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POLICY BRIEF

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Patient-Reported Outcome Measures

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Key Messages

- Patient reported outcomes are any aspect of a patient's self-reported health status.
- At the patient-level, the use of Patient Reported Outcome Measures (PROMs) can enhance the quality of clinical decision-making, support people's capability to self-care, and improve overall quality of care
- At the organisational and system-levels, PROMs can support performance monitoring, quality assurance, continuous quality improvement and service evaluation that help drive value-based health care initiatives.
- PROMs are used globally, but their application has been primarily restricted to local initiatives rather than embedded in regional or national approaches.
- The systematic implementation and use of PROMs face many challenges such as resource constraints and limited stakeholder engagement.
- Patient and public involvement is essential for effective PROMs implementation, yet current levels are low.
- A structured and targeted approach to the initiation and scaling of PROMs programmes over time at the system-level is needed to ensure the delivery of meaningful results.
- Engaging in national and international efforts can integrate data collection for benchmarking, facilitate implementation lessons, share costs, and promote training and educational opportunities.

Executive Summary

What is a Patient-Reported Outcome Measure?

A patient-reported outcome is any aspect of a patient's health status that is directly reported by a patient. Patient-Reported Outcome Measures (PROMs) are standardised questionnaires used to capture patients' own assessment of how their condition and treatment affect their health and wellbeing.

How have PROMs been adopted internationally?

The international adoption of PROMs has its origins in the early 1980s in Europe and the USA, which sought to provide more holistic care to patients, specifically to maximise both health status and physical functioning. The subsequent development of standardised PROMs heralded a step-change towards quality improvement initiatives through the ability to systematically collect, manage and monitor health status. International initiatives such as the Organisation for Economic Co-operation and Development (OECD) Patient-Reported Indicator Surveys (PaRIS) and the International Consortium for Health Outcomes Measurement (ICHOM) have accelerated such capabilities.

Many health systems internationally have since seen rapid advances in the use of PROMs in clinical practice, representing an upward curve in the integration of PROMs as part of a wider movement to advance value-based care. In Singapore, for example, the national shift towards Appropriate and Value-Based Care (AVBC) positions PROMs as a foundational component of healthcare transformation. As of 2024, an estimated 115 PROMs have been evaluated for use in Singapore across 35 conditions.

Why are PROMs important?

PROMs can have a positive impact on health system performance at all levels of the health system. At the patient level, PROMs can improve patient participation, enhance quality of clinical decision-making, facilitate shared decision-making, bolster monitoring and screening, and improve overall care quality and outcomes. At the organisational level, PROMs can support performance monitoring, organisational accreditation, continuous quality improvement and service evaluation. At the system level, they can help to assess population health status, guide policy decisions and drive value-based care initiatives.

PROMs are part of a wider movement to advance value-based healthcare.

What has been the impact of PROMs?

PROMs impact has been variable, but there is good evidence to show that their use can improve health system performance at different levels of the health system:

- At the patient level, PROMs have been shown to improve people's self-awareness of their conditions, modify their health behaviours and treatment choices, and augment clinical decision-making leading to better health outcomes.
- At the organisational level, PROMs data has supported benchmarking to drive higher-performing healthcare through more efficient resource allocation and service improvements through greater accountability for performance.
- At the system level, PROMs have provided evidence to inform health policy decision-making, for example in areas such as virtual care, chronic care and mental health.

What are the facilitators and barriers to PROMs adoption?

Since PROMs are being implemented in complex, dynamic healthcare systems, their adoption poses many challenges:

- At the patient level, attitudes of different stakeholders (e.g., system leaders, medical staff and patients) towards PROMs are key factors, including perceptions of their relevance and value in providing higher quality clinical care.
- At the organisational level, if patient-reported outcome data collection can be seamlessly integrated into clinical workflows and the data made easily accessible to users (e.g., as part of electronic health records), adoption is much more likely. In addition, leadership and peer champions are critical drivers of a cultural shift towards continuous quality improvement, including the use of PROMs to inform decision-making.
- At the system level, political will and ambition exert significant influence. Nationally mandated PROMs programmes have helped standardise and harmonise data collection as well as provide clear governance, funding, incentives, training, and a health system platform for data visualisation to support improvements.

How can PROMs be best implemented?

The adoption of PROMs in health systems is shaped by multilevel and multidimensional factors. Evidence demonstrates that implementing PROMs into routine care requires coordinated changes in relationships, workflows, technology, and incentives, but that current approaches to adoption lack implementation strategies aimed at system-level change, resulting in sub-optimal outcomes. Early engagement of clinicians, managers, and patients appears essential, but it must be undertaken within a structured process in which PROMs are carefully prioritised and selected. An intentional and systematic approach is required to ensure that the adoption of PROMs can lead to sustainable solutions delivered at scale.

Four implementation stages are needed as follows:

1. *Structured initiation* that determines the rationale for PROMs, the target populations and conditions that might most benefit, the selection of PROMs, and the testing of PROMs to determine the effectiveness of their use and acceptability to ensure they are relevant, well understood and yield meaningful results.
2. *Scaling* PROMs implementation from pilot programmes across a larger provider network that includes a focus on engaging healthcare professionals and patients.

3. *Wider adoption* at a regional and national level through active dissemination and the establishment of comprehensive system registries. At this stage, institutions have adopted PROMs to promote best practices, support comparative performance, and enable public reporting.

4. *System-wide adoption* then occurs with PROMs becoming accepted tools for quality improvement for many conditions and diseases with embedded data infrastructure, educational programmes and guidance.

