



Commentary

Definitions, measurement and indicator selection for quality of care in abortion [☆]

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ABSTRACT

Little consensus exists about how to measure quality of care in abortion. Our purpose is to (a) provide common language for healthcare quality definitions, frameworks and measurement; (b) synthesize literature about quality measurement in abortion; and (c) present criteria for quality metric development. Quality includes effectiveness, patient centeredness, timeliness, efficiency and equity of care. Information about structure, process and outcomes of care is used to measure quality. We do not have good evidence about expected population-level health and behavioral outcomes associated with improving abortion service quality. Abortion patients overwhelmingly report high satisfaction with services, but it is not clear if their satisfaction indicates high-quality care. Guidance exists for quality metric selection; measures must focus on priority topics, be scientifically sound and be feasible. Technical quality standards and clinical guidelines exist, but we lack a standard set of quality metrics. Partners in the Abortion Service Quality Initiative (<https://asq-initiative.org/>) are collaborating to develop the first-ever global standard for measuring abortion service quality in low- and middle-income countries, both in and out of health care facilities. Standardized and validated quality metrics would move our field forward and contribute to quality improvement activities and, ultimately, to improved health outcomes for women and families.

Implications: We define quality of health care, synthesize the evidence about quality of care in abortion and advocate for standardized and validated quality metrics to improve health outcomes for women.

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1. Introduction

Abortion is safe [1], but quality of care is more than safety. [2] Metrics exist to measure the quality of abortion services, but no consensus and little empirical evidence exist about which measures are useful quality indicators, that is, associated with health or patient experience outcomes [3]. The purpose of this synthesis is to (a) provide common language for healthcare quality definitions, frameworks and measurement, and link the quality of care

literature to abortion; (b) review literature about quality measurement in abortion; and (c) present criteria for development of quality metrics.

2. Quality in healthcare

Health services quality has been a focus for decades in wealthy countries and is now recognized as crucial to realizing health gains in low- and middle-income countries as well. Three recent major reports, from the National Academies of Medicine in the United States [4], the WHO/World Bank/OECD [5] and the Lancet commission on Health System Quality [6], all emphasized the central role of quality in the Sustainable Development Goal (SDG) era. The Millennium Development Goals focused more on access and utiliza-

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Table 1
IOM and WHO elements of quality [7]

Quality element	IOM Example questions to assess element	WHO definition
Patient safety Effectiveness	Are the risks of injury minimal for patients in the health system? Is the care provided scientifically sound and neither underused nor overused?	Delivering health care which minimizes risks and harm to service users Delivering health care that is adherent to an evidence base and results in improved health outcomes for individuals and communities, based on need
Patient centeredness	Is patient care being provided in a way that is respectful and responsive to a patient's preferences, needs, and values? Are patient values guiding clinical decisions?	Delivering health care which takes into account the preferences and aspirations of individual service users and the cultures of their communities
Timeliness	Are delays and waiting times minimized?	Delivering health care that is timely, geographically reasonable and provided in a setting where skills and resources are appropriate to medical need (labeled Accessible in WHO framework)
Efficiency	Is waste of equipment, supplies, ideas and energy minimized?	Delivering health care in a manner which maximizes resource use and avoids waste
Equity	Is care consistent across gender, ethnic, geographic and socioeconomic lines?	Delivering health care which does not vary in quality because of personal characteristics such as gender, race, ethnicity, geographical location or socioeconomic status

tion; the SDGs, specifically SDG 3, to promote healthy lives and promote well-being, requires a focus on quality of care if recent advances in achieving Universal Health Coverage are to result in better health. The Lancet report further broadens the focus on quality from the individual patient–provider interaction to assessing the capacity of health systems to deliver quality care [6].

So what is quality of care? The Institute of Medicine (IOM) published a landmark report in 2001, *Crossing the Quality Chasm*, which defines quality as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” [7]. This definition acknowledges that health care alone is not responsible for health, that health is a broad concept and that technical quality (current professional knowledge and practice) is part of, but not a synonym for, overall quality. The IOM further outlined six elements or domains of quality: patient safety, effectiveness, patient centeredness, timeliness, efficiency and equity, defined further in Table 1.

