

Measuring what really matters

Screening in primary care

Neil R. Bell MD SM CCFP FCFP Guylène Thériault MD CCFP Harminder Singh MD MPH FRCPC Roland Grad MD CMC MSc CCFP FCFP

Those who have not experienced the intricacies of clinical practice demand measures that are easy, precise, and complete—as if a sack of potatoes was being weighed. True, some elements in the quality of care are easy to define and measure, but there are also profundities that still elude us. We must not allow anyone to belittle or ignore them; they are the secret and glory of our art.

Avedis Donabedian¹

During the past decade, family physicians have been increasingly required to participate in quality improvement activities and evaluation of the performance of their individual practices. Professional organizations, health authorities, and patients all seek information on the quality of care provided by physicians. Some provinces now provide reports to individual physicians on the care they provide, including measures of preventive screening.^{2,3} Colleges of physicians and surgeons in some provinces include quality improvement activities in their periodic assessment of physician performance.⁴ All family physicians can expect to encounter performance measurement of their practices, including screening, in the future.

Why performance measures in screening are important

The initial framework for evaluation of quality of care was established by Avedis Donabedian with the publication of his classic paper in 1966.^{5,6} This subsequently became the basis for the developing science of quality assurance and supported the emerging field of health sciences research.^{1,7,8} Similarly, Barbara Starfield and colleagues outlined the

importance of primary care in high-functioning health care systems. She found that primary care helps prevent illness and death and is associated with a more equitable distribution of health in a population compared with specialty care.⁹ More than 40 years ago, Edwards Deming introduced the concept of quality improvement to the United States. In subsequent years, his principles on management were widely adopted by health care organizations to improve quality and reduce costs.^{10,11} More recently, Berwick and colleagues introduced the Triple Aim concept to health care. This proposed health care institutions pursue 3 dimensions of performance: improving the health of populations, enhancing the patient care experience, and reducing the per capita costs of health care.¹²

In the present era of managed health care, there is a push for external accountability around the cost and quality of care. This has led to the widespread adoption of quality improvement and quality assurance processes in primary care. A fundamental component of these processes is the development of performance measures. This has resulted in a plethora of primary care performance measurement frameworks by professional organizations and health authorities in Canada, the United States, and other Western countries.¹³⁻²⁰ These frameworks can be complex, consisting of many domains or dimensions, each of which contains many measures. For example, the Primary Care Performance Measurement Framework for Ontario contains 112 practice-level and 179 system-level measures.¹⁷ Screening is a main component of almost all of these frameworks.

There is increasing concern that traditional quality improvement processes might be inappropriate for

Key points

- ▶ Family physicians will increasingly encounter screening performance measures in quality improvement initiatives and evaluations (about individuals or groups) from professional or health care organizations.
- ▶ Primary care can be considered a complex adaptive system in which interactions can result in different acceptable outcomes owing to variations in practice settings or patient values and preferences. For primary care, traditional linear quality improvement processes such as those applied to isolated single-disease care might be inappropriate.
- ▶ Performance measures in current measurement frameworks are often inadequate to assess the full range of screening activities in primary care. Screening performance measures should consider shared decision making, patient values and preferences, and practice complexity in addition to the percentage of patients tested.
- ▶ Goals or targets for recommended preventive screening maneuvers in primary care should reflect that outcomes are dependent on social, health care system, and individual patient factors. Hence there is no “truth” in a single target value or threshold to achieve for the uptake of screening interventions. In almost all circumstances, uptake of recommendations for screening will be less than 100% and uptake of recommendations against screening will be greater than 0%.

primary care and that many measurable indicators of primary care performance might not be meaningful.²¹⁻²³ Other authors have pointed out that primary care practice is more complex than that of other specialties, including psychiatry, pediatrics, obstetrics and gynecology, or urology, and similar in complexity to internal medicine.²⁴ Primary care practices have been described as “complex adaptive systems” that require different metrics to measure quality beyond the traditional linear approach using a summation of single-disease-specific guidelines to describe the quality of work.^{22,23} Commonly used performance measures of screening seldom reflect the nuances of primary care practice that include the importance of the patient-physician relationship, shared decision making (SDM) between patients and physicians, and the potential for different decisions from different patients owing to differences in values and preferences.^{21-23,25,26} Further, the emphasis on performance measures that evaluate the management of specific diseases coupled with pay-for-performance initiatives can have unintended consequences, such as fragmentation of care and exacerbation of health care disparities.^{27,28}

