Garey Mazowita, MD, Jean-François Kozak, PhD

"First do no harm": Reflections on the application of consensus guidelines for diabetes and other chronic conditions in residential care

When caring for the frail elderly, a more thoughtful and collaborative use of clinical practice guidelines can prevent some of the undesirable outcomes resulting from strict adherence to treatment based on studies of younger subjects with fewer comorbidities.

ABSTRACT: Earlier research has raised concerns about noncompliance with guidelines for the residential care population, particularly with respect to diabetes. Subsequent studies, however, have suggested that many guidelines neither recognize nor accommodate the competing clinical interests (quality of life versus mitigation of disease complications) frequently encountered in this population. Guidelines must, therefore, be contextualized to allow for treatment that is thoughtful, patient-centred, and goal-directed. The management of chronic conditions in frail seniors residing in residential care is not always well served by rigid guideline application.

This article has been peer reviewed.

Diabetes mellitus is a major metabolic disease with known poor health outcomes and significant costs to the individual and the health care system. It is one of several chronic disabling disorders on the increase, especially among the elderly.[1] Within the residential care setting, the reported prevalence rates for diabetes have ranged from 14.5% to 26.0% in Canada and elsewhere.[2,3] Moreover, Aboriginal, South Asian, and Asian Canadians are all at greater risk than the general population for developing diabetes, as are low-income Canadians and those with multiple morbidities.[4,5]

In response to this burden of disease, clinical practice guidelines (CPGs) have been developed at the provincial, national, and international levels for the management of diabetes. These guidelines are intended to promote better health outcomes for diabetic patients and the population as a whole. Despite the value of such guidelines, researchers report that physicians tend not to adhere to them when managing older, frail diabetic adults in the long-term care (LTC) sector,[6,2] findings that raise two central questions: Are physicians remiss in their management of diabetes in this patient population? Or, are physicians adapting their use of consensus guidelines to reflect the clinical realities and the reduced life expectancy of elderly diabetic patients? Despite the lack of evidence for modifications in findings from studies that compare current management practices with the assumed gold standards of disease guidelines, the latter question may apply.

Given that these questions apply to other chronic diseases, and given demographic trends, it is timely to

Dr Mazowita is head of the Department of Community and Family Medicine, Providence Health Care. He is also a clinical professor in the Department of Family Practice, Faculty of Medicine at the University of British Columbia. Dr Kozak is an assistant professor in the School of Population and Public Health at UBC and a research scientist in the Centre for Health Evaluation and Outcome Sciences, UBC.

reflect on the tensions that arise from competing clinical interests (quality of life versus mitigation of disease complications) when treating frail older adults in residential care for complex medical conditions. Formalized attention to these clinical tensions suggests a more nuanced approach to diabetes care and chronic disease care in general for the frail elderly needs to be considered.

Guidelines and clinical reality

Diabetes guidelines such as BC's 2005 Diabetic Care, updated in 2010, and the Canadian Diabetes Association 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada, stress the need for good glycemic control for the prevention of diabetic complications and premature death. Age is, at times, recognized as a potential modifier of recommendations.[7,8] Such sanctioned "permissiveness" is most often attributed to a dearth of studies on the use of guidelines in the frail elderly population rather than to any inherent limitation of the intrinsic value and application of guidelines.

Even where it has been acknowledged that guidelines may require modification for long-term care residents as a patient group, very little specific direction is given as to how guidelines should be modified. Most often, guidelines are simply accompanied by caveats that invite clinicians to "exercise clinical judgment." In a recent review of clinical practice guidelines, Mutasingwa, Ge, and Upshur[9] reported that only 3 of 10 Canadian CPGs reviewed (for diabetes, CHF, and COPD) included specific modifications for elderly patients with multiple morbidities: a common clinical reality faced by physicians practising in LTC today. Although seniors 85 years and older are the largest age group currently in residential care, few guidelines provide specific direction for chronic disease management in this group. Reflecting this age bias, Cox and colleagues[10] reported that only 5 of 14 CPGs reviewed provided specific clinical recommendations for frail adults 80 years of age and older. Certainly the use of guidelines as performance benchmarks without any modification is common practice according to studies evaluating diabetes management in LTC.

