

# Identifying Canadian patient-centred care measurement practices and quality indicators: a survey

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## Abstract

**Background:** Patient-centred quality indicators allow health care systems to monitor and evaluate patient-centred care practices and identify gaps in health care quality. Our objective was to determine whether Canadian provinces and territories measure patient-centred care, identify patient-centred quality indicators currently being used and compare patient-centred care practices and measurement in Canada to those of health care systems in other countries.

**Methods:** An online survey was developed to collect data on demographic characteristics, patient-centred care practices, and indicators used at quality improvement organizations and health care authorities. The survey was conducted with quality improvement leads in Canada and 4 other countries. Content analysis methods were used to analyze and report the data. Patient-centred quality indicators were identified and categorized according to the Donabedian framework (structure, process, outcome).

**Results:** The survey had a response rate of 47/67 (70%) and a completion rate of 58/60 (97%). We obtained completed surveys from 12 of the 13 provinces and territories in Canada. Respondents from most provinces indicated their organization used patient-centred care measures to inform practices. Respondents in only 4 provinces/territories reported using patient-centred quality indicators, for a total of 61 unique indicators. Most indicators used across Canada assessed aspects of care related to the Donabedian components of process and outcome. Findings for Canada were comparable to those for Sweden, England, Australia and New Zealand, where many measures are still in development.

**Interpretation:** This study provided greater insight into patient-centred care measurement across Canada, Sweden, England, Australia and New Zealand and helped us to identify patient-centred quality indicators currently in use. These results will inform the development of a standard set of patient-centred quality indicators for implementation by health care organizations to improve the quality of health care.

In recent years, health care systems around the world have adopted patient-centred care as a model to improve quality of care.<sup>1</sup> A breadth of evidence has demonstrated that patient-centred care improves patient outcomes and experiences;<sup>2-4</sup> interactions and communication between patients, families and their health care providers;<sup>5-12</sup> and health care provider satisfaction. Further, patient-centred care has been shown to reduce health care utilization and costs while maintaining high-quality care.<sup>13-15</sup> The Institute of Medicine's *Crossing the Quality Chasm* report (2001) identified patient-centred care as 1 of 6 aims to achieve high-quality health care and defined it as "providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions."<sup>16</sup>

Quality indicators can play an important role in informing health care providers, organizations and policy-makers on the quality of care, enabling them to make comparisons

(benchmarking) across time and various contexts and helping them to set priorities.<sup>17</sup> The need for quality indicators for patient-centred care is acknowledged by the World Health Organization: "as of yet there are no universally accepted indicators to measure progress in establishing integrated people-centred health services."<sup>18</sup> Thus, there is a need to ensure that patient-centred quality indicators reflect the patient perspective: What matters most to the patients with regard to the health care that they receive?

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The objectives of this study were to understand how Canadian provinces and territories measure patient-centred care, identify existing patient-centred quality indicators that are in use, and compare patient-centred care practices and measurement in Canada with those in comparable health care systems in England, Sweden, Australia and New Zealand.

## Methods

The study was conducted as part of a larger program of research that aims to develop a core set of evidence-based, patient-informed, patient-centred quality indicators that can be used by health care systems across the continuum of care to evaluate patient-centred practice and promote quality improvement.

### Setting

With the help of our collaborators (including a patient partner in our research program; Providence Health Care, British Columbia Ministry of Health; Harvard Medical School; the Canadian Institute for Health Information; Health Quality Ontario; and the Health Quality Council of Alberta) and 2 research networks (the International Society for Quality of Life Research and the Canadian Association for Health Services and Policy Research), our study team identified quality improvement leads and experts in the measurement of patient-centred care across Canada and in England, Sweden, Australia and New Zealand,<sup>19,20</sup> to obtain an organizational perspective. These countries were chosen because of their ongoing efforts to measure patient-centred care, because they have health systems that are comparable to Canada's (i.e., universal health care systems) and because of the feasibility of identifying participants through our research networks. A scoping review of the peer-reviewed and grey literature was conducted previously and published elsewhere.<sup>21</sup> In addition to this, we performed a Google search between July 2016 and September 2016 to understand how various health care jurisdictions in Canada, England, Sweden, New Zealand and Australia were measuring patient-centred care and whether patient-centred quality indicators were used. We searched the websites of health care organizations and jurisdictions from the 5 countries using keywords such as "patient (or person)-centred care," "patient (or person)-centred care/patient experience measurement," "patient (or person)-centred care/patient experience measures," "quality indicators" and "quality improvement" to identify potential participants to contact regarding measurement of patient-centred care. If contact information for potential participants was not available, an email was sent to the organization to identify the most appropriate contact. An email message was sent to potential participants that included a formal letter of invitation.

