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Review

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# Review of quality assessment tools for family planning programmes in low- and middle-income countries

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## Abstract

Measuring and tracking the quality of healthcare is a critical part of improving service delivery, clinic efficiency and health outcomes. However, no standardized or widely accepted tool exists to assess the quality of clinic-based family planning services in low- and middle-income countries. The objective of this literature review was to identify widely used public domain quality assessment tools with existing or potential application in clinic-based family planning programmes. Using PubMed, PopLine, Google Scholar and Google, key terms such as 'quality assessment tool', 'quality assessment method', 'quality measurement', 'LMIC', 'developing country', 'family planning' and 'reproductive health' were searched for articles, identifying 20 relevant tools. Tools were assessed to determine the type of quality components assessed, divided into structure and process components, level of application (national or facility), health service domain that can be assessed by the tool, cost and current use of the tool. Tools were also assessed for shortcomings based on application in a low- and middle-income clinic-based family planning programme, including personnel required, re-assessment frequency, assessment of structure, process and outcome quality, comparability of data over time and across facilities and ability to benchmark clinic results to a national benchmark. No tools met all criteria, indicating a critical gap in quality assessment for low- and middle-income family planning programmes. To achieve Universal Health Coverage, agreed on in the Sustainable Development Goals and to improve system-wide healthcare quality, we must develop and widely adopt a standardized quality assessment tool.

**Keywords**: Assessment, developing countries, international health, low income, management, measurement, public health, quality, quality of care

## Introduction

With international commitment to Universal Health Coverage (UHC), as well as the quality goals in Family Planning 2020 (FP2020) and the Sustainable Development Goals (SDGs), more attention is being paid to quality healthcare services. Measurement of progress toward achieving UHC includes the proportion of the population that is covered by quality health services (World Health Organization 2013, 2014b).

UHC includes quality assurance as a critical health system component, such that the quality of healthcare services is sufficient to improve clients' health (World Health Organization 2014b, 2015a). Target 3.8 in the SDGs further emphasizes the importance of quality in achieving UHC and better health outcomes, including 'access to quality essential health care services, and access to safe, effective, quality and affordable essential medicines and vaccines for all' (United Nations 2015). Continued lack of a standardized quality assessment tool to determine the extent to which programmes are offering and achieving quality service delivery hampers the realization of UHC, including the targeting of resources for quality improvement initiatives and assessing the effectiveness of programmes to deliver quality services. Measuring and tracking quality is also an important part of managing clinical care, and of improving care delivery and clinic efficiency.

A quality assessment tool that permits benchmarking to a national standard across time and facilities is necessary to assess and improve the quality of care delivered. Such a measure would allow for the identification of where limited resources are needed, where

**Key Messages**

- Quality is a key component to achieving Universal Health Coverage, yet no standardized quality assessment tool exists to evaluate service delivery.
- We must first be able to evaluate service delivery quality so that we can make evidence-based resource allocation (personnel, financial, time) decisions in order to improve quality.
- A standardized clinic-based family planning quality assessment tool does not exist and needs to be created. Once created, there must be international commitment adopt the tool.

**Box 1. Definitions**
Component: An element, or part, of healthcare quality. Examples include infrastructure, medicines, staffing, referral capacity, patient experience and clinical practice.
Domain: A healthcare field or specialty service, such as pediatrics, surgery or primary care.
Instrument: A set of written instructions, questions, or guidelines that make up a quality assessment tool.

operations are most effective, and permits peer-to-peer learning (Institute of Medicine 2004). There are many facets to providing quality care in a clinical setting, and as a result, many different methods have been developed to assess quality. The heterogeneity of quality assessment methods, especially in light of inconsistent data collection, makes comparison of quality assessment tools challenging (Nickerson *et al.* 2014).

The objective of this literature review was to identify widely used (in current or past practice), public domain quality assessment tools with existing or potential application in clinic-based family planning programmes. The tools were reviewed for use in low- and middle-income countries (LMICs) that allow clinics to assess their ability to produce results that are comparable across time and facilities. Other key characteristics were compared such as assessment team required, time commitment to conduct, and the number of quality components measured. The ultimate aim was to explore the potential for improving or repurposing existing tools to create an easy-to-implement, standardized quality assessment for clinic-based family planning services in LMICs that can be used by health programmes at all levels of a health system and benchmarked against national standards. Shortcomings in the available tools were identified, with an argument that a new quality assessment tool is needed.

We sought to identify tools that are used in the clinic-based family planning context, although other health domains (such as surgery, primary care, infectious disease, oncology, non-communicable disease, maternal and child health) were searched since we theorize that their measurement instruments could be adapted to family planning quality assessment. This has been done successfully in the reverse, e.g. adapting a tool designed for family planning to use in general reproductive health, e.g. with the Quick Investigation of Quality (QIQ) (MEASURE Evaluation 2015).

## Materials and methods

The focus of this review was to identify tools and methodologies applied to the assessment of quality in large-scale programmes and health delivery infrastructure in LMICs. Because of the focus on scale of use of assessment tools, we applied a mixed-method approach to tool identification, conducting a comprehensive literature search (detailed in 'Literature review' section below) combined with interviews from a sample of experts in family planning facility quality assessment to allow us to identify tools that may not have been written about in the literature.

