Incorporating Patient-Reported Outcome and Experience Measures into Practice: A focus on Healthcare Providers
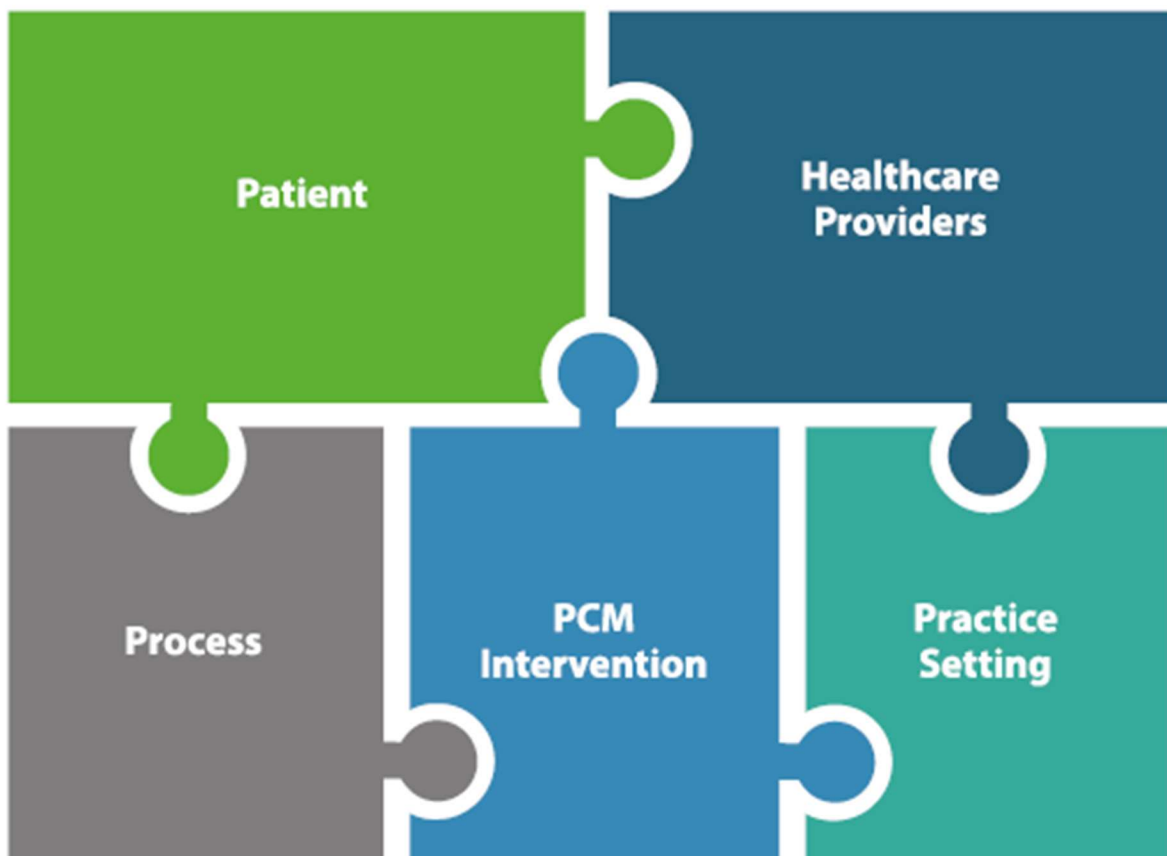
Evidence Brief

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This brief summarizes a research project on healthcare providers (HCPs) use of patient-centred measurement (PCM). We describe individual factors influencing HCPs' practice and identify strategies by which providers incorporate the PCM data into patients care. The **goal** is to improve the implementation of PCM by HCP in their daily, routine practice. This brief provides the key findings from a systematic review (n=127 articles) and qualitative interviews (n=20 HCPs). Exemplars were used from four practice areas: rehabilitation, mental health, perinatal/child health, and oncology. For a detailed overview of the study methods see Appendix A.

