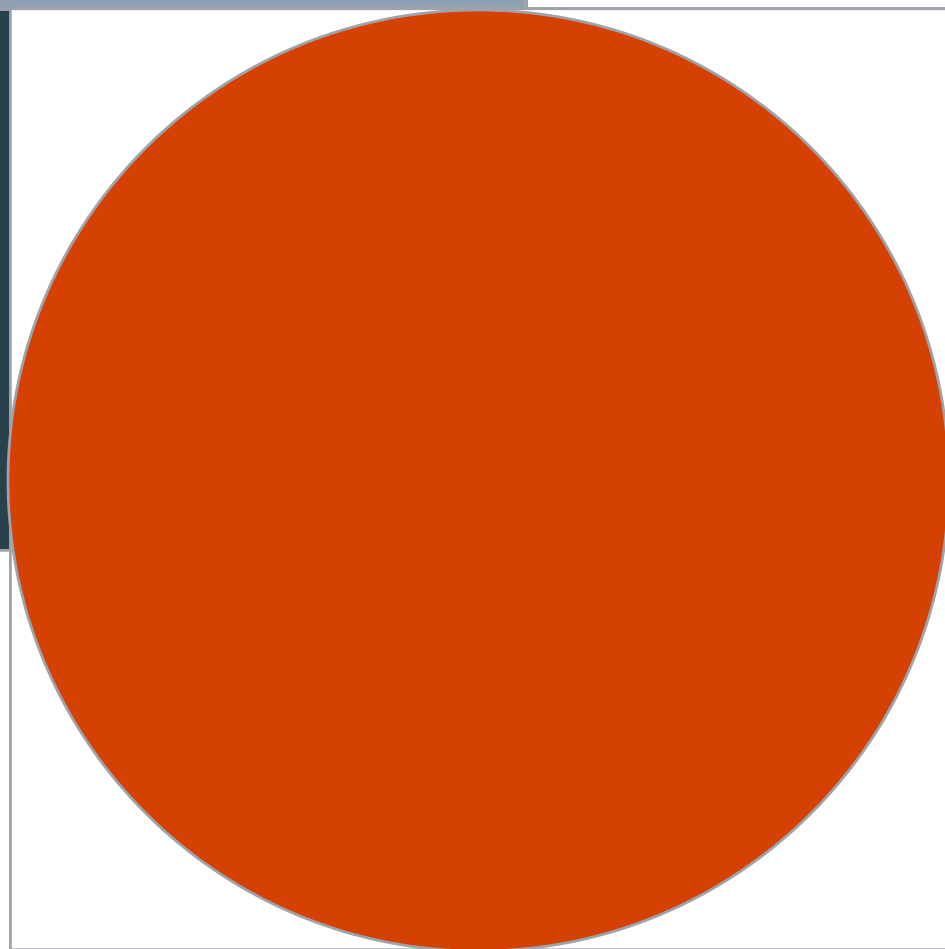


Adherence to Standards for MNH Service Delivery at Public and Private Facilities: A Multi- Country Analysis of Service Provision Assessment Data



January 2025

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Abbreviations

ANC	antenatal care
CHAM	Christian Health Association of Malawi
D4I	Data for Impact
DHS	Demographic and Health Survey
DRC	Democratic Republic of Congo
EOC	experience of care
FBO	faith-based organization
FP	family planning
HIS	health information systems
ITN	insecticide treated net
L&D	labor and delivery
LMIC	low- and middle-income countries
MNH	maternal and newborn health
NGO	nongovernmental organization
NFP	not-for-profit
QOC	quality of care
SPA	Service Provision Assessment
TT	tetanus toxoid
USAID	United States Agency for International Development
WASH	water, sanitation, and hygiene
WHO	World Health Organization

Executive Summary

Background

Improving the quality of maternal and newborn health (MNH) services is crucial for addressing maternal and neonatal morbidity and mortality. Governments, donors, and partners have prioritized efforts to enhance different components of quality of care (QoC), including efficacy, safety, people-centeredness, timeliness, equity, integration, and efficiency. Both the public and private sectors play significant roles in delivering MNH services, but there is limited evidence on how facilities from these sectors adhere to World Health Organization (WHO) standards for QoC.

This analysis, conducted under the Data for Impact (D4I) award, leverages Service Provision Assessment (SPA) data from 2012–2022 to evaluate the adherence of MNH service providers to WHO process standards. The study examines differences between public and private facilities, including for-profit and not-for-profit (NFP) facilities, and tracks changes over time in selected countries.

