Gregory M.F. Ganz, MD, CM, FRCPC

Guidelines for the management of chronic kidney disease: Rationale, development, and implementation

The prevalence and the potential impact of chronic kidney disease on health care resources have stimulated the development of guidelines for screening, investigation, and management.

ABSTRACT: Chronic kidney disease is a prevalent problem that causes significant morbidity and mortality. Appropriate screening and early management can significantly improve outcomes. In order to assist family physicians in detecting and managing this problem, the Guidelines and Protocols Advisory Committee, a joint initiative of the BCMA and BC Ministry of Health Services, sponsored the production of guidelines for management of chronic kidney disease. These focus on the use of chronic disease management principles at the primary care level. The challenges of implementation are now being addressed by a multifaceted approach, including information dissemination, medical education, academic detailing, and the production of educational materials. Further study is needed to assess the utility of the guidelines for management of chronic kidney disease by primary care providers.

Chronic kidney disease (CKD) is an unrecognized epidemic that has the potential to cause serious morbidity and mortality to thousands of British Columbians. It may also result in millions of dollars in new health care costs for a system already under strain. The third National Health and Nutrition Examination Survey completed in the US from 1988–1994 estimated the prevalence of chronic kidney disease in the American population at approximately 9% to 14%.[1] Extrapolating from this data to our population suggests that between 140 000 and 200 000 British Columbians have chronic kidney disease—defined as a glomerular filtration rate (GFR) of less than 60 mL/min/1.73m^2 (normal GFR being greater than 90 mL/min).

Most of these patients have not been diagnosed in the past, in part because there has not been systematic screening of individuals we know are at higher risk of chronic kidney disease, including those with diabetes or atherosclerotic disease and those with First Nations or Pacific Islands heritage. A serum creatinine level has been the most common screen for CKD, but as there is no absolute "normal" value for creatinine, this has permitted significant renal impairment to go unrecognized. The recent initiative by the laboratory physicians of BC to report an estimated glomerular filtration rate (eGFR) based on age, sex, and creatinine values has great potential to improve recognition of chronic kidney disease because the eGFR is a much better reflection of renal function than creatinine alone.

Rationale for guidelines

The impact of chronic kidney disease on health is significant. In addition to the morbidity of dialysis and related interventions, the prognosis of end-stage renal disease requiring dialysis is very poor, with higher mortality than most solid organ malignancies.[2] In addition, patients with chronic renal impairment have a significantly increased risk of cardiovascular events and mortality, at somewhere between 3 and 10 times the risk of the general population.[3,4] Patients with chronic

Dr Ganz is a clinical nephrologist at the Royal Jubilee Hospital, Victoria, BC.

kidney disease can also have many other associated pathologies, including anemia, metabolic bone disease, vascular calcification, malnutrition, and immunosuppression, all of which can result in significant morbidity. In general, the severity of these problems also increases with the severity of renal disease.

Several interventions have been shown to reduce the progression of CKD. These include rigorous blood pressure control, the use of angiotensin blockade, control of proteinuria, smoking cessation, and treating dyslipidemia.[5-9]

Although CKD is asymptomatic in its early stages, it can be detected with some fairly simple laboratory investigations. Interventions can reduce progression of this disease, and early interventions make the biggest impact. All of these characteristics suggest that early screening and management by primary care physicians will have the greatest effect on morbidity and mortality for patients with CKD. In the past, most patients diagnosed with CKD would have an assessment by a nephrologist then ongoing follow-up. With the current nephrology staffing in British Columbia, each nephrologist would have to see 10 new patients each day for 2 years just to assess the prevalent patients with CKD. Clearly, much of this management will need to be done by primary care providers.

Development of guidelines

Given the prevalence and the potential impact of chronic kidney disease, guidelines for screening, investigation, and management are essential. CKD guidelines were recently developed under the auspices of the Guidelines and Protocols Advisory Committee (GPAC), a joint initiative of the provincial government and the BCMA.

The development of the guidelines coincided with a focus on chronic disease and the preparation of guidelines for the management of diabetes, congestive heart failure, and hypertension. Development also coincided with an initiative by the BC Association of Laboratory Physicians to report eGFR, an innovation that could be included in the guidelines and thus assist family physicians in the interpretation of lab results.