In a global context, the WHO/World Bank/OECD [5] concurs with these domains and adds that quality care must be integrated across a person's needs. The Lancet commission uses similar concepts but groups them in a framework designed to encompass

the health system as processes of care, which includes evidence-based care, competent systems and user experience [6]. Elements of quality can be also conceptualized in terms of *technical* and *interpersonal* quality [8], which are cross-cutting across quality domains. Technical quality refers to whether providers, facilities and institutions meet normative standards for appropriate care or evidence-based criteria. Interpersonal quality is the patient experience of the health care interaction.

The main approaches to defining quality of care domains, i.e., the IOM framework, do not provide information on how to measure quality of care. Donabedian's framework [9,10], which classifies information used to assess quality of care into structure, process and outcomes, has been widely adopted across medical care quality improvement and health outcomes research. Table 2 describes information types needed and examples to operationalize concepts in concrete measures. Researchers and practitioners use diverse language to describe domains, concepts, indicators, measures and metrics. Some words are used interchangeably; more important than a discussion of specific words and their use is an understanding of concepts underpinning the terms (Table 2).

Structural characteristics are usually easiest to measure, and while key to care delivery, information about structural character-

Table 2
Donabedian's structure, process, outcomes framework [9]

Category of information and definition	Example information/concepts	Example of concrete measure domains
Structure Attributes of the settings in which care occurs	Attributes of material resources	<ul style="list-style-type: none"> •Facilities •Equipment •Money
	Attributes of human resources	<ul style="list-style-type: none"> •Number of personnel •Qualifications of personnel
	Attributes of organizational structure	<ul style="list-style-type: none"> •Medical staff organization •Methods of peer review •Methods of reimbursement
Process What is actually done in giving and receiving care	Patient's activities in seeking care	<ul style="list-style-type: none"> •Access •Wait time
	Practitioners' activities in making a diagnosis and recommending and implementing a treatment	<ul style="list-style-type: none"> •Interpersonal skills •Counseling •Technical skill of the clinician or personnel who provides procedures/treatments
Outcome Effects of care on the health status of patients and populations	Improvements in patient health, knowledge, and behavior	<ul style="list-style-type: none"> •Medication adherence •Adverse events •Morbidity •Mortality •Global satisfaction
	Satisfaction with care	<ul style="list-style-type: none"> •Satisfaction with specific attributes of interpersonal and technical care •Outcomes that may indicate dissatisfaction with care such as non-adherence or failure to follow-up

istics is a rather “blunt instrument” in quality assessment [10]. Health and behavioral outcomes, including consumer-oriented outcomes such as trust and confidence in health care providers, services and the health system [6], are the gold standard [9,10]. However, health outcomes can be hard to capture at time of care, and if outcomes occur long after the care encounter, they can be hard to attribute to the specific care received. Outcomes can occur due to factors outside of healthcare provider control (e.g., patient factors, underlying risk) or may reflect patient perceptions that do not align with whether evidence-based care was delivered (e.g., satisfaction). Process measures are, therefore, often preferred to make inference about quality, although Donabedian and more recent literature recommend inclusion of measures from each of the three categories [11–14]. Measures based on information about processes are attractive because they can include both technical and interpersonal aspects of quality – both doing the right thing and doing it well (competent care and technical quality) and management of the interaction between health care provider and client/patient (experience of care and interpersonal quality) [11].

Patient, person or user care experience (the field has moved to person or user, but much literature still refers to patients) is a critical component of quality [6] and is often measured using satisfaction with care. Satisfaction is associated with process quality measures and health outcomes [6]. However, satisfaction is a problematic measure since it can be influenced by many factors. Patients may be reluctant to report negative opinions of their care providers for fear of losing access to care, and some may not be capable of judging technical quality. For example, a patient may express dissatisfaction when she or he expects but does not receive antibiotics or other unindicated treatments [6]. Satisfaction is also influenced by expectations and past experiences. Furthermore, a global satisfaction measure provides no information on how care can be improved. One solution is to develop more detailed or nuanced satisfaction measures, such as asking patients to report on specific attributes of the interpersonal experience or care processes. Patient experience of care measures that are specific and focus on modifiable factors can help quantify person-centeredness of health care services, as well as timeliness, efficiency, and equity – other key quality domains. Confidence and trust in providers and services – or measuring user preferences (for example, for privacy, information or pain control) – are useful alternatives to satisfaction [15].