Blind application of guidelines can, at worst, replace appropriate and holistic patient care with so-called good, guideline-driven care, all in the name of CPG compliance. Fortunately, and as possibly reflected by the often reported lack of compliance with diabetes guidelines in the LTC sector, most practising clinicians providing continuity of care for the elderly are aware of guideline limitations and give precedence to patients, not guidelines. In the best situations, they do this with the necessary system supports, such as after-hours call arrangements, rapid access strategies, quality improvement initiatives, supporting information technology, and planned proactive care models. This more flexible approach to chronic disease management in a frail and older patient population, however, can result in clinical dissonance when patients are seen by episodic care consultants, who may not fully appreciate patient context and may understandably take more comfort in guideline-directed care, even though the guidelines are based on studies of younger subjects with fewer comorbidities.

Blind application of guidelines can, at worst, replace appropriate and holistic patient care with so-called good, guideline-driven care, all in the name of CPG compliance.

Physicians who maintain ongoing clinical relationships with the frail elderly invariably cite examples of undesirable outcomes resulting from strict adherence to treatment guidelines. For example, there are reports of esophageal erosions from guideline-driven bisphosphonate use; hypoglycemia from guideline-driven diabetes management; hypotension and falls from guideline-driven blood pressure management; and hemorrhage from guideline-driven anticoagulant use. As well, complications in the elderly may result from the polypharmacy common with guideline-driven treatment of a single disease in patients who have multiple diseases and complex medical histories.

Hypoglycemia is a major concern in managing diabetes in frail, older adults with multiple morbidities. Attempts to modify guidelines for

frail elderly patients are increasingly apparent. The American Geriatrics Society has stated that mean glycolated hemoglobin (HbA1c) levels should be 8% in frail older diabetics or in diabetics with short life expectancies.[11] Nova Scotia, in its Diabetes Guidelines for Elderly Residents in LTC, notes that glucose values in the 10 to 20 mmol/L range are acceptable, provided there are no reversible symptoms such as polyuria/nocturia.[12] Cayea and Durso[13] recommend an HbA1c of approximately 8%, except perhaps in patients with nephropathy or neuropathy.

Accepted guideline rejection or modification often raises ethical, legal, and moral dilemmas for the clinician. Does the risk of hypoglycemia outweigh the benefits of euglycemia? What is the relevance of "long-term outcomes" in residential care, where longevity is often measured in months, not years? With respect to hypoglycemia, little information other than case reports is available in Canada and the United States. Feldman, Rosen, and DeStasio[14] used chart reviews to determine that hypoglycemia cases requiring hospitalization are rare (1% of their sample). Less clear are the rates of hypoglycemia overall and the associated nonhospital adverse events and costs.

Evidence has been mounting that the clinical management of the older senior (85 years of age and older), such as those normally found in residential care, is different than it is for younger, more robust seniors. Thus, Soumerai and colleagues[15] reported that while thrombolytic therapy is associated with reduced mortality in individuals under the age of 80, the opposite is true for those 80 and older. Similarly, in the case of agitated dementia, Rondanelli and colleagues[16] demonstrated that treatment with low-dose atypical antipsychotics is not associated with the weight gain or significant metabolic abnormalities typically seen in younger patients.

Evidence has been mounting that the clinical management of the older senior (85 years of age and older), such as those normally found in residential care, is different than it is for younger, more robust seniors.

Guidelines and vulnerable populations

The creation of guidelines is clearly an iterative and evolving undertaking. Yet, many would speculate that the impact of applying guidelines remains poorly defined and inadequately researched. The distinction between guidelines that "inform" clinical practice and those that "compel" clinical practice can become blurred, with significant consequences to individual care and to system cost and performance. The primacy of guidelines may be tacitly facilitated by information technology solutions, care maps, and preprinted order sets. Selected components of guidelines may be employed by funders and quality advocates as evaluative markers, quality of care proxies, or both. The implication, of course, is that demonstrated adherence to guideline-recommended care constitutes a powerful and incontestable proxy for good care. This, in turn, creates conflict for the physician who wants to provide "ideal" care as laid out in the guidelines, yet struggles with applicability and relevance to a specific patient. This tension can result in ambivalence toward the guidelines process and, even more concerning, may undermine the considerable benefits possible from judicious, thoughtful, and tailored application of guidelines.

