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PERSPECTIVE

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Performance measurement and user-centeredness in the healthcare sector: Opening the black box adapting the framework of Donabedian

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Abstract

The framework of Donabedian is widely applied to performance assessment at the healthcare system level. Donabedian categorised the care quality measurement around three dimensions, namely structure, process, and outcomes. The first dimension concerns the inputs; the second one, the combinations of factors and inputs; the last one, the effectiveness in terms of patients' health status. Donabedian early included in the last dimension the patient satisfaction. Nevertheless, nowadays, outcomes are generally measured through hard endpoints, such as re-admissions and mortality indicators. Recently, the Patient-Reported Outcome Measures (PROMs) have been included among the outcome measures within the Donabedian framework. How to move the concept of patient-centeredness to a macro level, including the patient point of view in care quality measurement, evaluation, and improvement? This paper integrates the Donabedian structure-process-outcome framework, by incorporating in the proper dimension the patient-indicators, namely the abovementioned PROMs and Patient-Reported Experience Measures (PREMs). While PROMs are clearly measures of outcome, PREMs can be collocated in the process dimension, since they can be useful for mapping processes and care pathways,

in a lean perspective, as well as in the outcome dimension, because inherently linked to outcome, and enablers of patient-centeredness.

KEYWORDS
Donabedian, healthcare management, patient experience, patient-reported outcomes, performance evaluation, PREMs, PROMs

HIGHLIGHTS

- Donabedian early included the patient satisfaction in his structure-process-outcome model.
- The link between the Donabedian vision and the patient-centeredness represents a step forward.
- Outcomes are generally measured through hard endpoints, such as re-admissions and mortality.
- This paper integrates patient-indicators, namely PROMs and PREMs, in the Donabedian framework.
- While PROMs are clearly measures of outcome, PREMs can be collocated both in the process and in the outcome dimension.

1 | INTRODUCTION

Performance measurement and evaluation are complex and necessary in healthcare, due to the intrinsic characteristics of health systems, including the need for multi-dimensional and multi-stakeholder evaluations.[1,2]

The framework of Donabedian is widely applied to performance assessment at the healthcare system level. By simplifying his framework,[3] he categorised the measurement of care quality in three dimensions, namely structure, process, and outcomes. The structure domain concerns input resources used to foster processes. The dimension of process relates to the combinations of factors that put the best evidence into practice (e.g., appropriateness, efficiency, integration and coordination of care). Outcomes are meant as measures of effectiveness in terms of patients' health status. As reported by Noto and colleagues,[4] the most frequently used outcomes measure are the so-called hard endpoints, such as 30-day mortality indicators or re-admissions. On the contrary, still in his seminal work, Donabedian included the patient satisfaction in the last 'box'.[5]

Far away from a technocratic or reductionist vision, Donabedian has always put the person, particularly the patient preferences, in a key position in his approach to quality of care, as reported by Berwick and Fox.[3] In the Donabedian's vision, measurements in healthcare are a support to governance and management, aimed at improving the healthcare system's effectiveness and efficacy. The link between his threefold framework and the person- or patient-centred approach to care appears motivated by (i) the centrality of people in his vision, (ii) the need of patient-centred or patient-driven research and measures to move healthcare systems towards the patient-centeredness approach. According to Berwick and Fox,[6] the focus on the person- or patient-centeredness goes beyond the Donabedian structure-process-outcome framework.

Some recent works used the Donabedian framework to interpret and summarise the concept of patient-centred care.[3,7] The Donabedian model was mostly applied to an approach to the person centrality at a micro-level of the healthcare system, mainly developed in the domain of the healthcare professional-patient (and/or family) interaction. It refers to the partnership and collaboration between the healthcare service provider and people "to co-design and deliver personalised care that provides people with the high-quality care they need and improve health-care system