Many family physicians find it difficult to interpret the results of quality improvement performance measures of their practice. The complexity of practice also makes it challenging to implement strategies to improve or enhance screening. This paper expands on the role of quality in screening from a previous paper in the Prevention in Practice series on the quality of screening tests.²⁹ We consider the characteristics of screening performance measures in the context of the complex primary health care environment, the challenges related to implementation of performance measures, and potential approaches to quality improvement in the primary care environment.

Practice scenario

You are a family physician in a community-based practice comprising 7 members. Recently, as part of a quality improvement initiative in your province, you were provided with an annual report on your practice that includes the proportion of your patients who received selected screening maneuvers including mammography. In this report, breast cancer screening is reported as the percentage of eligible female patients who had received a mammogram. Owing to the potential for both harms and benefits from screening with mammography, you have been undertaking SDM with the use of decision aids to help guide your patients with their decision. Based on these discussions, some of your patients have decided not to participate in screening with mammography. You believe that these reports on screening activity in your practice do not reflect the potential for both harms and benefits from screening and the importance of individual patient values and preferences in decision making. You are concerned that these reports will be used

by professional organizations and health authorities to evaluate the quality of your practice. You wonder whether there is a better approach to capturing the quality, complexity, and health outcomes of preventive screening in your practice.

Evaluating screening in your practice

Quality improvement, quality assurance, and audit and feedback are all processes that can be used in primary care to improve quality and support changes in clinical behaviour. Central to all these strategies is the development of performance measures, benchmarks, and targets that define quality.¹³⁻²⁰ *Quality* can be defined as “the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”³⁰

Performance measurement is the process whereby an organization establishes the parameters by which programs and services are measured and determines whether desired outcomes are being achieved.¹⁷ A *performance measure* can be defined as “a measure of a primary care process or outcome that is useful at one or more levels of the health system (practice, organization, community, regional or province) to support planning, management or quality improvement.”¹⁷ Owing to the complexity and variability of primary care practice, family physicians need to consider the selection and development of performance measures suitable for their own practices.²¹⁻²⁶

Screening performance measures for primary care

Berwick, in his editorial “Era 3 for medicine and health care” on changes needed to improve health care systems, called for a reduction in the number of performance measures with a focus on measuring only what matters and mainly for learning.³¹ Choosing performance measures for primary care will require consideration of several issues if Berwick’s³¹ goals are to be achieved.^{21-29,31} Existing screening performance measures are often narrowly focused on the uptake of individual preventive interventions and usually report percentages of patients who have received a screening test within a defined time period.^{2,3,17-20} The Health Quality Ontario “MyPractice: primary care report technical appendix,” version 4, provides an example of a performance measure for screening with mammography. This was defined as the “percentage of screen eligible female patients aged 52 to 69 years who had a mammogram within the past two years.”¹⁸ However, for most screening maneuvers there is a narrow trade-off between the potential for benefit and the potential for harm.³² Often benefits are small and take years to become apparent, while harms related to overdiagnosis and false-positive results occur near the time of testing. Given these circumstances, implementing the process of SDM is most appropriate.³³⁻³⁹ *Shared*

decision making is a process whereby clinicians collaboratively help patients to reach evidence-informed and value-congruent medical decisions.^{33,34} *Patient values and preferences* have been defined as the relative importance people place on health outcomes.^{35,36} Complexity of both the practice environment and patient circumstances can also influence both physician and patient decision making on screening.²²⁻²⁶ Understanding the entire scope of screening activity within a primary care practice will require consideration of all these issues.

Selecting screening performance measures for your practice

Owing to limitations in resources and availability of data, most primary care practices will be constrained in the number of performance measures that can reasonably be evaluated. A suggested goal would be to undertake the measurement of a maximum of 3 or 4 performance measures in a practice setting at any given time. Characteristics that could be used to select performance measures for screening are outlined in **Table 1**. Each individual performance measure would meet some of the characteristics outlined, while multiple performance measures when combined could meet as many as possible of the suggested characteristics.