Patient and Public Involvement

Patient and public involvement is essential to ensure that PROMs implementation is relevant, acceptable, and patient-centred. However, evidence suggests that current levels of patient involvement are low. This risks failure due to misalignment with patient experience and expectations, leading to low completion rates, poor data quality, and weak clinician uptake. Patient and public involvement should occur across the PROMs implementation process to enable active collaboration and ensure PROMs are guided by what matters most to patients.

Policy considerations

Despite adoption of PROMs programmes, wider national-level implementation efforts are limited. In systems where PROMs utilisation has become integral, national governments have demonstrated strong political commitment. Key policy levers, such as legislative change, patient and healthcare professional training programmes, and the integration of data from PROMs into electronic health records, have helped accelerate adoption.

A balanced policy to enable the systematic development, collection and use of PROMs is required to maximise their potential and advance the value-based healthcare agenda. Key policy considerations include:

- How can national policies stimulate a culture of improvement in which healthcare professionals are incentivised to learn from and act on PROMs data?
- How can the systematic participation of patients and the community in the design and development of PROMs programmes be best achieved?
- How can investment in data infrastructure realise the full potential of PROMs?
- To what extent should PROMs be used for quality assurance purposes, and what PROMs tools should be chosen from the wide variety available?

Conclusions

The development and use of PROMs have the potential to significantly advance value-based healthcare. Internationally, countries are increasingly committed to using PROMs, though at this stage it is primarily limited to pilot projects at the national and subnational level. To realise the full potential of PROMs, nationally coordinated and clinically driven PROMs programmes should be sought, enhancing clinical care and supporting evidence-based health policy.

Policy makers should develop a purposeful strategy to build capabilities and grow implementation maturity at different levels of the health system over time. Specific attention is required to ensure such processes are undertaken in co-productive partnerships with healthcare professionals, patients and communities. Engaging with and finding international partners to learn from each other's efforts can augment data collection, facilitate the sharing of implementation lessons, combine resources and lower costs, and promote training and educational opportunities.

What is a Patient-Reported Outcome Measure?

Patient-reported outcomes are any aspect of a patient's health status that comes directly from the patient, without interpretation by others[1]. Patient-Reported Outcome Measures (PROMs) are standardised questionnaires used to capture patients' own assessment of how a condition and its treatment affect their health and wellbeing[2].

Standardised patient-reported outcome questionnaires provide insight into how patients experience their health and daily functioning. PROMs complement clinical data to provide a holistic picture of patients' health, functioning and quality of life, thereby supporting patient-centred and value-based care[3,4]. PROMs complement patient-reported experience measures (PREMs) which assess patients' experiences of care (e.g., communication, timeliness, environment), or clinician-reported outcome measures which are assessments completed by healthcare professionals based on clinical judgement or observation[5-7]. Together, these tools offer complementary but distinct perspectives on healthcare quality and outcomes (Table 1).

There are two main types of PROMs: disease-specific, which assess symptoms specific to particular conditions or medical procedures, and generic, which seek to measure overall health, well-being, and quality of life in a variety of contexts[8]. Patient-reported outcome data are often combined with other data as part of a broader measurement set. For example, the Overall Adult Health Standard Set developed by the International Consortium for Health Outcomes Measurement (ICHOM) comprises 16 outcome measures across four domains: overall, physical, mental, and social health[9]. Another example is the Organisation for Economic Co-operation and Development (OECD) Patient-Reported Indicator Surveys (PaRIS), which integrates PROMs within a broader framework to assess the outcomes and experiences of people living with chronic conditions. Within the PaRIS framework, PROMs are analysed alongside domains such as patient experiences, health behaviours, and system characteristics, supporting health policy and system-level decision-making[10,11].

Table 1: Definition of different measures that assess patient outcomes[5-7,12,13]

