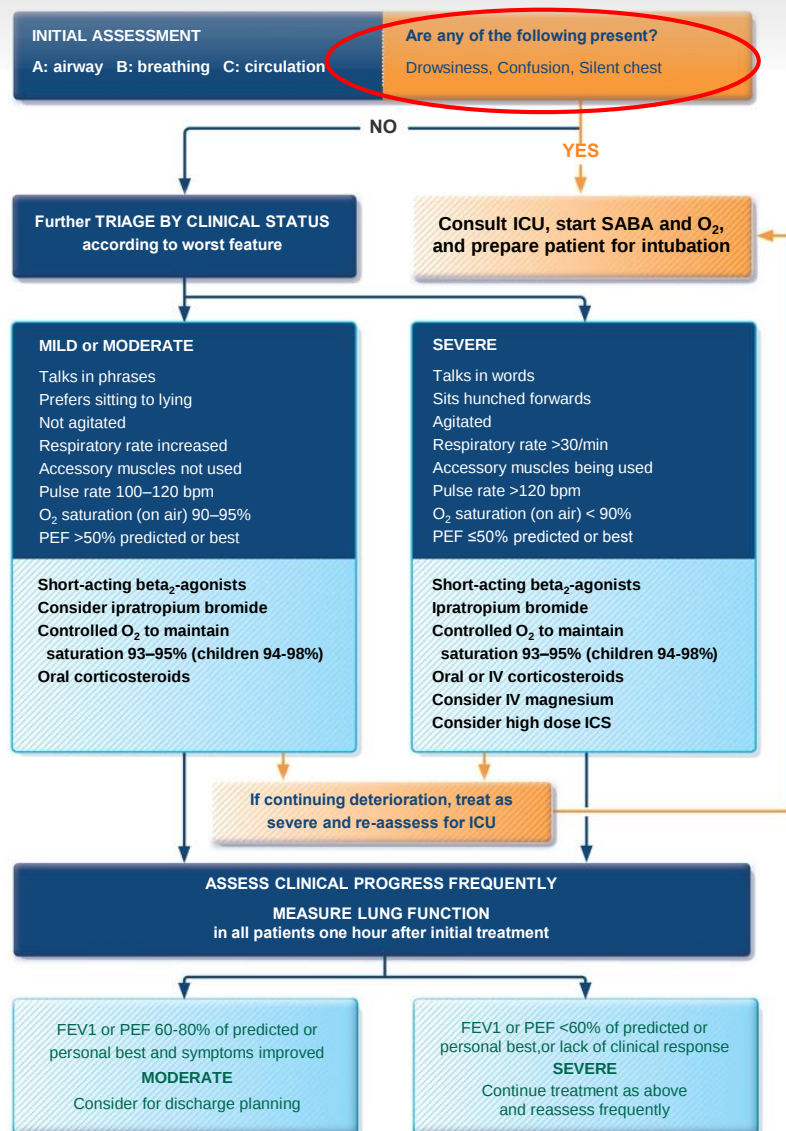
* Percentage who do not have one of 39 other conditions in the full count

Comorbidity of 10 common conditions among UK primary care patients²

Assessment of asthma

1. Asthma control - two domains
 - Assess symptom control over the last 4 weeks
 - Assess risk factors for poor outcomes, including low lung function
2. Treatment issues
 - Check inhaler technique and adherence
 - Ask about side-effects
 - Does the patient have a written asthma action plan?
 - What are the patient's attitudes and goals for their asthma?
3. Comorbidities
 - Think of rhinosinusitis, GERD, obesity, obstructive sleep apnea, depression, anxiety
 - These may contribute to symptoms and poor quality of life

Managing exacerbations in acute care settings



Multimorbidity

- Boyd C, et al. Clinical Practice Guidelines and Quality of Care for Older Patients With Multiple Comorbid Diseases. Implications for Pay for Performance. JAMA 2005;294;716.
- Criticisms of Guidelines (CPG)
 - Applicability to older adults
 - Short vs long-term goals
 - Quality of scientific evidence
 - Incorporation of scientific evidence
 - Lack of patient-centred domains (e.g. cost, burden, convenience)₈

Multimorbidity - Case

- Applying individual disease guidelines to a patient with five chronic conditions, what would her regimen be?
- 79-year-old woman with osteoporosis, osteoarthritis, type 2 diabetes mellitus, hypertension, and **chronic obstructive pulmonary disease**, all of moderate severity

Multimorbidity - Case

Time	Medications	Non-pharmacologic Therapy	All Day	Periodically
07	Ipratropium MDI Alendronate 70 mg Qweek	Check feet Sit upright 30 min Check blood sugar	Joint protection Energy conservation Exercise (non-weight bearing if severe foot disease, weight bearing for osteoporosis); muscle strengthening exercises, aerobic exercise, ROM Avoid environmental exposures that might exacerbate COPD Wear appropriate footwear Salbutamol MDI PRN Limit alcohol Maintain normal body weight	Pneumonia vaccine Yearly influenza vaccine All provider visits: evaluate self-monitoring of glucose, foot exam, BP Quarterly: A1C, biannual LFTs Yearly Cr, lytes, microalbuminuria, cholesterol Referrals: Pulmonary Rehab, PT, DEXA q2y, eye exam qyearly Medical nutrition therapy Patient education – high-risk foot conditions, foot care, foot wear, OA, COPD medication and delivery system training, DM
08	Eat breakfast HCTZ Lisinopril Glyburide ECASA Metformin Naproxen Omeprazole Calcium Vitamin D	2.4 g Na, 90mmol K, adequate Mg, low cholesterol and saturated fat, medical nutrition therapy for DM, DASH		
12	Eat lunch Ipratropium MDI Calcium Vitamin D	Diet as above		
17	Eat dinner	Diet as above		
19	Ipratropium MDI Metformin Naproxen Calcium Lovastatin			
23	Ipratropium MDI			

Multimorbidity Case Example

- The patient would take:
 - 12 separate medications with a medication complexity score of 14.51
 - This regimen requires 19 doses per day, taken at 5 times during a typical day, assuming that salbumatol “as needed” is taken twice daily, plus weekly alendronate.
 - Non-pharm: 14 non-pharmacological activities are recommended for this patient if all nutritional recommendations are pooled into one.