### Design

The survey was codeveloped and piloted with the study collaborators and the patient-centred quality indicator study patient partners, to address our specific research objectives and ensure

that it had face validity and that it incorporated the perspectives of patients, health care providers, experts in quality improvement, experts in patient-centred care measurement and data experts (Appendix 1, available at [www.cmajopen.ca/content/6/4/E643/suppl/DC1](http://www.cmajopen.ca/content/6/4/E643/suppl/DC1)). The lead patient partner in this study (S.Z.) is a co-investigator on our research program on developing patient-centred quality indicators. Her involvement in this study was to ensure that the content of the survey incorporated the patient perspective. She and the study authors agreed on the extent of her participation in this component of the study.

The survey used adaptive questioning; if the participant's health care organization did not practise patient-centred care, the next question was an open-ended one in which the participant could offer an explanation, rather than a question asking what kind of patient-centred quality indicators their organization used. The survey was divided into 6 sections: (a) health region/agency information; (b) interviewee contact information; (c) health region/agency characteristics; (d) implementation of patient-centred care; (e) use of quality indicators for patient-centred care; and (f) collecting, reporting and storing information. Participants shared additional information about the patient-centred quality indicators that their organization used or that were in development and information related to patient-centred care measurement using free-text boxes (e.g., reasons for not practising patient-centred care).

### Sources of data

A follow-up protocol was developed to achieve the study's target of reaching a 75% response rate. We chose this response rate because the results of surveys with response rates below 70% may be approached with skepticism.<sup>22</sup> Similar environmental scans, including one conducted by Santana and colleagues (2012), achieved a response rate of 76%.<sup>23</sup> Although Web-based surveys can yield low response rates, we considered factors that would improve our response rate as we designed the survey and data collection protocol.<sup>24-26</sup> This protocol involved snowball sampling,<sup>27</sup> whereby potential respondents were asked to direct the researchers to an alternative contact for their organization if they were not the appropriate respondent. A sampling frame was not developed because of the variability of the potential respondents;<sup>28,29</sup> however, each referral chain for all organizations sampled was tracked using Microsoft Excel. Confirmed contacts received 3 initial invitation emails 1 week apart. If contact was made by telephone, the researcher (C.D. or K.M.) used a script to introduce the study to the potential participants. Participants who consented to responding to our survey were asked to complete the survey through an emailed link or over the telephone with the researcher; in the latter case, the researcher guided the participant through the questions and completed the questionnaire. Contact ceased after failure to reach the participant or if the survey was not completed after 2 follow-up calls.

Data were collected between July and December 2016. The survey was voluntary and incentives were not offered. Responses were collected automatically through SurveyMonkey (an open, free online survey platform), exported

into an Excel file, deidentified and analyzed using Stata 13. A “back button” enabled respondents to change their responses even after the survey was complete. To avoid duplicate responses, a “Web-link collector” option used cookies to restrict data collection to 1 unique response per device, and responses were reviewed by the research team. Surveys were considered complete and included in the analysis if all survey questions were completed up to “End Survey” and/or the respondent completed the primary survey question: “Do you use patient-centred quality indicators to measure the implementation of patient-centred care in your region (collect information on how patient-centred care is being delivered)?” Follow-up was done with respondents via email and telephone to clarify responses or obtain resources/measures that respondents referenced in their answers to survey questions.

### Data analysis

Our research team developed the definition of patient-centred quality indicators on the basis of definitions found in a scoping review of the literature and discussion among team members. In our search, we found no consensus on a definition, and we developed an operational definition for the purpose of this environmental scan.<sup>21</sup> We defined patient-centred quality indicators as the unit of measurement of health care system or organizational or individual performance that quantify patients’ and families’ experiences with the care received and quantify the experience of any individual who needs to have contact with health care services. To reduce response bias, examples were not provided in the survey. Any patient-centred quality indicators reported by national and international respondents to the survey and related information (description, dimensions, related measures, sector used, health care organization) were extracted from individual survey responses using Excel. Use of surveys and instruments, guidelines, feedback from patient advisory committees, and patient reports like complaints/compliments were also captured as tools/practices to measure patient-centred care.

