Training/Practice
Health Policy and Promotion

Canadian Cardiovascular Society Quality Indicators for Heart Failure

Members of the Heart Failure Working Group: Robert S. McKelvie, MD, PhD, FRCPC,[a]
George A. Heckman, MD, MSc, FRCPC,[b] Claudia Blais, PhD,[c]
Jafna L. Cox, BA, MD, FRCPC, FACC,[d] Justin A. Ezekowitz, MB, BCh, MSc, FRCPC,[e]
Yanyan Gong, MSc,[f] Karen Harkness, RN, PhD,[g] Gordon Moe, MD, FRCPC,[h]
Sulan Dai, MD, PhD,[i] Paul Dorian, MD FRCPC,[j]
David E. Johnstone, MD, FRCPC, FACC (retired),[k] **Other authors**: Erin C. McGeachie, BAH,[l]
Jack V. Tu, MD, PhD,[m] and Laurie J. Lambert, PhD[n]

[a] *McMaster University, Hamilton, Ontario, Canada*

[b] *Schlegel-UW Research Institute for Aging, School of Public Health and Heath Systems, University of Waterloo, Waterloo, Ontario, Canada*

[c] *Institut national de santé publique du Québec, Faculté de pharmacie, Université Laval, Québec City, Québec, Canada*

[d] *Dalhousie University, Halifax, Nova Scotia, Canada*

[e] *University of Alberta, Edmonton, Alberta, Canada*

[f] *Health System Performance, Canadian Institute for Health Information, Ottawa, Ontario, Canada*

[g] *Cardiac Care Network of Ontario and McMaster University, Hamilton, Ontario, Canada*

[h] *St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada*

[i] *Public Health Agency of Canada, Ottawa, Ontario, Canada*

[j] *St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada*

[k] *University of Alberta, Edmonton, Alberta, Canada*

[l] *Canadian Cardiovascular Society, Ottawa, Ontario, Canada*

[m] *ICES, Sunnybrook, University of Toronto, Toronto, Ontario, Canada*

[n] *Institut national d'excellence en santé et en services sociaux (INESSS), Montréal, Québec, Canada*

ABSTRACT

A working group was convened by the Canadian Cardiovascular Society (CCS) in 2010 to identify quality indicators (QIs) for heart failure (HF). Using the CCS "Best Practices for Developing Cardiovascular Quality Indicators" methodology, a total of 49 "long-list" QIs was identified and rated. Subsequent ranking and discussion led to the selection of an initial "short-list" of 6 QIs to evaluate quality care, including daily

RÉSUMÉ

En 2010, la Société canadienne de cardiologie (SCC) a confié à un groupe de travail le mandat de déterminer les indicateurs de qualité (IQ) pour l'insuffisance cardiaque (IC). Suivant la méthodologie d'élaboration des IQ cardiovasculaires selon les meilleures pratiques de la SCC (*Best Practices for Developing Cardiovascular Quality Indicators*), 49 IQ ont initialement été cernés et cotés. Après

Clinical practice guidelines (CPGs) provide recommendations for diagnostic or therapeutic interventions, or both, requiring clinical judgement in their application. However, guidelines represent only 1 component of the strategy to improve health care and must be combined with an approach to quantify the quality of health care provided to patients.[1]

assessment of blood chemistry indicators, chest radiography, patient education, in-hospital use of angiotensin-converting enzyme inhibitors or angiotensin-receptor blockers, assessment of left ventricular function, and 30-day hospital readmission. The short-list QIs were selected as being important for quality assurance and because the patient information, for the most part, can be captured during the inpatient setting, which would allow these QIs to be adopted more easily. These 6 QIs were subjected to a feasibility test that found that even within the inpatient setting, there is a significant gap between the existing knowledge infrastructure and the necessary information-tracking processes to measure QIs. Only 1 QI (30-day hospital readmission) can currently be measured comparatively across Canada, although the other 5 of 6 short-list QIs can be measured using other data collected by jurisdictions. Standardization and enhancements to knowledge infrastructure are essential to provide the comprehensive patient data necessary to evaluate the quality of HF care across Canada.