Measuring SDM, patient values and preferences, and practice complexity

At present, measurement of SDM, patient values and preferences, and practice complexity is challenging.⁴⁰⁻⁴² There is also a paucity of instruments to measure practice complexity and patient values and preferences.^{43,44} Further, many existing electronic medical records are poorly designed to collect patient data on these issues, making evaluation of screening activity in primary care practices more difficult and time-consuming. In contrast, definitions and methodology to measure the uptake of single-disease screening tests, such as patients who have received mammography, are well described in existing primary care performance measurement frameworks.¹⁷⁻²⁰ **Table 2** provides an outline of measurement tools and instruments along with a description of measurement challenges.^{23,43-53}

Example of performance measurement with SDM in screening

Table 3 provides an example of how SDM could be included in a measure of the uptake of screening with mammography in a primary care practice.^{3,54} Similar measures could be developed for other cancer screening interventions. Measurement of shared decisions across all cancer screening or other screening interventions could also be undertaken.

Table 1. Characteristics for selecting screening performance measures in primary care

CHARACTERISTIC	DISCUSSION
Importance of the issue to the patients and physicians in the practice	<ul style="list-style-type: none"> • Patients, physicians, and other team members in a practice should decide on what issues are most important • Practices with different patient populations, settings, and health care organizations could choose different performance measures to meet their individual practice needs • Priorities of individual practices could be different from those of other stakeholders in the health care system
Quality of evidence	<ul style="list-style-type: none"> • Use systematic reviews and a rigorous approach to evaluation of the quality of evidence (eg, GRADE) in developing recommendations • Consideration should be given to strong vs weak or conditional recommendations and the balance of benefit vs harms for screening maneuvers • Consider the availability and quality of evidence on patient values and preferences for the screening maneuver and the availability of strategies shown to be effective for quality improvement
Patient-centred	<ul style="list-style-type: none"> • Individual patients might be eligible for multiple screening maneuvers at different screening intervals • The overall screening needs of individual patients, in contrast to the uptake of a single screening intervention, need to be assessed
Measurable, feasible, interpretable	<p>Consider whether ...</p> <ul style="list-style-type: none"> • the data can be easily obtained in your practice setting • existing electronic medical records capture the data needed to measure the issues considered important (eg, shared decision making) • there are human resources to help analyze and report on the outcomes of performance measurement • other physicians and primary care team members will be able to easily interpret the results
Patient participation in selection of performance measures	<ul style="list-style-type: none"> • Ideally, values and preferences of patients would be reflected in the choice of performance measures; however, it can be potentially challenging for individual practices to engage patients in the process of performance measure selection
Influence of other stakeholders in the health care system	<ul style="list-style-type: none"> • Demands from health care administrators about the choice and number of performance measures will be inevitable • Performance measures important to other health system stakeholders might not be relevant at the individual practice level

GRADE—Grading of Recommendations Assessment, Development and Evaluation.

Performance targets and benchmarks

It is almost certain that family physicians will increasingly encounter performance targets and benchmarks related to screening applied to their practice by health care system payers and professional organizations. Targets are tools that are supposed to improve health and health system performance. Characteristics of targets include a commitment to achieving specific results in a defined time period, use of either quantitative or qualitative methods, and consideration of either health processes or outcomes.⁵⁵ Targets can be used in quality improvement processes, pay-for-performance schemes where physicians receive additional income for achieving specified levels of performance, and evaluation of the quality of care provided by individual physicians. Benchmarking has been described as an ongoing activity of comparing your organization's processes, services, and products against best-known similar processes.⁵⁶ Target setting can be done by comparing performance

either against other providers or against absolute pre-determined levels (criterion base). Often target setting is done in an arbitrary fashion, designed to incentivize improvement and subject to change when performance levels are achieved.⁵⁷⁻⁵⁹ Additional discussion of quality improvement approaches to improve screening in primary care will be provided in a future paper in the Prevention in Practice series.