### Definitions

We define a tool to include the following three components:

a. accompanied by a complete set of written documentation that supports consistent implementation and reporting;
b. includes one or more instruments (such as a checklist, observation guide, exit interview etc.); and
c. may be applied, or adapted to be applied, in multiple settings.

Also see Box 1.

### Literature review

A literature review was conducted using key term combinations such as 'quality assessment tool', 'quality assessment method', 'quality measurement', 'LMIC' and 'developing country', as well as health terms such as 'family planning', 'reproductive health', 'maternal health', 'adolescent health', 'primary care' and 'surgery' (see Appendix for search terms). We searched PubMed, PopLine and Google Scholar, as well as organizational websites including EngenderHealth, Family Planning 2020 (FP2020), Population Council, USAID's MEASURE Evaluation Project, The Global Fund to Fight AIDS, Tuberculosis and Malaria, International Planned Parenthood Federation, Marie Stopes International, Population Services International and the World Health Organization (WHO). Tools identified and data collected were compared with previously published tool summary articles, such as those by Nickerson *et al.* (2014) and Hozumi *et al.* (2006), to identify additional tools for inclusion in this review.

### Inclusion and exclusion criteria

Facility-level, national-level and health domain-specific tools in current or past use in LMICs were included.

Tools were excluded that:

- Focus on quality improvement without a quality assessment component capable of being applied independently from the improvement activities;
- Are designed for use in a single research study or single country;

- Are created for use in high-income country (HIC) contexts;
- Did not address clinical performance (i.e. measure only patient satisfaction; measure FP counseling, but not clinical services; focus on human resources and not clinical services); and
- Are designed for accreditation or pre-accreditation schemes.

The rationale for exclusion of the accreditation-related tools was that accreditation requires an external governing body. Therefore, accreditation programmes do not meet the objective of this review to identify tools that can be implemented by a FP clinic to assess service quality.

The rationale to exclude tools that measure only patient satisfaction was that while assessing patient satisfaction is an important aspect of service delivery quality, satisfaction is influenced by a wide variety of factors such as costs, expectations of care, and demographic characteristics. Furthermore, although patients may report high levels of satisfaction, satisfaction should not be conflated with quality (Farley *et al.* 2014). The emphasis of this review is on elements of quality focused within the clinic environment.

## Data extraction

Data was extracted by one researcher from peer-reviewed journal articles and tool guidelines written by the organization that developed the tool. Tool inclusion/exclusion decisions were reviewed with a senior researcher.

The results were presented in a preliminary write-up and presented in a meeting of a diverse group of quality experts, including health care quality specialists, academics and researchers, LMIC programme leaders and government quality tool developers held at the Rockefeller Bellagio Center on family planning quality in October 2015 for feedback on included/excluded tools and any tools missed.

## Assessment of tools

Avedis Donabedian's widely referenced framework of quality of care, which includes three main elements—structure, process and outcome (Donabedian 1966, 1988)—was used as the framework for tool assessment. Structural quality refers to the context in which healthcare is delivered and includes components such as physical infrastructure, equipment, revenue, health information management systems and staffing. Process quality refers to interactions between healthcare providers and clients throughout service delivery. Outcome quality refers to the effects of care delivery on the status of a patient or larger population (Donabedian 1988).

The tools were reviewed in depth by studying the peer-reviewed literature that discussed use of the tool, as well as the instructions about tool application and the associated instruments (where publicly available), to determine key features relevant to LMIC programmes. These features were:

- Number and type of quality components assessed (divided into structure, process and outcome components)
- National-level versus facility-level design (whether designed to be used for national aggregate quality assessment and reporting, or at the individual facility-level)
- Health service domain (i.e. family planning, reproductive health, maternal health etc., or general applicability), in order to consider tools that could also be adapted to use in clinic-based family planning
- Cost to complete the quality assessment
- Whether the tool is currently in use

Quality components were identified by reviewing the available literature and supporting documentation for one tool and compiling a list of components included, adding additional components to the list with each subsequent tool review. The tools were then re-reviewed against this full list of quality components. We defined client records as either structure or process quality components, according to the emphasis of the assessment instrument. Presence and completion of clinical records was defined as structural components, whereas content of clinical records related to patient treatment was defined as a process component.

## Identification of shortcomings in tools

The identification of gaps or insufficiencies in currently available tools was guided by the Social Franchising Metrics Working Group (SFMWG), who are the conveners of the 2015 Bellagio Center Meeting on Quality of Care within Private Franchised Clinics. The SFMWG aims to create standardized, systematized and simplified performance metrics for health-focused social franchising programmes that engage a large number and diversity of programmes (University of California, San Francisco 2014). With a focus on applicability at the programme level, criteria to identify gaps in existing tools included:

1. *Whether internal clinic staff could complete the assessment, so that additional costs and coordination expenses for an external assessor were not required.* The assessor, or team of assessors, required and amount of time to implement the quality tool affect the cost of the assessment. If a physician must be selected, hired and trained to complete provider observations, the cost will necessarily increase as compared with tools that allow a non-provider staff member to lead the assessment. That is not to diminish the cost to the organization to take a staff member (provider or non-provider) away from their daily tasks to complete the quality assessment. And even when staff can perform the quality assessment in house, a level of pre-assessment training and planning with external support is frequently required. Personnel time requirements are also influenced by the facility size, location, pre-assessment training and sampling methodology.