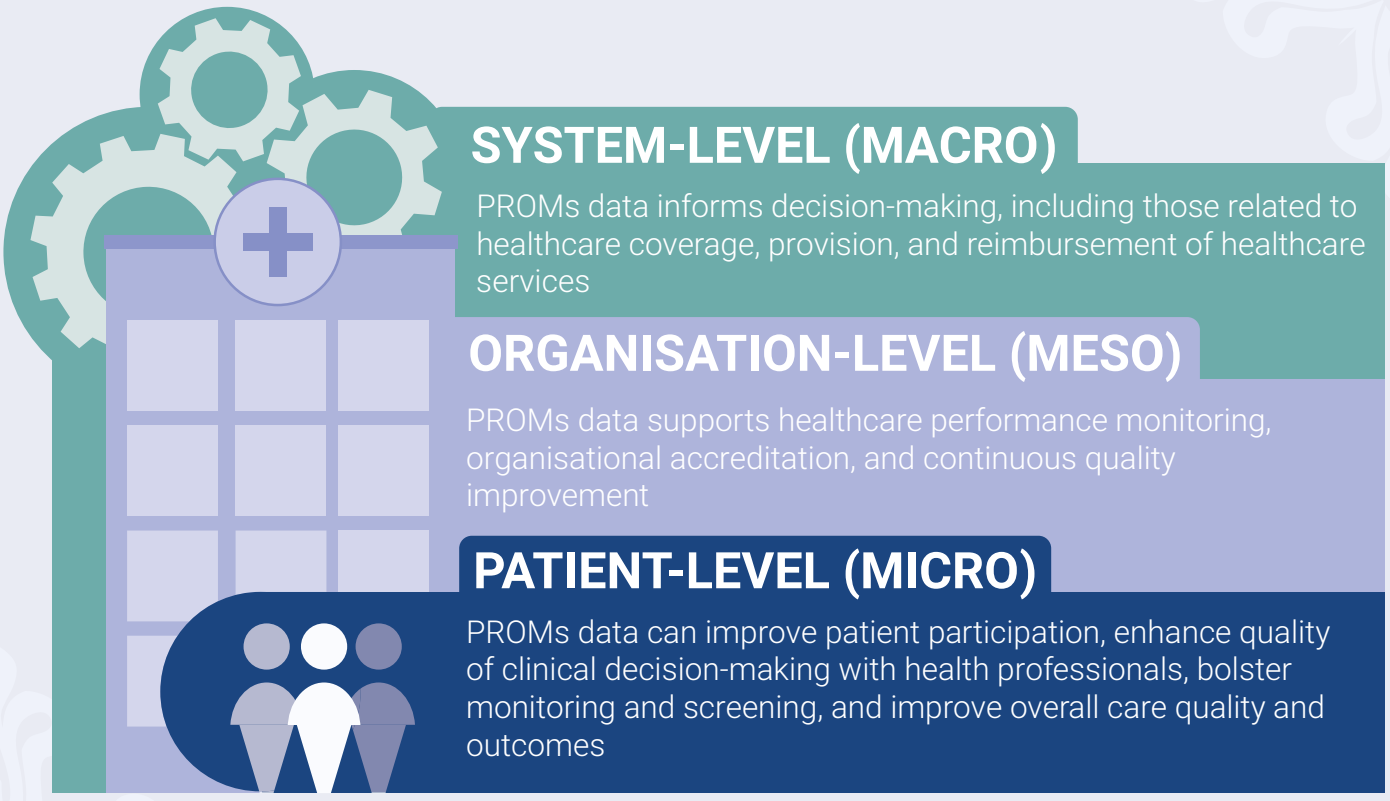
Measure	Definition
Patient Reported Outcome Measure (PROM)	Instruments that capture any aspect of a patient's health status that comes directly from patients.
Patient Reported Experience Measure (PREM)	Instruments that capture patients' experiences of care delivery, such as communication, timeliness, coordination, and overall satisfaction.
Clinician Reported Outcome Measure	Assessments completed by healthcare professionals based on clinical observation or judgement, such as disease severity ratings or clinical progress scales.
Clinical indicators	Objective measures used to monitor health status, such as blood pressure or serum cholesterol.

Why are PROMs Important?

Health systems serve diverse patient populations, ranging from individuals with less complex, short-term acute conditions to those living with long-term and complex chronic illnesses, including co-morbidities. Integrating patient preferences, values, and patient-reported outcomes and experiences into clinical decision-making and quality assessment is essential for building high-performing and responsive health systems[14]. Evidence suggests PROMs can provide optimal benefits through targeted population use, though this requires appropriate instrument selection, validation and administration[15,16].

PROMs-informed decisions can lead to health system improvements at three levels: direct patient care (micro), the performance of health organisations and institutions (meso), and the effectiveness of health policy and health systems (macro) (Figure 1)[17]. Across these levels, PROMs help embed patients' perspectives in the design and delivery of healthcare, while supporting the translation of health policies into programmes that address gaps and variations in effectiveness[18-20].

Figure 1: PROMs utilisation at each level of the health system[17,21-23]



International Application of PROMs

The origins of modern PROMs stem from initiatives in the 1980s in Europe and the USA to promote more holistic care and treatment to patients, specifically to maximise both health status and physical functioning[24]. The subsequent development of standardised tools was most often in aggregated form for research and policy purposes rather than for proactively supporting value-driven care practices. Yet such thinking heralded a generational step forward towards quality improvement initiatives that sought to improve clinical care[25]. By the 1990s, the growth and use of PROMs had become commonplace for managing and monitoring health status[26].

Many health systems internationally have seen rapid advances in the use of PROMs in clinical practice. For example:

- In England, the Department of Health in April 2009 initiated the standardised collection of PROMs for all pre- and post-operative patients of four elective surgeries: hip, knee, hernia, and varicose vein. These groups were selected as they affected a substantial number of people and had a considerable direct cost of an estimated £800 million[27].
- In Sweden, PROMs have been adopted in quality registries for hip and knee at the national level. They are used for 1- and 6-year post-surgery follow-ups. These quality registries are partially government-funded, primarily for capacity-building in PROMs collection, analysis, and implementation. They serve as an important source for developing guidelines and informing resource allocation policies[27].
- In the Republic of Korea, the introduction of PROMs on a national scale was established in 2005 through the Korea National Health and Nutrition Examination Survey (KNHANES) led by the Korea Disease Control and Prevention Agency[28]. KNHANES is an annual nationwide survey of approximately 10,000 civilians[29] that uses standard tools such as EQ-5D, EQ-VAS (EuroQol visual analogue scale), AUDIT (alcohol use disorders identification test), and the International Physical Activity Questionnaire[28].
- Japan was an early adopter of PROMs to measure health-related quality of life (HRQOL) in a randomised controlled trial conducted within the National Surgical Adjuvant Study for Breast Cancer (1996-2001). PROMs use has been subsequently expanded through the Comprehensive Support Project for Health Outcome Research (CSP-HOR), led by the Public Health Research Foundation (PHRF)[30,31]. Under the CSP-HOR, a consortium promotes PRO-QOL research and dissemination, including cancer research and clinical trials[32].