efficiency and effectiveness"[7] (p.430). The Institute of Medicine (IOM) defined patient-centred care as: "Providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions."[8] (p. 40) The emphasis in these definitions is often on the care provision at the individual level. Scholl and colleagues identified the dimensions of patient-centeredness in the literature and mapped them onto three different levels of healthcare: 1) the micro, 2) the meso, and 3) the macro levels.[9] In their work, the activities (i.e., patient information, patient and family involvement, patient empowerment, physical and emotional support) are mainly placed on the micro level of care, which regards the encounter between the patient and the provider; the enablers (i.e., clinician-patient relationship and communication, team-work, access to care, coordination and continuity of care, integration of medical and non-medical care) are mostly situated on the meso level, the level of healthcare organizations, both within and between organizations; while none of the dimensions of patient-centeredness focused on the macro level of care, that relates to governance, policy, legislation, accreditation. They proposed this integrative model of patient-centeredness to provide a foundation for operationalising better measures of patient-centeredness. Following the same direction, Jaensch and colleagues included Patient-Reported Outcome Measures (PROMs) among the patient-centred measures of outcome within the Donabedian framework.[3] In both these approaches, the focus remains on the care quality for the individual patient in the daily practice.

Nevertheless, correctly designing measurement tools of patient-centeredness of care is essential also for guiding a real shift of the care paradigm towards the person or patient-centeredness, pervading the entire system from the micro to the macro level. The approach of Donabedian clearly referred to care quality measurement, evaluation, and management as a tool for improving the 'healthcare as a system'.[3] As reported by Vainieri and colleagues,[1] performance management systems have been traditionally focused on process or output of specific units or providers, without fully embrace a multi-stakeholder value concept considering what is relevant to patients, among the others, and capturing the intra- and inter-organizational interdependencies along the care pathway in the patient perspective.

How to move the concept of patient-centeredness to a macro level, including the patient point of view in care quality measurement, evaluation, and improvement?

Inquiries that specifically address community- and patient-centred health services evaluation are few in the management and accounting fields.[10] Previous papers on this topic have been mainly published on journals in the medicine area (e.g., Bjertnaes and colleagues[11] and Nilsson and colleagues[12]). This paper aims to address this gap, offering a contribution in the managerial area, with the aim of bringing together issues from both the medicine and the management fields. The paper aims to focussing on possible impacts in the discipline of management science, and, particularly, on the public sector management and accounting, by emphasising how patient-reported measures can contribute to developing new insights in performance evaluation and management systems. This paper integrates the Donabedian structure-process-outcome framework, by incorporating the patient-indicators among the various dimensions of quality measurement.

2 | PATIENT-MEASURES

Two kinds of measures are generally used to capture an 'objectivised' patient feedback on care: the abovementioned PROMs and the Patient-Reported Experience Measures (PREMs).

The importance of understanding how patients experience care has led to the development of PREMs, validated instruments used to discern a patient's perception of their experience with health care delivery. PREMs are aimed at capturing factual patients experience with healthcare services. PREMs are intended to elicit what actually occurred to patients while they received care; this covers both the use of a single service (i.e., in a hospital) and along a care pathway.[13] According to Coulter and colleagues, "focussing on the details of patients' experience can help to pinpoint the problems more precisely"[13] (p.8). PREMs are valuable data to be used to improving quality of care in relation to concrete aspect of care delivered.[13–19] Patient experience metrics usually include questions of

relevance to patients, the key dimensions of experience to be considered in evaluating healthcare services, such as: access to care; informative support from healthcare professionals to patients; patient and family involvement; coordination and teamworking; pain management; emotional support, compassion, dignity, respect and relational aspects; integration and continuity of care.[13] These aspects of the patient experience are recognized by the Picker Institute's principles of person-centred care.[20] In this way, PREMs are able to measure what School and colleagues defined patient-centeredness activities[9] and to collect specific information on 'what matters', 'what does not work' and 'what works' according to patients' point of view, in relation to both a punctual experience with specific services, and a cross-setting and multi-provider experience with surgical as well as medical care pathways.[21–25] In the recent PREMs taxonomy of Tim Benson,[26] the subdomains proposed are service provided, provider culture and innovation. The first one is about perception of the care and service provided in terms of compassion (i.e., measures of kindness in the treatment), communication (i.e., healthcare professionals' listen/explain behaviours), access (i.e., readiness and responsiveness in seeing the patient) and organization (i.e., service integration, services' providers talk/work together, know the patient story). In the second subdomain, the provider culture is represented by the patients' perceptions of protection, sharing and information governance of patient data. Finally, the last dimension is about the patient digital confidence and readiness. However, the Benson's taxonomy of PREMs do not cover several other dimensions of patient experience that were mentioned above.