Methods

This multi-country analysis uses SPA data, a nationally representative health facility assessment, to evaluate the quality of antenatal care (ANC) and labor and delivery (L&D) services. For L&D, adherence to standards was assessed using the WHO QoC framework, which categorizes quality into eight domains, including evidence-based practices, actionable information systems, functional referral systems, effective communication, respect and preservation of dignity, emotional support, competent and motivated human resources, and availability of essential physical resources.

For ANC, the team utilized an adapted version of the WHO QoC Framework, which categorizes quality into domains including maternal and fetal assessment and management, provision of nutritional interventions, infectious disease testing and management, counseling and information sharing, satisfaction with services, transparency, respect and preservation of dignity, competent and motivated human resources, and availability of essential physical resources.

Key research questions include:

1. Do providers in public and private facilities adhere to WHO standards for ANC and L&D services?
2. What are the largest differences in adherence between public and private sectors?
3. How has adherence to ANC process standards changed over time?

Data from seven countries were included for the single time point analysis of adherence to QoC standards for ANC and for three countries for the trend analysis at two time points. Two countries (Malawi and Nepal) were included in the analysis of adherence to L&D quality standards at a single time point. Facilities were categorized by management authority (public, private for-profit, and private NFP). Composite scores for QoC domains were calculated, and trend analyses were conducted for countries with multiple surveys.

Results and Conclusions

Adherence to ANC Standards:

- Across countries, private NFP facilities consistently performed better than public and private for-

profit facilities, particularly in adherence to ANC standards.

- Private for-profit facilities often lagged in key areas such as infectious disease management and counseling services but performed well across countries on satisfaction with care.
- In all but one country, there was no significant difference between management authorities in the quality of maternal and fetal assessment services.

Trends Over Time:

- Positive trends were observed in Haiti, Nepal, and Senegal in the quality of ANC services for infectious disease testing, transparency, respect and preservation of dignity, essential physical resources, and provision of nutrition interventions.
- Satisfaction with ANC services largely plateaued or decreased across countries and management authorities (with the exception of private NFP facilities in Nepal). In Senegal, satisfaction with ANC services declined significantly across all three management authorities. Public facilities in Nepal showed highly significant improvement across most domains between 2015 and 2021.

L&D Insights:

- In Malawi and Nepal, private NFP facilities provided higher-quality L&D services compared to public and private for-profit facilities.
- The public sector in Nepal lags behind other management authorities on nearly all quality domains for L&D.
- Fewer L&D quality domains in Malawi were significantly different, indicating that quality may be similar across management authorities.

Recommendations

1. **Strengthen the private for-profit sector:**
 - Develop targeted interventions to improve the QoC in private for-profit facilities, drawing on successful practices from private NFP facilities.
2. **Improve QoC overall:**
 - Invest in QoC improvements across all management authorities and conduct additional country-level research to contextualize findings and identify positive practices or exemplars.
3. **Harmonize data collection and use:**
 - Promote the use of the revised SPA (V7) that maps with WHO QoC standards to better understand QoC for L&D services.
 - Conduct further research to understand contextual factors driving performance and trends across and within specific countries to inform decision making for programs and policies.

Conclusion

This analysis highlights significant gaps in adherence to MNH quality standards across public and private facilities. While private NFP facilities often lead in quality, public and private for-profit facilities face challenges requiring focused interventions. Trends of improvement in some countries demonstrate that large-scale progress is possible, offering valuable lessons for global efforts to ensure equitable, high-quality care for mothers and newborns.

Introduction

Evidence shows that timeliness, appropriateness, and equity of maternal and newborn health (MNH) services contribute to improved health outcomes, and efforts to improve the quality of maternal healthcare have been prioritized by governments, donors, and other partners to address maternal morbidity and mortality (Ladak et al., 2024; Lattof et al., 2023). Given the important role that the private sector plays in providing MNH care in many countries, evidence about the quality of services offered in both public and private facilities is needed to guide these efforts (Campbell et al., 2016). The World Health Organization (WHO) has developed a Quality of Care (QoC) Framework for pregnant women and newborns, including input and output/process standards for facilities across eight domains. While there have been several recent studies that have examined MNH QoC in low- and middle-income countries (LMICs) in terms of the physical and human resources available, evidence related to facilities' performance relative to the WHO standards for the provision and experience of care is lacking, specifically across facility management authorities.