Fundamental to developing quality metrics is establishing a relationship between the quality domain, measure and relevant clinical and patient-centered outcome or change in behavior or health. Quality assessment is not intended to establish these relationships; they must be known or have a strong preexisting theoretical foundation. We have more evidence about relationships between technical quality of care and health outcomes than about interpersonal quality. Evidence connecting many quality measures to improved health outcomes is modest at best [16].

3. Quality of care in abortion

Although the link between legalizing abortion and reductions in maternal morbidity and mortality is clear [17,18], we do not have

good evidence about expected population-level health and behavioral outcomes associated with improving quality of abortion services. Where illegal or highly restricted, abortion incidence is difficult to measure, rendering quality assessment nearly impossible. Where legal and especially where governments are held accountable to provide access to services, even if under narrow indications or exceptions, quality assessment can take place. All health services are regulated, but abortion faces special scrutiny and is often regulated in the penal code, not the health code [19]. Decriminalizing abortion can result in service availability, improvements in service quality and reductions in morbidity and mortality, but how should quality of abortion care be measured? And how would improving quality of care impact behavioral and health outcomes?

In family planning, the Bruce framework [20] has been used widely, defining quality elements for family planning, which has allowed for the creation of measurement tools. In abortion, a review by Benson [21] highlights the difficulty of measuring health outcomes as abortion program indicators. The population-level link between safe abortion provision and health outcomes (morbidity and mortality) can be difficult to capture, limited by sample sizes, underreporting of abortion, lack of follow-up for adverse events or abortion-related morbidity, and data scarcity and quality issues. Benson stresses a focus on process measures linked to intermediate outcomes. She groups outcomes as related to laws and policies, women’s abortion-care seeking behavior, access to safe services, service quality and service utilization. Recommended quality measures include technical competence, evidence-based technologies, equipment, information and counseling, and interaction quality – all measures that align with the Bruce framework and can be categorized as structure or process measures.

Despite work adapting the Bruce framework to evaluate abortion quality, little consensus exists on quality indicators [3]. A recent review [3] identified and organized 75 abortion quality indicators following Donabedian’s structure, process, outcomes framework and found that nearly one-third were structural measures ($n=23$), 45% ($n=34$) were process indicators and 5% focused on services provided, while 19% (14 indicators) focused on outcomes, including health and behavioral outcomes such as attitudes, knowledge, care-seeking and satisfaction. This is consistent with overall research on quality measurement in which the majority of indicators are process measures. In operations research and where resources are limited, more emphasis is placed on structural measures and provider reports [22].

The British Society of abortion care providers proposed quality metrics for abortion in the United Kingdom [23]. Metrics include the proportion of abortions under 10 weeks and access to appropriate procedure choice, including referral pathways (see Table 3 for full list). The British Society statement further highlights the roles of patient-reported outcomes but does not provide detailed patient-reported outcomes measures.

Regardless of the framework or specific indicators employed, we have little data on abortion service quality worldwide. Abortion patients overwhelmingly report high satisfaction with services, but it is not clear if their satisfaction indicates high quality. Women receiving abortions may be satisfied because they were able to

Table 3
British Society of Abortion Care Providers proposed quality indicators for abortion [23]

