Care by Design

Website: http://www.cdha.nshealth.ca/care-by-design

Care by Design is improving care for nursing home residents in the Capital Health area. Residents are put at the centre of a collaborative, on-site health care team that includes physicians, facility medical directors, nurses and paramedics.

With this new support system, residents can be better cared for in the comfort of the place they call home, instead of being transferred to a hospital.

Long Term Care Facilities

Previously, residents entering LTCF in the Capital District Health Authority maintained or found a family physician for primary care. As a result many different family physicians provided care to residents within a single LTCF, creating care coordination challenges.

Primary Care

Studies demonstrate uncoordinated mechanisms of primary care in LTCF. These are less effective than coordinated models. This study examines changes in physician care for LTCF residents with the introduction of a new model of care called “Care by Design”.

The results of the Primary Care of the Elderly (2006) study pointed to primary healthcare deficits in long-term care facilities in CDHA including:

- Reduced number of physicians working in long-term care
- Lack of access to appropriate primary care in LTCF
- High rates of transfers from LTCF to emergency departments
- Medical directors frustration with the lack of care coordination

In the summer of 2009, CDHA implemented a new model, "Care by Design" that included:

- Dedicated per-floor physician with 24-hour on-call physician coverage
- Team approach to primary care in long-term care facilities
- Extended care paramedics providing on-site acute care and facilitated transfers
- Mandated use of Comprehensive Geriatric Assessment tool (LTC-CGA)

Care by Design:
A Provincial Model of Care for Long Term Care

Prepared by the Provincial Council of District Medical Directors for Continuing Care (Physician Leaders)

July 15, 2014

Care by Design:
A Provincial Model of Care for Long Term Care

Executive Summary

Care by Design is a coordinated, consistent, comprehensive approach to manage care of residents in long term care. Since implementation in Capital Health in 2009, it has demonstrated significant improvement in both resident and broader-based health system outcomes such as reduced transfers from long term care to emergency rooms for basic care, more frequent patient visits/comprehensive care, significant cost savings, better utilization of resources, and other benefits.

Care by Design is a model of care which relies on development of a coordinated physician network to ensure 24-7 coverage. This network provides a stable, solid base of primary care practitioners to meet daily care needs and is available on-call to provide urgent after hours care – both of which are challenges in many long term care facilities in the province. The model is based on a shared leadership approach where long term care facility administrators and physician leadership work together, along with Nurse Practitioners and other health care professionals, to implement this new system of physician coverage and related improvements in care.

The Provincial Council of Distrcit Medical Directors for Continuing Care (Physician Leaders) have voiced the need for catalyst funding to support on-call after hours physician coverage as a critical lever to enable the introduction of an integrated *Care by Design* approach across the province, encouraging younger, more collaborative practices and engaging Nurse Practitioners and other health care providers as well. The model relies on providing long term care facilities with a sufficient number of core physicians to ensure an adequate primary care base, supplemented by the provision of additional funding to support on-call networks to provide after-hours care. The absence of physician back-up (holidays, vacation, after hours) and payment is an impediment to physician participation in a network-based system which requires physicians to be on-call. This is essential to ensure the availability of a pool of primary care physicians dedicated to long term care.

Not only is such a pool essential for good quality primary care (enough physicians providing enough visits), it is the critical foundation upon which quality care improvements (e.g. palliative care, better management of dementia and mental health issues) and service enhancements can be built (e.g. introduction of mobile ex-ray, more care on-site, etc.). It is also necessary in order to realize costs savings from initiatives such as polypharmacy and alternate/more appropriate use of EHS.

Care by Design has been underway in Capital Health since 2009. Partial implementation has begun in the Colchester-East Hants Health Authority, and plans have been developed for the Annapolis Valley area. With the recent appointment of a Physician Leader for Cape Breton, an opportunity exists to expand the benefits of *Care By Design* to this area – representing a third of the Province's population.

This would extend *Care by Design* to fully 2/3 of the population. A roll out of this approach to other areas of the province could be further developed.

Care by Design has clear demonstrated positive outcomes which can be replicated in other areas of the province. Implementation of the initiatives associated with this approach requires the leadership of Physician Leaders to guide this change throughout the province. Ensuring a continued focus on this population is especially critical at this juncture as plans for district amalgamation unfold.

It is recommended that the Department of Health and Wellness and District Health Authority senior leadership endorse the principles and core components of care embedded in a *Care by Design* approach (described herein) and support expansion of this approach across the province, enabling all long term care residents to receive the benefits of this model of care, regardless of geography or LTC site.

Introduction: The Nature of the Problem

Long term care (LTC) facilities experience difficulty with physician recruitment and retention, compromising the delivery of primary care to residents (in terms of continuity, frequency, and comprehensiveness) and increasing the vulnerability of seniors housed in LTC. The absence of sufficient physician resources, funds to compensate physicians for after hours/on call coverage, and a coordinated system of management of physician care contributes to less than optimal care for residents and exacerbates the problem, particularly in rural areas. Designing care to meet the needs of residents in innovative ways can result in better chronic disease management, preventative care, acute care management, and appropriate end of life care, as well as improved physician engagement. Issues include:

- Insufficient number of physicians to provide adequate care to long term care residents –

  Many nursing homes have aging family doctors and there are few opportunities for their replacement once they retire. Not only is there a shortage of physicians to provide primary care for the general population, few doctors express an interest in serving this population. Doctors with specialization in geriatrics are also scarce. Further, physician resources are not used in the most efficient or effective way. In some long term care sites, many doctors visit the facility to provide care to a few patients but the visits are perhaps not as frequent as required. Dedicating physician resources to serve a group (floor, wing, or building) of patients creates economies of scale and opportunities for the provision of more frequent comprehensive care.

- No system management for urgent or after hours care (the ER has become the site of care by default)

- Inconsistent/non-existent approach to pro-active, preventive, regular primary care

- Overmedication/polypharmacy

- No consistent approach to development of care directives for end of life

A coordinated, consistent, comprehensive approach to manage care is required.