2. *Whether re-assessment frequency was defined and often enough to allow programmes to see changes in quality and to make important clinic management and service delivery decisions based on the results*. Quality assessments must be conducted frequently enough to allow for comparison both within the facility and between facilities of similar types (Akachi *et al.* 2016).

3. *Whether outcome quality was assessed, and if not, whether structure and process quality components assessed were linked to health outcomes.* Because while structure components are necessary for quality care (Cooperberg *et al.* 2009), measuring structure components alone is insufficient (Mariko 2002). Furthermore, structure components have been shown to link only weakly to other quality aspects (Dayal and Hort 2015). Structure components are best used to establish a minimum level of quality, rather than to distinguish levels of performance (Cooperberg *et al.* 2009).

4. *Whether the data produced could be compared over time and across facilities to show improvements in quality*. In order to produce an actionable quality assessment, results should be able to be compared over time and across facilities.

5. *Whether results could be benchmarked to a national standard to show high or low performing clinics and to focus resources effectively*. A benchmark supports programme performance, and places it relative to other organizations to better identify successes or challenges, focus improvement efforts, and strengthen service delivery. A

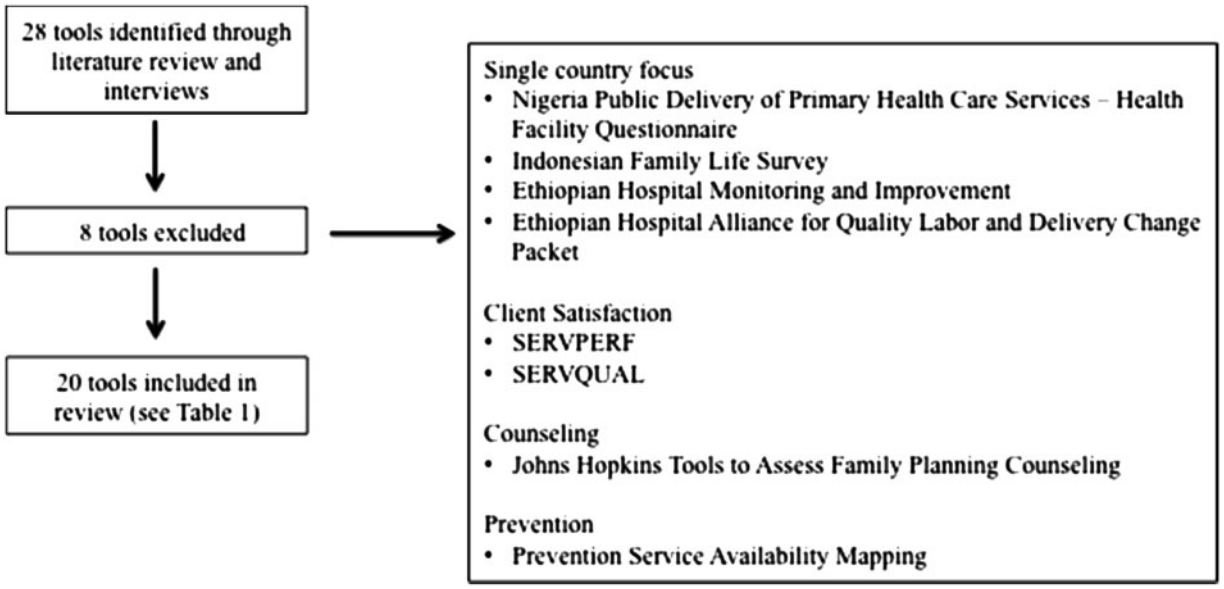


**Figure 1.** Tool exclusion based on results of literature search

quality assessment tool that permits benchmarking to a national standard across time and facilities is necessary to assess and improve the quality of care delivered. It allows identification of where limited resources are needed, where operations are most effective, and permits peer-to-peer learning (Institute of Medicine 2004).

## Results

### Literature review results

We identified 28 tools that assess quality in LMICs across health domains. We excluded eight of these: four tools that are designed for single country application; two tools that focus on patient satisfaction; one tool that addresses only counseling and not clinical services; and one tool that focuses on prevention and not service provision (see Figure 1). Thus, 20 tools were included in this review, all of which are available in the public domain.

### Assessment of tools

#### Number and type of components assessed

A total of 20 unique quality components were assessed by the 20 tools, including 16 structure (see Table 2) and four process (see Table 3).