A recent 2025 OECD survey found that PROMs use across 38 countries had grown to some 54 programmes targeting 50 population groups across national and subnational levels. The tools used have been diverse, with 82% of programmes using generic PROMs and 76% adopting disease-specific instruments (see Figure 2). Some 96% of PROMs data were used for quality improvement and 54% for quality assurance. However, PROMs data was embedded into electronic health records in less than half (45%) of the programmes. Of core concern was that patients were not systematically engaged in the use of PROMs (21%) with involvement mostly limited to being consulted or informed, with minimal stake in design or decision-making[33].

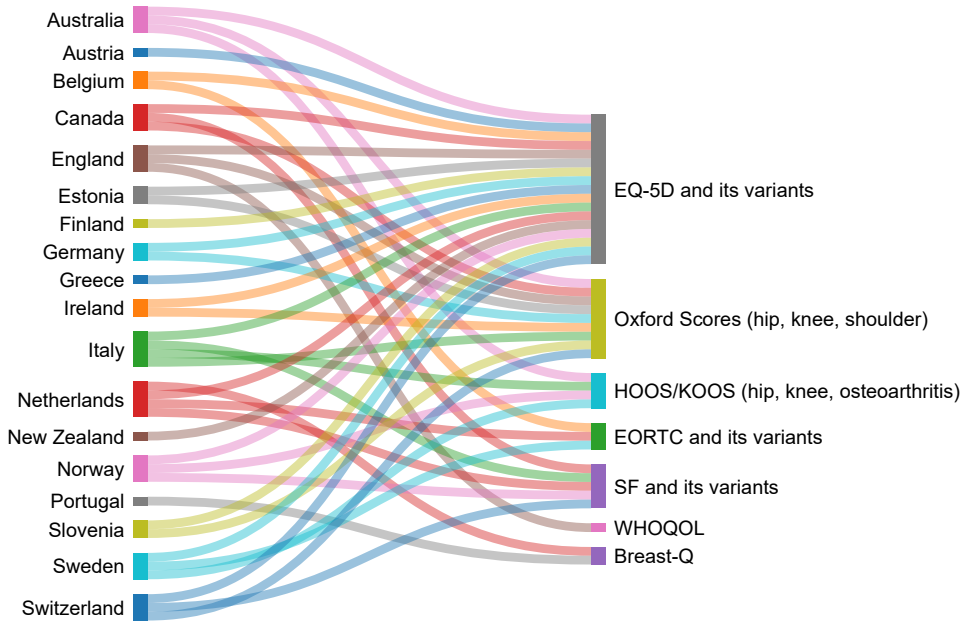


Figure 2: Examples of common PROMs used across select OECD countries[33]

EQ-5D & WHOQOL: generic health-related quality of life measure; SF: generic health status profile; Oxford Scores: joint-specific outcomes for hip, knee, and shoulder surgery; HOOS/KOOS: hip and knee pain, function, and quality of life; EORTC: cancer-specific quality of life; Breast-Q: care satisfaction after breast surgery and reconstruction.

Implementation of PROMs in Singapore

Singapore's Ministry of Health envisions a national shift towards Appropriate and Value-Based Care (AVBC) to transform local healthcare delivery. AVBC principles are designed to focus healthcare delivery on evidence-based practices that enhance patient-relevant health outcomes, ensuring the resilience and sustainability of the public healthcare system. PROMs are positioned as a foundational component of AVBC to assess health system performance based on outcomes that matter to patients, rather than relying solely on clinical or utilisation metrics. This includes a policy commitment for institutionalising PROMs nationally as core tools for aligning care delivery, pricing, and accountability[34].

The progress of PROMs adoption in Singapore has been stepwise. Initiatives have been targeted at specific priority population groups, but many professionally led initiatives using a range of both generic and disease-specific PROMs have been encouraged. Notable examples include:

- The PROMise Programme at the Department of Rheumatology and Immunology in Singapore General Hospital monitors the condition of patients with Axial Spondyloarthritis using laboratory results and PROM scores, with an aim to reduce unnecessary appointments or earlier reviews for urgent care[35].
- The Sleep Easy Programme (SLeEP) at the Department of Paediatrics, National University Health System, routinely undertakes PROMs collection to enable more timely interventions for infants at specific developmental milestones[36].
- National Healthcare Group has implemented PROMs to support patients with asthma to track their self-reported symptoms over time as a means to promote symptom control and reduce use of specialist services[37].

As of 2024, it has been estimated that at least 115 PROMs have been evaluated for use in Singapore across 35 conditions[38]. The future of PROMs development, both in Singapore and internationally, is thus on an upward curve with ongoing efforts to integrate them into healthcare practices as part of a wider movement to advance value-based care.

The Impact of PROMs

Patient Level

PROMs can be used to improve patient participation, enhance quality of clinical decision-making, facilitate shared decision-making, bolster monitoring and screening, and improve overall care quality and outcomes[21–23]. There is good evidence to demonstrate the impact of PROMs in the following areas:

- *Improving patient-clinician communication*. When patient reported outcome data are available during consultations, they can facilitate patient–clinician communication by helping patients raise concerns, supporting shared decision-making, and enabling clinicians to quickly identify and address specific problematic areas[39].
- *Improving patients' quality of life*. A Cochrane review of 116 studies found that providing PROMs feedback to patients during clinical encounters improves patient–clinician communication and slightly improves patients' quality of life[21].
- *Improving health behaviours*. By completing patient-reported outcome questionnaires, patients are better able to reflect on their health status and symptoms, increasing their self-awareness in managing their condition, validating their concerns, and empowering them to communicate with their physicians[40].
- *Improving clinical decision-making*. PROMs can identify subtle and undetected symptoms and changes that lead to more timely and tailored treatment, better decision-making, and improved outcomes[40].
- *Improving health outcomes*. PROMs can address deteriorating health status and improve adherence to care plans in patients with chronic conditions[41,42]. This can result in increased survival rates, smaller declines in health-related quality of life, fewer emergency visits, reduced hospitalisations, and shorter clinic stays[40].
- *Improving patient choice*. PROMs have been shown to support patients in making decisions on their care and treatment[43,44].