Background

In April 2010, a proposal was submitted by the Physician Leaders to the Master Agreement Steering Group (MASG) to support the roll out of district-specific models of care in LTC but this was not approved. *Care by Design*, CDHA's model of care, has since been implemented with Capital District funding support. In November of 2013, funding to compensate physicians to be on-call was secured in the Colchester-East Hants District Health Authority to begin to implement a *Care by Design* approach in that District. This enabled implementation of a physician on-call network for urgent care after hours and a physician per floor model to ensure day time coverage for residents of long term care. While partial implementation has begun in CEHHA, other districts remain without such dedicated models of care or funding for same.

Proposed Approach: Program Design

Analysis

Each District has different challenges in ensuring comprehensive coverage for seniors and persons with disabilities housed in long term care (nursing homes and ARCs/RRCs) so a flexible approach is required to meet needs.

Objectives

A purposeful District-specific Model of Care/*Care by Design* is under development by the District Medical Directors for Continuing Care, the objectives of which are to:

1. Maximize quality of care for residents/seniors
2. Maximize system efficiencies and appropriate use of resources

The approach is based on a set of core principles and care components common to all districts, although the mechanisms of delivery or mix of solutions may vary.

Principles

1. Care is best delivered on-site (in the LTC facility) to the extent possible, for both urgent and chronic/primary care needs.
2. Good quality care is predicated on the availability of timely, accurate, and comprehensive information.
3. The delivery of timely, good quality care is a shared responsibility.
4. Funding mechanisms should enable and support a holistic, comprehensive, coordinated approach in a fair, transparent, and equitable manner.

Core Components

1. ***Urgent care***: A plan to ensure adequate response to urgent care issues which could include a mix of:

    - On-call/after hours physician coverage (e.g. 5pm-8am) on-site or by phone, supplemented as necessary by:

        - EHS Extended Care Paramedic (ECP) program for onsite assessment/treatment (to reduce ER transfers – often deleterious for frail seniors)
        - EHS facilitated transfer for diagnostic tests
        - Equipment to enable on-site diagnostics (mobile ex-ray, etc.)
        - LTC staff working to full scope of practice to enable performance of additional procedures on-site

2. ***Regular care****:* an approach to ensure delivery of ongoing, proactive, preventive primary care management – through a sufficient number of physicians available for regular day time care (e.g. 8am-5pm) - e.g. physician per floor, dedicated physician per site, other). This will provide better

    - chronic care management
    - medication management
    - end of life care
    - management of Behavioural and Psychological Symptoms of Dementia (BPSD)/mental health issues

3. ***Tools and Practice Guidelines***: tools which gather patient information necessary for timely accurate decision-making (CGA, Discharge Transfer tool, End of Life Care Directives, etc.) and evidence-based best practice guidelines (diabetes guidelines, polypharmacy/drug use guidelines, EOL care orders for pain and symptom management/care, etc.) are available to support good quality care.

4. ***Teams***: Utilization and engagement of a collaborative, shared care, team-based approach to care on-site. Collaborative LTC clinical teams would include, at minimum, a *Care by Design* family physician (and/or Nurse practitioner).

5. ***Co-leadership model***: Implementation of a joint medical-administration/policy decision-making bodies at local, district, and provincial levels to ensure coordinated care at a system level(s).

6. ***Coherent Funding Approach***: Implementation of funding approach/mechanisms which ensures payment for delivery of comprehensive, integrated care based on complex care needs of residents.

Key Deliverables/Intended Outcomes

1. Reduced transfers to ER (and less cost)
2. Reduced polypharmacy/overmedication of residents (fewer medications, less cost)
3. Increased quality of life
4. Improved end of life care
5. Timely response to both urgent and chronic care needs
6. More comprehensive, proactive, preventive care (rather than fragmented, reactive care)
7. Better management of Behavioural and Psychological Symptoms of Dementia (BPSD)and mental health issues

Evidence

- This *Care by Design* concept and model of care has now been recognized as a high standard by Accreditation Canada.
- *Care by Design* has demonstrated significant cost savings and improvements in care on the following measures:

ER Transfers

- Reductions in ER transfers alone have saved approximately $3 million in CDHA. Transfers to the ER have reduced 36% due to the primary care base of physicians now in place in long term care facilities. With the subsequent introduction of Advanced Care Paramedics, to respond to urgent calls (for example falls or sudden serious deterioration in a resident's condition), this further reduced transfers to 43%. [1]
- In the neighboring district of Colchester East Hants, with improvement in the primary care physician base and limited additional funding for on-call afterhours care, the same outcomes were achieved almost immediately – both reduced transfers (30%) and higher and speedier rates of call uptake by physicians.(ER visits dropped from a high of403 in 2011 to 280 in 2013 representing a 30% reduction). Cost savings are conservatively estimated at $276,000 based on $2300 per visit of which $1800 is the cost to government for the ambulance.[2]

[1] Emily Gard Marshall, Barry Clarke, Greg Archibald, Fred Burge, Nirupa Varatharasan, Melissa Andrew. *Canadian Family Physician*. Coordinated Primary Care by Family Physicians in Long-term Care Reduced Transports to Emergency Departments by over 36%. Publication pending.

[2] Harold Berguis. Data derived from HitsNS Meditech data depository.

Recruitment and retention in long term care

- All physician vacancies have been filled and retention rates approach 100%.

Frequency of physician visits/comprehensiveness of care

- The introduction of *Care by Design* in CDHA resulted in 82% fewer doctors providing better care as measured by more frequent weekly visits and greater continuity of care. The number of documented primary care visits rose after implementation of CBD, as did physician contact and assessment on-site. This also had a direct impact on the number of 911 calls made from LTC and subsequent ER transfers as discussed. Informational continuity is found in the increased communication from physicians via chart notes and response to urgent care situations.