Practice scenario part 2

You and your colleagues have had the opportunity to further discuss and reflect on performance measures provided in the annual provincial report on your practices for breast cancer screening. You decide that, because of the importance of SDM and the characteristics of your patients and practice setting, it is important to include performance measures that reflect outcomes related to the use of SDM in screening. You decide to further adapt and develop measures suitable for your practice

Table 2. Measuring patient values and preferences, SDM, and practice complexity

SCREENING ISSUE	TOOL OR PERFORMANCE MEASUREMENT	MEASUREMENT CHALLENGES
Patient values and preferences	Rely on subjective assessments of individual physicians and other health care providers in your practice and patient values and preferences obtained during patient encounters	<ul style="list-style-type: none"> Lack of validated instruments. Research on instruments is in the early stage of development^{43,44}
SDM	<p>What do you seek to measure?</p> <ul style="list-style-type: none"> Decision antecedents: preparedness for decision making <ul style="list-style-type: none"> -Ottawa Personal Decision Guide⁴⁵: decisionaid.ohri.ca/decguide.html Decision process: for example, decisional conflict <ul style="list-style-type: none"> -Decisional Conflict Scale⁴⁶: decisionaid.ohri.ca/docs/develop/Tools/DCS_English.pdf -Or its simpler version, SURE⁴⁷: decisionaid.ohri.ca/docs/develop/Tools/DCS_SURE_English.pdf -SDM-Q-9⁴⁸⁻⁵⁰: www.patient-als-partner.de/media/sdm-q-9_english_version.pdf -Strull 1-item scale⁵¹: www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006732.pub4/full Decision outcome: for example, decision regret <ul style="list-style-type: none"> -Decisional Regret Scale⁵²: decisionaid.ohri.ca/docs/develop/Tools/Regret_Scale.pdf 	<ul style="list-style-type: none"> Electronic medical records not yet designed to support SDM Wide variation in the quality of patient decision aids. Seek decision aids that provide estimates of harms and benefits with use of natural frequencies or absolute risk
Practice complexity*	<p>Consider the following:</p> <ul style="list-style-type: none"> basic demographic measures that include age, sex, and comorbidity of patients in individual practices registries of patients who would be eligible for screening tests flexible targets based on the demographic and social characteristics of the practice setting the role of multidisciplinary team members in practice 	<ul style="list-style-type: none"> Lack of risk-adjustment tools, instruments, or processes to measure complexity in the primary care setting^{23,46} Multiple preventive screening tests for the same patient Screening in patients with comorbidity (eg, diabetes) Screening in disadvantaged populations Individual patient goals, priorities, and needs influence uptake of screening interventions (eg, not all patients will accept recommendations regardless of the strength of the recommendation) Individual patient risk factors, circumstances, and priorities influence the time frame for uptake of screening interventions

SDM—shared decision making, SDM-Q-9—Shared Decision Making Questionnaire.

*Practice complexity is a dynamic and constantly emerging set of processes and objects that not only interact with each other, but come to be defined by those interactions.⁵³

Table 3. Suggested performance measures for the example of screening for breast cancer

PERFORMANCE MEASURE	WHAT TO MEASURE	ISSUES IN MEASUREMENT
Performance measure from existing frameworks		
<ul style="list-style-type: none"> Eligible patients who have received a mammogram 	<ul style="list-style-type: none"> Percentage of screen-eligible patients aged 52 to 69 y who had a mammogram within the past 2 y³ 	<ul style="list-style-type: none"> Methods from existing performance measurement frameworks³
Performance measures that consider SDM		
<ul style="list-style-type: none"> Patients who have undertaken SDM on screening with mammography (all age groups) 	<ul style="list-style-type: none"> Percentage of patients who received knowledge translation tool on screening with mammography Percentage of patients who have undertaken SDM on screening with mammography Percentage of patients who received mammograms Percentage of patients who declined mammograms Percentage of patients who agreed to mammograms but subsequently did not undertake them 	<ul style="list-style-type: none"> Measuring the quality of SDM for weak or conditional recommendations for screening in women aged 50 to 69 y Recommendations against screening in other age groups⁵⁴ Can use modified method from existing performance measurement frameworks to calculate numerators and denominators³ Limited availability of good-quality data on SDM in electronic medical records
<ul style="list-style-type: none"> Patients who have been made aware of their eligibility for screening with mammography 	<ul style="list-style-type: none"> Patient awareness of their eligibility for screening and the possibility of SDM (decision point) 	<ul style="list-style-type: none"> Limitations of tools to measure awareness of the decision point

SDM—shared decision making.

environment to provide a more complete assessment of screening with mammography. One of your colleagues with an interest in quality improvement has made you aware of “quality circles,”⁶⁰⁻⁶³ implemented in many European countries to improve quality in primary care. Your practice group decides to explore this concept further as a method of evaluating the results of your performance measurement strategy and improving the quality of screening in your practice. You also decide to ensure that knowledge translation tools on screening with mammography are easily available to your patients before or during their visits when this issue is discussed.