PROMs[13–19] are standardized questionnaires aimed at measuring health outcomes through patients' lenses.[27] Patients report directly on perceptions of their own health, without clinician interpretation, with respect to physical functioning, symptoms, ability to maintain daily activities, mental health and wellbeing, relational and emotional well-being.[28] PROMs can be collected using disease-specific or generic questionnaires, to capture respectively the various dimensions of health and functional status or symptoms related to a specific health condition, or measures of more generic health-related quality of life, also in combination. They are collected longitudinally, along medical or surgical pathways, often before and after a surgery or treatment (see i.e., De Rosis et al. 2021; Ferré et al. 2021), or less often during a treatment or care pathway (see i.e., Pennucci et al. 2020). In both cases, they are aimed at identifying changes in health outcomes over time.[28]

PROMs and PREMs can be jointly collected, also for investigating the relationship between patient experience and outcome along the care pathway, thus providing a complete vision of the quality and integration of care from the patient perspective.[17,29]

3 | PROMS AND PREMS' USE IN THE HEALTHCARE SERVICES EVALUATION

PREMs have been increasingly used as a tool for evaluating and improving care quality with respect to the service delivery.[13,17,30] PROMs have been initially developed for being incorporated and used into clinical trials, to measure effectiveness and impact of interventions.[27,28,31] The interest in using PROMs in routine practice has increased over time, particularly in some specific care sector to monitor patient symptoms during treatment (i.e., mental health or oncologic care), for improving individual patient health status and clinical care, as well as for supporting communication and shared decision-making.[28] PROMs have also been integrated with specific disease or prothesis registries.[12,32]

PREMs provide key information on patient experience with the service delivery process with specific services and along the care pathway, also clarifying some PROMs results[29,33] and providing also key information on patient safety.[34,35]

PROMs and PREMs have been widely indicated as key and promising assessment tools for comparative performance assessment from the patient perspective. PROMs can be effectively used at an aggregated form for assessing the outcome produced by healthcare organizations.[36] In fact, they provide comparable data with previous measurements from the same individual or group, or among different groups or sub-groups, to monitor health gain or loss over time and to compare against standard,[28] or among healthcare providers and systems, to evaluate best and worst performers and identify improvement areas within clinical performance through benchmarking[37] (see also OECD's

Health at a Glance reports). A key example of PROMs' use for assessing healthcare services' quality has been the English national PROMS programme, mandatorily introduced in 2009 in relation to selected elective surgical procedures, resulted in little impact for service improvement.[38]

Some authors proposed PREMS and PROMs taxonomies, so providing a tool for including a patient-centred approach in the managerial processes of healthcare services evaluation, using also aggregated measures at macro level.[26] Nevertheless, in the evolution of healthcare services evaluation systems, the voice of patients is still to be really considered in the evaluation systems. Angela Coulter reported that "multi-purpose applications of PREMs and PROMs - using them in individual clinical care and aggregating the data for performance assessment - remains largely aspirational at present"[28] (p.1). There are some examples of PREMs and PROMs integration into performance evaluation systems that provide health managers and professionals with a complete and integrated vision of the patient pathway, so evaluating performance according to a patient-based perspective.[1,2,15,17]

Despite the availability of taxonomies, standards, and examples of patient-data use, it is worth pointing out that, currently, the main issue highlighted in literature and by practitioners regards a real and wide use and impact of them in the practice, at the various levels of the healthcare system.[28,39–42] As reported by D'Avena and colleagues, "What is primarily missing is progress in results [not in measurements]. Changes in culture, investment, leadership, and even the distribution of power are even more important than measurement alone."[43](p.1). On the contrary, while the patient voice is seen as a key aspect to be considered in multi-dimensional systems for measurement of a multi-facets concept of value from the first phases of the ongoing evolution of the healthcare services' evaluation systems, currently measurement, evaluation and management systems in healthcare still need to evolve.[1]