- Further, it has resulted in increased relational continuity between care team physicians, nurses, residents and family members as fewer family physicians providing more frequent care has improved the therapeutic relationship between the patient and provider. It has also allowed family physicians with a particular interest and expertise in providing care in the LTCF setting to focus more on this work. Additionally, the coordination through a single on-call system has greatly improved after hours coverage.

Polypharmacy

- Significant cost savings are anticipated with polypharmacy initiatives to reduce overmedication in the senior population. The anticipated outcome is a minimum reduction of medications per resident of 25-40%, which would represent $6-10 million in savings in Pharmacare costs for LTC currently estimated at $25 million, as well as better resident care.

The *Care by Design* coordinated approach enables effective implementation of polypharmacy and other initiatives to increase efficiencies, improve care, and reduce costs.

Expected Outcomes and Evaluation

Evaluation and outcomes monitoring is essential to measure success and determine the extent to which the new model addresses current issues in primary care delivery in Continuing Care. A logic model and evaluation framework has been developed which identifies key metrics. Key measures include:

Physician Care

- ER transfer rates by LTC site, reasons, cost of transfers
- # on-call responses (pre and post CBD)
- qualitative interviews with nursing staff re responsiveness
- # of physicians pre and post CBD; ratio/# of patients per physician(% change pre and post)
- # patient/resident physician visits per week (pre and post CBD)
- # of new physicians recruited, # of sites and patients without a physician (pre and post)

- Qualitative interviews to measure client/family, LTC staff and physician satisfaction with new system
- Other measures used for CBD CDHA for comparative purposes

Polypharmacy

- #/% reduction in medications used in LTC
- $ value of drug budget (pre and post medication reviews/polypharmacy project implementation
- $/% of budget reductions in Pharmacare expenditures in Long Term care

Clinical Geriatric Assessment Tool (CGA)

- Utilization rates of CGA by CBD physicians and LTC sites comparative to non-CBD sites
- % of resident charts with completed CGAs (e.g. 77% of resident charts had a completed CGA; qualitative findings suggest the LTC CGA in CBD facilities has enabled timely and informed clinical decision-making by physicians, nursing staff, and CBD ECP)[3]
- Improved information exchange between and among transfer points

BPSD and mental health management

- CBD Mental Health Committee completed survey/scan to identify range and type of mental health issues and impact on LTC; currently developing measures, tools, and effective practices to address

Orthopedic pathway

- CBD Orthopedic Committee currently to develop measures, tools, and effective practices

Palliative care

- CBD District-wide palliative care practice guideline/tool to assist teams to diagnose active dying stage and utilize palliative care approach and standing order set. Sites report 100% utilization of approach and order set at end of life. Measures include:
    - # of LTC sites utilizing the order set
    - family, physician, staff satisfaction
    - others to be developed

Other indicators will be developed to measure the key outcomes the program is designed to achieve.

[3] Emily Gard Marshall, Barry Clarke, Melissa Andrew. *Canadian Geriatrics Journal.* A Long Term Care Clinical Geriatric Assessment Tool: Improving care for frail older adults who live in Long Term Care. Publication pending.

Implementation Plan – A Phased-in Approach

Accountability and Oversight

The District Medical Directors of Continuing Care will be accountable for providing oversight and leadership in the implementation and operation of the new primary care model. This group will lead the implementation in their respective districts, adapting it to meet unique challenges as required. Once operational, this group will be accountable for managing funds associated with the new model, ensuring that network deliverables are met and maintaining any required documentation (call rosters, etc) for accountability purposes. The District Medical Directors will be responsible for reporting any required information and documentation on a regular basis, as required.

Implementation in Each District/Zone

The District Medical Director of Continuing Care for Capital Health will be available to support the local District Medical Directors of Continuing Care to facilitate dialogue with key stakeholders (local physicians, DHAs, facilities, staff, residents, and families) to discuss the model, design the model to reflect local needs assuring adherence to the shared principles and core components of care, and to develop local implementation plans and timelines.

Care by Design has been underway in Capital Health since 2009. Partial implementation has begun in CEHDHA, and plans have been developed for the Annapolis Valley area. With the recent appointment of a Physician Leader for Cape Breton, an opportunity exists to expand the benefits of CBD to this area – representing a third of the Province's population. This would extend *Care by Design* to fully 2/3 of the population. A roll out of this approach to other areas of the province could be further developed.

The model relies on providing long term care facilities with a sufficient number of core physicians to ensure an adequate primary care base, supplemented by the provision of additional funding to support on-call networks to provide after-hours care. This will also support a stable environment for physician recruitment as the absence of physician back-up and payment is an impediment to physician participation in a network-based system which requires physicians to be on-call. This is essential to ensure the availability of a pool of primary care physicians dedicated to long term care. A solid primary care physician base is the critical foundation upon which quality care improvements (palliative care, better management of behavioural and psychological symptoms of dementia) and service enhancements can be built (e.g. more appropriate use of EHS, introduction of mobile ex-ray, etc.).

The organization of practice is more efficient, coordinated, and comprehensive. A network of facility and physician collaboration is essential as is after hours on-call service. The outcomes of the model rely on effective, consistent CBD team providing care during daytime hours. This is based on a consistent collaboration of a network of facilities and physicians. The CBD team relies on on-call support for any clinical issues that need follow up after hours and the on-call service is dependent upon clinical follow-up by the CBD team during the day in a consistent, predictable way. The two are fundamentally inter-related.

Estimated Cost

The estimated cost of after-hours coverage is based on the current on-call remuneration rate within the existing Physician Networks at Capital Health. Colchester East Hants Health Authority also adopted this rate with success. The remaining DHAs have greater geographic and physician resource challenges and in estimating the cost of provincial implementation, the Network Criteria below are offered as a means of determining the number and composition of networks required.