The patient-centred quality indicators extracted from the scan were categorized on the basis of the Donabedian model of health care systems,<sup>30</sup> which has been widely used as a basis for defining and conceptualizing quality of care.<sup>31–33</sup> This model classifies information about quality of care into 3 categories: structure, process and outcome. Patient-centred quality indicators were categorized under “structure” if they measured health care materials, resources and organizational characteristics. They were categorized as “process” indicators if they measured the interactions between patients and health care providers (e.g., communication, self-care management, transitions of care). “Outcome” patient-centred quality indicators measured the outcomes of interactions between the health care system and health care providers and patients (e.g., patient-reported outcomes).

Three of the research team members (C.D., K.M., M.S.) reviewed and agreed upon the extraction and classification of patient-centred quality indicators. Duplicate patient-centred quality indicators were removed. Patient-centred quality

indicators that varied somewhat in wording but measured similar domains were considered unique (e.g., “client experiences with respect to care” v. “would residents recommend this home to others”).

The frequency of responses for each of the following survey sections was calculated using Stata 13: health care organization characteristics; implementation of patient-centred care; use of patient-centred quality indicators; and collecting, reporting and storing information. Data collected from open-ended responses in the survey were analyzed using directed content analysis methods and represented by items in the survey, such as “other definitions for patient-centred care,” “plans for developing patient-centred quality indicators” and “other ways data are reported.”<sup>34</sup> Using this deductive approach, 2 researchers (C.D., K.M.) independently read and analyzed the open-ended responses, to minimize bias, and agreed on the categorization of the data into predefined major themes, using Excel. It was not necessary to use a coding tree as the data set was small. The results were presented at stakeholder meetings to verify the findings with participants and ensure consistency between the data and the findings.

### Ethics approval

Ethics approval was obtained from the University of Calgary Conjoint Health Research Ethics Board in June 2016. The ethics identification number for the study is REB15:2846. We did not foresee any risks to the participants in the study.

## Results

### Demographics of respondents and health care structures

The research team selected a target response rate of 75% in an attempt to capture as much information on patient-centred care measurement from Canadian health care organizations as we thought might be feasible in a 6-month timeframe. Our aim was to obtain a comprehensive view of the Canadian patient-centred care landscape; we hypothesized that there would be a great deal of variation across Canada because of the lack of national standardization for patient-centred care measurement. The 75% response rate goal necessitated the development of a follow-up protocol to ensure timely and appropriate follow-up of respondents. Although we did not reach our goal of a response rate of 75%, we felt that with our response rate of 70%, we were able to obtain a good representation of patient-centred care measurement across Canada.

In Canada, we contacted 67 health care agencies and authorities; of these, 47 responded to our survey (70% response rate). We were able to capture information from most provinces and territories with governing organizations that oversee health care quality at the provincial/territorial level, with the exception of Nunavut. Of the overarching agencies that set patient-centred care policies for multiple groups in each province/territory, 30/36 (83%) responded. The overall survey completion rate for all countries and organizations was 58/60 (97%).

Participants from 11 organizations from other countries responded: 2 of 4 in Australia, 1 of 1 in New Zealand, 4 of 12 in England and 4 of 7 in Sweden, resulting in a response rate of 11/24 (46%). Although the response rate from the international survey was lower than that of the Canadian one, it met our research objective to get a general sense of patient-centred care and patient-centred quality indicators in these 4 other countries. We are confident that the information captured internationally depicts the landscape of patient-centred care measurement.

### Patient-centred care practice in Canada

Study participants represented Canadian organizations that largely served both adults and children (94%) in urban (89%) and rural (91%) areas and mostly provided acute care (85%). A variety of health care organizations were represented, including long-term care facilities, substance addiction rehabilitation centres, home care services, ambulance services, provincial coordinating services and networks (autism, transplant, renal, cardiac, perinatal), public health services, maternity care services, dental care services, and nurse stations.

Table 1 displays the demographics of our Canadian participants. Forty-three of the 47 respondents (92%) reported practising patient-centred care, with the exception of respondents from the Northwest Territories, Quebec, Saskatchewan and Manitoba. Some organizations in Manitoba and Saskatchewan do report practising patient-centred care. The 8% who did not practise patient-centred care offered various reasons (Box 1). Respondents were asked whether they use the Institute of Medicine's definition of patient-centred care.<sup>16</sup> Almost half of the Canadian organizations represented in the survey (21/47; 45%) practise patient-centred care according to this definition; 22/47 (47%) practise patient-centred care, but do not use the Institute of Medicine's definition; and 4/47 (8%) reported not practising patient-centred care at all.