The use of PROMs data to support quality improvements in healthcare has grown globally

Organisational level

PROMs have been used to support healthcare performance monitoring, organisational accreditation, and continuous quality improvement[17]. Evidence suggests that PROMs influence organisational performance in the following ways:

- *Benchmarking quality of care*. PROMs data have been shown to guide service reviews and adjustments, enabling services to more effectively respond to the needs of patients and staff[45]. For example, use of PROMs in a Welsh value-based care programme enabled continuous service improvement, leading to greater efficiency, effective resource allocation, and better patient care[40].
- *Higher performing healthcare*. PROMs data has the potential to influence patients' choice of health providers, with providers improving services to stay competitive in the market[46]. However, patients'

choices of their care and treatment options were less likely to be affected[44].

- *Accountability for performance.* PROMs can enhance provider accountability for service quality, though the impact is variable[47,48]. For example, a QualityCounts initiative in the USA involving 115 hospital obstetric units found that up to one-third demonstrated improvements in performance after 2 years when quality accounts reports were used, compared to no observable benefits in those that did not receive reports[49].

System Level

The value of PROMs data to inform decision-making at the systems level and drive policies that enhance value-based care has often been cited as a core goal[17]. The evidence for impact at the system-level, however, is less clear and based on fewer studies. However, key impacts include:

- *Evaluating practices and policies.* Decision-makers use PROMs to inform performance management and resource allocation. For example, England embedded PROMs within the NHS Outcomes Framework to monitor system performance and support commissioners in managing healthcare providers. In Belgium, the national institution for health and disability insurance (INAMI/RIZIV) uses PROMs to inform reimbursement and coverage decisions, including managed entry agreements[45,47].
- *Improving healthcare productivity.* PROMs information has been used to support productivity calculations. For example, PROMs data analysis of patients undergoing hernia surgery in the English NHS indicated that elective hernia repair is cost-effective, with laparoscopic surgery providing better health-related quality of life (as measured by the EQ-5D) and higher cost-utility than open procedures[46].
- *Routinised data collection and use.* Patient-reported outcome data can be routinised to provide longitudinal information that is quicker to access and at lower cost. For example, in the Netherlands, manual PROM collection among orthopaedic surgery patients cost approximately €6.00 more per PROM compared with a lower-cost automated approach[47,50].

A recent OECD report in 2026 showed that the use of PROMs data to support health policy is increasing. For example, seven countries reported using PaRIS to identify gaps in primary care, particularly in care co-ordination and digital health. Many countries have also adopted PROMs to formally identify health challenges and priorities, and include them in national frameworks for healthcare system assessment and quality monitoring, such as in Greece, Iceland, Italy, Luxembourg, Norway, Portugal, Slovenia and Wales[51].

Facilitators and Barriers to PROMs Implementation

PROMs adoption comes with many challenges including resource constraints, system integration, and limited professional and patient participation due to a lack of knowledge, education, motivation and interest[34]. Conversely, increased political commitment and nationally driven approaches, investment in IT infrastructure, and training to promote active PROMs use in clinical practice have been common enablers[34].

Table 3 provides a breakdown of the known facilitators and barriers to PROMs implementation across the three levels of the system. It uses the Consolidated Framework for Implementation Research as a structured way to examine barriers and enablers across multiple levels, including the intervention itself, the organisational context, the external environment, the people involved, and the implementation process[52,53]. In summary:

- At the *patient level*, attitudes of both clinicians and patients towards PROMs are a key factor that may hinder or enable the process, including perceptions of PROM's relevance and value in providing clinical care.
- At the *organisational level*, barriers and facilitators are associated with the presence of leadership, the degree to which information technology is integrated into existing systems, the availability of dedicated funding, and levels of data utilisation for decision-making[54].
- At the *system level*, culture and politics have a significant influence. Nationally mandated PROMs programmes have helped standardise and harmonise data collection as well as guide governance, incentives, training, and the development of a health system platform for data visualisation. Medico-legal and governance frameworks that support the integration of PROMs into routine clinical care and address uncertainties around clinical responsibilities provide clarity on the interpretation and implementation of PROMs to drive quality improvement.

Patient and Public Involvement

Effective PROMs implementation requires meaningful patient and public involvement (PPI). Involving patients in PROMs design and implementation helps strengthen patient-centred care, improves the relevance and acceptability of measures, improves the quality of care, and enhances trust in the processes of service improvement and policy making[54,55]. However, PPI becomes less effective when measures are misaligned with patient experience, are clinically irrelevant, or do not effectively reflect their wider holistic needs. This leads to low completion rates, poor data quality, and weaker clinical engagement[56].

PPI can and should occur throughout the PROMs implementation journey from consulting patients on PROMs selection and data collection to their active collaboration in data interpretation and use[54,55,57,58]. For PPI to be successful, patients should be involved early in the PROMs implementation process so they can understand the project's aims and objectives, and actively contribute to discussions and decisions. Skilled facilitation, communication and education are needed to ensure a diversity of patient views and broader implementation issues are considered, including whether there are adequate resources to do so[54,57-59].