A working group was struck consisting of nephrologists, internists, endocrinologists, cardiologists, family physicians, laboratory physicians, and representatives from the Kidney Foundation of Canada and BC Ministry of Health.

Current literature was reviewed, including guidelines on the management of chronic kidney disease from the US National Kidney Foundation and the Canadian Society of Nephrology. Guidelines were generated at a series of meetings, with input from all of the physicians involved. A great deal of emphasis was placed on providing adequate information for management of early disease while keeping the guidelines as simple as possible to enhance implementation. Self-management and principles of chronic disease management were emphasized in the development of guidelines.

After multiple revisions, the guidelines were submitted to the GPAC for external review by 537 physicians, including internists and specialists in nephrology, endocrinology, and cardiology, as well as laboratory physicians. Family physicians who ordered renal investigations very frequently or very rarely were asked to review the guidelines, and patients were contacted through the Kidney Foundation of Canada and asked to comment. All feedback was incorporated into further revisions of the guidelines.

The final draft of the guidelines was then distributed to all physicians in BC and is now available online (see Box on page 294).

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Implementation of guidelines

Barriers to the implementation of these new guidelines are still being assessed and addressed. At the time the guidelines for chronic kidney dis-

ease were published, the GPAC had already produced 50 guidelines.[10] The CMA database of guidelines includes 363 guidelines,[11] and the US National Guideline Clearinghouse includes information on 1306 guidelines for physicians.[12] Several commonly used guidelines are revised regularly. Because physicians are receiving guidelines on an almost daily basis, deciding which bear more than a cursory review and which need to be incorporated into practice can be very challenging.

Multiple strategies can be used to assist physicians in implementing the recommendations in guidelines. Wide dissemination of guidelines is probably the most common measure used. Unfortunately, simple mail-outs alone are often ineffective in promoting guideline implementation.[13] In order to inform physicians about the importance of the CKD guidelines and review the major recommendations, many CME sessions have been undertaken across the province by specialists. These have consisted of lectures as well as small-group case-based discussions of the major recommendations.

The BC Kidney Summit, a provincial conference on the management of chronic kidney disease, was held in Vancouver in June 2005 (www.bckidneysummit.com/). One of the purposes of this conference was to raise awareness of CKD and the tools available to improve detection and management.

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Although traditional CME activities can improve guideline use, other strategies such as academic detailing, distribution of reminder cards and other teaching tools, and provision of patient-specific tools such as flow sheets may be more useful.[14] The Kidney Care Initiative on Vancouver Island is investigating some of these alternative methods to improve guideline implementation (see "Management of chronic kidney disease in the primary care setting" in this issue).

In addition to promoting awareness of the guidelines, improving implementation will require adjustments to the infrastructure of primary care. The current reimbursement schedule for primary care is based on acute care and does not support the optimal management of chronic disease. Remuneration needs to reflect the complex nature of caring for patients with chronic illness and the time required to deal with their multiple health issues. Despite this lack of financial support, there is still significant interest on the part of primary care providers to adopt best practices for the management of problems such as CKD. Even with the best of intentions, however, physicians will need to make modifications in office routines, data gathering, and communication to allow the implementation of guidelines in family practice. There are many different strategies that can assist in identifying and addressing these issues. Education on chronic disease management through a structured collaborative process and registry-type tools such as the Ministry of Health chronic disease management toolkit may begin to help in this process.

Another serious impediment to the management of chronic disease is the shortage of primary care providers. An increasing number of "orphan" patients with no family physician have no access to preventive care or planned care of chronic disease. This problem will continue to worsen as fewer graduating physicians choose family practice as a career. In the 2004 CaRMS match, only 26.4% of applicants from Canadian medical schools chose family practice as their first career choice.[15] Unless this shortfall is addressed, measures aimed at prima-

See the GPAC guidelines—Identification, Evaluation, and Management of Patients with Chronic Kidney Disease—www.healthservices.gov.bc.ca/msp/protoguides/gps/ckd.pdf.

ry care physicians will be increasingly ineffective as fewer and fewer patients will have access to family physicians to provide chronic care.

Summary

Appropriate screening and early management are important in limiting the impact of CKD. Ultimately, the utility of the new CKD guidelines in improving the health of patients in BC will rest on their implementation. Further study is planned to assess the impact of the current guidelines on screening and management practices, and to guide ongoing efforts to make the guidelines more useful to family physicians.

Competing interests

None declared.

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