Network Criteria

The number and composition of networks should be based on the following criteria:

- Number of beds: The number of beds must be manageable for a physician on-call. In an urban area, approximately 400 beds is the average network size. Where appropriate, Residential Care Facilities, Adult Residential Centres and/or Regional Rehabilitation Centres may also be covered by a network.
- Geography: The location of the facilities in a network in relation to one another must allow for reasonable physician response times (by phone and/or on-site).
- Physician resources: There must be sufficient interested physicians in the area to make the network geography and patient load manageable.
- Incentives: The network must create incentives for physicians to improve the way in which services are currently provided through improved working conditions and/or remuneration.
- DHA boundaries: The networks are not restricted by DHA boundaries.
- Existing on-call systems: The way in which the networks collaborate/integrate with existing on-call systems must be clearly defined.

Annual Cost per Network (based on current remuneration rate within Capital Health):

Current Daily On-call Coverage Rate:	$175/day, 7 days a week
Current Annual Cost of On-call Coverage per Network:	$63,700/year

The actual number of Networks (and cost) will be determined in consultation with District Medical Directors and DHA/local management as a *Care by Design* approach is worked out within each district or zone envisioned under the new DHA structure. Some funding for CBD has already been by provided by Capital and Colchester East Hants DHAs. Additional costs would therefore be largely for those areas currently without CBD, or for enhancements in each DHA.

Costs Savings/Potential Revenue Sources

Funding is expected to be recouped as the model is implemented over time (an expected 5 year period) as savings are anticipated from polypharmacy and reductions in ER and acute care resources. Ongoing funding for this Provincial *Care by Design* Program would be from:

- Significant saving in pharmacare based on a provincial polypharmacy approach. A very modest reduction in drugs by 30% would translate to $5-7 million annually.
- Significant savings of another $4-5 million annually would be saved by reducing unnecessary transfers to the ER, and subsequent hospitalization.
- A third revenue source would be MASG, which would continue to support LTC specific funding with some improved codes.

The cost of this program would be significantly less than any of the revenue sources listed. It is expected that this program would be self-sustaining; indeed, there would be more than enough funding to support a Provincial Program with the cost recoveries anticipated. We estimate significant costs savings from this approach. Research is underway in CDHA to demonstrate this with the help of a senior health economist from the Department of health and Wellness. While the program would be integrated within Districts, common care components and deliverables would define the program.

Recommendations

That the Department of Health and Wellness and District Health Authority senior leadership

1. Support a consistent provincial model of care to ensure and a comprehensive, coordinated approach and equitable access to care by all long term care residents in the province, regardless of geographic location or LTC site.
2. Support/endorse the basic framework of a *Care by Design* approach for the province, based on the success demonstrated in Capital Health, and its partial application in CEHDHA. This framework reflects the principles and core components of the *Care by Design* model of care, but not the actual specific Capital Health solutions. In this way, the provincial program would achieve common quality deliverables in providing medical services to all LTC facilities, but be unique in its solutions reflecting the unique issues of every district.
3. Support extension of this approach to Cape Breton, engaging District leadership, LTC Administrators, residents and their families in the process.
4. Support ongoing leadership of the Physician Leaders to continue to work with areas/zones of the province as the new District structure unfolds.

Comprehensive Geriatric Assessment

What is a CGA?

A comprehensive geriatric assessment (CGA) is the major tool of the geriatrician. It is meant to supplement the usual approach to diagnosis (e.g., pneumonia, NSTEMI, UTI). That is because in frail older adults, many problems usually are active at once, and because acute illness can threaten independence.

Why do a CGA?

The CGA obliges an assessment of prior cognition, mobility, balance, function and social engagement at two weeks prior to the acute illness. Given that it is hard to make people better than they were two weeks before they became ill, this assessment forms the basis of care planning. For example, "If your husband was to get back to how well e was two weeks before he got sick, (now established in some detail) would you be able to take him back home?"

How is a CGA is Done?

The patient is interviewed usually in the presence of a reliable informant.

(A) Assessment of cognition. Has dementia been diagnosed to now? Is the patient delirious? Cognitively impaired? A brief assessment of cognition is carried out, often done with the Mini-Mental State Examination, the Montreal Cognitive Assessment or some like measure, as well as a clinical evaluation. The clinical evaluation should note whether cognitive impairment is present, whether it meets the criteria for dementia and whether it is better characterized as delirium or depression.

(B) Other aspects of the mental state. Other than cognition, other aspects of the mental state are considered. In particular, the presence of depression or other mood disorder, or presence of perceptual disturbances is evaluated. Motivation is assessed clinically. Health attitude is assessed using the general health question, "For your age, would you rate your health as excellent, good, fair, poor or bad?" In keeping with the observation that people who cannot answer this question have the worst possible outcome, those who "can't say" are noted.

(C) In regard to evaluation of special senses, functional ability, speech, hearing and vision is recorded.

(D) An assessment of strength is carried out in the context of a neuromuscular examination, but modified to look specifically at evaluating deconditioning.

(E) Likewise, a functional assessment of mobility and balance to include detailed recording of the hierarchal assessment of balance and mobility (*MacKnight C., Rockwood*

K., A hierarchical assessment of balance and mobility, Age and Ageing, 1995;24:126-130) is carried out.

(F) Bowel and bladder function is recorded.

(G) A brief nutritional screen focusing on weight and appetite is completed.

(H) Functional capacity and personal – instrumental and basic - activities of daily living is recorded.

(I) Sleep disruptions are recorded.

(J) Social Assessment. The social assessment includes information about the extent of social engagement, the presence of a caregiver, the marital state and living arrangements of the individual, condition of the house and whether or not they need to be able to navigate stairs in order to be safe at home. The presence of supports is recorded as well as some information about the caregiver, including their coping ability, their own health and their outlook.

Note 1: For people being assessed during an acute illness, items D through H are recorded both for the baseline state (2 weeks previously) and currently.