Table 2: Facilitators and barriers to PROMs implementation[27,43,48,52-53,56,60-73]

Domain / Level	Innovation *Features of the intervention being implemented*	Outer Setting *External influences such as patient needs, policies, and incentives*	Inner Setting *Organisational context, culture, climate, and resources*	Individuals *Knowledge, beliefs, and attributes of the people involved*	Implementation Process *Stages of panning, engaging, executing, and evaluating implementation*
Patient (micro) – Facilitators	Staff are familiar with PROMs before data collection Staff are available to assist patients in completing PROMs PROMs collection and analysis are integrated into consultation sessions and electronic health records Confidence in clinical value of PROMs is high	Patients are interested and motivated to complete PROMs Consultation with stakeholders and clinicians clarify the purpose of PROMs and supports selection of the most relevant tools	Support in initiating PROMs collection flexibly is provided to healthcare workers	Healthcare workers acknowledge the benefits of PROMs for patient care and quality of professional practice Staff training on PROMs methods, analysis, interpretation and psychometry Health professionals committed to quality improvement	PROM results communicated to staff alongside other relevant data to support decision-making for quality improvement PROMs data available in EHR and presented as graphics and adjusted for confounding variables. Clarity in when, where, and how often the PROM is administered, and response plans to the questionnaire results
Patient (micro) – Barriers	PROMs instruments not user-friendly PROMs tools do not capture clinically meaningful changes and have concerns about their psychometric properties. PROMs use narrows the focus of clinical consultations or strains the patient–clinician relationship	PROMs collection perceived as intrusive to patient privacy with potentially distressing questions. Patients may have limited IT access and various levels of IT literacy Patients may have insufficient cognitive ability or language skills to complete PROMs. Patients may not understand the purpose of the PROMs tool	The clinician's role in PROMs utilisation lacks clarification Patient participation in PROMs collection lacks meaning and relevance to them Standardised metrics for data comparability may conflict with an assessment tailored to the holistic nature of a patient's condition	Lack of staff expertise in analysing and interpreting the data Lack of staff training in patient recruitment, complex situations, and the need for specialist/specific treatments Health workers who are not open to feedback/ changes Health workers' and patients' negative views on the value of PROMs and their impact	Unclear guidelines on the process of data collection Some technologies may be perceived as slowing down PROM processes "Pandora's box" phenomenon: the fear that PROMs will reveal complex psychosocial issues
Organisation (meso) – Facilitators	Medical directors provide project support to PROMs development and use	Funding available to support robust PROMs development and adoption Leadership and peer champions support PROMs adoption Direct incentives for PROMs use channels resources towards quality improvement	Recognition of PROMs as an instrument for research and audit PROMs implementation is among the service's strategic priorities	Executive and senior level decision-makers strongly support PROMs adoption Local system stakeholders and national agencies work in partnership Strong quality improvement culture within the institution	Incorporating the PROMs into the existing IT infrastructure to enhance PROM collection and dissemination Provide the results of PROMs, both aggregated and individualised scores Providing paper-based and electronic PROMs options to address digital disparities
Organisation (meso) – Barriers	Lack of aggregated data on treatment effectiveness is available to complement individual patient data	PROMs implementation costs are high. Performance benchmark framework lacks use of PROMs indicators. Incentivised PROMs may artificially narrow the scope of quality improvement	Not prioritised by institutions. Lack of collaboration among staff, leading to a fragmented implementation Limited time and manpower Resistance from healthcare professionals	Leadership-level support is not shown for PROMs adoption Routine data collection and analysis are perceived as an additional workload Senior leadership preoccupied with other priorities	Insufficient IT infrastructure to support PROMs adoption and data management Lack of transparency in the purpose of data collection and overall implementation. No agreement on whether paper or electronic PROMs were preferred
System (macro) – Facilitators	A national PROMs platform supports data visualisation and decision-making	Health systems that adapt and mandatorily adopt value-based funding programmes for public health care services	Embedding person-centred and value-based health care in national healthcare policy, funding, safety, quality standards, accreditation, and service agreements	Clear ownership of the PROMs programme at the system level, creating standards and protocols	Adoption of a nationally mandated PROM programme
System (macro) – Barriers	PROMs suitable for measuring performance at the system level are limited	Reservations in transitioning from pay for service to pay for value	Cultural and/or political reluctance towards value-based health care	Cost prioritisation due to programme leadership coming from an economic or clinical background	Quality improvement strategies and frameworks do not include patient-reported indicators

Implementing PROMs

The adoption of PROMs in health systems is shaped by multilevel and multidimensional factors. Evidence demonstrates that implementing PROMs into routine care requires coordinated stakeholder engagement and changes in workflows, technology and incentives, but current approaches to adoption seem to lack clear implementation strategies aimed at system-level change, which in turn leads to sub-optimal results[74]. Early-phase engagement of clinicians, managers, and patients appears essential, but it needs to be undertaken within a structured process in which deliberate choices about the selection of patient-reported outcomes and the specific tools and platforms are made.

To support this, Ernst et al (2022) developed the PROM Healthcare System Implementation Framework for assessing system-wide maturity of a healthcare system's PROM implementation. The framework enables users to evaluate an organisation's readiness, capabilities, and progress in embedding PROMs use into routine care[65]. It offers a practical structure for understanding how PROMs are introduced and developed across levels and stages within health systems. The framework also helps identify specific areas that could be strengthened to advance PROM implementation, which is useful for comparing progress within individual dimensions, rather than merely producing or ranking overall implementation scores[75]. A summary of the key stages for the effective implementation of the framework is outlined below, with Table 3 drawing on the wider evidence to highlight key PROM adoption strategies within the PROM Healthcare System Implementation Framework.