Components of structure quality were more frequently assessed than components of process quality by a ratio of >5:1. Seven of 20 tools look only at structural components of quality, while all tools that look at process components also include structure components. Of the 16 structural components assessed, equipment and supplies were the most commonly assessed, by nearly three-quarters of tools. The next most commonly assessed components were medicines and physical facilities (13 of 20 tools each). Components least assessed include clinical records (1 of 20 tools), supply logistics and infection control (2 of 20 tools each).

Of the four process components assessed, patient experience was the most commonly assessed component in 11 of 20 tools, while client flow was least commonly assessed in only 3 of 20 tools.

One quarter of tools, including the client flow analysis (CFA), Facility Audit of Service Quality (FASQ), Primary care assessment tools (PCAT), Health facility census (HFC) and Performance assessment tool for quality improvement in hospitals (PATH), assess three or fewer components of quality, although the components assessed vary across the tools. The HFC assesses only one component: physical facilities.

Three of the 20 tools [Supply, enabling environment and demand (SEED), Evaluation of LAPM services suite (ELMS) and Service provision assessment (SPA)] assess 10 or more components of quality. The remaining 17 assess nine or fewer components of quality.

#### *National* vs *facility-level design*

The 20 tools identified were evenly divided between national design and facility-level design (see Table 4).

There were no clear differences in quality components assessed in facility-level vs national-level design tools. However, facility-based tools assess more components (on average 8) than national design tools (on average 6). The outlier among national design tools is the SPA, which assesses 13 of 20 components. No tools designed for national-level assessment evaluate provider technical competence and knowledge, client flow or clinical records.

#### Service-specific tools

Sixteen of the tools were designed for a specific health domain, of which 11 address family planning and/or reproductive health. Six assess family planning quality exclusively, five tools address a combination of health service domains, and three tools each address reproductive health and child health (Table 5).

#### Costs

Costs to complete a quality assessment vary based on team members, location, sampling methodology, facility size, total time requirements and data analysis. Calculations are further influenced by exchange rates, in-country purchasing power and inflation. For example, a 2000 report on the QIQ shares costs per facility that vary from $258 in Turkey to $1070 in Ecuador (Sullivan and Bertrand 2000). Other tools do not estimate per facility costs due to the challenges outlined above. Therefore, although we hoped to report on cost information as an important element for a clinic to select and plan for completion of a quality assessment, we were unable to estimate costs.

**Table 1.** Overview of the 20 quality assessment tools included in the review

| | |
|---|---|
| **CFA** | The CFA looks at how patients move through a clinic, giving information on waiting times and contact time with providers and staff, identifying service bottlenecks and areas of poor staff utilization (Lynam et al. 1994). |
| **COPE** | COPE is a self-assessment tool developed by EngenderHealth for programme evaluation and improvement. The tool includes a checklist-aided self-assessment, client interviews, client-flow analysis and development of a plan of action for quality improvement for family planning programmes (Lynam et al. 1993). |
| **ELMS** | Adapted from the FASQ, this tool assesses the availability of resources in facilities providing long-acting and permanent method contraceptive options. It evaluates staffing, referral capability, physical facilities, medicines, basic equipment, provider knowledge and qualification and client satisfaction, among other components of quality (Hozumi 2006). |
| **FASQ** | The FASQ assesses facility infrastructure, equipment and the quality of care provided. It is recommended to complete this assessment annually (Hozumi 2006). |
| **Facility-based assessment (FBA)** | The FBA evaluates the extent to which children are appropriately diagnosed and treated at health facilities. It uses observation of provider performance, exit interviews with child caretakers, provider interviews, record review, and an inventory of essential equipment and supplies. The tool provides limited or no assessment of clinic management, staffing or client flow (Bryce et al. 1992). |
| **HFC** | This tool assesses the physical assets in the health sector with primary design for policy, planning and management of the health system (Hozumi 2006). |
| **PATH** | Designed by the WHO to help hospitals define quality improvement strategies, this performance assessment tool examines clinical effectiveness, efficiency, staff orientation, responsive governance, safety and patient centeredness. PATH was primarily designed for HICs, but has also been tested for use in South Africa (Performance Assessment Tool for Quality Improvement in Hospitals 2009). |
| **PMA2020** | This tool uses standardized questionnaires, modified to the local context, to monitor nationally representative family planning indicators that support the FP2020 goals. PMA2020 collects, analyzes and disseminates data on access, quality, equity, demand and utilization. The work is implemented by local universities and research organizations in the nine countries where PMA2020 operates (Performance Monitoring and Accountability 2020, 2015). |
| **Population Council Health Facility Assessment (HFA)** | Building on the Situation Analysis (SA), the Population Council HFA allows reproductive health programme managers to benchmark the performance of health facilities. The tool is primarily designed for planning purposes, especially for strategic health planning, monitoring, and evaluation, although it may also be used while piloting service quality improvements (Hozumi 2006). |
| **PCAT** | The PCAT include client, facility, provider and health system surveys to assess quality of primary healthcare (Johns Hopkins Bloomberg School of Public Health 2015). |
| **Quality Assessment Guidebook for Adolescent Services** | This WHO tool assesses the quality of services for adolescents. Although it is unwieldy to use all recommended data collection instruments for each quality component, the tool recommends using at least two instruments to assess each quality component, adapting the instruments to the local context (World Health Organization 2009). |
| **QIQ** | The QIQ, a subset of the SPA, uses a shortlist of indicators to assess family planning clinic quality every 1-2 years. The tool uses a facility audit, provider observation and client exit interviews (Bessinger and Bertrand 2001; MEASURE Evaluation 2015). |
| **Rapid Health Facility Assessment (R-HFA)** | The R-HFA measures a small set of indicators for maternal, newborn and child health services in primary care to identify bottlenecks in service delivery. Although it is recommended to repeat the assessment every 3–5 years, a subset of indicators can be incorporated into routine facility monitoring (Hozumi 2006). |
| **Rapid Service Quality Assessment (RSQA)** | The RSQA, produced by The Global Fund to Fight AIDS, Tuberculosis, and Malaria, is designed to assess service quality under national disease programmes (The Global Fund to Fight AIDS, Tuberculosis, and HIV (2014). |
| **Service Delivery Indicator (SDI) Health Survey Instrument** | The SDI Health Survey Instrument assesses education and health service delivery quality and performance from a citizen's perspective. The data collected is used primarily by government officials, donors, civil society and other stakeholders to track quality and performance over time (Service Delivery Indicators 2013). |
| **SAM** | Used from 2004 to 2009, the WHO's SAM tool collects basic information on health infrastructure, human resources, and available services (World Health Organization 2015a). Although it was the first quantitative tool to measure access to reproductive and child health services (Creel et al. 2002), it has been replaced by the Service Availability and Readiness Assessment (World Health Organization 2015a). |
| **SARA** | The Service Availability and Readiness Assessment uses rapid data collection and analysis methods to assess health facility service delivery. A standard set of core questions that address facility type, managing authority, national service guidelines, staffing categories and national medicines policies allow for comparisons across and within countries (World Health Organization 2014a). |
| **SPA** | The SPA provides a national overview of a health service delivery system (ICF International, n.d.). The tool uses a facility inventory provider interview, provider observation, and client exit interview to collect information on the availability of and readiness to provide facility-based health services (MEASURE Evaluation 2015; ICF International n.d.). The SPA provides comparisons across different service areas, facility types, regions and countries (Ametepi 2013). |
| **SA** | Developed by the Population Council, the SA assesses client-provider interaction through direct observation and client interviews. It is designed to identify the strengths and limitations of the infrastructure and services provided (Brown et al. 1995). |
| **SEED** | With an emphasis on long-acting family planning methods, this tool was designed by EngenderHealth to assess an organization's capacity to provide family planning services (The RESPOND Project 2012). This self-assessment tool scores organizational capacity in 25 programme criteria through a desk review of the literature, key informant interviews, analysis and write-up of a final report and discussion with key stakeholders and partners (EngenderHealth 2011). |