Other definitions of patient-centred care used by the organizations represented in the survey emphasize the importance of creating a culture of teamwork and engagement between patients, families and health service providers; emphasizing the contribution of not only patients but also their family members; and treating individuals as unique, while valuing patient diversity.

### Patient-centred quality indicators used to monitor and assess patient-centred care

Of the respondents who reported using patient-centred quality indicators, many used measures to assess patient-centred care rather than patient-centred quality indicators (see Appendix 1, Supplementary Table A1).

Table 2 displays findings from participants who used patient-centred quality indicators as described in our definition. In total, we identified 61 patient-centred quality indicators. Of these, 100% were defined and developed to the point of readiness for implementation, with some still being further developed; 26% described the domains of measurement/content of the patient-centred quality indicator, such as "patients/families involved in strategic planning" but the

source of measurement was unknown (see Appendix 1, Supplementary Table A2 for a more detailed version of Table 2). The majority of the indicators identified were from Health Quality Ontario (27/61).

Structure indicators were used infrequently (9/61; 15%); process (18/61; 30%) and outcome (34/61; 56%) indicators were more commonly used. Saskatchewan was the only province that used indicators that measure structural dimensions of health care. British Columbia, New Brunswick and Ontario focused on process and outcome indicators.

### Collecting and reporting information

Respondents reported collecting information on patient-centred care measurement from more than 1 source, including from patients (97%), clinicians (48%) and other sources (55%), such as families, caregivers, administrators and health care organizations (e.g., ICES, the Canadian Institute for Health Information). Data on patient-centred care were often collected by paper-based (86%) or online surveys (72%).

Overall, data on patient-centred care were reported in 90% of health regions, and 88% had stand-alone data reporting systems. Reporting was presented at meetings (81%) or included in annual reports (61%), on electronic and paper-based dashboards (50%) and on other platforms, such as public reports and websites (58%).

### Patient-centred care measurement in other countries

A sample of participants from Australia (Australian Commission on Safety and Quality in Health Care; NSW Clinical Excellence Commission), New Zealand (Health Quality and Safety Commission), Sweden (Kronobergs län, Western Region, Småland, Jönköpings län) and England (National Health Service, Point of Care Foundation) provided insight into how the measurement of patient-centred care in Canada compares with that in other countries. All (11/11) of the international organizations represented in our survey served both adults and children, 91% (10/11) served rural, suburban and urban populations and 82% (9/11) provided both community and acute care services. All organizations reported that they practised patient-centred care, but 36% (4/11) said that they were not currently using patient-centred quality indicators. However, 75% (3/4) of the organizations that did not use patient-centred quality indicators were currently developing them.

#### Box 1: Examples of reasons that health care organizations were not practising patient-centred care

"It is a value and a goal for our organization; we are implementing new tools and supports for staff and patients. Based on trends in complaints and patient feedback I cannot say we are practising patient-centred care at this time."  
— Vice President of Quality Improvement

"It would be the provincial aim to do so; however, I would not be confident in stating this is occurring systemically in [our] regional health authorities or facilities. I would suggest that we are on a path toward doing so, but it is not occurring presently."  
— Executive Director of Quality Improvement

**Table 1: Use of patient-centred quality indicators and patient-centred care measures by 43 Canadian organizations that reported practising patient-centred care**