Some health professions fear that a guideline-driven algorithmic approach to health care might lead to realignment of health care personnel and reallocation of resources. Specific guideline-generated tasks may be entrusted to other care providers. Where reimbursement is based on adherence to guidelines, the assignment of care tasks can create a complicated and confusing accountability environment. Guideline skeptics also express concern that a more patient-centred model and philosophy of care may be compromised. The "art" versus "science" debate is often resurrected, notwithstanding the fact that much of what was previously construed as art in medicine can now be defined and protocolized as science.

All of these issues raise numerous questions. How can we create effective guidelines for vulnerable populations? Do gaps exist in the evidence used in the guidelines development process? Are gaps created by conflicts of interest in "ownership" of guide-

lines (e.g., the medical specialist versus family physician versus disease advocacy organization)? Conversely, are care gaps the result of inadequacies in the sophistication of guidelines or their application? Also unanswered are broader questions that can affect chronic disease management. What are the impacts of factors such as bureaucratic structure, reimbursement models, or resource allocation decisions? What of competing politics, perspectives, and agendas of multiple stakeholders, corporate and noncorporate?

The clinician, particularly the community-based generalist physician, must be particularly circumspect with guidelines that attempt to embed newer technologies, drugs, tests, and treatments into routine practice. Cutting-edge practice is inherently riskier and, unfortunately, is not always supported by evidence derived from long-term use in large and diverse populations. Such newer therapies are not immune from inclusion in guidelines. Witness new therapies of the last decade that are now limited in therapeutic scope or have been withdrawn (e.g., Vioxx).

Guidelines for the continuity of care process

Good intentions and incomplete evidence notwithstanding, the primary care provider remains charged with the enormous responsibility of weighing and reconciling competing aspects of patient care: quality of care, cost, patient preferences, physician biases, values, hope, evidence, and outcomes. This is no small task. In our constantly challenged health care system, the task is further complicated by discontinuity and fragmentation of care, and by single-disease guidelines applied without reference to context.

Explicit reference to the frail elderly in guidelines will help. Because blindly applying single-disease guidelines when caring for the frail elderly can lead to undesirable outcomes, the guidelines process itself needs to become more rich and relevant in attending to recommendations that target this population. The BC Guidelines and Protocols Advisory Committee (GPAC) serves as a welcome example of this with its collaborative guidelines process.

As we demand more sophistication from our guidelines, they stand to become ever more complicated. Evolving collaborative and shared-care models that draw on the wisdom of specialists and others will only add to care complexity. For these reasons, continuity of care and role clarity will be important. One might argue that the specialist role in collaborative care should be to reference guidelines and advise of risks, benefits, and alternatives to guideline-driven investigations and treatments—and in so doing, to empower the family physician to provide evidence-informed contextual care. Guidelines thus become slightly different tools, with complementary applications, in the hands of specialists and general practitioners.

In residential care, primary care physicians will inevitably find themselves discontinuing guideline-recommended medications in order to reconcile good clinical care with goals of care. They will also find themselves setting more forgiving targets for blood pressure, blood glucose, and other endpoints. This is not therapeutic nihilism but rather an acknowledgment of the patient's highly complex medical condition and individual goals and values. By extension, one might argue that the initiation of any chronic disease therapy in a vulnerable population should not be made by a provider of occasional care, but rather by the provider able to offer continuity of care. Perhaps it is process guidelines that we now most require, so that the various parts of the health care system can work better together. In such a world, clinical practice guidelines might provide both therapeutic and process guidance. Safeguarding the continuity of care in this way underscores the importance of context and the primacy of patient-informed consent. This seems particularly relevant to residential care, and is arguably relevant to all care settings.

One might argue that the specialist role in collaborative care should be to reference guidelines and advise of risks, benefits, and alternatives to guideline-driven investigations and treatments—and in so doing, to empower the family physician to provide evidence-informed contextual care.

Conclusions

The care models where guidelines inform, specialists educate and advise, and general practitioners weigh and implement are of universal interest.

As well, there is an acknowledged hunger for more research on undifferentiated primary care populations, particularly the frail elderly with limited lifespans, to ensure relevant guidelines exist. Clinical practice guidelines will always be useful, and in some cases may be powerful enough to compel. All of this, thankfully, is consistent with the current BC health care landscape and GPAC process.