Multimorbidity Case Example

- Additional Interventions
 - The CPG also recommend one-time educational and rehabilitative interventions, and monitoring of the patient's chronic diseases from daily to biennial intervals depending on the type of monitoring.
 - It theoretically would be possible to compress all monitoring into 2 to 4 primary care visits and 1 ophthalmologic visit per year.
- Interactions
 - Medications and a disease, and between food and medications.
 - Recommendations may also contradict one another.

Multimorbidity

AGS 2012

1. Patient preferences
2. Interpreting the evidence
3. Prognosis
4. Clinical feasibility
5. Optimizing therapies and care plans

GINA Guidelines and Multimorbidity

- Side-effects of oral corticosteroids
 - When prescribing short-term OCS, remember to advise patients about **common side-effects** (sleep disturbance, increased appetite, reflux, mood changes)

GINA Guidelines and Multimorbidity

- All patients should have a written asthma action plan
 - The aim is to show the patient how to recognize and respond to worsening asthma
 - It should be **individualized for the patient's medications**, level of asthma control and health literacy
 - Based on symptoms and/or PEF (children: only symptoms)
- The action plan should include:
 - **The patient's usual asthma medications**
 - When/how to increase reliever and controller or start OCS
 - How to access medical care if symptoms fail to respond
- Why?
 - When combined with self-monitoring and regular medical review, action plans are highly effective in reducing asthma mortality and morbidity

GINA Guidelines and Multimorbidity

- Monitoring
 - Consider the benefit versus the burden
 - Frequency of measurement of lung function
 - “Lung function should be assessed at diagnosis or start of treatment; after 3–6 months of controller treatment to assess the patient’s personal best FEV₁; and **periodically** thereafter”
 - ‘Periodically’ has been clarified
 - Most adults: lung function should be recorded at least every 1-2 yrs
 - More frequently in higher risk patients



GOLD Guidelines and Multimorbidity

Non-Pharmacologic Recommendations:

- Education and self-management
- Physical activity
- Pulmonary rehabilitation programs
- Exercise training
- Self-management education
- End of life and palliative care
- Nutritional support
- Vaccination
- Oxygen therapy

Device Use

Short-acting Insulin		Long-acting Insulin		Combination Insulin	
U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	Combination Insulin (U-100)	Combination Insulin (U-100)
					
U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	Combination Insulin (U-100)	Combination Insulin (U-100)
					
U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	Combination Insulin (U-100)	Combination Insulin (U-100)
					
U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	U100 Regular Insulin (U-100)	U100 NPH Insulin (U-100)	Combination Insulin (U-100)	Combination Insulin (U-100)
					

ASTHMA MEDICATIONS

Controller Medications

Long-Acting Beta₂ Agonists (LABAs)

These medications are used to prevent asthma symptoms and attacks. They are not for quick relief.

- Formoterol (Symbicort)**: A combination of a LABA and an inhaled corticosteroid. It is used for long-term control of asthma.
- Budesonide/Formoterol (Symbicort)**: A combination of a LABA and an inhaled corticosteroid. It is used for long-term control of asthma.
- Formoterol (Foradil)**: A LABA used for long-term control of asthma.
- Budesonide/Formoterol (Symbicort)**: A combination of a LABA and an inhaled corticosteroid. It is used for long-term control of asthma.

Inhaled Corticosteroids (ICS)

These medications are used to reduce inflammation in the airways and prevent asthma symptoms and attacks.

- Budesonide (Pulmicort)**: An ICS used for long-term control of asthma.
- Fluticasone (Flovent)**: An ICS used for long-term control of asthma.
- Fluticasone (Arnuity)**: An ICS used for long-term control of asthma.
- Budesonide (Pulmicort)**: An ICS used for long-term control of asthma.

Combination Medications

Long-Acting Beta₂ Agonists (LABAs) and Inhaled Corticosteroids (ICS)

These medications combine a LABA and an ICS to provide both long-term control and quick relief.

- Formoterol/Budesonide (Symbicort)**: A combination of a LABA and an ICS. It is used for long-term control of asthma.
- Formoterol/Budesonide (Symbicort)**: A combination of a LABA and an ICS. It is used for long-term control of asthma.
- Formoterol/Budesonide (Symbicort)**: A combination of a LABA and an ICS. It is used for long-term control of asthma.
- Formoterol/Budesonide (Symbicort)**: A combination of a LABA and an ICS. It is used for long-term control of asthma.

Rescue Medications

Short-Acting Beta₂ Agonists (SABAs)

These medications are used to quickly relieve asthma symptoms and attacks.

- Albuterol (Proventil)**: A SABA used for quick relief of asthma symptoms.
- Albuterol (Xopenex)**: A SABA used for quick relief of asthma symptoms.
- Albuterol (Proventil)**: A SABA used for quick relief of asthma symptoms.
- Albuterol (Xopenex)**: A SABA used for quick relief of asthma symptoms.