Examining and comparing public and private sources of healthcare is essential for a comprehensive evaluation and understanding of MNH services globally because these sectors play complementary yet distinct roles in healthcare delivery. Ideally, public healthcare systems are designed to provide universal access to health services and aim to reduce health disparities by offering services at no or low cost, largely funded by government resources. Public facilities are crucial for ensuring that even the most vulnerable populations receive care. However, public systems may more commonly face limitations such as resource shortages, infrastructure issues, and bureaucratic hurdles that may affect the QoC. By assessing public healthcare sources, program and policy makers, clinical supervisors, and other decision makers with a vested interest in QoC can better understand the breadth of coverage and identify systemic issues that need addressing to improve MNH outcomes.

Alternatively, private healthcare providers in many countries represent an important source of healthcare provision in LMICs. One analysis, conducted using Demographic and Health Survey (DHS) data across 57 countries, indicated that care from private sources represented, on average, 44% of antenatal care (ANC) services and 40% of labor and delivery (L&D) services provided; however, geographic variation exists (Campbell et al., 2016). The study found the private sector was utilized by more women from Asian countries for ANC and L&D services (55% and 56%, respectively) compared with women from sub-Saharan Africa (16% and 22%, respectively). Private-sector services are often promoted as better able to introduce innovations and high-quality services that can lead to improved health outcomes for those who can afford them. Private healthcare settings may offer advanced technologies, personalized care, and quicker access to services, which can be particularly beneficial in areas where public services are lacking. However, the private sector can also exacerbate health inequalities, as access to high-quality care is often tied to individuals' financial resources. By examining private healthcare sources, we can gauge the quality and accessibility of services available to different income groups. Overall, evaluating both public and private healthcare systems provides a holistic view of the healthcare landscape, enabling more effective strategies to enhance MNH services on a global scale.

The Service Provision Assessment (SPA), a nationally representative facility survey implemented as part of the DHS Program, is a major source of standardized data on reproductive, maternal, newborn, child, and

adolescent health QoC at public and private sector health facilities. The core SPA modules include observations of family planning (FP), ANC visits, sick child client-provider interactions, and client exit interviews. There is also an optional L&D observation checklist, but there is no client-provider interaction observational data for postpartum or postnatal care beyond one hour after birth. In 2012, the SPA underwent a major revision to harmonize the existing tool with the WHO's Service Availability and Readiness Assessment. This revised tool was used between 2012 and 2022. In 2022, when the most recent round of revisions occurred, additions included a new postnatal exit interview for women who delivered at the health facility as well as a module on simulation of newborn resuscitation¹. Since that time, the WHO has also developed a new health facility assessment called the Harmonized Health Facility Assessment (World Health Organization, 2021).

Recent analyses, including one 2021 study that used SPA data from seven countries to characterize the quality of services provided at public and private facilities and another published in 2020 that examined the quality of integrated management of childhood illness, are likewise helping to identify gaps in service provision processes relative to standards, including sector differences (Bradley et al., 2020; Mallick et al., 2021). Efforts to map SPA measures to QoC standards for ANC and other maternal health services suggest some overlap but underscore the need for increased harmonization to support data use for decision making (Brizuela et al., 2019).

The objective of this analysis is to assess the degree to which MNH services meet quality process standards for ANC and L&D by management authority and how that has changed over time. We will use SPA data published between 2012 and 2022 from as many as eight countries, depending on data availability.

Most QoC analyses have utilized the Donabedian framework, categorizing the findings into three domains: structures, process (outputs), and outcomes (Donabedian, 1966). While a useful framework, the lack of specificity across the three domains may hinder a user's ability to make more targeted decisions for programming and policy. To provide more specificity, we have used the WHO QoC framework to guide the selection of domains used in this analysis.

This work was conducted by the Data For Impact (D4I) award between 2022 and 2024. Results can be used to help target support for MNH interventions to improve QoC through evidence-informed program and policy decision making.

Methods

The methods section is structured to give a clear overview of the approach used by the analysis team to organize and interpret the data. It begins by outlining the research questions, followed by a description of the frameworks guiding the analysis, and concludes with the process used for data analysis.

Research Questions

The analysis explores the following questions:

1. Do providers at public and private facilities in selected countries adhere to WHO process standards for MNH service provision for ANC and L&D?

¹ <https://dhsprogram.com/Methodology/Survey-Types/SPA-Questionnaires.com>

2. What process standards show the largest differences in adherence between the public and private sectors?
3. How has adherence to process standards for ANC changed over time?