- Percentage of all National Health Service-funded abortions being performed at under 10 weeks’ gestation. This is an excellent general system efficiency measure and has been routinely collected and published for years in England and Wales.
- Access to appropriate choice of procedure (medical, surgical under local and general anesthetic) with evidence of efficient shared-care pathways if the procedure of choice is not provided where the patient presents.
- Waiting times within Royal College of Obstetricians and Gynaecologists standards of <1 week for assessment and 1 week for treatment where desired by the patient.
- Measures of quality of care from patient-reported outcomes (e.g., satisfaction surveys)
- Engagement in quality assurance processes such as peer review and publishing results, including key quality parameters such as readmission rates

access a (potentially restricted or stigmatized) service and are no longer pregnant; satisfaction here tells us nothing about how to improve service quality. Satisfaction is known to be related to expectation [24,25]; abortion clients or patients may have such low service quality expectations, likely linked to gender and abortion stigma, that even poor quality services exceed expectations. This may be of special concern where access to abortion services is restricted. This is another complicating factor in cross-country or cross-cultural quality measurement and in using global satisfaction measures.

In the public sector legal abortion program in Mexico City, 400 women were interviewed after receiving their abortions and asked their overall evaluation about the care they received [26]. Ratings were overwhelmingly high, as seen across abortion research. While earlier work identified factors associated with global satisfaction, including interpersonal interactions, information, wait time and client sociodemographics, this study hypothesized that global satisfaction would be linked to quality, measured using a modified Bruce framework. Across domains, respondents rated service quality highly, which may be a true indication of service quality or may represent social desirability bias or low initial expectations.

One of few studies on abortion service quality in the United States reported that 60% of US abortion clients in their sample said their care was excellent and another 26% said it was very good [27]. This innovative study also investigated specific care processes and compared abortion patients with a sample of women receiving other ambulatory care services. This comparison can help us untangle patient-reported quality that may be unique to abortion services and what aspects of quality are similar across health care. Compared with 60% of abortion patients who rated their overall care as excellent, 53% of female ambulatory surgery patients rated care as excellent; proportions were similar when the “excellent” and “very good” categories were grouped (85% abortion patients, 83% ambulatory surgery patients) [27]. This suggests that women are as satisfied with abortion services as with other health care services. In fact, other evidence suggests that women may be even more satisfied with abortion services than other care they receive [28]. However, this global satisfaction does not tell us how we might intervene to improve quality of care.

More recent work on the abortion care patient experience in the United States has focused on clinic- and patient-level factors associated with a positive abortion experience [29,30] and suggests that prior expectations about care, wait time and pain management are important to patients. Overall patient experience scores were very high (9.4/10) [30]. The literature on family planning service quality identifies these same elements of quality as important to women, including facility cleanliness, promptness and service availability, time for consultation and respectful treatment by providers [31]. Recent work has also highlighted the negative impact of policies and restrictions on the patient abortion care experience [32]. In the broader healthcare literature, patient experience has been shown to be linked to better adherence to prevention and treatments, clinical outcomes, patient safety within hospitals and reduced service utilization [33]. In the contraception literature, being provided with chosen contraceptive method, adequate information and perceptions of the helpfulness of providers have been found to be positively associated with contraceptive acceptance and continuation [34]. Several studies have reported that information or counseling is linked to contraceptive continuation; contraception interventions that improve client–provider interactions show promise [31].

In Mexico City, measures most highly correlated with overall abortion service quality ratings were as follows: whether the doctor made the woman feel comfortable, privacy, confidence in the doctor’s skills, total time spent at the facility, convenience of hours and facility cleanliness [26]. Thus, client–staff interaction, patient

perception about the provider’s technical competence, accessibility and facility environment quality domains were all important to women in their overall service quality assessment. Among factors identified in the literature, some are structural or technical (cleanliness, service availability), but most are interpersonal aspects of quality (promptness, time, respectful treatment). WHO safe abortion guidelines also stress the importance of interpersonal factors such as information and counseling on abortion method choice [35]. In sum, most literature to date on abortion quality links quality measures with patient experience. Clinical guidelines exist [35,36] and can inform technical quality measurement, for example, current evidence about use of aspiration instead of sharp curettage and evidence-based medication abortion regimens, but no agreement exists on a core set of technical quality metrics in abortion.