Patient-reported outcomes and experience measures

There are a variety of standardized and validated patient-centred measures/assessment tools for clinicians to collect decision-aiding information from patients to better understand and address what matters to them. These tools are intended to make healthcare more person-centred, responsive, and efficient. There are two types of tools that assess either health status or experiences (video here):

1. health status (overall health; disease condition, symptoms, and its treatment; functional status; quality of life; or mental well-being) → also referred to as **patient-reported outcome measures** (PROMs), herein the term PROMs will be used
2. experiences (health care or illness experience) → also referred to as **patient-reported experience measures** (PREMs)

Why are PROMs used?

Theses assessment tools can provide information that can enhance HCPs' interpretation of data obtained from clinician-based assessments such as health history, biological measures, and physical examination. This information might inspire conversations between patients and providers as they develop individualized care plans. As a result, such conversations might facilitate shared decision-making between patients and clinicians, improved patient-clinician communication, detection of overlooked problems, and tailored process monitoring.

Assumptions

- Integration of PROMs in the routine practice of HCPs might have a positive impact on health outcomes
- PROM data can be used in combination with other data, such as clinician outcomes, to continually encourage shared decision-making
- Information collected from patients via PROMs be used within patient-provider encounters, rather than solely for quality and safety initiatives
- Implementation of PROMs into clinical practice is a "complex intervention." Initial and sustained adoption of the patient-centred assessment tools require consideration of the PROM assessment tool, context, HCPs, and implementation process (Damschroder et al., 2009)

Research Evidence about the Factors Influencing Provider Behaviour

Ten factors emerged as significant from the systematic review and are reported under three overarching categories: Capability, Motivation, and Opportunity.

CAPABILITY

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1. Practical Knowledge

HCPs gained "new" knowledge about or familiarity with PROMs that was both *general* and *specific* within a clinical context/practice area. *General knowledge* about PROMs included the (a) purpose (e.g., patient-centred care and patient voice), (b) definition, (c) concept/area measured (e.g., quality of life), (d) benefits and relevance to practice for patients, HCPs, and healthcare, (e) explanation of PROMs to patients, and (f) team utility of PROMs.

Specific knowledge about PROMs within clinical context/practice area included:

- What PROM could be selected for a given condition or concern (including validity and reliability)?
- What do the scores mean? What is considered a "meaningful" change?
- What is the difference between generic versus disease-specific PROMs? How do HCPs (e.g., physiotherapist) select PROMs for various patient populations?
- In what ways can PROMs inform patient care (e.g., diagnosis, treatment, monitoring, evaluation)?
- What referral pathways exist? How are referrals made?
- What time efficiencies are possible?

In some instances, HCPs used this practical knowledge so that it would become speculative "second-nature" knowledge such as that for pattern recognition and intuitive decision-making.

2. Procedural Knowledge

HCPs acquired "know-how" knowledge to be able to implement and apply PROMs in HCPs routine practice. Procedural knowledge was both ***general*** and ***specific*** within a clinical context/practice area. As such, providers need to know the following ***general procedures***:

- How to administer/collect PROMs (e.g., when to collect and review data)
- Completion requirements such as initial and ongoing frequency for data collection
- Whether PROMs are mandatory or at the discretion of HCP
- How to use interpersonal skills for PROMs administration (e.g., scripts)
- Accessing results in a timely and "easily" interpretable manner
- How data was generally and meaningfully integrated into client care
- When and how to share with patients
- Roles and responsibilities of each HCP working within the larger team; how PROMs data was used to coordinate/collaborate with HC team
- Technological procedures associated with electronic administration (e.g., login, access to data, and system navigation)

Examples of ***specific procedural knowledge*** about PROMs include:

- Why (in what situations – for whom was it intended) the PROM may be used
- When (at what point in care) the PROMs may be used
- The outcomes associated with the PROM (how it has benefitted client care); strengths and weaknesses, validity/reliability
- The PROM itself and how to use it (score + interpretation)
- General treatment plan applications based on the scoring/responses (e.g., referrals to other HCPs)

In terms of having clear procedures and workflow processes, many studies have noted no significant impact on length of clinical encounters. When procedures were not addressed, were confusing and/or inconsistent, then HCPs workload increased, and issues occurred.

3. Skills / Skills Development

HCPs develop their proficiencies to implement PROMs in their practice through professional development and self-directed learning. Most times, supports and resources were necessary for HCPs to acquire the theoretical knowledge and practice skills that could encourage confidence. Moreover, there needed to be initial and ongoing skills development for optimal PROMs integration into routine practice.