Organization	Respondent's title/position	Uses PC-QIs	Uses measures to inform PC-QIs*
<b>Alberta</b>			
Alberta Health Services	Executive director, clinical quality metrics		Yes
Health Quality Council of Alberta	Director, health system analytics		Yes
<b>British Columbia</b>			
BC Provincial Health Services Authority	Project coordinator, accreditation and patient experience	Yes	Yes
Provincial Renal Agency	Patient-centred performance improvement manager		Yes
Providence Health Care	Practice consultant, care experience strategic direction	Yes	
Vancouver Coastal Health	Regional director, client relations, professional practice, quality and patient safety	Yes	Yes
Island Health	Executive director, patient experience (client relations, professional practice, quality and patient safety)	Yes	
Fraser Health	Executive director, clinical quality	Yes	Yes
<b>Saskatchewan</b>			
Sunrise Health Region	Continuous improvement and patient safety specialist	Yes	
Cyprus Health Region	Director, quality care and patient safety	Yes	
Prince Albert Parkland Health Region	Vice president, clinical support services and quality performance	Yes	Yes
Health Quality Council of Saskatchewan	Director, data analysis and reseach partnerships		Yes
<b>Manitoba</b>			
Interlake–Eastern Regional Health Authority	Regional director, quality, risk and patient safety		Yes
Winnipeg Health Region	Manager, nursing intitatives		Yes
<b>Ontario</b>			
Health Quality Ontario	Vice president, health system performance	Yes	
Champlain Local Health Integration Network	Senior integration specialist	Yes	
Erie St. Clair Local Health Integration Network	Health system manager	Yes	
North Simcoe Muskoka Local Health Integration Network	Director, planning, integration, evaluation and community engagement	Yes	
Central Local Health Integration Network	Senior director	Yes	
Cancer Care Ontario	Director, person-centred care	Yes	Yes
Ontario Association of Community Care Access Centres	Quality lead	Yes	
Sunnybrook Health Sciences Centre	Performance improvement specialist	Yes	Yes
<b>Nova Scotia</b>			
Nova Scotia Health Authority	Director, quality improvement, safety and patient relations, Eastern zone		Yes
IWK Health Centre	Manager, patient experience and accreditation		Yes
<b>Newfoundland and Labrador</b>			
Eastern Health	Client and family centred care manager		Yes
<b>New Brunswick</b>			
New Brunswick Health Council	Executive director, performance measurement	Yes	
<b>Prince Edward Island</b>			
Health Prince Edward Island	Health information specialist		Yes
<b>Yukon</b>			
Yukon Health and Social Services – Continuing Care	Director, safety and clinical excellence		Yes

Note: PC-QI = patient-centred quality indicator. No data were available from Nunavut. Some organizations in Saskatchewan and Manitoba did not practise patient-centred care. None of the respondents from the Northwest Territories or Quebec indicated that their organization practises patient-centred care. \*Patient-centred care measures may include guidelines, strategic directions or instruments that have a collection of items that measure 1 or more dimensions of care (e.g., physician communication and patient experience).

**Table 2: Examples of patient-centred quality indicators in Canada**

Indicator by Donabedian category*	Province	Jurisdiction/organization
<b>Structure</b>		
Presence of a patient- and family-centred care steering committee	Saskatchewan	Prince Albert Parkland Health Region
No. of breaches of Personal Health Information Act	Manitoba	Interlake–Eastern Regional Health Authority
Patient-centred care project funding and evaluation	Ontario	Cancer Care Ontario
100% of health regions have patient- and family-centred care content included in staff general orientation by Mar. 31, 2017	Saskatchewan	Health Quality Council of Saskatchewan
<b>Process</b>		
Inclusion of patients in decisions about care they receive	British Columbia	Providence Health Care
Treated with respect and dignity	New Brunswick	New Brunswick Health Council
Patient involvement in decisions about their care and treatment	New Brunswick Ontario	New Brunswick Health Council Health Quality Ontario
Given the information needed about community care access centres' services Felt involved in developing care plan	Ontario Ontario	Health Quality Ontario Ontario Association of Community Care Access Centres
<b>Outcome</b>		
British Columbia Children's Hospital Emergency Department Patient Experience (% positive score for overall care received, emotional support, respect for patient preferences, information and education, physical comfort, access and coordination, and continuity and transition)	British Columbia	BC Provincial Health Services Authority
Timely access to service	New Brunswick	New Brunswick Health Council
Proportion of patients and families informed about treatment options	Ontario	Cancer Care Ontario
Language and cultural needs met	Ontario	Champlain Local Health Integration Network
Recommendation of hospital/emergency department to others	Ontario	Erie St. Clair Local Health Integration Network
End of life, preferred place of death	Ontario	Health Quality Ontario
Patient experience: provider spending enough time with patient	Ontario	Health Quality Ontario

\*A full list of indicators is found in Appendix 1.

Our results revealed that the health care system in Australia has not yet systematically incorporated patient-centred care into the health care system at the national level, and it has not yet developed patient-centred quality indicators. However, the Australian Commission on Safety and Quality in Health Care reported that Australia is in the process of developing a patient-reported experience and outcome measure that will be implemented systematically at the national level. New Zealand uses patient-centred quality indicators that measure patient-reported experiences of care to assess patient-centred care in the health care system. The respondents from all of the 4 regions sampled in Sweden reported that their health care system practised patient-centred care; 3 of the 4 regions were developing patient-centred quality indicators, and 1 region reported using a patient-centred quality indicator. This patient-centred quality indicator measured the “percentage of organizations that have descriptions of patient-centred care processes in early planning.” Finally, the respondents from England reported using patient-centred quality indicators to measure patient-centred care in their health care system including the National Health Service mandated

patient-centred quality indicator Friends and Family Test. England also used instruments implemented by the National Health Service to assess patient-centred care and inform patient-centred quality indicators, including the National In-Patient Survey, the National Cancer Patient Experience Survey and the Survey of Bereaved Carers. All of the patient-centred quality indicators and measures in England were used to measure outcomes of health care.