There is an acknowledged hunger for more research on undifferentiated primary care populations, particularly the frail elderly with limited lifespans, to ensure relevant guidelines exist.

Let us collectively ensure that treatment decisions for frail patients in the latter stages of life are made thoughtfully, collaboratively, and with an awareness of context. Let us remember that guidelines alone, without the necessary system supports (e.g., after-hours call arrangements, rapid access strategies, quality improvement initiatives, supporting information technology, and planned proactive care models), are only somewhat useful. Let us ensure that the final years of life are filled with choice and empowerment within a guideline-informed, holistic, and goal-directed environment.

Competing interests

None declared.

References

1. Public Health Agency of Canada. Report from the national diabetes surveillance system: Diabetes in Canada, 2008. Accessed 18 March 2011. www.phac-aspc.gc.ca/publicat/2008/ndssdic-snsddac-08/index-eng.php.
2. Clement M, Leung F. Diabetes and the frail elderly in long-term care. Can J Diabetes 2009;33:114-121.
3. Sinclair AJ, Gadsby R, Penfold S, et al. Prevalence of diabetes in care home residents. Diabetes Care 2001;24:1066-1068.
4. Public Health Agency of Canada. Diabetes in Canada. 2nd ed. Accessed 18 March 2011. www.phac-aspc.gc.ca/publicat/dic-dac2/english/01cover-eng.php.
5. Young TK, Reading J, Elias B, et al. Type 2 diabetes mellitus in Canada's first nations: Status of an epidemic in progress. CMAJ 2000;163:561-566.
6. Hauner H, Kurnaz AA, Haastert B, et al. Undiagnosed diabetes mellitus and metabolic control assessed by HbA1c among residents of nursing homes. Exp Clin Endocrinol Diabetes 2001;109:326-329.
7. British Columbia Guidelines and Protocol Advisory Committee. Diabetes care. Accessed 24 March 2010. 2010. www.bcguidelines.ca/guideline_diabetes.html.
8. Canadian Diabetes Association 2008 clinical practice guidelines for the prevention and management of diabetes in Canada. Can J Diabetes 2008;32:S1-S201.
9. Mutasingwa DR, Ge H, Upshur RE. How applicable are clinical practice guidelines to elderly patients with comorbidities? Can Fam Physician 2011;57:e253-262.
10. Cox L, Kloseck M, Crilly R, et al. Underrepresentation of individuals 80 years of age and older in chronic disease clinical practice guidelines. Can Fam Physician 2011;57:e263-269.
11. Brown AF, Mangione CM, Saliba D, et al. Guidelines for improving the care of the older person with diabetes mellitus. J Am Geriatr Soc 2003;51(5 suppl):S265-S28012.
12. Diabetes Care Program of Nova Scotia. Diabetes guidelines for elderly residents in long-term care (LTC) facilities. Accessed 6 January 2013. http://diabetescare.nshealth.ca/sites/default/files/files/LTCPocketReference.pdf.
13. Cayea D, Durso SC. Management of diabetes mellitus in the nursing home. Ann of Long Term Care 2008;16(suppl). Accessed 9 March 2010. www.annalsoflongtermcare.com/content/management-diabetes-mellitus-nursing-home?page=0,0.
14. Feldman SM, Rosen R, DeStasio J. Status of diabetes management in the nursing home setting in 2008: A retrospective chart review and epidemiology study of diabetic nursing home residents and nursing home initiatives in diabetes management. J Am Med Dir Assoc 2009;10:354-360.
15. Soumerai SB, McLaughlin TJ, Ross-Degnan D, et al. Effectiveness of thrombolytic therapy for acute myocardial infarction in the elderly: Cause for concern in the old-old. Arch Int Med 2002;162:561-568.
16. Rondanelli M, Opizzi A, Andreoni L, et al. Effect of treatment with a food supplement (containing: selected sea fish cartilage, vitamin C, vitamin E, folic acid, zinc, copper) in women with iron deficiency: Double blind, randomized, placebo-controlled trial. [Article in Italian] Minerva Med 2006;97:385-390. BCMJ