Suggestions for improving the quality of screening in primary care practices

Family physicians can consider some of the following suggested strategies to improve the quality of screening in their practices.

- Individual or practice groups of family physicians should carefully select, adapt, or develop screening performance measures that reflect the needs of their practices and patients. These measures can differ between practices and can evolve as quality improvement processes develop and mature in each practice setting.
- Family physicians should develop skills in the use of SDM in circumstances where there is a trade-off between the harms and benefits of screening. Performance measures should reflect the use of SDM and the potential for no screening decisions.
- Before or at the time of the patient visit, knowledge translation tools on screening maneuvers should be readily available to assist in SDM on screening.

- Electronic medical records should be updated to allow collection of data on the use of SDM.
- Persons tasked with the development of performance measures need to consider the importance of SDM and the complexity of the primary care practice environment in the development of screening performance measures.

Conclusion

Performance measures in current measurement frameworks are often inadequate to measure the full range of screening activities in primary care. Screening performance measures should consider SDM, patient values and preferences, and practice complexity in addition to the percentage of patients tested. Goals or targets for recommended preventive screening maneuvers in primary care should reflect that outcomes are dependent on social, health care system, and individual patient factors. Hence there is no “truth” in a single target value or threshold to achieve for the uptake of screening interventions. 

Dr Bell is Professor in the Department of Family Medicine at the University of Alberta in Edmonton. **Dr Thériault** is Associate Vice Dean of Distributed Medical Education and Academic Lead for the Physicianship Component at Outaouais Medical Campus in the Faculty of Medicine at McGill University in Montreal, Que. **Dr Singh** is Associate Professor in the Department of Internal Medicine and the Department of Community Health Sciences at the University of Manitoba in Winnipeg and in the Department of Hematology and Oncology of CancerCare Manitoba. **Dr Grad** is Associate Professor in the Department of Family Medicine at McGill University.

Acknowledgment

We thank **Dr France Légaré** for her valuable support and suggestions on the measurement of shared decision making in primary care.

Competing interests

All authors have completed the International Committee of Medical Journal Editors' Unified Competing Interest form (available on request from the corresponding author). **Dr Singh** reports grants from Merck Canada, personal fees from Pendopharm, and personal fees from Ferring Canada, outside the submitted work. The other authors declare that they have no competing interests.