Anticholinergics

These medications are used to relax the muscles in the airways and provide quick relief.

- Tiotropium (Spiriva)**: An anticholinergic used for long-term control of asthma.
- Tiotropium (Spiriva)**: An anticholinergic used for long-term control of asthma.
- Tiotropium (Spiriva)**: An anticholinergic used for long-term control of asthma.
- Tiotropium (Spiriva)**: An anticholinergic used for long-term control of asthma.

Systemic Corticosteroids

These medications are used to quickly relieve severe asthma symptoms and attacks.

- Corticosteroids (Oral)**: Systemic corticosteroids used for quick relief of severe asthma symptoms.
- Corticosteroids (Injectable)**: Systemic corticosteroids used for quick relief of severe asthma symptoms.
- Corticosteroids (Oral)**: Systemic corticosteroids used for quick relief of severe asthma symptoms.
- Corticosteroids (Injectable)**: Systemic corticosteroids used for quick relief of severe asthma symptoms.

Important Information: Always use your asthma medications as directed by your healthcare provider. Do not stop taking your controller medications without consulting your healthcare provider. If you experience severe symptoms or a life-threatening asthma attack, seek medical attention immediately.

Assessment of asthma

1. Asthma control - two domains
 - Assess symptom control over the last 4 weeks
 - Assess risk factors for poor outcomes, including low lung function
2. Treatment issues
 - Check inhaler technique and adherence
 - Ask about side-effects
 - Does the patient have a written asthma action plan?
 - What are the patient's attitudes and goals for their asthma?
3. Comorbidities
 - Think of rhinosinusitis, GERD, obesity, obstructive sleep apnea, depression, anxiety
 - These may contribute to symptoms and poor quality of life

How to distinguish between uncontrolled and severe asthma



Provide hands-on inhaler skills training



Choose

- Choose an appropriate device before prescribing. Consider medication options, arthritis, **patient skills** and cost. For ICS by pMDI, prescribe a spacer
- Avoid multiple different inhaler types if possible

Check

- **Check technique at every opportunity – “Can you show me how you use your inhaler at present?”**
- Identify errors with a device-specific checklist

Correct

- **Give a physical demonstration to show how to use the inhaler correctly**
- **Check again (up to 2-3 times)**
- **Re-check inhaler technique frequently, as errors often recur within 4-6 weeks**

Confirm

- Can you demonstrate correct technique for the inhalers you prescribe?
- Brief inhaler technique training improves asthma control

Check adherence with asthma medications

- Poor adherence:
 - Is very common: *it is estimated that 50% of adults and children do not take controller medications as prescribed*
 - Contributes to uncontrolled asthma symptoms and risk of exacerbations and asthma-related death
- Contributory factors
 - Unintentional (e.g. forgetfulness, cost, confusion) and/or
 - Intentional (e.g. no perceived need, fear of side-effects, cultural issues, cost)
- How to identify patients with low adherence:
 - Ask an empathic question, e.g. *“Do you find it easier to remember your medication in the morning or the evening?”*, or *“Would you say you are taking it 3 days a week, or less, or more?”*
 - Check prescription date, label date and dose counter
 - Ask patient about their beliefs and concerns about the medication

Choosing between controller options – individual patient decisions



Decisions for individual patients

Use shared decision-making with the patient/parent/carer to discuss the following:

1. Preferred treatment for symptom control and for risk reduction
2. Patient characteristics (phenotype)
 - Does the patient have any known predictors of risk or response? (e.g. smoker, history of exacerbations, blood eosinophilia)
3. Patient preference
 - What are the patient's goals and concerns for their asthma?
4. Practical issues
 - **Inhaler technique** - can the patient use the device correctly after training?
 - **Adherence**: how often is the patient likely to take the medication?
 - **Cost**: can the patient afford the medication?

Strategies to improve adherence in asthma



- Only a few interventions have been studied closely in asthma and found to be effective for improving adherence
 - Shared decision-making
 - Comprehensive asthma education with nurse home visits
 - Inhaler reminders for missed doses
 - Reviewing patients' detailed dispensing records

Adherence

- How adherent are we?



Adherence

- Unintentional
 - Forgetting medications
- Functional:
 - Trouble opening containers
 - Trouble swallowing medications
- Intentional:
 - Hoarding
 - Altering doses based on symptoms
 - Reducing dosage to save money