To push patient-driven improvements, patient-indicators in healthcare services evaluation must be linked to incentives in collecting and using them, both into clinical practice, and for quality improvement actions; patient-measures [15,17,31] must be explicitly used in assessments of value, linked with managerial levers, performance evaluation and reimbursement to drive patient-centered improvements in care.[15,17,31]

In this perspective, integrating patient-measures into the Donabedian model has provided insights for performance measurement practices. To integrate the patient-indicators into the management toolkits, this article proposes a Donabedian model—based framework for a more patient-centered services evaluation, in order to concretely facilitate the uptake of these measures into healthcare services measurement and evaluation systems.

4 | INTEGRATING THE DONABEDIAN MODEL WITH PATIENT-MEASURES

As anticipated, the Donabedian model groups the measurement of care quality in three dimensions, namely structure, process, and outcomes. While PROMs are clearly measures of outcome, it is not easy to collocate PREMs in the Donabedian framework.

4.1 | Proms in the outcome dimension

Within the Value-Based Care paradigm,[31] the quality of care is usually measured in terms of healthcare outcomes in respect to resources, input or cost of care, that can be respectively referred to the last and the first dimensions of the Donabedian model. As reported by Tseng and Hicks, in this perspective, patient-centred care is one aspect of high-quality care but is not necessarily a dominant aspect.[31] For measuring value in a patient-centred perspective, it is necessary to incorporate the patient perspective into the quality measures. Nowadays, because of measurement challenges and a relative lack of experiences, patient-centred care is overshadowed by other aspects of quality such as efficacy and safety.[31] With this respect, PROMs can answer to Batalden and colleagues, who ask for measures that reflect the value in the patient perspective, instead of metrics in the product or volume paradigm.[35] PROMs can actually measure what matters to patient over time.[28] They can integrate the outcome measures in the

last dimension of the Donabedian model, by adding valuable information to traditional 'hard' outcome indicators such as readmission, revision rates, mortality rates.[15,16] PROMs can also replace some output measures, sometimes confused with outcomes, so shedding light on results that matters to patients, such as less pain, better functions, recovered independence, good mental wellbeing, which can only be directly captured from patients.[16] As anticipated, recently, Tim Benson proposed a taxonomy of PROMs with subdomains: quality of life, individual care and community.[26] ICHOM provides standard sets for measuring the outcome of treatments, conditions, pathways, including also patient-reported outcome measures (see ICHOM website and publications).

Some challenges must be considered in the uptake of PROMs measures and in producing benefits to patients, such as the selection of PROMs indicators; ethical concerns related to patient involvement, information and results' sharing; data collection, analysis, reporting, and interpretation; data logistic problems, for instance in relation to the digital collection and the lack of interoperability of ICT systems; need of coordinated approach, also trough greater and wider collaborative multi-stakeholder efforts.[44,45]

4.2 | Prems in the process dimension

Previous research has suggested the collection and use of PREMs for mapping and improving the process, in an operational management or lean perspective.[46] According to Mahdavi and colleagues, the operational management is aimed at addressing the barriers to patient experience.[47] In a lean perspective, the patient perspective on quality, safety, access and experience are among the most important aspects to consider.[46] Prioritising patient values and experience is essential for measuring value produced or wasted in the patient perspective during the care service provision, improving the process. The improvement of the process (i.e., better integration, better coordination, less waste of time) increases the patient satisfaction, which was indicated as an outcome by Donabedian. Thus, PREMs can be used as measures of intermediate results.