Correspondence

Dr Neil R. Bell; e-mail neilb@ualberta.ca

References

- Donabedian A. The quality of care: how can it be assessed? *JAMA* 1988;260(12):1743-8.
- Health Quality Council of Alberta. *Primary healthcare panel report*. Calgary, AB: Health Quality Council of Alberta; 2019.
- Health Quality Ontario. *MyPractice primary care: a tailored report for quality care*. Toronto, ON: Health Quality Ontario; 2019.
- Multi-Source Feedback Plus+ [website]. Edmonton, AB: College of Physicians and Surgeons of Alberta; 2019. Available from: www.cpsa.ca/your-practice/msf-plus. Accessed 2019 Aug 1.
- Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q* 1966;44(3 Pt 2):166-203.
- Donabedian A. Evaluating the quality of medical care. 1966. *Milbank Q* 2006;83(4):691-729.
- Berwick D, Fox DM. "Evaluating the quality of medical care": Donabedian's classic article 50 years later. *Milbank Q* 2016;94(2):237-41.
- Ayanian JZ, Markel H. Donabedian's lasting framework for health care quality. *N Engl J Med* 2016;375(3):205-7.
- Starfield B, Shi L, Macincio J. Contribution of primary care to health systems and health. *Milbank Q* 2005;83(3):457-502.
- Best M, Neuhauser D, W Edwards Deming: father of quality management, patient and composer. *Qual Saf Health Care* 2005;14(4):310-2.
- Montgomery DC, Jennings CL, Pfund ME. *Managing, controlling and improving quality*. Hoboken, NJ: Wiley; 2011.
- Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. *Health Aff (Millwood)* 2008;27(3):759-69.
- Adair CE, Simpson E, Casebeer AL, Birdsell JM, Hayden KA, Lewis S. Performance measurement in health care: part I—concepts and trends from a state of the science review. *Health Policy* 2006;1(4):85-104.
- Adair CE, Simpson E, Casebeer AL, Birdsell JM, Hayden KA, Lewis S. Performance measurement in health care: part II—state of the science findings by stage of the performance measurement. *Health Policy* 2006;2(1):56-78.
- Canadian Institute for Health Information. *Pan-Canadian primary health care indicator update report*. Ottawa, ON: Canadian Institute for Health Information; 2012.
- Haj-Ali W, Hutchinson B; Primary Care Performance Measurement Steering Committee. Establishing a primary care performance measurement for Ontario. *Health Policy* 2017;12(3):66-79.
- Health Quality Ontario. *A primary care performance measurement framework for Ontario. Report of the Steering Committee for the Ontario Primary Care Performance Initiative: phase one*. Toronto, ON: Queen's Printers for Ontario; 2014.
- Health Quality Ontario. *MyPractice: primary care report technical appendix, version 4*. Toronto, ON: Health Quality Ontario; 2019.
- Langton JM, Wong ST, Johnston S, Abelson J, Ammi M, Burge F, et al. Primary care performance measurement and reporting at a regional level. Could a matrix approach provide actionable information for policy makers and clinicians? *Health Policy* 2016;12(2):33-51.
- Qaseem A, Fitterman N, Cross JT, Asch S, Barrett E, Basch P, et al. *Performance measurement. Preventive care: a review of the Performance Measurement Committee of the American College of Physicians*. Philadelphia, PA: American College of Physicians; 2018.
- Premji K, Hogg W. *Let's not confuse measurable with meaningful in primary care*. Toronto, ON: Healthy Debate; 2016. Available from: https://healthydebate.ca/opinions/measure_performance_primary-care. Accessed 2019 Jul 8.
- Heath I, Rubinstein A, Stange KC, van Driel ML. Quality in primary health care: a multidimensional approach to complexity. *BMJ* 2009;338:b1242.
- Young RA, Roberts RG, Holden RJ. The challenges of measuring, improving, and reporting quality in primary care. *Ann Fam Med* 2017;15(2):175-82.
- Katerndahl D, Wood R, Jaén CR. Complexity of ambulatory care across disciplines. *Health (Amst)* 2015;3(2):89-96. Epub 2015 Feb 27.
- Upshur RE. Understanding clinical complexity the hard way: a primary care journey. *Health Q* 2016;19(2):24-8.
- Sturmberg J. Complexity and primary care. In: *WONCA Europe. The world book of family medicine—European edition*. Istanbul, Turkey: WONCA Europe; 2015. Available from: <https://www.woncaeurope.org/sites/default/files/World%20Book%202015.pdf>. Accessed 2019 Aug 2.