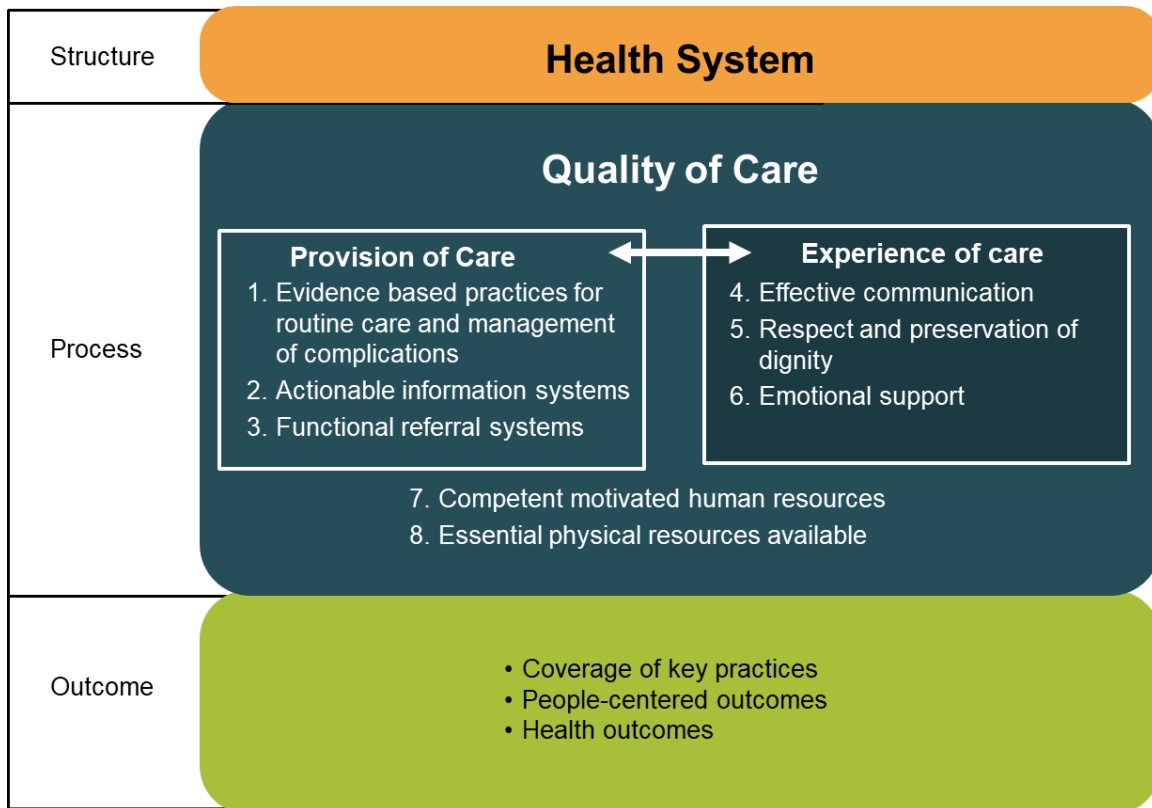
To answer these questions, the team undertook a scoping exercise to identify relevant MNH QoC frameworks to guide the analysis.

L&D Framework

In consultation with the United States Agency for International Development (USAID), the WHO QoC Framework (World Health Organization, 2016) was selected for conceptualizing and analyzing QoC related to L&D (Figure 1). The analysis focused on the process component of the framework broken out by the eight standards, referred to as “domains” in the analysis, included under QoC:

1. Evidence-based practices for routine care and management of complications
2. Actionable information systems
3. Functional referral systems
4. Effective communication
5. Respect and preservation of dignity
6. Emotional support
7. Competent, motivated human resources
8. Essential physical resources available

Figure 1. WHO framework for the quality of maternal and newborn healthcare



In order to map questions and indicators of interest in the SPA to the WHO QoC Framework, we drew heavily from a publication by Brizuela et al. that maps questions from a number of surveys, including the SPA, to the WHO framework (Brizuela et al., 2019). This mapping was complemented by consultations with maternal health measurement experts within the D4I project and USAID. The final list of L&D QoC indicators mapped to the relevant WHO domains and subdomains are presented in [Appendix A](#), but a summary of domains and subdomains is also included in Table 1.