By organising the PRE questions following the flow of activities, or longitudinally along the care pathway, it is possible to measure 'what is done' in the patient perspective.[15] Using the words of Kuluski and colleagues, "While a person's experience in one sector or organization may be great, the overall experience across the health system and transitions between settings may be dreadful. (…) What matters is the overall care experience and how people feel as they interact with various providers involved in their care"[48] (p.74–75). Thus, a longitudinal collection of PREMs in different and successive touchpoints across services, settings and providers, can enlighten aspect of care delivery along the care pathway, or patient journey, such as continuity/discontinuity within and between different care units and settings, level of inter- and cross-organizational synchronization, coordination or integration of care service provision and quality.[25,47]

PREMs can effectively be used to improve care processes. However, some scholars underline the imperfection of patient experience measurement tools, in terms of typology of measures[46] and methodologies to capture the experience and of ability to engage different patients' groups (i.e., vulnerable people), and this can impede the use of these data for quality improvement actions.[25,46] Dealing with care pathways means managing some aspects that patients can evaluate using specific measures. According to Rubin and colleagues,[49] the evaluation of a process implies measurement and assessment of the degree of adherence to a process proven to produce positive outcomes (i.e., health outcomes, patient values and preferences) by the available scientific evidence and/or professionals' consensus. Accordingly, process measures are time- and context-specific measures, requiring updating to new guidelines and strategies, as well as adaptation to specific situations. Putting together some different and recent frameworks and guidelines on healthcare that include a vision of processes and pathways, for instance on integrated people-centred health services provision,[50,51] it emerged an impressive number of dimensions, subdimensions and measures of experience that can be used for monitoring and assessing the enabling 'backstage process'[51](p.16). For instance, among the dimensions, it can be cited the coordination between health professionals, within and across organizational boundaries, including official and not official networks, with subdimensions such as referral networks (i.e., collaboration

procedures between general practitioner and specialist), informative continuity (i.e., experience of not repeating the patient health history to doctors), and relational continuity (i.e., care coordinator, reference doctor/nurse).

However, as anticipated, a selection of measurements from the patient perspective on care experience must be carefully suggested and discussed, to correctly measure processes in the Donabedian perspective, for instance in terms of appropriateness, service provision, integration and coordination. The methodology used for collecting PREMs, including the administration time and method, the questionnaires, and the indicators themselves, need further consideration. According to Barbazza and colleagues, indicators should be designed to measure what matters, be easy to understand and interpret, be acceptable and trusted by managers and professionals, and actually support action.[52]

Benchmarking process results can provide valuable data for identify good practices and design improvement actions.[47] In order to capture the 'system-ness' of quality, the siloed vision of care should be substituted by a pathway vision.[1,52] In literature, there are some examples of adoption of the pathway perspective in the healthcare performance evaluation that includes a systematic assessment of the patient experience.[2,15,53]

Nevertheless, some scholars have shown that PROMs and PREMs are inherently linked, in respect to the safety and clinical effectiveness in producing outcome, and together help to provide higher care quality.[29,30,33,54,55] Evidence is available on the fact that Patients who report good healthcare experiences tend to respond better to treatment, as judged by clinical indicators (such as recovery from myocardial infarction, blood glucose levels, and infections) and quality of life measures.[56] Thus, as anticipated, patient-oriented evaluation of services should be not based on siloed approach, but should assess both experiential factors and outcomes of services to better understand if healthcare systems are providing what the really patients need. In addition, in particular sectors of care, a positive care experience can be extremely relevant for patients and caregivers, equally or more important than health-related results, for instance in palliative and end of life care.[16] For this reason, some specific PREMs can also be included into the outcome dimension of the Donabedian model.

4.3 | Prems in the outcome dimension

PREMs are not only "able to capture patients' evaluation of their satisfaction with, or experience of, the structure and process as well as of the results of healthcare" (p.144).[12] Some PREMs can capture the level of patient-centeredness of the care system, at a macro, more strategic level than the micro or meso one, such as those covered by operational management. As reported by Mahdavi and colleagues, at the strategic level there is the need to understand the pace and the level of the healthcare system's paradigm towards the patient-centeredness, while working for supporting the mid-level and the operational level management in being patient-oriented in their action.[47]

Also, the Quadruple Aim model includes the improvement of patient experience among the goals to be achieved at the different levels of healthcare systems.[57] As reported by Slawomirski and colleagues, the experience with care is important particularly for patients with multiple chronic conditions, who have multi-providers and multi-setting care journey over time, where experiencing a fragmented care, poor information and care coordination, difficulties in navigating among the healthcare providers can affect the final outcomes for patients.[16]

Considering patient-centeredness among the outcomes to be reached by the healthcare systems, PREMs can be used aggregated at a macro level for reflecting and measuring this approach. For example, principles, enablers and activities of the patient-centeredness listed by Scholl and colleagues[9] can be easily translated into patient-reported dimensions and measures, for example, patient information, to be measured as provision of tailored and clear information, or patient involvement in care, to be measured as active involvement in decision-making.