- Roland M, Guthrie B. Quality and outcomes framework: what have we learnt? *BMJ* 2016;354:i4060.
- Roberts ET, Zaslavsky AM, McWilliams JM. The value-based payment modifier: program outcomes and implications for disparities. *Ann Intern Med* 2018;168(4):255-65. Epub 2018 Nov 28.
- Dickinson JA, Grad R, Wilson BJ, Bell NR, Singh H, Szafran O, et al. Quality of the screening process. An overlooked critical factor and an essential component of shared decision making about screening. *Can Fam Physician* 2019;65:331-6 (Eng), e185-91 (Fr).
- Understanding quality measurement*. Rockville, MD: Agency for Healthcare Research and Quality; 2018. Available from: www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/chtolbox/understand/index.html. Accessed 2019 Aug 19.
- Berwick DM. Era 3 for medicine and health care. *JAMA* 2016;315(13):1329-30.
- Bell NR, Grad R, Dickinson JA, Singh H, Moore AE, Kasperavicius D, et al. Better decision making in preventive screening. Balancing benefits and harms. *Can Fam Physician* 2017;63:521-4 (Eng), 525-8 (Fr).
- Grad R, Légaré F, Bell NR, Dickinson JA, Singh H, Moore AE, et al. Shared decision making in preventive health care. What it is; what it is not. *Can Fam Physician* 2017;64:682-4 (Eng), e377-80 (Fr).
- McCormack J, Elwyn G. Shared decision is the only outcome that matters when it comes to evaluating evidence-based practice. *BMJ Evid Based Med* 2018;23(4):137-9. Epub 2018 Jul 12.
- Lang E, Bell NR, Dickinson JA, Grad R, Kasperavicius D, Moore AE, et al. Eliciting patient values and preferences to inform shared decision making in preventive screening. *Can Fam Physician* 2018;64:28-31 (Eng), e13-6 (Fr).
- Bastemeijer CM, Voogt L, van Ewijk JP, Hazelzet JA. What do patient values and preferences mean? A taxonomy based on a systematic review of quantitative paper. *Patient Educ Couns* 2017;100(5):871-81. Epub 2016 Dec 24.
- Mansfield C, Tangka FK, Ekwueme DU, Smith JL, Guy GP Jr, Li C, et al. Stated preference for cancer screening: a systematic review of the literature, 1990-2013. *Prev Chronic Dis* 2016;13:E27.
- Vernooij RWM, Lytvy L, Pardo-Hernandez H, Albarqouni L, Canelo-Aybar C, Campbell K, et al. Values and preferences of men for undergoing prostate-specific antigen screening for prostate cancer: a systematic review. *BMJ Open* 2018;8(9):e025470.
- Mathioudakis AG, Salakari M, Pylkkanen L, Saz-Parkinson Z, Bremefeld A, Deandrea S, et al. Systematic review of women's values and preferences concerning breast cancer screening and diagnostic services. *Psychooncology* 2019;28:939-47. Epub 2019 Mar 24.
- Barr PJ, Elwyn G. Measurement challenges in shared decision making: putting the 'patient' in patient-reported measures. *Health Expect* 2016;19(5):993-1001. Epub 2015 Jun 25.
- Gärtner FR, Bomhof-Roordink H, Smith IP, Scholl I, Stiggelbout AM, Pieterse AH. The quality of instruments to assess the process of shared decision making: a systematic review. *PLoS One* 2018;13(2):e0191747.
- Bouniols N, Leclère B, Moret L. Evaluating the quality of shared decision making during the patient-care encounter: a systematic review of tools. *BMC Res Notes* 2016;9:382.
- Mangin D, Stephen G, Bismah Y, Risdon C. Making patient values visible in healthcare: a systematic review of tools to assess patient treatment priorities and preferences in the context of multimorbidity. *BMJ Open* 2016;6(6):e010903.
- Bai F, Ling J, Esomime G, Yao L, Wang M, Haung J, et al. A systematic review of questionnaires about patient's values and preferences in clinical practice guidelines. *Patient Prefer Adherence* 2018;12:2309-23.
- O'Connor AM, Stacey D, Jacobsen MJ. *Ottawa personal decision guide*. Ottawa, ON: Ottawa Hospital Research Institute, University of Ottawa; 2015.
- Garvelink MM, Boland L, Klein K, Nguyen DV, Menear M, Bekker HL, et al. Decisional Conflict Scale findings among patients and surrogates making health decisions: part II of an anniversary review. *Med Decis Making* 2019;39(4):315-26. Epub 2019 May 29.
- Légaré F, Keating S, Clay K, Gagnon S, D'Amours D, Rousseau M, et al. Are you SURE? Assessing patient decisional conflict with a 4-item screening test. *Can Fam Physician* 2010;56:e308-14. Available from: www.cfp.ca/content/cfp/56/8/e308.full.pdf. Accessed 2019 Sep 30.