Table 1. Summary of L&D domains and subdomains according to the WHO QoC framework

No.	Domain Name	No. of subdomains (indicators)	Description of subdomains
1	Evidence-based practices for routine care and management of complications	11 (88)	<p>1.1a. Women are assessed routinely on admission and during labor and childbirth and are given timely, appropriate care.</p> <p>1.1b. Newborns receive routine care immediately after birth.</p> <p>1.1c. Mothers and newborns receive routine postnatal care.</p> <p>1.2 Women with pre-eclampsia promptly receive appropriate interventions according to WHO guidelines.</p> <p>1.3. Women with postpartum hemorrhage promptly receive appropriate interventions, according to WHO guidelines.</p> <p>1.4. Women with delay in labor or whose labor is obstructed receive appropriate interventions, according to WHO guidelines.</p> <p>1.5. Newborns who are not breathing spontaneously receive appropriate stimulation and resuscitation with a bag-and-mask within 1 min of birth, according to WHO guidelines.</p> <p>1.6a: Women in preterm labor receive appropriate interventions for both themselves and their babies, according to WHO guidelines.</p> <p>6b: Preterm and small babies receive appropriate care, according to WHO guidelines.</p> <p>1.7a: Women with or at risk for infection during labor, childbirth, or the early postnatal period promptly receive appropriate interventions.</p> <p>1.7b: Newborns with suspected infection or risk factors for infection are promptly given antibiotic treatment, according to WHO guidelines.</p> <p>1.8: All women and newborns receive care according to standard precautions for preventing hospital-acquired infections.</p> <p>1.9: No woman or newborn is subjected to unnecessary or harmful practices during labor, childbirth, and the early postnatal period.</p>
2	Actionable information systems	3 (6)	<p>2.1: Every woman and newborn has a complete, accurate, standardized medical record during labor, childbirth, and the early postnatal period.</p> <p>2.2: Every health facility has a mechanism for data collection, analysis, and feedback as part of its activities for monitoring and improving performance around the time of childbirth.</p>
3	Functional referral systems	3 (9)	<p>3.1: Every woman and newborn is appropriately assessed on admission, during labor, and in the early postnatal period to determine whether referral is required, and the decision to refer is made without delay.</p> <p>3.2: For every woman and newborn who requires referral, the referral follows a pre-established plan that can be implemented without delay at any time.</p> <p>3.3: For every woman and newborn referred within or between health facilities, there is appropriate information exchange and feedback to relevant healthcare staff.</p>
4	Effective communication	2 (6)	<p>4.1: All women and their families receive information about the care and have effective interactions with staff.</p>

No.	Domain Name	No. of subdomains (indicators)	Description of subdomains
			4.2: All women and their families experience coordinated care, with clear, accurate information exchange between relevant health and social care professionals.
5	Respect and preservation of dignity	3 (11)	5.1: All women and newborns have privacy around the time of labor and childbirth, and their confidentiality is respected. 5.2: No woman or newborn is subjected to mistreatment, such as physical, sexual or verbal abuse, discrimination, neglect, detainment, extortion, or denial of services. 5.3: All women have informed choices in the services they receive, and the reasons for interventions or outcomes are clearly explained.
6	Emotional support	2 (8)	6.1: Every woman is offered the option to experience labor and childbirth with the companion of her choice. 6.2: Every woman receives support to strengthen her capability during childbirth.
7	Competent, motivated human resources	3 (19)	7.1: Every woman and child has access at all times to at least one skilled birth attendant and support staff for routine care and management of complications. 7.2: The skilled birth attendants and support staff have appropriate competence and skills mix to meet the requirements of labor, childbirth, and the early postnatal period. 7.3: Every health facility has managerial and clinical leadership that is collectively responsible for developing and implementing appropriate policies and fostering an environment that supports facility staff in continuous quality improvement.
8	Essential physical resources available	3 (23)	8.1: Water, energy, sanitation, hand hygiene, and waste disposal facilities are functional, reliable, safe, and sufficient to meet the needs of staff, women, and their families. 8.2: Areas for labor, childbirth and postnatal care are designed, organized, and maintained so that every woman and newborn can be cared for according to their needs in private, to facilitate the continuity of care. 8.3: An adequate stock of medicines, supplies, and equipment is available for routine care and management of complications.

For most subdomains, the indicators available in the SPA easily map; however, there are a few notable gaps. For example, for the WHO subdomain related to QoC for women with prolonged labor (1.4: Women with delay in labor or whose labor is obstructed receive appropriate interventions, according to WHO guidelines), many of the supporting indicators are specific to women experiencing prolonged labor, whereas questions in the SPA are more general to all women giving birth. Given that the SPA does not have questions that inform subdomains like prolonged labor specifically, and as the optional L&D observation checklist only covers management of normal deliveries in full, the measures are incomplete in some areas. An informal mapping of potential gaps is found in [Appendix B](#). Additionally, the existence of these gaps is addressed as a limitation of the analysis in the discussion section.