The most frequently cited skill acquisition was how to interpret PROMs data to understand its clinical significance (e.g., summary scores, item or subscale scores, and score changes) to inform care decisions and planning. The second most frequently cited skill in the evidence was their ability to deal with, and address patients' needs that are not biomedical (e.g., psychological, emotional, and psychosocial) and to participate in shared decision-making. HCPs often indicated that because of limited application skills, the use of PROMs further reduced their confidence. Resources to support HCPs to collect data and share results were commonly identified as a need. For example, they relied on scripts for discussing results with patients and communicating results to team members and patients. PROMs were a means by which a communication pathway between

patients and providers became more person-focused. The systematic review demonstrated that HCPs have the ability to integrate PROMs into daily practice. Examples include the following.

- During initial history taking and intake assessments, PROMs referred to a comprehensive set of structured questions that were not based on what HCPs deem important. Information from PROMs was used by HCPs to quickly orientate themselves to the patient's well-being, better understand concerns faced by patients/families; gain further insight into issues that arise from the patient; prioritize concerns in a shared manner and personalize care.
- HCPs noted that PROMs allowed them to validate patients' feelings, get to know the patient better, and minimize clinical assumptions.
- PROMs (and resultant data) could initiate, guide, and enrich the patient-provider conversation and serve as a springboard to discuss concerns beyond physical/biomedical symptoms to achieve a more holistic view.
- PROMs provided a starting point to highlight unmet/overlooked needs that affect the daily life of patients or are sensitive in nature such as psychological, financial, social, cognitive, emotional, and sexual.
- HCPs draw on the baseline and ongoing collection of PROMs data to diagnose or review patients' symptoms; create and modify treatment plans that are tailored to patients; monitor and track patient progress; identify patients at high risk; evaluate care/treatment effectiveness; refer to the most relevant clinician for patients' needs; determine prognosis; and decide on discharge from services.

4. Decision-making

PROMs data were "integrated" into clinical practice in both *general* and *specific* ways regarding the cognitive processes for clinical judgment and decision-making.

In *general*, these data were a way to obtain a general impression of the patient, obtain further details, or discern patient preferences and priorities for care. PROMs were one of many assessment tools that could be combined with data elicited by clinicians (e.g., health history and physical assessment) to support clinical judgment, opinions, and decisions. They complemented or were an adjunct to guide HCPs' decisions about patients' care and were used alongside clinician-based data to provide a holistic or comprehensive picture of the patient. PROMs could be effective when included in clinical practice guidelines to supplement care protocols and evidence.

Specifically, decision-making conversations could be informed/guided by PROMs data (e.g., diagnosis and prognosis; overall care needs; type/options and length of treatment; identify and respond to risks; options for self- and provider-management; educate about recovery; monitoring symptom severity/progress; care evaluation; and triage and referrals). The specific ways included:

- Integration of PROMs data to tailor patients' care could not occur unless the scores were easily interpretable and understood within the context of other clinician-based data. In other words, HCPs needed to understand the meaning of PROMs scores in "real life" given the patients' reasons for seeking healthcare. Interpretability could be aided by having visual representations scores (e.g., graphs), and identifying clinically relevant scores/cut-off scores or guidelines on what constitutes abnormal scores along with corresponding clinical action(s). When HCPs did not know what clinical decisions to make because of PROMs scores, or there was not a suitable resolution of the concern, then HCPs were sometimes likely to disregard the integration of PROMs data in their clinical decisions/judgments.
- PROM data could be important when there were multiple treatment options with similar patient outcomes and/or efficacy. Key considerations were about PROMs being clinically meaningful. Weighing these data was considered on a case-by-case basis and was context specific. For example, in oncology settings, all data collected were prioritized in terms of efficacy, impact on patients (quality of life and symptoms), and toxicity.
- A reoccurring example in the literature about PROMs being included in care decisions was integrating them into an electronic health record system to create automatic alerts/triggers/flags for HCPs to review PROM scores quickly and easily. Processes/workflow and procedures with specified HCP roles and responsibilities were needed for the optimization of PROMs data.