- School I, Kriston L, Dirmaier J, Buchholz A, Härter M. Development and psychometric properties of the Shared Decision Making Questionnaire—physician version (SDM-Q-Doc). *Patient Educ Couns* 2012;88(2):284-90. Epub 2012 Apr 3.
- Doherr H, Cristalle E, Kriston L, Härter M, School I. Use of the 9-item Shared Decision Making Questionnaire (SDM-Q-9 and SDM-Q-Doc) in intervention studies—a systematic review. *PLoS One* 2017;12(3):e0173904.
- Rencz F, Tomási B, Brodsky V, Gulácsi L, Weszl M, Péntek M. Validity and reliability of the 9-item Shared Decision Making Questionnaire (SDM-Q-9) in a national survey in Hungary. *Eur J Health Econ* 2019;20(Suppl 1):S43-55. Epub 2019 May 20.
- Strull WM, Lo B, Charles G. Do patients want to participate in medical decision making? *JAMA* 1984;252(21):2990-4.
- Becerra Pérez MM, Menear M, Brehaut JC, Légaré F. Extent and predictors of decision regret about health care decisions: a systematic review. *Med Decis Making* 2016;36(6):777-90. Epub 2016 Mar 14.
- Greenhalgh T, Papoutsis C. Studying complexity in health services research: desperately seeking an overdue paradigm shift. *BMC Med* 2018;16:95. Epub 2018 Jun 20.
- Klarenbach S, Sims-Jones N, Lewin G, Singh H, Thériault G, Tonelli M, et al. Recommendations on screening for breast cancer in women aged 40-74 years who are not at increased risk for breast cancer. *CMAJ* 2018;190:E1441-51.
- Smith P, Busse R. Targets and performance measurement. In: *Smith PC, Mossialos E, Papanicolaou I, Leatherman S, editors. Performance measurement for health system improvement: experiences, challenges and prospects*. Cambridge, UK: Cambridge University Press; 2010. p. 509-36.
- Etorchi-Tardy A, Levif M, Michel P. Benchmarking: a method for continuous quality improvement in health. *Health Policy* 2012;7(4):e101-19.
- Appendix A: approaches to setting targets for quality improvement plans. In: *Health Quality Ontario. Quality improvement plan (QIP) guidance document for Ontario's health care organizations*. Toronto, ON: Health Quality Ontario; 2017. p. 28-31. Available from: www.hqontario.ca/portals/0/Documents/qi/qip/appendix-a-target-setting-1611-en.pdf. Accessed 2019 Aug 21.
- Doran T, Kontopantelis E, Reeves D, Sutton M, Ryan AM. Setting performance targets in pay for performance programmes: what can we learn from QOF? *BMJ* 2014;348:g1591. Epub 2014 Mar 4.
- Born K, Sullivan T, Pendharkar S. *Missing the target on health care performance?* Toronto, ON: Healthy Debate; 2014. Available from: <https://healthydebate.ca/2014/01/topic/politics-of-health-care/missing-the-target>. Accessed 2019 Aug 21.
- Rohrbasser A, Harris J, Mickan S, Tai K, Wong G. Quality circles for quality improvement in primary health care: their origins, spread, effectiveness and lacunae—a scoping review. *PLoS One* 2018;13(12):e0202616.
- Smith GI, Mercer SW, Gillies JC, McDevitt A. Improving together: a new quality framework for GP clusters in Scotland. *Br J Gen Pract* 2017;67(660):294-5.
- Rohrbasser A, Guthrie B, Gillies J, Mercer S. *GP clusters briefing paper 12. Collaborative quality improvement in general practice clusters*. Version 12.0. Glasgow, Scot: Scottish School of Primary Care; 2017. Available from: www.sspc.ac.uk/media/Media_543940_smx.pdf. Accessed 2019 Aug 21.
- Scottish Government. *Improving together: a national framework for quality and GP clusters in Scotland*. Edinburgh, Scot: Scottish Government; 2017. Available from: www.gov.scot/publications/improving-together-national-framework-quality-gp-clusters-scotland. Accessed 2019 Aug 21.

This article is eligible for Mainpro+ certified Self-Learning credits. To earn credits, go to www.cfp.ca and click on the Mainpro+ link.

La traduction en français de cet article se trouve à www.cfp.ca dans la table des matières du numéro de novembre 2019 à la page e459.

Suggested reading

Donabedian A. The quality of care: how can it be assessed? *JAMA* 1988;260(12):1743-8.

Young RA, Roberts RG, Holden RJ. The challenges of measuring, improving, and reporting quality in primary care. *Ann Fam Med* 2017;15(2):175-82.

Berwick DM. Era 3 for medicine and health care. *JAMA* 2016;315(13):1329-30.