As anticipated, the integration of patient measures into existing performance evaluation and management systems are considered as effective strategies to achieve patient-centred care and value-based health care too.[30,58] The above-mentioned performance evaluation system embracing a pathway and patient vision of assessment and benchmarking is a valuable strategic approach to patient-centeredness, promoting a shared vision on the importance

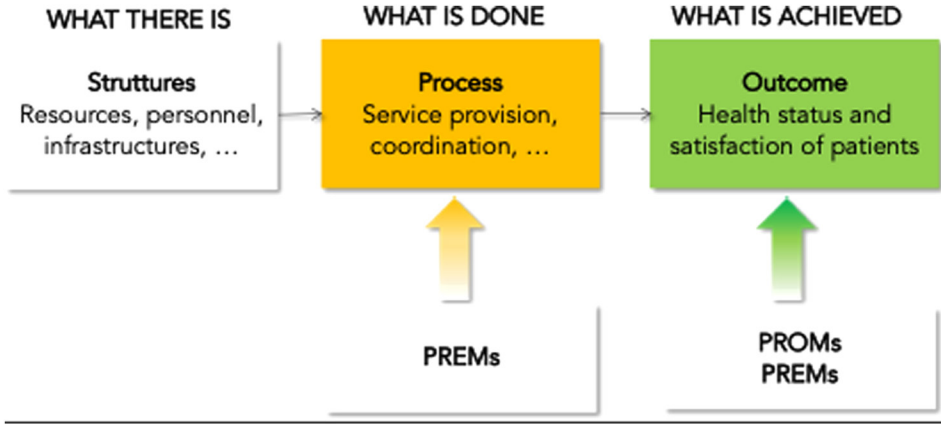

FIGURE 1 Proposal of integration of patient-indicators into the dimensions of the Donabedian's framework.

of patient experience improvement.[15] The healthcare performance management systems "should be designed to support the link between [healthcare organizations'] operations (i.e., how services are delivered) and the strategy at the organization and health system level"[1] (p.7).

Given these premises,[16,57] the author suggests that some specific PREMs can be considered and used also as outcome measures—Figure 1, in particular those measures related to enablers of patient-centeredness care approach.[9] Considering some indicators of patient-experience as outcomes can support the consideration of patient preferences, values, and satisfaction as core principles of planning, evaluation, and rewarding system.[47]

5 | CONCLUSIONS

The patient- or people-centred paradigm of care has been a key topic for scholars, policymakers, managers, and practitioners as well. Performance evaluation and management can support the efforts in moving the healthcare systems towards this approach, from the micro to the macro level.

This piece contributes to the literature by proposing an integration to the Donabedian structure-process-outcome model, incorporating patient-indicators, namely PROMs and PREMs, in the proper dimension of the framework. While PROMs are clearly measures of outcome, PREMs can be collocated in both the process and the outcome dimension, thus affecting improvement actions at micro, meso and macro levels.

The advantages of adopting the author's proposition in the healthcare services' evaluation are related to the greater emphasis given to the experiential aspects of care, by proposing these latter as outcomes and not only as intermediate results. This implies a cultural evolution in the approach to experience measures, and their improvement over time as strategic goals of healthcare systems.

This model can support design or rethinking of evaluation systems in a multi-stakeholder and multi-setting perspective, by collocating patient-indicators among the measures that can define performance and quality of care in terms of processes and outcomes in the patient perspective.

Further research should be done to empirically apply this model and to specifically discuss what patient measures should be included in each dimension of the Donabedian model, considering whether and what value they are measuring, their acceptability and actionability by managers and professionals, their potential impact on patients, citizens and society, what are the managerial levers needed to increase and release their potential.

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DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

ETHICS STATEMENT

Not applicable.

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