Note 2: All this information is in addition to the general medical information recorded in the general medicine consult.

Note 3: Much of the assessment is judgment based. It, therefore, requires both some expertise and the ability to make judgments. Not everyone is, and people who are not comfortable in making judgments should not so this work. That is preferable to trying to design elaborate roles to cover every category, which is counter-productive and should be resisted.

For more information contact:
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Long-Term Care
Clinical Geriatric Assessment (CGA)

PATIENT ID

WNL: Within Normal Limits ASST: Assisted
IND: Independent DEP: Dependent

Chief lifelong occupation: _____ Education: (yrs) _____

Cr Cl/eGFR: _____

Infection Control
MRSA _____ Pos _____ Neg
VRE _____ Pos _____ Neg
Flu shot given (d/m/y) _____
Pneumococcal vaccine given (d/m/y) _____
TB test done (d/m/y) _____
Tetanus (d/m/y) _____

Cognitive Status
❒ WNL
❒ Dementia
❒ Delirium
MMSE _____

Emotional
❒ WNL ❒ ⇩Mood
❒ Depression ❒ Anxiety
❒ Other
❒ Hallucinations/Delusions
Date (d/m/y): _____

Behaviours
❒ Verbal Non-aggressive
❒ Verbal Aggressive
❒ Physical Non-aggressive
❒ Physical Aggressive

Communication:

Speech	Hearing	Vision
❒ WNL	❒ WNL	❒ WNL
❒ Impaired	❒ Impaired	❒ Impaired

Foot-care needed ❒ Yes ❒ No
Dental care needed ❒ Yes ❒ No
Skin Integrity Issues ❒ Yes ❒ No

Strength
❒ WNL ❒ Weak
Upper: Proximal Distal R L
Lower: Proximal Distal R L

Mobility	Transfers	❒ IND	❒ ASST	❒ DEP
	Walking	❒ IND Slow	❒ ASST	❒ DEP
	Aid	_____		
Balance	Balance	❒ WNL		❒ Impaired
	Falls	❒ No ❒ Yes		Frequency
Elimination	Bowel	❒ Constip	❒ Cont	❒ Incont
	Bladder	❒ Catheter	❒ Cont	❒ Incont
Nutrition	Weight	❒ STABLE	❒ LOSS	❒ GAIN
	Appetite	❒ WNL	❒ FAIR	❒ POOR
ADLs	Feeding	❒ IND	❒ ASST	❒ DEP
	Bathing	❒ IND	❒ ASST	❒ DEP
	Dressing	❒ IND	❒ ASST	❒ DEP
	Toileting	❒ IND	❒ ASST	❒ DEP

Personal Directives ❒ Yes ❒ No
Substitute Decision Maker: _____
Tel #: _____

Code Status:
❒ Do Not Attempt to Resuscitate
❒ Do Not Hospitalize
❒ Hospitalize
❒ Attempt to Resuscitate

Marital Status	Family Stress
❒ Married	❒ None
❒ Divorced	❒ Low
❒ Widowed	❒ Moderate
❒ Single	❒ High

1.	❒
2.	❒
3.	❒
4.	❒
5.	❒
6.	❒
7.	❒
8.	❒
9.	❒
10.	❒
11.	❒
12.	❒

Scale ❒ 5. Mildly Frail ❒ 6. Moderately Frail ❒ 7. Severely Frail ❒ 8. Very Severely ill ❒ 9. Terminally Ill

Note: Shaded areas to be completed by physician.

Clinical Frailty Scale*

5. Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6. Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

7. Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8. Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover from even a minor illness.

9. Terminally Ill – Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common symptoms in mild dementia include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In moderate dementia, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In severe dementia, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005; 173; 489-495

CGA Associated Visits	
Date	Comments

Physician Name (please print): _____ Physician Signature: _____

Signed on (d/m/y): _____ (Visit required on this date)

Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

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Polypharmacy Toolkit Initiative

The Polypharmacy Toolkit is a partnership of Nova Scotia's district health authorities (DHAs) with assistance by the Nova Scotia Department of Health and Wellness (DHW). Coordination was provided through the Guysborough Antigonish Strait Health Authority (GASHA) and Cumberland Health Authority (CHA).

Initiative deliverables include: a toolkit to assist health care providers with managing medications for the frail elderly and continuing education around appropriate prescribing.

Guidelines include:

Hypertension

Lipids

Diabetes

Bacteriuria

Bacteriuria

This guideline outlines the management of bacteriuria in the elderly and for long term care residents. This information was prepared by the Academic Detailing Services, Continuing Medical Education at Dalhousie University and the Palliative and Therapeutic Harmonization (PATH) Program.

Research concludes:

- Asymptomatic bacteriuria is common in long term care: men 15% – 30%; women 25% – 50%.
- Screening for asymptomatic bacteriuria is not recommended, even in the elderly.
- Asymptomatic bacteriuria **should not** be treated with antibiotics. Pyuria accompanying asymptomatic bacteriuria is **not** an indication for antimicrobial treatment.
    - Pyuria indicates inflammation in the genitourinary tract, but does not differentiate symptomatic from asymptomatic UTI.
    - Postive urine cultures are virtually always associated with pyuria (>90%) and neither is sufficient for a diagnosis or treatment of UTI.

- An individual with a chronic **indwelling catheter** will always have bacteriuria, but antibiotic treatment is only warranted if the person is symptomatic.
- Changes in the character of the urine such as odor, color, or turbidity are associated with bacteriuria, but are not a reliable predictor of UTI and are usually attributed to other diagnoses such as incontinence or dehydration.
- Acute symptoms may be difficult to recognize because of impaired communication, dementia, or comorbid illnesses.

Recommendations

When should bacteriuria be treated? Recommendations from different sources vary somewhat. However, they all differentiate between patients with and without an indwelling catheter.