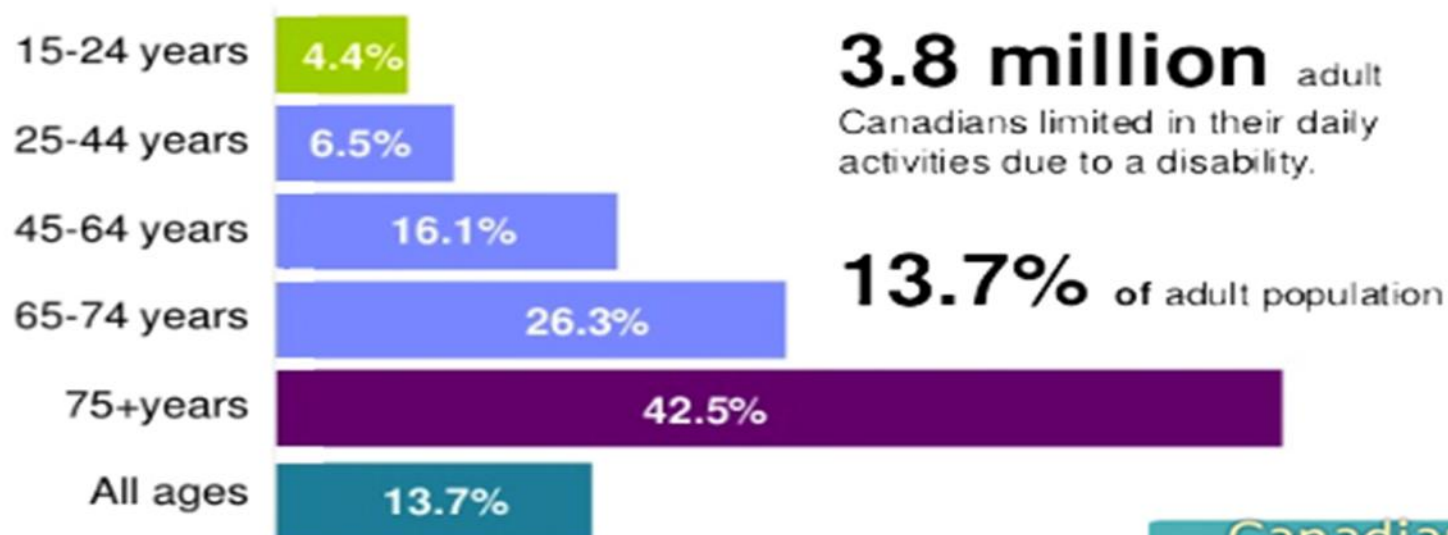
Factors Improving Compliance

- Belief medication was important
- Belief medication was effective
- Regularly attending same clinic, pharmacy

Function - Dependence

Impairment	Mild	Mod	Severe	Total
Age				
45-64	4%			4%
65-74	10%	2%		12%
75-84	19%	6%	2%	27%
85+	32%	15%	5%	52%

3.8 million Canadians with disabilities



Source: Statistics Canada. [Canadian Survey on Disability 2012](#)
(Cat. No. 89-654-XWE)



Medication Management

- Complexity of the management process:
 - Ordering
 - Picking up
 - Sorting
 - Packaging
 - Reminding/cueing
 - Administration
 - Monitoring



Management in the Home

- Storage
- Hoarding
- Sharing



Administration Ability

- How often are you asked?
- How often do you demonstrate?
- Abilities required:
 - Cognition
 - Manual dexterity
 - Vision

Medication Regimen Complexity Index

- Part A - type of dosage form
- Part B – dosing frequency
- Part C – additional directions



- Examples:
 - Spiriva Handihaler/Respimat inhale once daily
 - Tylenol No.3 1-2 tabs q4-6h PRN
 - Ramipril 10 mg daily₅₃
 - Insulin sliding scale, with monitoring QID

Management Interventions

- Suggest use of intuitive products
 - Participate in the design of products
- Use of calendar packaging
 - Evidence is variable
 - Not applicable for devices
- Simplification of the regimen
- Education
- Home care assessment/support



Inhalers

- “Metered dose inhalers are effective if they are used correctly.”

– Anna Murphy, 2002

Studies of Inhaler Use

- 1990's -2000's
 - Focus on CFC-propellant MDI's

Pharma Ingenuity and Creativity



Inhaler Technique

- N=56 medical interns
- Correct use of MDI:
 - Pre-test = 5%
 - Lecture + demonstration = 13%
 - Intensive 1:1 session = 73%
- Greatest difficulty: coordinating actuation with inhalation

Inhaler Technique

- N = 3955 asthma patients
 - 71% misusers of the device
 - 47% of the misusers had poor coordination
 - 15% rated their technique as poor or very poor
- reflected by:
 - increased beta-agonist use
 - worsening of asthma
 - serious exacerbations

Inhaler Technique

- Zanamivir Diskhaler
- N=73 elderly patients unfamiliar with the Diskhaler
- Results:
 - 50% had difficulty with inhaler after training
 - 65% had difficulty using the device 1 day later

Inhaler Technique

- N=71 elderly subjects
- Results:
 - 62% demonstrated correct technique immediately following instruction
 - 56% demonstrated correct technique at 1 week

Recent Studies

- New devices
- Same problems

Inhaler Technique

- N=47 inpatients
- 70% made at least one critical error while demonstrating their inhaler technique
- Number of critical errors/patient = 1.6

Inhaler Technique

- Children vs older adults
- Methods: 10-step protocol
 - Assessed inhaler technique in 135 pediatric asthma patients and 128 adult asthma patients.
- Results:
 - The most common error among the pediatric patients was failing to execute a 10-s breath-hold after inhalation
 - The most common error among the adult patients was failing to exhale fully before using the inhaler.

Inhaler Technique

Age (years)	Correct technique	Incorrect technique
Pediatric patients	n	n
5-6	5	3
7-8	12	1
9-10	14	7
11-12	19	11
13-18	49	14
%	73.4	26.6 [*]
Adult patients		
19-30	9	3
31-45	0	6
46-60	1	24
61-75	3	48
76-90	1	35
%	9.4	90.6 [*]

Frequency of correct/incorrect inhaler technique, by age group.

*p < 0.05 (equivalence test for two proportions).