The limited research on abortion service quality in the United States [27,37] focuses on overall satisfaction as the outcome and investigates which concrete quality measures are associated with global satisfaction. In one study, factors that were most highly correlated with overall satisfaction with care were information, privacy and trust in staff [27]. However, these analyses did not account for other factors such as client or clinic characteristics (e.g., client age, socioeconomic status or clinic location).

Satisfaction question wording matters as well [38,39]. One study that interviewed about 800 women at 2 clinics in the United States and asked “All things considered, the care I received could have been better” [37] documented lower satisfaction levels (or higher levels of agreement with that statement; ~28% agreed or strongly agreed that care could have been better) than studies that have asked women to rate their overall satisfaction using positive wording [27]. Despite differences in item phrasing, factors associated with satisfaction were consistent: information, staff sensitivity, perceived shorter wait time between exam and procedure, and satisfaction with counseling (although which aspect of counseling is not known). Women who reported difficulty accessing abortion services were also more likely to report that care could have been better (lower satisfaction), as were women who experienced adverse events or abortion-related morbidity.

In sum, limited evidence exists about technical and interpersonal quality of care in abortion and associated health and behavioral outcomes. While a robust literature can guide clinical practice (technical quality) to improve safety and reduce adverse events and/or abortion-related morbidity, we have little evidence about domains of quality other than safety. Abortion is a very safe procedure, and strong clinical evidence exists to guide technically high-quality care [1]. However, challenges lie in determining what matters most to patients and thus influence behavioral outcomes across diverse geographic and cultural settings. Standardized structure and process quality measures for abortion services, linked to key outcomes such as adverse events and/or abortion-related morbidity, follow-up (if needed) or postabortion contraceptive use (if desired), are sorely needed to guide efforts to improve access to care, experience of care and health outcomes.

Finally, additional reasons exist to be concerned about quality of care beyond potential impacts on behaviors or health outcomes. In a human rights framework, patients have the right to demand quality health care services from providers, organizations and ultimately their governments [40]. A rights-based approach extends beyond patients or clients to include providers, who have the right to training, supplies and respect they need to do their jobs [31].

4. Selecting quality metrics in abortion

Clinical practice guidelines are key to delivering quality care, specifically safety and care effectiveness quality domains, but are

Table 4
Criteria for selecting quality indicators

CDC FP criteria for quality metrics[42]	AHRQ criteria for selecting quality indicators[43]	
	Criterion	Includes
Is the topic important to measure and report? For example, does it address a priority aspect of health care, and is there opportunity for improvement?	Importance	<ul style="list-style-type: none"> •Relevance to stakeholders •Relevance to health •Potential for improvement (due to poor quality or variability; if something cannot be improved, it is not a good focus of quality measurement) •Whether the measure is susceptible to being influenced by the health care system (for example, if institutional factors are the real driver of quality problems, measuring technical quality may not tell us much about how to improve quality) •Stakeholder priorities •Stakeholder ability to interpret and use metric
What is the level of evidence for the measure (e.g. that a change in the measure is likely to represent a true change in health outcomes)? Does the measure produce consistent (reliable) and credible (valid) results about the quality of care?	Scientific soundness	<ul style="list-style-type: none"> •Clinical logic: explicitness and strength of the evidence (clear and strong evidence linking the measure to higher quality care) •Measure properties: reliability, validity, allowance for patient factors as required (e.g., case-mix adjustment), comprehensible
Are the results meaningful and understandable and useful for informing quality improvement? Is the measure feasible ? Can it be implemented without undue burden (e.g. captured with electronic data or electronic health records)?	Feasibility	<ul style="list-style-type: none"> •Explicit specification of numerator and denominator (for proportions or rates) or explicit benchmarks or targets (for frequencies) •Data availability •Cost

not a replacement for quality metrics [41]. In addition, following clinical guidelines may reduce unwarranted practice variation and improve technical quality but not result in overall higher-quality care.

Existing guidance exists for quality metric selection [14]. The US Centers for Disease Control and Prevention (CDC) recommendations [42] for quality improvement in family planning services highlight questions to consider when selecting performance measures (Table 4). These questions may be useful to frame thinking about focus (what to measure) and information type required (structure, process or outcomes) for abortion indicators. The US Agency for Healthcare Research & Quality (AHRQ) also provides guidance on selecting measures, which overlap with CDC guidance. Desirable attributes of a quality measure can be grouped into three broad conceptual areas: importance, scientific soundness and feasibility (Table 4) [43].