ANC Framework

To assess the QoC for ANC services, which are not specifically included in the WHO's MNH QoC framework, we reviewed a number of ANC QoC frameworks (Lattof et al., 2019, 2020; Morón-Duarte et al., 2019) as well as recommended indicators during the latest SPA revision by the USAID MOMENTUM maternal health working group (unpublished). We examined each set of indicators and identified where overlap existed

between the frameworks and the SPA. The final framework (Figure 2) is the result of the combined and adapted frameworks, principally the Latoff et al. framework, with expansion on the experience of care domain in line with the WHO QoC framework to capture additional domains of quality, including satisfaction with services and transparency, respect, and preservation of dignity. These additional domains were proposed by the D4I analysis team and reviewed and approved by maternal health measurement experts within USAID. Similar to the WHO QoC framework used to analyze the L&D data, the ANC framework divides QoC into multiple domains, including:

1. Maternal and fetal assessment and management
2. Provision of nutritional interventions
3. Infectious disease testing and management
4. Counseling and information sharing
5. Transparency, respect and preservation of dignity
6. Satisfaction with services
7. Competent and motivated human resources
8. Essential physical resources available

The final structure of the framework resulted in two levels, domains and indicators. The eight domains are composed of several indicators, ranging from 16 indicators for the maternal and fetal assessment and management domain to three indicators for the infectious disease testing and management domain (Table 2).

Table 2. Summary of ANC domains and indicators

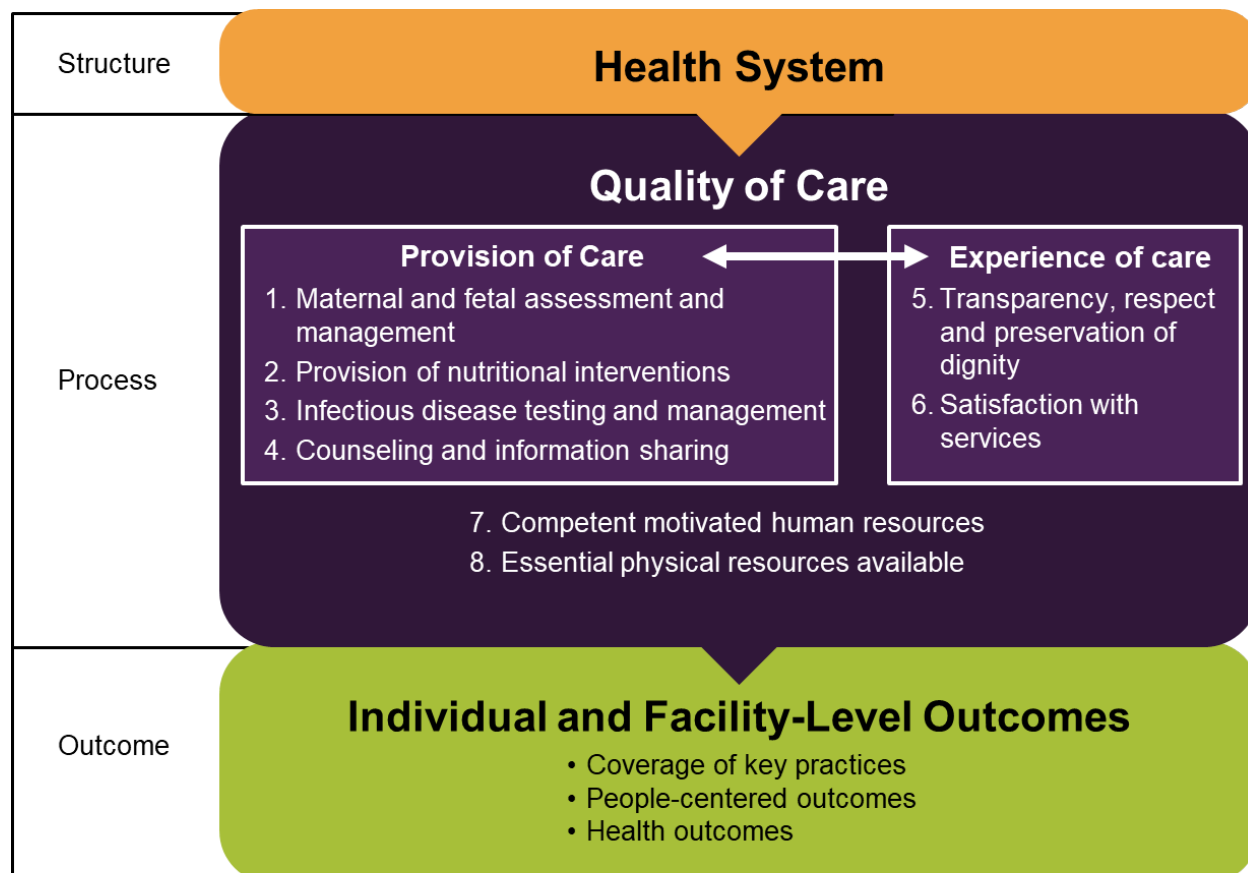
No.	Domain Name	No. of indicators included in domain	Description of indicators
1	Maternal and fetal assessment and management	14	<p>Counseling: Discussed danger signs.</p> <p>Physical exam: Measured blood pressure, fetal heartbeat, performed ultrasound, examined fetal presentation, measured fundal height, examined for anemia, measured weight, examined breasts, conducted vaginal exam, and examined for edema.</p> <p>Testing: Anemia testing and urine tests.</p> <p>Patient history: Asked about age, medications, date of last menstrual period, number of previous pregnancies, and prior pregnancy history (complications).</p> <p>Document review: Reviewed ANC card.</p>
2	Provision of nutritional interventions	3	<p>Counseling: Counseled on purpose, importance, side effects, how to take iron and/or folic acid, and counseled on the purpose of mebendazole.</p> <p>Prescribed: Prescribed/gave iron and/or folic acid, prescribed/gave mebendazole, and prescribed/gave calcium.</p>
3	Infectious disease testing and management	4	<p>Counseling: Counseled on HIV testing, malaria prevention, and the importance of the tetanus toxoid (TT) injection.</p> <p>Testing: Syphilis, HIV.</p> <p>Prescribed: Provided insecticide treated net (ITN), first dose of preventive treatment, and TT injection.</p> <p>Patient history: Asked about HIV status.</p>