The "mental work" of integrating PROMs was expressed by HCPs. Some HCPs indicated PROMs could decrease the cognitive overload because their use streamlined the patient information available across the interprofessional team. For this long-term gain, HCPs indicated that the information from PROMs could be overwhelming, excessive, and demanding. This was closely aligned with #10 (below).

5. Behavioural regulation

HCPs that received regular, ongoing practice evaluation and feedback about their ability to incorporate PROM data commented about how it aided clinical decision-making and enhanced communication with patients and team members. Regular feedback engaged and motivated team members to understand PROM relevance. For those supervising HCPs, training resulted in positive attitudes towards administering PROMs and using the data and high levels of self-efficacy. However, this could be overshadowed by other contextual challenges and change initiatives in organizations.

MOTIVATION

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6. Attitude and Beliefs

Integration of PROMs regularly in practice was influenced by various beliefs (e.g., opinions, attitudes, and perspectives). These subsequently impacted HCPs current or future uptake of PROMs. The most common themes from HCPs about PROMs were:

a. Personal experiences using PROMs were:

As a result of implementing PROMs in daily practice, HCPs offered ideas about their overall abilities.

- **Self-confidence** about the use of specific PROMs was related to the area being assessed (e.g., physical versus mental). When used for symptom monitoring, some HCPs lacked confidence in the reliability of the PROMs to identify those at risk in comparison to their own assessment of patients. Finally, some HCPs lacked **the** confidence to integrate the PROMs information into their plan of care.
- In terms of HCPs **self-efficacy**, some were not comfortable interpreting certain PROM data (e.g., quality of life) or using it with patients. Another article noted that clinicians with positive attitudes or self-efficacy regarding PROMs had higher levels of PROM use than clinicians with less positive attitudes or self-efficacy. Time to practice using PROMs and 3-days of training have also been reported to having an effect on self-efficacy related to PROMs.
- More than three-quarters of HCPs that incorporated PROMs in their daily practice (compared with half that did not) were likely to recommend PROMs to a colleague in another department or institution. On the other hand, powerlessness to effect change was expressed by clinicians in one article when PROMs implementation brought to the surface prevailing person, cultural, and structural obstacles around good patient care.

b. The top 3 HCP beliefs about PROMs in practice:
- PROMs should be clinically relevant, beneficial to patients, and valuable to support clinical decisions for care planning/treatment. PROMs need to be accurate, actionable, relevant, useful/practical, and impactful.
- PROMs should focus on patient concerns/experiences to allow their voice to be heard and identify aspects of care that were important to patients. HPCs indicated that patient outcomes related to the regular completion of PROMs were awareness, empowerment, encouragement, responsibility, and sense of control.
- PROMs provided structure to communication in such a way that it facilitated conversation/dialogue between some patients and HCPs for rapport/relationship building.

c. The top 3 beliefs about the integration PROMs:
- Burden to patients such having difficulty completing the PROM assessment questions (e.g., health literacy, severity of condition, vulnerability, or cognitive impairment).
- Validity and reliability of PROMs to accurately reflect patients situation/concerns, subjectivity of patient answers, cultural and gender differences, and complexity of area being assessed (e.g., quality of life).
- Patients may not complete the PROM accurately. The main reasons why this could occur was due to patients' desire to provide positive response to "keep the clinician happy" and fear of disclosing sensitive information.

A key **consequence** of PROMs was time-related workload concerns. The use of PROMs for efficiency in terms of time demands (e.g., workload and changes to clinical workflow) need to be balanced with HCPs ideas about the benefits to clinical practice and patient care (e.g., provider-patient communication and relationship building; patient level of expectations of HCP; shared decision-making; and referrals to access additional services). Efficiencies were sometimes realized when PROMs data were used to facilitate clinical discussions between patients and providers. Another unintended consequence was practice liability with HCPs being concerned about

their legal and ethical responsibility to follow-up on a matter identified by using a PROM and whether failure to do so would result in clinical negligence and liability concerns (e.g., remote monitoring of patients using PROMs).