**Table 2.** Structure components of quality assessed by 20 quality assessment tools for LMICs

| | Structural Quality | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Quality Component* | Equipment and supplies | Physical facilities | Medicines | Staffing | Supervision | Service availability | Referral capacity | Provider technical competence + knowledge | Provider training (qualification + ongoing) | Infection control | Guidelines and protocols | Supply logistics | Revenue | HMIS | Facility management | Clinical records |
| **Tool Name** | | | | | | | | | | | | | | | | |
| CFA | | | | x | | | | | | | | | | | | |
| COPE | x | x | | x | x | | | x | | | | | | | | |
| ELMS | x | x | x | x | | | x | x | x | x | | | | | | |
| FASQ | x | x | | | | x | | | | | | | | | | |
| FBA | x | | x | | | | | | | | | | | | | |
| HFC | | x | | | | | | | | | | | | | | |
| PATH | | | x | x | | | | | | | | | | | | |
| PMA2020 | | x | x | x | | x | x | | | x | | | | | | |
| Population Council HFA | x | x | x | | | x | | | x | | | | | x | | |
| PCAT | | | | | | x | x | | | | | | | | | |
| Quality Assessment Guidebook for Adolescent Services (WHO) | x | x | x | | | x | | x | | | x | x | | | | |
| QIQ | x | x | | | x | x | | | | | x | | | x | | x |
| R-HFA | X | x | x | x | x | | | | x | | | | | | | |
| RSQA | | | x | | x | | x | | | | x | | | | | |
| SDI Health Survey Instrument | X | x | x | x | | x | | | | | | | x | | x | |
| SARA | x | x | x | x | | x | | | | | x | | | | | |
| SAM | x | X | | x | | x | | | | | | | | | | |
| SPA | x | x | x | x | x | x | | | x | | x | | x | x | x | |
| SA | x | | | x | | x | | | x | | | x | | | | |
| SEED | x | | x | x | x | | x | x | x | | x | | x | | x | |