Magnitude of the anticipated relationship (conceptual or empirical) between processes and outcomes can help guide measure selection [14] and is related to metric importance. This criterion may be especially relevant in the case of abortion and maternal mortality. In some settings, we may expect a large impact due to improved quality abortion care, and in others (for example, lower maternal mortality settings and/or where there is community access to misoprostol), perhaps not. The difference in outcomes we anticipate with optimal performance on the measure is important to consider. If the measure cannot be influenced by quality improvements in the health care system, it is likely not a useful metric. In other words, is the measure really a lever? Can it be changed, and if changed, will it alter outcomes? If the measure cannot be improved (hospital size, for example) or if it is not anticipated to have an impact on outcomes if it is improved, it is not a useful quality measure. Relevance to stakeholders is also an importance criterion. How invested are stakeholders in the metric? Is the indicator easily understandable by decision makers?

Scientific soundness includes both clinical logic for the proposed relationship between the metric and outcomes and also measure properties (e.g., reliability and validity). Is the measure empirically or at least theoretically linked to health or behavioral

outcomes? Finally, feasibility is a key consideration. Are there existing or routinely collected data that can be used to assess measures or is new data collection required? Are the denominator and numerator for the metric clear and easily definable? How expensive is the data collection process?

AHRQ has developed a validated core item set to assess patient experience, including timely care/access, communication with providers, office staff respectfulness and health literacy (health care provider explained things in a way the patient could understand), and a global provider rating [44,45]. These items have broad overlap with elements of the Bruce [20] framework for quality in family planning services as well as individual metrics used in abortion [3]. While it is not known if these items perform well in diverse health systems and cultural settings, using validated measures is a good starting place. Further, testing validated measures allows comparison between abortion and other health services and normalizes abortion as a routine health care service that requires quality assessment.

While our manuscript intends to provide frameworks and language for talking about quality of care, partners in the Abortion Service Quality (ASQ) Initiative (<https://asq-initiative.org/>) are collaborating to develop the first-ever global standard for measuring abortion service quality in low- and middle-income countries that will address abortion services provided both in and out of health care facilities. The ASQ Initiative goal is to facilitate widespread adoption and use of standard metrics of abortion quality of care that are client-centered, actionable, simple to collect and valid. The primary audience for the metrics includes governments, institutions, programs, or other organizations or providers offering abortion care, with a secondary audience of global and national policymakers and advocacy groups.

Finally, when developing and implementing quality metrics, it is important to be cognizant of potential risk for indicators to be interpreted as targets, which could undermine rights of people seeking care. Including indicators about method choice – whether for family planning or abortion – and provider/client interaction quality and/or decision-making locus can help center rights and choices of people seeking care. Indicator data collection and inter-

pretation should be carefully monitored for evidence of coercion. More work is needed on reliable autonomy of choice and respect for person's health care choices indicators as part of a robust indicators tool box for quality of family planning and abortion care.

5. Conclusion

Quality in health care is a multifaceted concept and includes both technical quality, or competent, evidence-based care, and interpersonal quality, or user experience of care. Quality measures can be divided into metrics that use information about structure, process and outcomes of care; most measures address structure or process because outcomes are difficult to capture and not all outcomes are directly related to care received. However, there must be a plausible link between structure and process measures and important health outcomes or patient experience and rights for these measures to be useful quality indicators. Measures must be important, scientifically sound and feasible.

Limited evidence exists on technical and interpersonal quality and associated outcomes, and there is little consensus on abortion quality metrics, despite technical quality standards and clinical guidelines. Standardized and validated quality metrics would move our field forward and contribute to quality improvement activities and, ultimately, to improved health outcomes for women and families. We must ensure that measures resonate with women and providers, be explicit about the change we anticipate under optimal performance, and remain focused on human rights and the patient abortion care experience.

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