In a patient **with an indwelling catheter,** the presence of a least one of the following is an indication for treatment:

- New costovertebral angle tenderness

- Fever
- Unexplained delirium
- Rigors with or without identified cause

In a patient **without an indwelling catheter**, patients must have **acute** signs and symptoms:

- Dysuria alone OR
- Unexplained delirium OR
- Fever AND at least one of the following
    - New or worsening urgency, frequency, or urinary incontinence
    - Suprapubic pain
    - Costovertebral angle tenderness
    - Gross hematuria

To rule in or role out UTI and to help select an antibiotic, a urine specimen for culture should **always** be obtained before initiating antibiotics.

Choice of antibiotic therapy is similar to that of uncomplicated UTI in women, but the duration of therapy is longer for the elderly and individuals in LTC. In the elderly, treatment duration is usually ***7 days*** (10 – 14 days in the presence of fever or more severe systemic symptoms).

- **Nitrofurantoin** is contraindicated in **renal impairment** (CrCl<60mL/min) and resistance is higher in LTC population than in other settings (21% vs 6 to 8%).
- Long term use has been associated with pulmonary fibrosis.

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Diabetes

This area outlines the diabetes guidelines for elderly residents in long-term care facilities. This is an abridged version developed by the Diabetes Care Program of Nova Scotia[1] in conjunction with the Palliative Care and Therapeutics Harmonization (PATH) Program.

Recommendations

The guidelines advocate for more lenient blood glucose (BG) targets with frailty and make recommendations to advoid excessive blood glucose testing; and to identify, appropriately manager and prevent hypoglycemia.

Blood Glucose (BG) Targets

- Acceptable BG may be between 10 and 20 mmol/L
- For BG <7.0 mmol/L stop or reduce treatment
- For BG between 7.0 and 9.0 mmol/L consider reduced treatment

A1C Targets

Recommended A1C target is ≥8% and <12%, as long as the resident does not have symptoms of hyperglycemia.

Blood Glucose (Bedside Capillary) Testing

On admission (with a diagnosis of diabetes) – twice daily at alternate times for one to two weeks to establish baseline and determine need to adjust treatment as per recommended glycemic targets

Routine/ongoing (if BG is stable and within liberalized glycemic target range):

- On oral agents or stable doses of basal insulin without regular/rapid insulin – routine testing is usually not necessary.
- On regular/rapid insulin (meal time insulin) – test once daily alternate times (See Clinical Pearl below)

A1C Testing

On admission (with a diagnosis of diabetes) – measure once to establish baseline

Routine/ongoing

- Lifestyle modification only – not more than once/year, but may not be needed at all
- Oral agents/insulin – once or twice/year

Clinical Pearls

- These guidelines do not apply to younger less frail residents of LTC.
- Consider that most oral medications decrease A1C by ≈ 1% when deciding whether and which medications can be stopped.
- More frequent testing may be needed with acute changes in health status, change in oral intake, when adjusting diabetes medications, when starting prednisone and based on clinical judgment.
- Use NPH as basal insulin instead of long-acting insulin analogues such as Lantus® or Levemir® (less expensive with similar outcomes).
- Basal insulin alone (without regular or rapid insulin) may be preferable due to variations in oral intake that can lead to hypoglycemia.
- A1C targets ≥8% and <12% reflects BG of 10-16 mmol/L. Consistent BG measures between 16-20 mmol/L would yield an A1C of 12-14% and an increase in treatment may be indicated.

For a full version of this guideline (Phase 1 and 2), go to: http://diabetescare.nshealth.ca/guidelines-resources/professionals/guidelines/special-populations

Rationale

- Older adults living in long care facilities are generally frail. The Nova Scotia Department of Health and Wellness data indicates that in 2010/2011, 27% of admissions had diabetes with a length of stay of 2.5 years.
- It takes at least five years to achieve benefits from tight control – an irrelevant timeframe with frailty.[2-5]
- When there is long standing diabetes (as occurs with frailty), studies show limited benefit[3], no benefit[4], or harm[5] with tight control.[6]
- The demonstrated microvascular benefits in randomized controlled trials are surrogate, not clinical, outcomes that have limited relevance in frailty[2,6,7] including:
    - Decreased photocoagulation, but no difference in vision.
    - Less albuminuria, but no difference in creatinine.
    - Less neuropathy, not based on clinical symptoms, but based on outcomes measured that may not be related to neuropathy, including changes in reflexes, biothesiometer readings, R-R intervals on EKG, lying and standing blood pressure measures, and self-reported erectile dysfunction.

- In the Veterans Affairs Diabetes Trial[4], there was no difference in positive outcomes or serious hyperglycemic adverse events when HbA1c was 6.9% compared to 8.4%. Therefore, a HbA1c target above 8% is reasonable. The targeted range of HbA1c (>8 to <12%) was chosen to allow individualized treatment decisions based on drug tolerance and symptoms, as some frail patients may be able to tolerate higher blood glucose and HbA1c measures.
- The most consistent finding of randomized controlled trials of intensive blood glucose control has been an increased risk of hypoglycemia, which is particularly problematic for the elderly.
- There is increased hospitalization with intensive treatment.
- The cost and human resources needed to measure and maintain tight control in long-term care is significant.

Treatment of Hypoglycemia

A hypoglycemia treatment kit should be readily available (containing ready sources of glucose).

The risk associated with hypoglycemia and frailty is considerable. The diabetes guidelines aim to minimize hypoglycemic episodes. However, when hypoglycemia occurs, adjust treatment accordingly.

- If blood glucose is < 3.9 mmol/L:
  - Give oral carbohydrate (CHO), such as 15ml (one tablespoon) or sugar in water, ¾ cup juice or regular soft drink, or 15g in the form of glucose tablets.
  - Recheck BG in 15 minute intervals until BG is >4.0 mmol/L.
  - If meal is more than 30 minutes away, give snack containing CHO and protein such as bread and cheese or meat.
- If resident is unable to ingest or unconscious:
  - Give 1 mg glucagon, intramuscularly (write prn order in advance).
  - Notify the physician or nurse practitioner.