**Table 3.** Process components of quality assessed by 20 quality assessment tools for LMICs

| | Process Quality | | | |
|---|---|---|---|---|
| *Quality component* | Client flow | Patient experience | Clinical practice | Clinical records |
| **Tool name** | | | | |
| CFA | x | | | |
| COPE | x | x | | x |
| ELMS | | x | x | |
| FASQ | | | | |
| FBA | | x | x | x |
| HFC | | | | |
| PATH | | x | | |
| PMA2020 | | | | |
| Population Council HFA | x | x | | |
| PCAT | | x | | |
| Quality Assessment Guidebook for Adolescent Services (WHO) | | x | x | |
| QIQ | | x | x | |
| R-HFA | | x | x | x |
| RSQA | | | | |
| SDI health survey instrument | | | x | |
| SARA | | | | |
| SAM | | | | |
| SPA | | x | x | |
| SA | | x | x | x |
| SEED | | | | |

**Table 4.** Tools designed primarily for national vs facility-level implementation

| National design | Facility-level design |
|---|---|
| • FBA | • CFA |
| • HFC | • COPE |
| • PATH | • ELMS |
| • PMA2020 | • FASQ |
| • RSQA | • PCAT |
| • SA | • Population Council |
| • SAM | • HFA |
| • SARA | • QIQ |
| • SDI Health Survey | • Quality Assessment |
| • SPA | • Guidebook for Adolescent Services |
| | • R-HFA |
| | • SEED |

### Extent of use of tools

Although all tools identified are currently available in the literature, many are out of date or no longer maintained. This notably includes the service availability mapping (SAM), FASQ and ELMS. SAM was used only from 2004 to 2009 and has since been replaced by the SARA (World Health Organization 2014a). FASQ is ten years out of date (Bates Bucker, personal communication, 10 May 2015), and ELMS is no longer maintained (Karen Levin, personal communication, 1 September 2015; Bates Bucker, personal communication, 2 Oct 2015). Only nine of the tools report countries where the tool has been applied, with the majority of countries included located in Africa, although Asia, Latin America and South America are also represented (see Table 6).

### Identification of shortcomings in tools

*Personnel requirements.* Not all tools clearly state who should complete the quality assessment. Of the 18 tools that provide a recommendation, 12 require an external assessor (non-staff) while only four state that staff may complete the assessment. Fourteen tools require a trained data collector/evaluator or team of collectors often including a physician, to conduct provider observations (see Table 7).

*Time required to complete quality assessment and reassessment frequency.* Of those tools reporting time needed to complete a quality assessment, the range is from 1.5 h/facility in the FASQ to up to 6 weeks to account for assessments at multiple facilities in the PMA2020 Facility Survey. Only 11 tools provide a recommended re-evaluation frequency, ranging from as short as 3 months for the CFA to up to 5 years in the F-HFA, SPA and HFC (see Table 8).

*Measurement of outcome quality.* Although several tools used client satisfaction as a proxy for outcome quality, no tools assessed clinical or health outcome quality as a standalone measure nor in relation to structure and process quality measurements.

*Comparability across facilities.* None of the tools provide an easily comparable overall quality score, grade, index or report card with the exception of the Quality Assessment Guidebook for Adolescent Services. This guidebook includes instructions to calculate a score for each individual health characteristic assessed (World Health Organization 2009). Although the R-HFA offers a 'balanced scorecard' for its 21 indicators, results are owned by the organization completing the assessment and are not publically available (Hozumi 2006).

Although 13 tools allow for comparison of assessment results from year to year or facility to facility, the comparison must generally be completed manually through a review of reports, tables and charts (see Table 9). Seven of the tools were not designed for comparison between or across health facilities, do not have publicly available datasets, or do not report scoring methods, allowing for internal comparison and assessment of quality changes, but eliminating an opportunity for comparison across facilities.

*Ability to benchmark to national standards.* None of the tools provides a method to benchmark quality assessment results to national standards.

**Table 5.** Quality assessment tools for specific health domains

| Tool | **Health domain*** |
|---|---|
| COPE | FP |
| ELMS | FP |
| FASQ | RH, CH |
| FBA | PHC (children) |
| PMA2020 | FP |
| Population Council HFA | RH |
| PCAT | PHC |
| Quality Assessment Guidebook for Adolescent Services | AH |
| QIQ | FP |
| R-HFA | MNCH |
| RSQA | HIV, TB, Malaria |
| SARA | FP, CH, BEmOC, CEmOC, HIV, TB, Malaria, NCDs |
| SAM | RH, CH |
| SPA | MNCH, FP, HIV/AIDS, STI, Malaria, TB, NCDs |
| SA | FP |
| SEED | FP |

*AH, adolescent health; BEmOC, basic emergency obstetric Care; CEmOC, comprehensive emergency maternal care CH, child health; FP, family planning; HIV, human innumodeficiency virus; MNCH, maternal; neonatal and child health; NCDs, non-communicable diseases; PHC, primary health care; RH, reproductive health; STI, sexually transmitted infections; TB, tuberculosis.