Integrating PROMs into routine care requires a clear implementation strategy

Stage 1: Structured Initiation

In this first stage, users must determine which PROMs to use. PROMs are often developed in specific contexts and may not be directly applicable across settings where cultural norms, health beliefs, or language use differ[76,77]. Therefore, simply "picking" a PROM may be insufficient, and a rigorous selection process is required. A five-step, iterative process is recommended[78,79] as follows:

- *Step 1: Clarify Objectives.* It is important to clarify the purpose of PROMs. For example, to inform individual patient care, support quality improvement and accountability, or contribute to system-level decision-making and policy[80].
- *Step 2: Identification of Target Health Outcomes.* This should be grounded in evidence and informed by the perspectives of clinicians, patients, and the wider public. This broad input ensures the selected outcomes are meaningful to patients and relevant to clinicians and policy-makers[79,80]. When initiating a new programme, it may be strategic to focus on "trailblazer" conditions – such as oncology, orthopaedics, or chronic conditions – where improvements in health outcomes and reductions in expenditure are most probable[75]. Strategic successes can serve as best practices for adoption and spread to other departments[75]. Where PROMs are already in use, their continued suitability should be verified against current objectives[79].

- *Step 3: Selecting PROMs.* The selection of PROMs requires a structured evaluation of candidate instruments. At minimum, PROMs should demonstrate adequate content validity for the target constructs and acceptable measurement properties (reliability, validity, and responsiveness), ideally for the specific context of use. PROMs should be accompanied by a user-friendly interpretation guide that includes crucial details, such as cut-off values and population reference values for comparing scores between healthy and diseased populations[81]. Practicalities such as administrative burden, the availability of the instrument in different languages, and ease of integration into routine workflows should also be considered for sustainable collection[79].
- *Step 4: Testing Candidate PROMs.* Before formal implementation, PROMs should be tested for usability, acceptability, and performance in the intended population. Where language or cultural adaptations are required, established translation and adaptation procedures should be followed to preserve content validity. Feedback from key stakeholders such as patients, clinicians and policy makers is essential at this stage, as PROMs that are burdensome, poorly understood, or perceived as irrelevant are unlikely to yield meaningful results[79].
- *Step 5: Continual Review of Relevance of Deployed PROMs.* After the final set of PROMs has been selected and implemented, they should be routinely reviewed to assess their continued usefulness and relevance for clinical care and service development. Validation of PROMs is an ongoing process rather than a once-off event, and new evidence may emerge over time that either supports or raises concerns about their suitability in specific contexts or populations. In addition, newer or more appropriate PROMs may become available over time. Routine review is therefore necessary to ensure that the PROMs in use remain fit for purpose.

Stage 2: Scaling

In the second stage, PROMs implementation progresses further to a larger provider network (e.g., speciality groups) across selected disease areas, using appropriate questionnaires and protocols. PROMs are shared with clinicians and patients to inform shared decision-making and/or self-management[75].

Stage 3: Wider Adoption

At stage three, the broader adoption of PROMs across multiple provider networks is undertaken through active dissemination across various health conditions in comprehensive system registries[75]. PROMs use standard metrics and common risk adjustments and can be used to provide personalised recommendations for a patient's health condition. Patient-reported outcome data are available through public reporting and not developed in isolation from other data collection processes[43,75].

Stage 4: System-wide Adoption

By stage four, PROMs become mandatory by the national key stakeholders for many conditions and diseases, with embedded data infrastructure, and are included in healthcare provider education and guides[75].

For PROMs to truly advance value-based care, there is a need to move from innovative pilots and projects, driven by clinical champions, towards a more sustainably funded, systematic, institutionalised use of PROMs. This pathway to system maturity requires concerted political action. This includes the need for an at-scale data-collection effort, potentially accelerated through international collaborations such as the PaRIS and ICHOM initiatives. It also requires laying the foundations for a system ready and able to use PROMs data in policy and practice.

Table 3: PROM adoption strategies according to a modified version of the Healthcare System Implementation Framework (HCSIF)[33,61,70,73,75,82-90]