Inhaler Technique

- Some research tells us that patients may prefer or perform better with one device over another

Inhaler Technique

- Overall:
- Estimates of appropriate use of a device:
 - 30% of elderly patients cannot use an inhaler
 - 40% have some difficulty using an inhaler
 - TOTAL = 70% of patients do not fully benefit from their inhalers

Inhaler Technique

Poor technique associated with many factors, including:

- low cognitive (MMSE) score
- low planning/executive function (EXIT) score
- arthritis
- weakness
- poor dexterity
- poor vision
- cerebrovascular disease
- lack of instruction

Design and Function

- Universal Design
 1. Equitable use
 2. Flexibility
 3. Simple and intuitive
 4. Perceptible information
 5. Tolerance for error
 6. Low physical effort
 7. Size and space for approach and use

Design and Function

- An example of Universal Design
 - Bobby McFerrin
- <https://www.youtube.com/watch?v=Hodp2esSV9E>

Regulatory Requirements

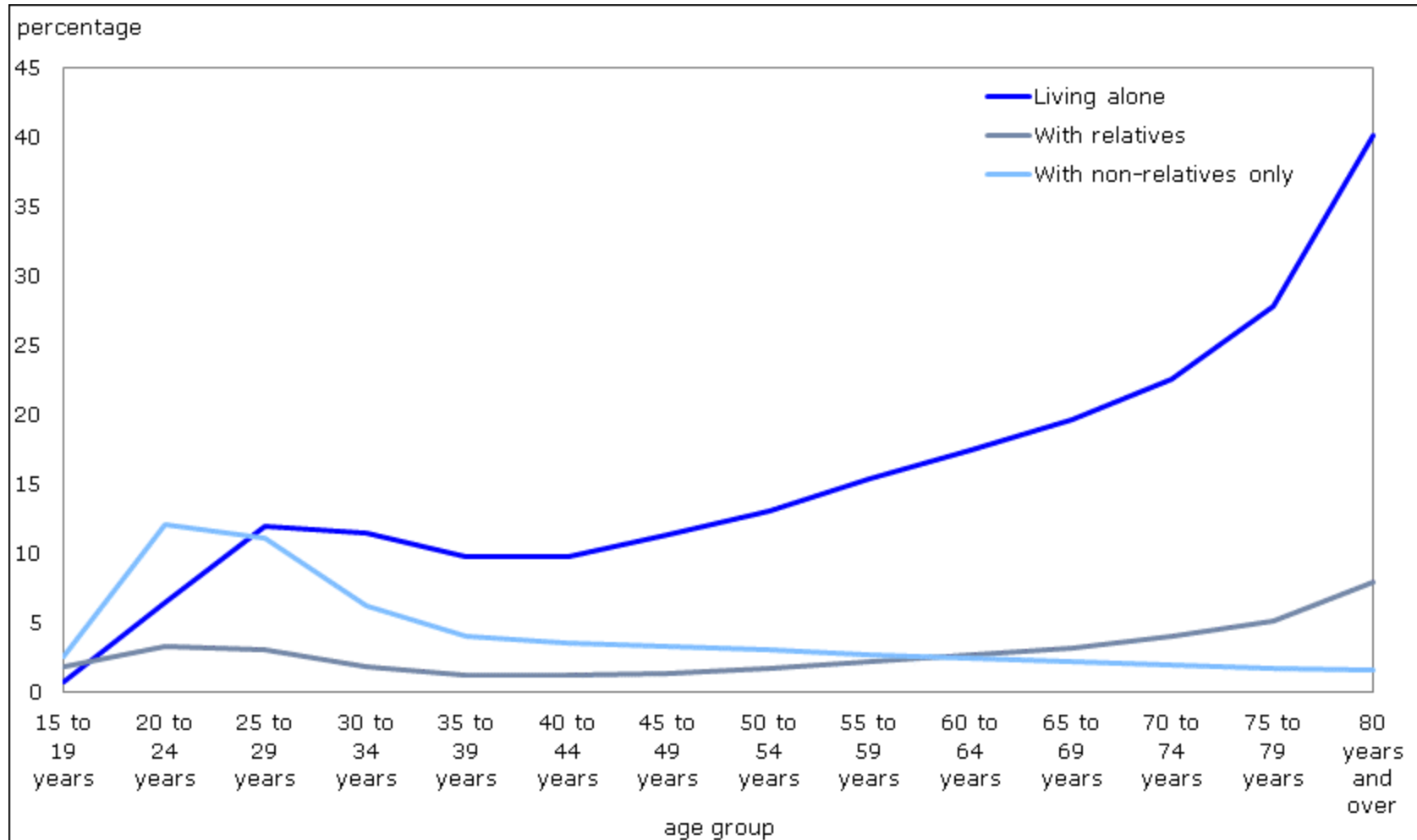
- “The term Medical Devices, as defined in the *Food and Drugs Act*, covers a wide range of health or medical instruments used in the treatment, mitigation, diagnosis or prevention of a disease or abnormal physical condition.”
- Examples:
 - bed rails
 - pacemakers
 - artificial heart valves
 - hip implants
 - synthetic skin
 - medical laboratory diagnostic instruments
 - test kits for diagnosis
 - contraceptive devices

Additional Challenges for Older Adults

Income

Population	Percent in low income after tax
All Canadians	8.8
65 and older	5.2
Males 65 and older	3.8
Females 65 and older	6.4
Unattached males 65 and older	12.2
Unattached females 65 and older	16.1