7. Social/Professional Role and Identity

Little to no evidence was found to indicate that HCPs thought PROMs were not part of their professional responsibility. What was identified was the need for clinicians, as part of the larger collaborative care team, to have clear delineation of roles/responsibilities among HCPs and sufficient resources to support their use of PROMs. Further, they required assistance to address difficulties applying these tools and ensuring PROM use did not negatively affect or limit their therapeutic relationship with patients. Furthermore, the evidence determined that specific practice contexts (e.g., Emergency Department) were not suited to PROM collection.

HCPs viewed PROMs as supporting and encouraging cooperative/collaborative/teamwork effort towards common care goals (see #8). Team processes (e.g., interpersonal relationships, communication, and scope of practice) were necessary to optimally implement PROMs into practice for continuity of patients' care.

8. Goals

The main goals identified by HCPs for integrating PROMs into their daily practice were to facilitate patient-centred care, discuss individualized treatment options and focus on patients' health goals. An integral component of achieving these goals was the nature of patient-provider relationships and shared decision-making.

9. Emotion, Intention, and Reinforcement

HCPs have multiple **fears** related to their internal expectations (e.g., correct use of PROM/ fear of change), the external expectations of administration and managers (e.g., cost containment, quality of service, use for performance measures), and expectations of patients. Some HCPs expressed this as a "fear" that was attributed to uncertainty, making things worse, or "opening a can of worms" that they do not have the skills to address. Common fears were raised that because of the findings from PROMs that this could raise patients' expectations of HCPs. Providers were uncertain as to whether they could meet these expectations. Minor fears evident in the literature were about change (e.g., the way clinicians might practice), making mistakes using PROMs, lack of flexibility to integrate the PROM in specific patient-provider encounters, interference by managers in clinical practice, and PROMs use solely for cost containment. A few articles reported HCPs experienced being stressed, cognitively strained, and overwhelmed when PROMs implementation was burdensome.

Another theme in the literature was HCPs **motivation** (intentions) towards the uptake of PROMs. Intrinsic motivators were about individuals being open to new ideas and wanting to improve their practice. A lack of motivation of HCPs was linked to a very low number of completed PROM assessments. Concerns (actual or perceived) about PROMs contributed to their low motivation, which subsequently affected their routine use of these assessment tools.

With regards to **reinforcement**, the main concern expressed by HCPs was about the meso- (organizational) and macro- (national) level use of PROM data for performance evaluation and system-level quality improvement (e.g., performance evaluation in comparison to peers). HCPs were ambivalent about these data used for meso-level purposes, particularly if it was punitive. Only 3 studies mentioned HCPs being financially compensated for completing PROMs.

OPPORTUNITY

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10. Environmental context and resources

This domain was one of the most reported factors that influenced HCP behaviour, particularly the organizational planning and choosing of PROMs. From the clinician standpoint, the dynamic interplay between the HCP and their healthcare surroundings was a key influential factor. The top 3 of 9 themes identified by HCPs were:

- Given the current healthcare environment that was fraught with competing organizational/work priorities, dwindling health human resources (e.g., staffing levels) and sufficient administrative/clerical staff, organizations need to

mitigate the burden of greater workload demands that could be associated with the routine use of PROMs (collection, scoring, interpretation, determining treatment or care plans, monitoring). This was often discussed as an insufficient time, being busy, and optimizing efficiencies.

- To benefit patients' care, PROMs integrated into practice should (a) improve workflow (rather than hinder, disrupt, or be misaligned), (b) align or "fit" the specific practice settings, and (c) avoid duplication of work.
- Usability of PROMs by HCPs in their current practice areas influenced uptake. This was expressed in number of ways by HCPs such as PROMs (a) designed in a user-friending manner for data collection, (b) interfacing with electronic health record/documentation system, (c) comprehensibility, (d) viewing and interpretability of results promptly, and (e) clinical relevance.

References

Bingham, CO, Noonan, VK, Auger, C, Feldman, DE, Ahmed, S, & Bartlett, SJ (2017). Montreal Accord on patient-reported outcomes (PROs) use series – Paper 4: Patient-reported outcomes can inform clinical decision making in chronic care. *Journal of Clinical Epidemiology*, 89, 136-141.