Implementation Stages / Dimensions		Considerations for each implementation stage			
		Micro level	Meso level		Macro level
		Structured initiation	Scaling	Wider adoption	System-wide adoption
PRO measurement	Scope and condition coverage	Availability of country-specific value set Integration strategy of validated PROMs into standardised healthcare services	Dedicated PROMs data collection driven by speciality societies and/or registries	Extension of PROMs collection across different disease areas and ≥ 10 participating registries	Limited availability of suitable PROMs appropriate to measure system-level performance
PRO measurement	Metric and process standardisation	Align PROMs reference period with the timing and frequency of data collection Technical feasibility of PROM integration into the clinical workflow, ease of administration, other administration modes, and language support	Tailor the tested PROMs to the context and best practices in the country	Comparison of adopted PROMs with instruments that other providers may use Use linking methods and construct-specific scales to facilitate comparability	Reporting process and data sharing standards for system-wide PROMs interfaces
PRO measurement	Tools and IT-based solutions	Assess infrastructure readiness: while paper-based collection is possible, it requires logistical preparations Digital collection is preferred for scalability but requires reliable network connectivity and synchronisation	Applications are easy to use, do not disrupt the efficiency of healthcare services, and data is easily retrieved for patient management	Available technologies and resources for PROMs data management, analysis, security/access and ownership	Integation with national health information systems, with data available in individual and aggregated forms
PRO measurement	Culture and stakeholder involvement	PROMs champions, including clinicians, patients, and hospital management staff, to identify goals, validated instruments, and support for PROMs implementation Hospital management support and staff training to enhance PROMs adoption	Initiation of information exchange between different institutions	Addressing health equity in PROMs to prevent widening health disparities from biased interpretations and clinical mismanagement	Sustainability and improved usage with time through incorporating PROMs into the health worker education system and practice guidelines
PROM utilisation	Patient empowerment and clinical decision support	Define clinical utility: Determine if PROMs will be used for once-off screening, baseline assessment, or longitudinal monitoring of health changes	Results are easily understood by patients and its sed for decision-making and clinical management by providers	Personalised recommendations based on PROMs results and other relevant considerations can be made, hence motivating patients to fill out the PROMs	Patient choice of healthcare facilty informd by hospital performance PROMs
PROM utilisation	Reporting and quality improvement	Ensure data is accessible to professionals at the point of care Integrate PROMs findings into the department meetings for the development of action plans	Internal forums for discussion of PROM results are arranged with healthcare professionals	Limited proof that public performance reporting leads to improvements in care quality	Various health providers share PROMs across platforms, enabling result comparison and stakeholder learning
PROM utilisation	Rewarding and contracting	Incentivise participation: Utilise payer contracts that encourage PROMs collection without tying payments to performance outcomes	Payers take PROMs result into consideration, such as stipulating quality improvements to be met by providers	Some PROMs are open-sourced, while some may require proprietary fees when implemented widely over a long duration	Reluctance in transitioning from pay for service to pay for performance

Policy Considerations

Successful PROMs implementation is heavily influenced by government policy[91]. In systems with extensive PROMs utilisation, such political commitment has typically required the activation of a variety of policy levers, including: legislative change to promote patient-reported outcome data collection and dissemination; investment in education and training of patients and healthcare professionals to accelerate PROMs use; and the integration of PROMs into electronic health records to support clinical decision-making and policy-making[33]. The PROMs adoption strategies, as set out in Table 3, provide a starting point to develop national action plans. From this, key policy considerations include:

- How can national policies stimulate a culture of improvement in which healthcare professionals are incentivised to learn from and act on PROMs data?
    - What policies and plans are in place for PROMs data to drive forward quality improvement at the system-level?
    - How can medico-legal and governance frameworks be developed to support the safe integration of PROMs into routine clinical care?
    - What training opportunities exist to increase awareness and understanding of PROMs?
    - What quality assurance mechanisms should be put in place to incentivise performance?
- How may the systematic involvement of patients and the community in the design and development of PROMs and PROMs programmes be best achieved?
    - How can participation and trust between patients, healthcare professionals, and the wider health system be nurtured and advanced?
    - How can patients be effectively supported to understand, use, and contribute to PROMs?
    - How can PROMs and PROMs programmes be designed to meaningfully engage underserved populations?
- How can investment in data infrastructures realise the full potential of PROMs?
    - How important is the integration of PROMs data into electronic health records?
    - What digital tools should be used to enhance PROMs data collection and minimise the potential for data collection burden and exclusion of patients with complex needs?
    - How can the integration and linkage of PROMs data be best developed in ways that inform clinical and political decision-making in a timely manner?
- To what extent should PROMs be used for quality assurance purposes?
    - How should financial or other incentives be used to promote the collection of PROMs data?
    - To what extent should PROMs be used to benchmark performance and reward quality?

For PROMs to truly influence value-based healthcare practices a sustainably funded and systematic approach is needed.

Conclusions

The development and use of PROMs have the potential to significantly advance value-based healthcare. Internationally, countries are increasingly committed to using PROMs, though at this stage it is primarily limited to pilot projects at the national and subnational level. Both a nationally coordinated and clinically driven PROMs programme should be sought, enhancing clinical care and supporting evidence-based health policy. To achieve this, a purposeful strategy is required to build capabilities and grow implementation maturity at different levels of the health system over time. Specific attention is required to ensure such processes are undertaken in co-productive partnerships with healthcare professionals, patients and communities. Engaging with and finding international partners to learn from each other's efforts can augment data collection, share implementation lessons, combine resources and costs, and promote training and educational opportunities.

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About CRiHSP

The NUS Centre for Research in Health Systems Performance (CRiHSP) was established in 2023 within the Yong Loo Lin School of Medicine at the National University of Singapore to become a world leading centre of excellence in research, innovation, dissemination and education on the optimisation of health systems performance for population health. Its mission is to contribute to improvement of health systems performance both internationally and locally through research, innovation, dissemination, and capacity building.

A core activity of CRiHSP is the provision of health policy intelligence through the review and synthesis of evidence for the effective implementation and impact of important policy developments that will influence the future of health systems. Through developing and disseminating knowledge and recommendations to policymakers, service providers, researchers and the wider public, CRiHSP aims to support decision-making that enables improvements in health system performance.

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These policy briefings are designed to distil the latest trends and evidence on an important policy issue for health and care systems, bringing timely and relevant recommendations to the attention of policymakers to support informed decision-making both in Singapore and internationally.

In developing this policy brief on Social Prescribing, researchers at the NUS Centre for Research in Heath System Performance (CRiHSP) undertook a rapid review to understand what the national and international experience tells us about the implementation and impact of social prescribing in policy and practice. CRiHSP then hosted a policy dialogue on social prescribing to bring together the evidence with practical experiences and expert opinion to support the development of key considerations for evidence-informed policymaking.

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