Living Alone

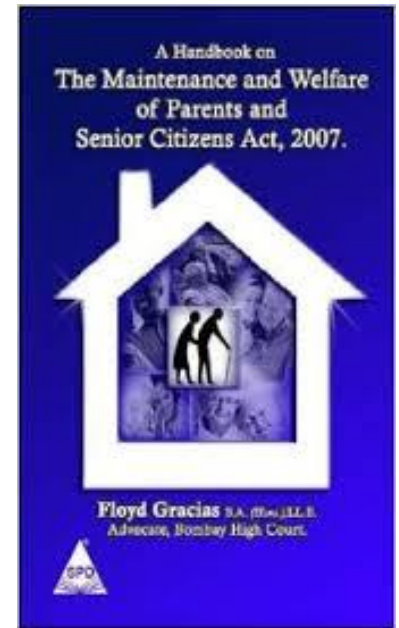


Examples of barriers to implementation

- Health care providers
 - Insufficient knowledge of recommendations
 - Lack of agreement with or confidence in recommendations
 - Resistance to change
 - External barriers (organizational, policies, cost)
 - Lack of time and resources
 - Medico-legal issues
- Patients
 - Low health literacy
 - Insufficient understanding of asthma and its management
 - Lack of agreement with recommendations
 - Cultural and economic barriers
 - Peer influence
 - Attitudes, beliefs, preferences, fears and misconceptions

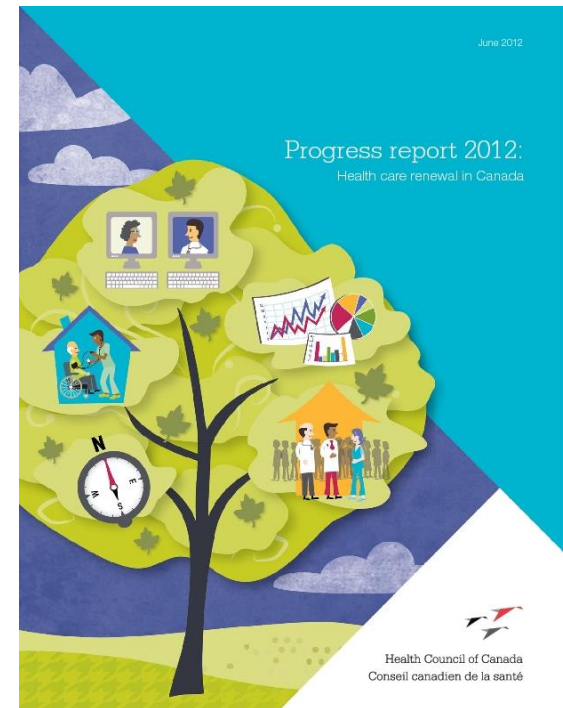
Addressing Health Care Challenges

- Demand a Plan
- Resources
- Living settings
- Mandating supports
- Engaging community (health/non-health)



Policy and Seniors' Health

- Health issues that need to be addressed:
 - Social connectedness
 - Physical activity
 - Healthy eating
 - Falls prevention
 - Tobacco control
- Health System issues
 - Access to care
 - Knowledge of seniors' health
 - Data



Challenges with Information Delivery

Reducing the impact of impaired health literacy

- Health literacy affects health outcomes, including in asthma
 - ‘The degree to which individuals have the capacity to obtain, process and understand basic health information and services to make appropriate health decisions’ (*Rosas-Salazar, JACI 2012*)
- Strategies for reducing the impact of impaired health literacy
 - Prioritize information (most important to least important)
 - Speak slowly, avoid medical language, simplify numeric concepts
 - Use anecdotes, drawings, pictures, tables and graphs
 - Use the ‘teach-back’ method – ask patients to repeat instructions
 - Ask a second person to repeat the main messages
 - Pay attention to non-verbal communication

Health Literacy

- Specific for inhalers
- Mean baseline scores for inhaler technique:
 - 12.2 +/- 2.2 steps correct for the control group
 - 13.4 +/- 1.3 for the low health-literacy group of the 18 maximum points
- Change in inhaler technique score:
 - control group was 1.0 +/- 1.8
 - low health-literacy group was 2.1 +/- 2.7
 - (P = .03).

Medication Information

- What is most prominent on a label?
- Colour/size of information

Old Dot Matrix Printers - Outpatient Labels	New Thermal Printers - Outpatient Labels
Simpson, Marjorie T8CC OPU 06/09/29 055 E987654-1 AB467262 Qty: 180 TAMOXIFEN 20 mg TAB (ASZ) Take one (1) tablet daily. DR: Smith, Darbie REF: 6 Tom Baker Cancer Centre (403) 521-3764 1331-29th Street NW, Calgary, AB	Marjorie Simpson Rxd# AB467390 E987654 2010 APR 01 TAMOXIFEN 20 mg TAB Take ONE (1) tablet daily. Qty: 180 tablet (DIN#: 02048465) (ASZ) Qty Remaining: 180 tablet Dr. Smith, Darbie Cross Cancer Institute 780-432-8710 11560 University Ave, Edmonton, AB, T6G 1Z2
Milloy-Jones, Sheldo T8CC OPU 06/09/29 055 E987653-1 AB467261 Qty: 945 TEMOZOLOMIDE 135 mg (SCC) Take the contents of one bubble as a single dose daily, 1 hour before radiotherapy (RT) starting on Aug.25/08 and continuing until completion of RT. (On non-RT days, take capsules in the morning). Week 5 of 6 Daily dose: 135 mg (1 x 100 mg, 1 x 20 mg, 3 x 5 mg) DR: Jones, Oakley REF: 35 Tom Baker Cancer Centre (403) 521-3764 1331-29th Street NW, Calgary, AB	Sheldon Milloy-Jones Rxd# AB467415 E987653 2010 APR 01 TEMOZOLOMIDE 135 mg Take the contents of one bubble as a single dose daily, 1 hour before radiotherapy (RT) starting on Mar.25/10 and continuing until completion of RT. (On non-RT days, take capsules in the morning). Week 5 of 6 Daily dose: 135 mg (1 x 100 mg, 1 x 20 mg, 3 x 5 mg) Qty: 945 mg (SCC) Qty Remaining: 33075 mg Dr. Jones, Oakley Cross Cancer Institute 780-432-8710 11560 University Ave, Edmonton, AB, T6G 1Z2





Vision Care™

Cataracts and Age-related Macular Degeneration (AMD) are the leading causes of vision impairment and legal blindness in developed countries, and the leading causes of blindness in developing countries.