For a full version of this guideline (Phase 1 and 2), go to: http://diabetescare.nshealth.ca/guidelinesresources/professionals/guidelines/special-populations

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Hypertension

This is a consensus guideline for the pharmacological management of hypertension with frailty. This information was developed by the Dalhousie University Academic Detailing Service and the Palliative and Therapeutic Harmonization (PATH) Program.

This guideline is unique in that it focuses equally on when to stop and when to start medications. We recommend stopping antihypertensive medications that are used for the sole purpose of keeping the systolic blood pressure (SBP) below 140 mmHg, although we are unable to make treatment recommendations for frail older adults with previous stroke (see below).

Recommendations

Carefully review the risks and potential, but unproven, benefits of treatment.

Methods for measuring blood pressure

- Decisions about treatment should be based on blood pressure measurements in the seated (not supine) position, while also considering the presence of orthostasis.
- To evaluate orthostasis, measure BP lying, then immediately on standing and after 2 minutes. Ask the patient if they feel lightheaded or dizzy when standing.

Stopping treatment

- If sitting SBP is <140mmHg, medications can be tapered and discontinued to achieve the targets described in the guideline.
- Before discontinuation, consider if the medications are treating additional conditions, such as rate control for atrial fibrillation or symptomatic management of heart failure.

We are unable to make treatment recommendations for frail older adults at high risk for cardiovascular events. In particular, whether or not to discontinue treatment for individuals with a history of previous stroke is uncertain (see rationale: High Risk due to Previous Stroke)

Starting treatment

- Consider starting treatment when SBP is ≥160mmHg.

- Target SBP should be 140 to 160 mmHg while sitting as long as:
    - There is no orthostatic drop to <140 mmHg using the technique described above.
    - There are no adverse effects from treatment that affect quality of life.
    - See above recommendation regarding treatment of high risk individuals with previous stroke.

- In the very frail with short life expectancy, a target SBP of 160 to 190 mmHg may be reasonable.
- The blood pressure target does not need to change when there is a history of diabetes.
- In general, use no more than 2 medications.

Rationale

- Evidence from "drug treatment" trails (ie, trials that randomize patients to different treatment such as comparing placebo to a drug or comparing one drug to another drug) indicates that there is benefit in treating healthy older adults with hypertension. The benefit of treating frail older adults is unknown.
- Major trials enrolled in elderly patients only if their SBP was above 160mmHg. As such, evidence supports initiating pharmacotherapy at a SBP >160 mmHg. None of the randomized controlled "drug treatment trials" involving elderly patients achieved a SBP <140 mmHg in the active treatment group. Therefore, there is no evidence from randomized controlled trials that supports a SBP target of <140 mmHg for the elderly.
- 'Treat to target' trials randomize subjects to two different SBP target goals, but the two groups are treated with the same or similar drugs. Two "treat to target" trials of elderly subjects achieved a SBP <140 mmHg, but there were no statistically significant differences in the primary outcome. Thus, "treat to target" studies also fail to support a SBP target of <140 mmHg for the elderly.
- The benefit of adding a third medication to lower blood pressure has not been studied.
- The characteristics of frailty make the potential benefits of strict blood pressure targets even less certain and increase the possibility of harm from adverse drug events. The only study of adults above the age of 80, HYVET, enrolled relatively healthy subjects and excluded individuals with orthostatic hypotension.

Rationale: High risk due to previous stroke

- Most of the studies reviewed above enrolled relatively healthy older adults. Due to limited evidence, it is even more difficult to judge the potential benefit of lowering BP below 140 mmHg when frail individuals have a history of previous stroke compared to the possibility that medications will cause adverse effects (such as weakness, orthostasis, and falls). To consider treatment benefit with frailty, we valued trial outcomes that would impact quality of life. Thus, a relevant outcome would be non-fatal stroke leading to disability. In contrast, the effect of treatment on mortality is difficult to evaluate when there are competing

causes for death due to frailty, which makes a mortality outcome less meaningful for the frail.

- In the PROGRESS trial[9], individuals with a mean age of 64 years were treated with perindopril +/- indapamide. The treatment group experienced decreased rates of disabling stroke, with a relative risk reduction of 38% and absolute risk reduction of 1.64% (2.7% vs 4.3%; NNT 61, [95% CI 39-139]) over almost 4 years, compared to placebo. Based on an evaluation of the risk reduction for all strokes (fatal and non-fatal), the relative risk reduction was found to be similar across a range of baseline systolic pressures, but the absolute reduction was greater in the population with a mean blood pressure of 159/94 mmHg compared to the remainder of the population with a mean blood pressure of 136/79 mmHg. This evidence is based on studies of younger patients in relatively good health; the extent to which these results can be extrapolated to older, frail adults is uncertain due to the timeline needed to achieve benefit and the added vulnerability of frailty, which could make treatment with medications riskier.
- Another study of individuals with previous stroke and mean age of 66.1±8.6 years, PRoFESS,[10] showed no benefit over 2.5 years in the primary outcome of stroke using telmisartan 80 mg daily compared to placebo. This result is concordant with the PROGRESS trial, which failed to demonstrate a statistically significant reduction in stroke risk with single agent treatment.

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Lipids

These recommendations outline statin use in severe frailty. This is an evidence-informed consensus, developed in collaboration with the Dalhousie Academic Detailing Program and the Palliative and Therapeutic Harmonization (PATH) Program.

This is intended for those with severe or very severe frailty according to the Clinical Frailty Scale.