**Table 6.** Geographical application of tools

| Tool Name | LMIC implementation countries |
|---|---|
| CFA | Not reported |
| COPE | Not reported |
| ELMS | Azerbaijan, Bangladesh, Bolivia, Tanzania |
| FASQ | Not reported |
| FBA | Burundi, Central African Republic, Cote d'Ivoire, Democratic Republic of the Congo, Guinea, Malawi, Nigeria, Swaziland, Togo |
| HFC | Malawi, Zambia |
| PATH | South Africa |
| PMA2020 | Burkina Faso, Democratic Republic of the Congo, Ethiopia, Ghana, Kenya, India, Indonesia, Niger, Nigeria, Uganda |
| Population Council HFA | Not reported |
| PCAT | Brazil, China |
| Quality Assessment Guidebook for Adolescent Services (WHO) | Not reported |
| QIQ | Ecuador, Morocco, Turkey, Uganda, Zimbabwe |
| R-HFA | Not reported |
| RSQA | Not reported |
| SDI Health Survey Instrument | Kenya, Mozambique, Nigeria, Senegal, Tanzania, Togo, Uganda |
| SARA | Not reported |
| SAM | Not reported |
| SPA | Bangladesh, Egypt, Ethiopia, Ghana, Guatemala, Guyana, Haiti, Kenya, Malawi, Nepal, Rwanda, Senegal, Tanzania, Uganda, Zambia |
| SA | Not reported |
| SEED | Not reported |

## Discussion

We identified 20 tools for quality assessment of programmes in LMICs. To understand the application of the tools, we looked at which quality components were assessed, national vs facility-level design, health domain, cost and current or former use of the tools along with geographical application. We then examined the tools against five items to assess shortcomings in these tools: personnel requirements, staff time and reassessment frequency, measurement of outcome quality, comparability across facilities and ability to benchmark to a national standard. We selected these five areas because they best address the requirements to create standardized performance metrics that can be used by clinics to manage and improve quality service delivery. We found that all tools had shortcomings in one or more of these areas.

None of the 20 tools examined meet all of the requirements for an easy-to-use, standardized tool to assess clinic-based family planning service delivery. Working through the requirements, we find only four tools that can be completed by staff at the facility: CFA, client-oriented, provider-efficient (COPE), FASQ and SEED. FASQ is outdated, and so cannot be considered for standardized application without significant updates. SEED takes 4–6 weeks to complete

**Table 7.** Personnel requirements to complete quality assessment

| Tool | Assessor | Outside facilitator? |
|---|---|---|
| CFA | Staff | No |
| COPE | Staff | No |
| ELMS | Trained data collector | Yes |
| FASQ | Staff | No |
| FBA | Trained data collector | Yes |
| HFC | Trained data collector | Yes |
| PATH | Not reported | Not reported |
| PMA2020 | Trained data collector | Yes |
| Population Council HFA | Trained data collector | No |
| PCAT | Not reported | Not reported |
| Quality Assessment Guidebook for Adolescent Services | Trained data collector | No |
| QIQ | Trained data collector | Yes |
| R-HFA | Trained data collector | Not reported |
| RSQA | Trained data collector | Yes |
| SDI Health Survey Instrument | Trained data collector | Yes |
| SARA | Trained data collector | Yes |
| SAM | Trained data collector | Yes |
| SPA | Trained data collector | Yes |
| SA | Trained data collector | Yes |
| SEED | Staff | Yes |

**Table 8.** Time required to complete quality assessment and recommended frequency of re-assessment

| Tool | Time required | Re-assessment frequency |
|---|---|---|
| CFA | 1 day/facility | 3–6 months |
| COPE | 3 days/facility | Not reported |
| ELMS | 1 day/facility | 3–4 years |
| FASQ | 1.5 h/facility | 1–2 years |
| FBA | Not reported | Not reported |
| HFC | 1–6 days/facility | 5 years |
| PATH | Not reported | Not reported |
| PMA2020 | 6 weeks | Not reported |
| Population Council HFA | 1–2 days/facility | Not reported |
| PCAT | Not reported | Not reported |
| Quality Assessment Guidebook for Adolescent Services | Not reported | Not reported |
| QIQ | Not reported | 1–2 years |
| R-HFA | 2–4 hours/facility | 3–5 years |
| RSQA | Not reported | Not reported |
| SDI Health Survey Instrument | Not reported | 2 years |
| SARA | Not reported | 1–2 years |
| SAM | 1–3 days/faclity | 6 months to 1 year |
| SPA | 1 day/facility | 3–5 years |
| SA | 1 week for facility-level | Not reported |
| SEED | 4–6 weeks/facility | 6–12 months |

and so is not feasible for a clinic, which often has limited personnel resources. COPE can also take several weeks to complete alongside a staff member's normal workload, although a timeframe is not explicitly defined.

Moving to the next criteria, CFA is the only tool currently in use that recommends a re-evaluation frequency of < 1-year intervals. For consistent checks on family planning quality, a tool should be able to be applied at regular intervals to inform programme performance and to support improvements that directly address quality of care concerns. CFA addresses too narrow a feature of care quality to meet the needs of a FP facility, although it can easily be included in a family planning quality assessment. It has, in fact, been included in both COPE and the Population Council HFA.

Tools included in this review assess only structure and process components of quality.