Damschroder, LJ, Aron, DC, Keith, RE, Kirsh, SR, Alexander, JA, Lowery, JC (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science, 4*, 1-15. https://doi.org/10.1186/1748-5908-4-50

Greenhalgh J, Long AF, Flynn R. (2005). The use of patient reported outcome measures in routine clinical practice: Lack of impact or lack of theory? *Social Science & Medicine, 60*(4), 833-43.

Greenhalgh J, Meadows K. (1999). The effectiveness of the use of patient-based measures of health in routine practice in improving the process and outcomes of patient care: A literature review. Journal of Evaluation in *Clinical Practice, 5*(4), 401-16.

Lavallee DC, Chenok KE, Love RM, Petersen C, Holve E, Segal CD, et al (2016). Incorporating patient-reported outcomes into health care to engage patients and enhance care. *Health Affairs, 35*(4), 575-82.

Wolff, AC, Dresselhuis, A, Hejazi, S, Dixon, D, Gibson, D, Howard, AF, ... & Edwards, L (2021). Healthcare provider characteristics that influence the implementation of individual-level patient-centered outcome measure (PROM) and patient-reported experience measure (PREM) data across practice settings: A protocol for a mixed methods systematic review with a narrative synthesis. *Systematic reviews, 10*(1), 1-12. https://doi.org/10.1186/s13643-021-01725-2

World Health Organization (WHO). (2019). *Health systems strengthening glossary: Person-centred care*. Available from https://www.who.int/healthsystems/hss_glossary/en/index8.html

Yang LY, Manhas DS, Howard AF, Olson RA. (2018). Patient-reported outcome use in oncology: A systematic review of the impact on patient-clinician communication. *Supportive Care in Cancer, 26*(1), 41-60.

Appendix A: Overview of the Research Project

Background and Rationale

In healthcare there is a vision among many to provide patient-centred care[1] (PCC) as a hallmark of achieving quality and safe health care. What this means is that care, whenever possible directly involves the needs and perspectives of the patient. As such, healthcare providers (HCPs) are faced with the challenge to focus on what matters to the patient during their encounters with the health system. One challenge that needs resolving is how to assist HCPs, when requested, to use assessment tools that are "patient-centred" (also referred to as patient-centered measurement (PROM)). Once these assessment tools are used, the second challenge is how HCPs can routinely use this information to optimally deliver patient care, treatment decisions, and clinician decision-making. Specifically, information gained from these tools at the practitioner level can be used for various purposes, such as screening, monitoring, planning and evaluating care, and creating decision aids.

To answer this question, we will use a multi-method approach to involve researchers, knowledge users (stakeholders that are healthcare providers and decision makers supporting practice), and patient partners. The outcome of this study is the development of a resource guideline for providers and decision makers on the routine use of PROM data for planning and decision making at the point-of-care at the provider-patient interface.

Purpose

To address these challenges, we are studying how providers can interpret and integrate data from patient-centered measurement assessments (experience and outcome) into routine clinical care.

Our research questions are:

1. What are the experiences of providers using PROM data as a routine part of their everyday practice?
2. What are the methods/strategies by which providers interpret and use the results of PROMs?
3. What are the enablers for providers to use PROM data in routine practice? What factors impact providers' ability to interpret and use these data?

The overarching **objective** of this study is to create a resource guide to support clinical decision-making that uses PROM data. As previous mentioned, advancing the work of others, the guide might aid in the shift towards routine collection, interpretation, and use of PROM in clinical practice.

Method

Two phases:

A Systematic Review focused on healthcare provider's experiences in implementing PREMs and PROMs. For details, the protocol for the review has been published (Wolff et al, 2021). To-date, a total of 126 research articles (see Table 1) were synthesized to develop the evidence brief. To validate the evidence findings, a Qualitative Description study was conducted to include twenty 1:1 HCP interviews from 4 practice areas: rehabilitation, mental health, perinatal/child health, and oncology. Two focus groups were held with pre-licensure physiotherapy students in the United Kingdom. All evidence, knowledge, and data from the evidence and interviews were analyzed separately, and then synthesized as a whole by comparing, linking, and contrasting develop the evidence brief.