No.	Domain Name	No. of indicators included in domain	Description of indicators
4	Counseling and information sharing	8	Counseling: Counseled on nutrition during pregnancy, preparations for delivery, post-partum FP, early initiation, prolonged and exclusive breastfeeding, HIV testing, newborn care, newborn vaccinations, the importance of using an ITN, and danger signs during pregnancy.
5	Transparency, respect, and preservation of dignity	8	Protocols/Documentation: Availability of fee structures, policies, and protocols to process client complaints. Patient satisfaction: Reported client wait time. Provider communication: Provider used communication aids and encouraged questions. Infrastructure: ANC service area provided auditory and visual privacy.
6	Satisfaction with services	6	Patient satisfaction: Reported satisfaction with time to see provider, ability to discuss problems or concerns, explanation received from provider, visual and auditory privacy during consultation, availability of medicines, facility days and hours of operation, facility cleanliness, how patients were treated by staff, cost for services, and overall satisfaction with services received.
7	Competent, motivated human resources	13	Training: Received training recently on ANC and water, sanitation, and hygiene (WASH). Supervision: Have received supervision. Documentation: Have a written job description. Policies: Facility carries out quality assurance activities, has routine management meetings, provides a duty schedule, mechanism for reviewing patient and provider feedback, and opportunities for promotion.
8	Essential physical resources available	15	Infrastructure: Availability of clean water, sanitation, waste disposal, electricity, and pharmacy. Equipment: Availability of essential ANC equipment (lab supplies and tests, ultrasound, blood pressure cuff, stethoscope, exam bed, weighing scale, etc.). Medication/vaccines: Availability of medicines (TT vaccine, albendazole, mebendazole). Guidelines: Available guidelines for ANC services, sterilization and waste disposal, etc. Other: Availability of emergency transportation.

Unsurprisingly, given the relative predictability and more narrow scope of services offered as part of ANC when compared with L&D, fewer gaps in indicators exist between published ANC frameworks and what is included in the SPA. However, we did note a few gaps in our analysis. The first gap is around questions and indicators for disease-specific testing and management during ANC. For example, as part of the maternal and fetal assessment, Latoff et al. propose indicators that examine treatment for asymptomatic bacteriuria, prophylaxis with anti-D immunoglobulin in non-sensitized Rhesus-negative (RH-) pregnant women, and prophylaxis for recurrent urinary tract infections. The SPA does not capture these indicators but includes more generic testing and treatment indicators that were incorporated into the analysis (i.e., whether or not the provider asked about, performed, or referred the client for any urine test). Another gap between the ANC frameworks and the SPA identified in the mapping was for indicators around assessment

of and counseling for consumption of alcohol, caffeine, and nicotine. These may be areas for inclusion in future revisions of the SPA.

Figure 2. Adapted framework for antenatal QoC



Sample

The analysis draws from publicly available SPAs conducted between 2012 and 2022, a period of 10 years when the SPA Version 6 Questionnaires were deployed. Table 3 provides an overview of the assessments conducted during this time period. Nine countries completed at least one SPA between the 2012 and 2022 survey revisions, including Afghanistan, Bangladesh, the Democratic Republic of Congo (DRC), Ethiopia, Haiti, Malawi, Nepal, Senegal, and Tanzania, with four countries (Bangladesh, Haiti, Nepal, and Senegal) having completed two or more assessments in that time frame.