Recent studies have found that consumption of Lutein rich foods and supplements may play an important role in reducing the risk of serious eye conditions, such as age-related Degeneration and Cataracts.

Those most at risk include: the elderly, women more than men, Caucasians more than any other race, smokers, diabetics, people with inflammatory diseases, and those with high exposure to the sunlight. Individuals with light (blue and green) coloured eyes are more prone to Cataracts. The only treatment for Cataracts is surgically replacing the natural lens. AMD is an incurable condition, but Lutein can help prevent it.

Lutein belongs to the family of Carotenoids found in fruits, bright-coloured vegetables and green plants, such as spinach, kale, corn, red & orange peppers. Since only about 23% of people meet the goal of consuming 5 servings of vegetables per day, Lutein supplementation is highly recommended.

There are over 600 different Carotenoids found in nature, but only about 20 in the human body. Of these, only Lutein and Zeaxanthin are found in the eye - specifically in the macula and the lens.

Although they share similar chemical structure, Lutein and Zeaxanthin differ from one another. The amount of lutein in the eye is referred to as "Macular Pigment Density" (MPD). It is possible to increase MPD through diet or supplements rich in lutein. A study from Harvard University confirms that people with higher MPD have a significantly lower risk of Age-related Macular Degeneration. The Nurses Health Study, Health Professionals Follow-Up Study and Eye Disease Case-Control Study all reported direct link between dietary intake of Lutein, around 6 mg per day, and decreased risk of AMD and Cataracts.

Each Vision Care™ capsule contains 2 mg of elemental Lutein. Take 3 per day to meet the therapeutic dosage. Vision Care™ also contains the added benefits of Ester-C®, European Bilberry, Eye Bright, L-Glutamine, Grape Seed Extract and Citrus Bioflavonoids, which are well-known antioxidants or circulatory agents.

Caution: Lutein inhibits absorption of Beta-carotene (vitamin A). Take vitamin A supplements at least 2 hours apart from Lutein.

NOTE: This pamphlet is intended for research and educational purposes only, and is not intended to diagnose or treat any disease. For medical advice, see your health professional.

Westcoast Naturals® From Nature's Medicine Cabinet™
Vancouver BC

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BIO-FEN

For many of us, it is not just the loss of our hair that we are concerned with ... it is also the loss of our self-confidence, self-esteem, and the bad jokes we've had to endure. These things drive us to continuously look for the most advanced hair loss solutions available.

We understand your concerns and as such, we provide the most successful treatment for hair loss in men and women today.

Hair Grow Technology Inc. is the exclusive importer of BIO-FEN products into North America. This revolutionary hair product has been successful throughout Europe in the prevention of hair loss and undertaking new hair growth. We only distribute sound products, which have scientific studies and research to prove their effectiveness.

**HAIR
GROW**
TECHNOLOGY INC.

DEALER INQUIRIES WELCOME!

VISIT US AT
www.biofen.com/dealers

TESTIMONIALS

"My mom has very thin hair and I was terrified when I noticed mine was starting to thin. I've only been taking BIO-FEN for three weeks and already I can see the difference, not nearly as much hair in the drain...Thanks!"
Lori A., Toronto

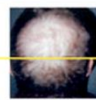
"Thanks BIO-FEN! I've been taking BIO-FEN for three months now...I'm not losing any more hair and I can see new hair growing! I'm not going to end up bald like my dad."
Brad S., Edmonton

"I've seen more results with BIO-FEN in the last six weeks than all of the last seven years that I've been using another well known product."
Terry R., Alberta

"I have been using BIO-FEN for 4 weeks now and I have already noticed a significant reduction in my hair loss. My wife is convinced that there is new hair growth already. Overall I'm delighted with the results and I encourage others to give BIO-FEN a try."
Vance L., 39 years old, Calgary, Alberta

"I've been progressively losing my hair for the last 15 years. I've tried lots of different products, shampoos, lotions, creams and medications, all to no avail. Then I came across BIO-FEN. It was totally herbal, so it was safe, it was easy, one pill-a-day and the fact that it had been sold in Europe for the last ten years and they had 1 million customers, I had to give it a shot. I'm so thrilled with the results, after just 3 months... I've got hair! I encourage anyone, male or female, who is having issues with hair loss to give BIO-FEN a try."
Gerry Freundt, Brooks, AB, Sept. 2001

These photos are the Real McCoy! They haven't been touched up in any way!



Check out the new hair growth - above and below the line!

27/03/2007

WAL-MART PHARMACY
50TH ST. & 101 AVE.
EDMONTON AB T6A0A6-0000
(780) 469-4469

811

NOVO-HYDRAZIDE 25MG TAB

HYDROCHLOROTHIAZIDE (hye-droe-klor-oh-THYE-a-zide)

COMMON USES: This medicine is a thiazide diuretic used to treat high blood pressure and swelling due to excess body water. It may also be used to treat other conditions as determined by your doctor.