Research concludes:

- We found no studies that reported the effect of lipid lowering in severely frail older adults in primary or secondary prevention; therefore studies of the non-frail elderly that reported outcomes meaningful to the frail elderly were examined and assessed for applicability.
- We consider the following outcomes as most meaningful for the frail elderly: symptomatic non-fatal myocardial infarction (MI) (e.g., leading to morbidity such as angina or heart failure) and non fatal stroke leading to disability. The effect of treatment on mortality is difficult to evaluate with frailty (see relevant outcomes in the rationale section).
- Recommendations are intended for individuals who are ≥ 7 on the Clinical Frailty Scale (CFS). This encompasses most older adults living in long term care facilities who are typically severely frail (e.g. completely dependent for personal care). Such individuals frequently have a life expectancy of less than 2 years.

Recommendations

These recommendations consider the significant impact and decreased life expectancy of **severe frailty**.

Primary Prevention*: It is unlikely that statins provide benefit in applicable outcomes and **so there is no reason to prescribe or continue statins for primary prevention.**

Secondary Prevention*: Statin treatment in severe frailty is probably not necessary, although there may be extenuating individualized circumstances that shift the risk/benefit ratio.

With severe frailty there is:

- Uncertainty about whether statin trial outcomes are clinically meaningful.
    - For the frail elderly, an important outcome is non-fatal stroke leading to disability. However, the outcome of non-fatal stroke in some studies sometimes includes mild strokes and TIAs and the number of strokes leading to disability is not reported separately. Therefore, the outcome of non-fatal stroke might not be applicable to the frail.
    - In some statin studies, the primary composite outcome and the outcome of CHD events include those with asymptomatic heart disease such as silent MIs.
- Uncertainty about the magnitude of any benefit conferred partly because of the decreased life expectancy in severe frailty.
- Increased potential for adverse events.

Heart failure: There is evidence that statins are ineffective in improving clinical outcomes in the elderly and there is no reason to start or continue them for this indication.

Ezetimibe: There is currently no conclusive evidence that ezetimibe reduces cardiovascular events or mortality either alone or with statins in any population. There is no reason to start or continue ezetimibe for primary or secondary prevention.

Combination therapy with statins: There is no evidence of added benefit in clinical outcomes for combination therapies for either primary or secondary prevention in any population. There is no reason to start or continue other lipid lowering drugs in conjunction with statins.

Statin dosing: We suggest doses no higher than the following, and possibly lower, remembering that 2/3 of the lipid-lowering effect of a statin is realized at the starting dose. Thereafter, doubling the dose will lower LDL only by a furhter of 4% to 7%.

Atorvastatin 10mg	Rosuvastatin 10mg	
Simvastatin 20mg	Pravastatin 40mg	Fluvastatin 80mg

Adverse events: Advancing age is a risk factor for adverse effects from statins. Consider a trial of statin discontinuation if there is concern about myalgias, drug interactions, or other adverse effects.

Clinical Pearls

Doses

- 2/3 of the lipid-lowering effect of a statin is realized at the starting dose. Thereafter, doubling the dose will lower LDL by only a further 4% to 7%.
- High doses of statins are associated with increased adverse effects and uncertain benefit in the frail elderly, especially when the standard of disabling outcomes is considered.

Adverse events to statins – consider discontinuing statins

- Advancing age is a risk factor for adverse effects of statins.
- Myopathy, including myalgia (muscle pain, weakness, stiffness, and cramps) is a common adverse effect of statins. Female sex, a small body frame, frailty and multisystem diseases are some of the risk factors for myopathy.
- A meta-analysis [Richardson] did not suggest an association between statin use and cognition. However, the strength of the evidence is limited, especially for high dose statins. Case reports, retrospective cohort studies, FDA post marketing surveillance data bases and minor changes in neuropsychological testing after statin initiation suggest a possible association between statin use and cognitive decline. While these data are not definitive, a trial of discontinuation may be appropriate to determine whether cognitive impairment is statin-related.
- Avoid adding medication to treat muscular pain, cognitive impairment or diabetes until statin-related adverse events are considered.

Drug Interactions

- There are some serious drug interactions with statins. To ensure your information is current, please consult a pharmacist for potential interactions and their severity.

Lab Tests

- Regular lipid profiles should not be required since these recommendations do not support starting or maintaining statins in the frail elderly population.

- In the rare situation where statin therapy is initiated or maintained in the frail elderly the following measurements are recommended:
    - Liver enzymes: ALT (not AST) At baseline and within the first 3 months. If normal, no further testing unless symptoms develop or statin increased or switched.
    - Creatine kinase: At baseline and within 3 months. If normal, no further testing unless myalgias develop or statin dose increased or there is a switch to a different statin.

Rationale

We found no studies that report the effect of lipid lowering in severely frail older adults in primary or secondary prevention; therefore studies of the non-frail elderly that reported outcomes meaningful to the frail elderly were examined and assessed for applicability.

- Mortality: There are competing causes for mortality in the frail elderly; therefore we cannot assume that a mortality benefit shown in the non-frail population applies to frail populations. In addition, the goals of therapy may not be to prolong life in the frail.
- **CHD events:** For the frail elderly, the important outcome is symptomatic non-fatal MI (eg., leading to morbidity such as angina or heart failure.) In some statin studies, the primary composite outcome and the outcome of CHD events include those with asymptomatic heart disease such as silent MIs. Prevent asymptomatic heart disease might not prevent morbidity for the frail. Therefore, the outcome of CHD events, as reported in studies of the non-frail, might not be applicable for the frail.
- **Stroke:** For the frail elderly, the important outcome is non-fatal stroke leading to disability. However, sometimes the outcome of non-fatal stroke includes mild strokes and TIAs and the number of strokes leading to disability is not reported separately. Therefore, the outcome of non-fatal stroke as reported in studies of the non-frail might not be applicable to the frail.

We consider the following outcomes as most meaningful for the frail elderly: symptomatic non-fatal myocardial infarction (MI) (e.g., leading to morbidity such as angina or heart failure) and non fatal stroke leading to disability. The effect of treatment on mortality is difficult to evaluate with frailty.

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