l'établissement d'un classement et la tenue de discussions, une liste restreinte a été établie et les 6 IQ suivants ont été retenus pour l'évaluation de la qualité des soins : analyses biochimiques quotidiennes, radiographies thoraciques, éducation des patients, utilisation d'inhibiteurs de l'enzyme de conversion de l'angiotensine et d'antagonistes des récepteurs de l'angiotensine chez les patients hospitalisés, évaluations de la fonction ventriculaire gauche et taux de réhospitalisation à 30 jours. Les IQ de la liste restreinte ont été sélectionnés en raison de leur importance du point de vue de l'assurance de la qualité et du fait que les renseignements sur les patients peuvent en majeure partie être recueillis durant leur séjour à l'hôpital, ce qui faciliterait l'adoption de ces IQ. Une étude de faisabilité a cependant révélé que, même dans le milieu hospitalier, il subsiste un écart important entre l'infrastructure actuelle du savoir et les capacités nécessaires de suivi des renseignements pour mesurer ces 6 IQ. Dans l'état actuel des choses, un seul des 6 IQ de la liste restreinte (soit le taux de réhospitalisation à 30 jours) peut être mesuré à des fins comparatives dans l'ensemble du Canada; les 5 autres peuvent toutefois être mesurés à l'aide de données recueillies par les provinces et territoires. La collecte de données exhaustives nécessaires à l'évaluation de la qualité des soins en cas d'IC au Canada passe essentiellement par l'amélioration et la normalisation de l'infrastructure du savoir.

Quality assurance is a process whereby health care organizations can ensure the care delivered for an illness meets accepted standards.[1] Quality-of-care indicators can be derived from the CPGs for the illness of interest. A good quality indicator (QI) should be based on strong clinical evidence, and thus failure to perform the action defined by the QI will reduce the likelihood of optimal patient outcomes.

Heart failure (HF) was selected for QI development because it imposes a significant burden on patients and the health care system, and there is significant variation in management as well as outcomes achieved.[2] There are multiple evidence-based therapies that have been demonstrated to reduce clinical event rates.[3] Measurement of QIs would be important to identify whether patients with HF were managed appropriately according to CPGs.

Methods

The approach to develop QIs consisted of 3 phases: (1) plan and organize QI development, (2) develop and select QIs, and (3) operationalize QIs.[2] The main objectives were to develop QIs based on recent Canadian Cardiovascular Society (CCS) CPGs and involve stakeholders in the development process to encourage provincial adoption.

Plan and organize the QI development initiative

The QI Development Committee was multidisciplinary with pan-Canadian representation.[2] Members included 5 clinicians (fields of cardiology and geriatrics) and 5 data holders who were guided by 2 cochairs with HF expertise. Subtheme groups were created focusing on acute hospitalization for HF, discharge/transition, outpatient care, and palliative care/end-of-life planning. Members of subtheme groups provided expertise/recommendations but did not have

input on QI rating, ranking, or the final selection of key indicators.

Development and selection of the QIs

A literature review of relevant publications was conducted (Supplemental Appendix S1) to ensure that the QIs were consistent with the recommendations in the CCS HF CPGs.[3] Also reviewed was a recent international environmental scan of QIs.[4] A preliminary "long list" of QIs was created. The technical note for each QI was developed, including definitions of numerator, denominator, calculation method, rationale, clinical recommendations, data sources, and possible implementation challenges.

QIs were rated using a 7-point Likert scale that evaluated importance, scientific acceptability, feasibility, and overall rating. Three different strategies were applied to the QI ratings (Supplemental Appendix S2). Strategy 1 selected QIs with an overall rating ≥ 5. Strategy 2 selected QIs in which ≥ 70% of the respondents assigned an overall rating score of 5, 6, or 7. Strategy 3 selected QIs in the top third of each domain.[2]

The committee, in conjunction with stakeholders and the Canadian cardiovascular community (through web consultation) developed a QI short list. This short list was thought to be manageable for initial operationalization.

QI operationalization

The Committee identified a preliminary list of administrative and clinical database holders to initiate the operationalization process. The identified database holders completed a feasibility questionnaire and follow-up interview to evaluate whether the selected short-listed QIs would impose unreasonable effort, cost, and collection time. A summary of the methodology and questionnaire used are available in Supplemental Appendices S3 and S4.