HOW TO USE THIS MEDICINE: Follow the directions for using this medicine provided by your doctor. THIS MEDICINE will increase urination. If you are taking 1 dose of this medicine daily, take it in the morning to prevent this from affecting your sleep. If you are taking more than 1 dose daily, take the last dose no later than 6 pm. STORE THIS MEDICINE at room temperature below 86 degrees F (30 degrees C) in a tightly-closed container, away from heat, moisture, and light. IF YOU MISS A DOSE OF THIS MEDICINE, take it as soon as possible. If it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not take 2 doses at once.

CAUTIONS: DO NOT TAKE THIS MEDICINE if you have had an allergic reaction to it or are allergic to any ingredient in this product. IF YOU HAVE HAD A SEVERE ALLERGIC REACTION to this medicine or any other sulfonamide medicine (such as sulfamethoxazole, glyburide, or probenecid), contact your doctor or pharmacist before taking this medicine. A severe reaction includes a severe rash, hives, breathing difficulties, or dizziness. If you have a question about whether you are allergic to this medicine or if a certain medicine is a sulfonamide, contact your doctor or pharmacist. Laboratory and/or medical tests, including blood pressure checks and blood electrolytes may be performed to monitor your progress or to check for side effects. KEEP ALL DOCTOR AND LABORATORY APPOINTMENTS while you are taking this medicine. THIS MEDICINE MAY AFFECT CERTAIN LAB TEST RESULTS including parathyroid function tests. Make sure laboratory personnel and your doctors know you use this medicine. BEFORE YOU HAVE ANY MEDICAL OR DENTAL TREATMENTS, EMERGENCY CARE, OR SURGERY, tell the doctor or dentist that you are using this medicine. CHECK WITH YOUR DOCTOR before drinking alcohol while you are taking this medicine. Alcohol may add to the effects of this medicine. IF YOUR DOCTOR HAS ALSO PRESCRIBED a potassium supplement for you, follow the dosing directions carefully. Do not start taking additional potassium on your own or change your diet to include more potassium without first checking with your doctor. THIS MEDICINE MAY CAUSE DIZZINESS, LIGHTEADEDNESS, OR FAINTING. DO NOT DRIVE, OPERATE MACHINERY, OR DO ANYTHING ELSE that could be dangerous until you know how you react to this medicine. Alcohol, hot weather, exercise, fever and certain medicines (such as barbiturates and narcotics) can increase these effects. To prevent them, sit up or stand slowly, especially in the morning. Also, sit or lie down at the first sign of dizziness, lightheadedness, or weakness. THIS MEDICINE MAY CAUSE increased sensitivity to the sun. Avoid exposure to the sun or sunlamps until you know how you react to this medicine. Use a sunscreen or protective clothing if you must be outside for a prolonged period. THIS MEDICINE MAY CAUSE HYPERGLYCEMIA (high blood sugar). Symptoms of hyperglycemia include thirst, increased urination, confusion, drowsiness, flushing, rapid breathing, or fruity breath odor. If these symptoms occur, TELL YOUR DOCTOR IMMEDIATELY. BEFORE YOU BEGIN TAKING ANY NEW MEDICINE either prescription or over-the-counter, check with your doctor or pharmacist. FOR WOMEN: IF YOU PLAN ON BECOMING PREGNANT, discuss with your doctor the benefits and risks of using this medicine during pregnancy. THIS MEDICINE IS EXCRETED IN BREAST MILK. IF YOU ARE OR WILL BE BREAST-FEEDING while you are taking this medicine, check with your doctor or pharmacist to discuss the risks to your baby. IF YOU HAVE DIABETES, this medicine may affect your blood sugar. Check blood sugar levels closely and ask your doctor before adjusting the dose of your diabetes medicine. MONITOR BLOOD GLUCOSE on a regular basis, as directed by your doctor.

Tips for Caregivers

Many of us are unfamiliar with blindness and may feel uncomfortable when we are caring for a person who is blind, visually impaired or deafblind. The following tips will help you feel more at ease.

1 The individual is a person first and visually impaired second. As in any care-giving relationship, common courtesy and good communication skills are key.

2 Not all people considered "blind" are totally without sight. About 90 percent of blind people see something. Vision impairment may range from a loss of central vision because of an eye condition like macular degeneration, to a loss of peripheral vision

because of glaucoma, or spotty, fluctuating vision because of diabetes complications. Some degree of visual impairment is common among seniors.

3 Each person is unique. How a person with vision loss sees depends upon the eye condition and how well the remaining vision is used. Lighting and contrast are also important factors. If you aren't sure how much a person can see, ask!

4 When approaching a person with vision loss, make verbal contact. Address the person by name if possible, and always identify yourself. Speak directly to the person with vision loss in a normal tone of voice. Remember to let the person know when you are leaving.

5 Use common phrases like 'see', 'look' and 'read' freely. People with vision loss are used to these terms and likely use them as much as you do.

6 In a situation where you need to guide a person with vision loss, let the person take your arm. Never push or pull a blind, visually impaired or deafblind person from place to place.

7 Help the person with vision loss become familiar with the surroundings by describing the contents of each room. Then, do not move anything without telling the person. Avoid leaving 'obstacles' in the usual travel path of a person with vision loss.

8 In a care centre, gradually acquaint the person with vision loss with as many areas of the facility as possible, such as nurse's stations, recreational facilities, washrooms, elevators, the cafeteria and telephones. If there is a bedside table, it should be placed on the person's better visual side.

9 Tell the person with vision loss what foods are being served at mealtime. You can also

Summary

- Asthma commonly occurs with COPD in older adults
- Their aging bodies, comorbid diseases, and medical burden can affect how the disease is managed
- Tailoring our care for older adults is necessary