### Interpretation

This study depicts efforts to measure patient-centred care in health care organizations across Canada and compares them with efforts in England, Sweden, Australia and New Zealand. Our comprehensive approach to capturing patient-centred quality indicators exposed the variation in patient-centred care measurement across Canada. While some health care organizations use patient-centred quality indicators, others use patient-centred care measures (e.g., surveys), use guidelines for patient-centred care, or review patient-centred care practice through patient advisory boards. Many organizations

reported that they use various methods to evaluate patient-centred care and that they found value in measuring patient-centred care using a variety of approaches (e.g., use of patient-reported outcomes, feedback from patient advisory groups and self-assessments from health care providers). There was inconsistent use of patient-centred quality indicators and patient-centred care measurement within and across organizations in each country. Patient-centred care practices and measurement in Canada are comparable to those in the other countries included in this study. Nationally and internationally, the patient-centred quality indicators used focused on measuring health care processes and outcomes, with an emphasis on measuring patient experiences with care received and delivered.

The results of our survey reveal the complexity of measuring patient-centred care. Although the benefits of patient-centred care are evident in the literature, patient-centred care is a broad concept, as indicated by the various ways it was defined by the participating health care organizations. The measures currently in use may not capture the breadth of assessing patient-centred care. For example, patient-centred care measurement should not only include patient-reported outcomes but also measure patient-centred care in health care structures and processes.<sup>35</sup> Further, the literature suggests that patient-centred care measurement should include the various time points throughout a patient's interaction with the health care system (i.e., before provision of care, during patient care, and outcomes of patient care). At the national level in Canada, the Canadian Institute for Health Information has made important contributions in synthesizing various measures used to measure patient-centred care.<sup>36</sup> These measures and indicators can be used by health care organizations to monitor and evaluate patient-centred care, further the development of patient-centred quality indicators and help develop national, standardized measurements that establish benchmarks for patient-centred quality improvement. The current study compiled a list of candidate patient-centred quality indicators that can inform this national initiative. To provide a complete overview of patient-centred care measurement in Canada, we assessed patient-centred care measurement in as many health care sectors as possible, rather than focusing on a specific subset. Further, we improved the generalizability of our findings by sampling countries with health care systems comparable to Canada's: Sweden, England, Australia and New Zealand.

### Limitations

Limitations exist in this study. Snowball sampling<sup>27</sup> can be challenging, as it requires referral from potential contacts, which can result in not finding the correct contact and/or nonresponse. Even though our response rate (70%) was just below the target rate (75%), the Canadian landscape was well captured. We achieved a response rate of 46% for the international countries we selected. Although we aimed to gain a general understanding of patient-centred care measurement in these countries, there is the possibility that we may have missed feedback from other organizations in these countries. While we strived to have a team of national and international

experts on patient-centred care and its measurement, representation may have benefited from additional collaborators in Canada and the other countries we surveyed. Another limitation is the potential for missing information, although we strived to obtain information from all relevant national and international organizations through a follow-up protocol. Although our study instrument was developed and piloted with our study collaborators and patient partners, further testing could benefit its development. Including countries with similar health care systems allowed us to make international comparisons, but it remains unclear how countries with alternative health care systems, such as the United States, measure patient-centred care, reducing the generalizability of our results. The current study did not formally assess the quality of the indicators or provide information on what was considered a "high quality" indicator (i.e., the indicator is important to patients, reliable, valid, feasible and easily understood by the target audience).<sup>33</sup> However, because this was not a part of our study objectives, we suggest that future research assess the quality of patient-centred quality indicators. Finally, the comprehensive approach of the current study allowed us to capture the landscape of patient-centred care measurement across Canada. However, additional details on patient-centred quality indicator descriptions, dimensions, definitions and examples would have provided more detail to respondents and reduced the variation in how quality improvement leads defined patient-centred quality indicators.

### Conclusion

These findings will inform the development and implementation of patient-centred quality indicators. The identification and refinement of a list of patient-centred quality indicators will provide a standard of quality for patient-centred care and identify areas of improvement for patient care. If these indicators are implemented internationally, it will be possible to compare patient-centred care across countries.

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