Although the QIQ aims to select indicators that cooperating agencies 'felt most directly affected client outcomes in terms of behaviour', the instruments are limited to measure structure and process dimensions (MEASURE Evaluation 2015). Indeed, structure components of quality are often relatively easy and inexpensive to measure, while outcome quality data is often difficult to capture because it may need to be tracked over a long period of time and because a poor patient outcome is not necessarily linked to a poor quality of care (Teleki *et al.* 2003). Structure components are best used to establish a minimum level of quality, rather than to distinguish levels of performance (Cooperberg *et al.* 2009). Health outcomes must be assessed as part of clinic quality. Therefore, a tool that assesses FP clinic quality needs to be able to assess health outcomes directly or to link the structure and process quality components to health outcomes.

**Table 9.** Ability to compare one facility to another

| Tool | Allows for facility-to-facility comparison? |
|---|---|
| CFA | No |
| COPE | No |
| ELMS | No |
| FASQ | Not reported |
| FBA | Yes |
| HFC | Yes |
| PATH | Yes |
| PMA2020 | Yes |
| Population council HFA | Yes |
| PCAT | Yes |
| Quality Assessment Guidebook for Adolescent Services | Yes |
| QIQ | Yes |
| R-HFA | No |
| RSQA | Yes |
| SDI Health Survey Instrument | Yes |
| SARA | Yes |
| SAM | No |
| SPA | Yes |
| SA | Yes |
| SEED | No |

Data collected at the health facility or programme level are 'inconsistent, incomplete and incomparable' as a result of the variety of quality assessment tools employed (Nickerson *et al.* 2014). This makes it difficult to compare progress, or lack thereof, within or across facilities, slowing progress toward UHC as definitions of quality differ. Although 13 of the tools allow for comparison across facilities, the process must be completed manually and interpretations of a well performing clinic will vary. A report or score with consistent guidance for interpretation and comparison to comparable facilities will allow for facilities to learn how they fall in comparison to other similar types of clinics. This provides valuable information on how well a facility is performing relative to others, and can highlight well performing or struggling facilities in order to target support.

When any of the facility-based tools is used to assess clinic-based family planning quality, no clear benchmarks to national data are available. SPA was simplified to create the QIQ, and thus although the QIQ shares certain indicators with SPA, the sampling frame must be considered between the QIQ (a variety of samples are possible) and SPA (census sampling), making a readily accessible national benchmark still unavailable. By using questions and indicators asked in national surveys such as SPA, SARA or PMA2020 in a facility-level assessment, a national benchmark could be easily created.

### Next steps toward a new tool

A standardized quality assessment tool is a prerequisite to quality improvement and a new tool would provide advantages over existing quality assessment tools. A new tool should be applicable at the local facility level, because any national or international quality improvements must begin with individual providers (Jain *et al.* 1992). The national-level SPA, SARA and PMA2020 surveys have many similar and overlapping indicators for family planning quality. Sections of the validated quality assessment instruments from SPA, SARA and PMA2020 could be adapted for use at a facility-level to create a new tool. This would allow programmes to assess quality that mirrors indicators applied in national-level assessments, thus creating a method to benchmark facility-level performance against national results. A benchmark will show strong and weak performers, which will facilitate effective commitment of resources for service delivery quality improvement and overall health system strengthening.

We can draw on important lessons from the simplification of the SPA into the QIQ that make it accessible for facility-level use in how to adapt the national tools. Adaptations should adjust the instruments to allow on-site personnel to complete the quality assessment with minimal disruption to standard clinic operations and job requirements. The new tool should be easy to implement and simple to interpret, requiring minimal training to use and expense to implement. This new tool may be able to take advantage of low cost mobile technology to improve data collection through an app that can work online or offline, further simplifying data analysis.

In addition to exploring opportunities to adapt existing quality assessment tools for use at a facility level, an additional instrument needs to be added to measure important FP outcomes such as method discontinuation, side effects, morbidity and mortality. This outcome instrument should be correlated to the structure and process dimensions to link process, structure and outcome quality, demonstrating how preparedness for service and service provision affect family planning health outcomes.

### Limitations

This review was not intended to be a systematic review to summarize all possible methods of quality assessment. Instead, it focuses on tools at use at scale to understand quality of service delivery across a wide range of settings. The review looked for existing packaged tools, as defined in the methods section, and does not research the wide number of quality indicators. It does not attempt to explore patient satisfaction as a measure of quality, nor does it consider accreditation schemes.

## Conclusions

This review found that a standardized tool to assess LMIC clinic-based family planning quality does not exist. No tools take into account important LMIC programme needs (low staff requirements,

time necessary for assessment, low cost, comparable across time and programmes and benchmarked to national standards), nor assess FP outcomes. This lack of a standardized quality assessment tool makes it difficult to identify better performing facilities and to learn from best practices, or to identify struggling facilities and to focus assistance and resources to reverse slow progress toward delivering quality care. With the importance of quality in the current global health landscape as a requirement to achieve UHC, this gap is especially critical. Because adaptation of an existing quality assessment tool in its current form is unlikely to be effective to meet the needs of clinic-based family planning programmes, a new quality assessment tool that is relevant for LMIC programmes needs to be created and widely adopted.

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