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[1] *Patient-centred care* is commonly understood as focusing on the individual seeking care—the patient. Whereas *person-centered care* (video here) is focused and organized around the health needs and expectations of people and communities rather than on diseases. *People-centred care* (video here)extends the concept of patient-centred care beyond patients to include families, communities, and society. People-centred care encompasses patient/clinical encounters and also includes attention to the health of people in their communities and their crucial role in shaping health policy and health services (World Health Organization, 2019).

Table 1. Articles include in the Evidence Brief by Study Design and Quality Appraisal Score

Study Design (2009-2019)	Total Number	Quality Appraisal Score out of 100			
		100%	80-99	60-79	Less than 60
Systematic Reviews	8	2	4	2	0
Mixed Method	16	1	5	3	7
Qualitative	27	2	9	13	3
Survey (Prevalence)	16	0	2	12	2
Analytical Cross-Sectional	1	0	0	0	1
Organizational Experience / Quality Improvement	58	12	22	19	5
Total	**126**	**17**	**42**	**49**	**18**

Table 2. Summary of Participant Demographics for Qualitative Interviews

Profession	Number	% (out of 20)
Registered Nurse	5	25%
Registered Psychiatric Nurse	1	5%
Physician (GP)	1	5%
Oncologist	2	10%
Physiotherapist	6	30%
Registered Clinical Counsellor	4	20%
	19	95%
Professional Tenure		
Less than 1 year	1	5%
1 to 2 years	0	0%
3 to 5 years	3	15%
6 to 10 years	8	40%
Greater than 10 years	8	35%
	20	100%
Clinical Area		
Community Mental Health	5	25%
Maternal Child	4	20%
Rehabilitation	6	30%
Oncology	5	25%
	20	100%
Job/Role		
Staff/Clinical/Work at Bedside	13	65%
Coordinator/In Charge/Case Manager/Project Lead	4	20%
Manager/Leader/Dept Head	1	5%
Other (clinical resource, project lead)	2	10%
	20	100%
Length of Time Worked with PROMs (n=18)		
Less than 1 year	0	0%
1 to 2 years	2	11%
3 to 5 years	5	28%
Greater than 5 years	11	61%
	18	100%

Table 3. Examples of PROMs Used by HPCs Interviewed

List of PROM	Oncology	Maternal Child	Mental Health	Rehabilitation
ORS (Outcome Rating Scale) in Feedback-Informed Treatment (FIT)			0	
SRS (Session Rating Scale) in FIT			0	
Group SRS (Group Session Rating Scale) FIT			0	
Canadian Personal Recovery Outcome Measure (C-PROM)			1	
World Health Organization Quality of Life (WHOQOL-BREF)			2	
Health of the Nation Outcome Scales (HONOS Assessment)			1	
Role Functioning Scale (RFS)			1	
EPDS (Edinburgh Postnatal Depression Scale)		2		
Ages and Stages Questionnaire (ASQ)		1		
Patient-Reported Information & Symptom Measurement (PRISM)	4			
Prospective Outcomes & Support Initiative (POSI)	4			
Nutrition Screening Tool (NST)	2			
Psychological Screen for Cancer, revised (PSSCAN-R)	4			
Edmonton Symptom Assessment Scale, revised (ESAS-r)	4			
Columbia Suicide Severity Rating Scale	1			
Gynecologic Clinical Initiative - Patient Reported Outcome (GCI-PRO)	1			
International Prostate Symptom Score	1			
Sexual Health Inventory for Men	1			
Musculoskeletal Health Questionnaire (MSK-HQ)				0
Activities Specific Balance (ABC) Scale				4
Visual Analogue Scale (VAS) for Pain				6
Numeric Pain Rating Scale				2
Oxford Hip Score				1
Oxford Knee score				1
Upper Extremity Functional Index (UEFI)				1
Disability of the Arm, Shoulder and Hand (DASH) questionnaire				1
Lower Extremity Functional Scale				2
Patient Health Questionnaire-2 (PHQ-2)				1
Health Assessment Questionnaire -Disability Index (HAQ-DI)				1
Readiness to Manage Arthritis Questionnaire (RMAQ)				1
Modified Borg Dyspnea Scale				1
Berg Balance Scale (BBS)				1

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