Table 3. Available SPAs by country and year (2012 –2022)

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Afghanistan*								X			
Bangladesh			X			X					
DRC							X				
Ethiopia										X	
Haiti		X					X				
Malawi*			X								
Nepal*				X						X	
Senegal		X	X	X	X	X	X	X			
Tanzania				X							

*Survey includes L&D observation module.
Bold text indicates countries included in the final analysis.

The surveys conducted in Bangladesh in 2014 and 2018 did not include observations for the ANC or L&D modules, and the Afghanistan 2019 survey was drawn from a small sample size of only 160 facilities from 7 of the country’s 34 provinces (and fewer than 100 facilities that completed either the ANC or the L&D modules). As such, assessments from both Afghanistan and Bangladesh have been excluded from the final analysis.

In order to look at QoC at a single point in time and to understand changes over time, both cross-sectional and trend analyses have been conducted as part of the study. For the cross-sectional analysis, we included all countries that included *either* the ANC or L&D observation modules and published at least one report between 2012 and 2022. In countries with more than one survey in the last 10 years, the most recent survey conducted that includes either of the observation modules was included in the cross-sectional analysis to provide the most up-to-date results on QoC (Table 4).

Table 4. Countries, modules, and SPA reports included in the cross-sectional analysis

Country	Module		Report Year
	ANC	L&D	
DRC	X		2018
Ethiopia	X		2021
Haiti	X		2018
Malawi	X	X	2014

Country	Module		Report Year
	ANC	L&D	
Nepal	X	X	2021
Senegal	X		2018
Tanzania	X		2015

For the trend analysis, three countries conducted two or more assessments between 2012 and 2022: Haiti in 2013 and 2018, Nepal in 2015 and 2021, and Senegal in 2014 and 2018 (Table 5). Senegal has conducted numerous assessments over the last 10 years, but the surveys in 2014 and 2018 included ANC observations and exit interviews and represent the largest time gap between the administration of the modules (four years). As such, they have been included with hopes of showing change over time. None of the countries that administered multiple SPAs over the last 10 years included L&D observation modules in multiple surveys. As such, the trend analysis only examines changes in the QoC for ANC services.

Table 5. Countries, modules, and SPA reports to be included in the trend analysis

Country	Module		Report Years
	ANC	L&D	
Haiti	X		2013, 2018
Nepal	X		2015, 2021
Senegal	X		2014, 2018

Analysis

An overview of the analysis for ANC and L&D are described separately, below, to highlight the slight differences in the approaches.

ANC:

For ANC, as noted above, we used a number of existing publications to inform the mapping of SPA questions to the WHO QoC framework ([Appendix C](#)). The indicators represent items from the various modules of the SPA, which have different denominators (i.e., facilities, health providers, client-provider interactions/observations, and clients). In order to create more comprehensive ANC quality framework domains, the final domains include indicators drawn from questions from a mix of the SPA modules, which required us to first standardize the denominators to the facility level. We opted to standardize domains and related indicators to the facility level for a number of reasons. First, we chose to use the facility as the unit of analysis because we wanted to examine the performance of facilities and assess the proportion of service providers meeting service provision quality standards for ANC. Second, since the WHO QoC Framework includes input and output/process standards at the facility level—representing the highest

level of analysis in the SPA and serving as a common unit across various indicators—conducting the analysis at the facility level was the most logical approach. Third, we used the facility as the unit of analysis because we wanted to have the same unit of analysis for all analyses for both ANC and L&D, both of which have the facility as the highest and as a shared unit of analysis across observation types.

In order to collapse observation- and interview-based indicators to the facility level and determine adherence to quality standards, we hoped to use clinical benchmarks to determine whether or not the quality standard was reached. However, after consulting with USAID and determining that clinical targets that define levels of acceptable care do not exist for all of the indicators (or that the expectation is that the service is provided to *all* patients), we reviewed the data during preliminary analyses and set benchmarks based on the national means for each indicator. These national means were used to generate binary indicators that reflect whether or not the average of all observations in each facility was above (“1”) or below (“0”) the national average for that indicator.

Once the binary indicators were generated, eight domain-level composite scores were calculated using the simple mean of the binary indicators within each domain. If indicators were missing data, they were re-coded as missing, and the final mean was based on the number of indicators with non-missing data. Facilities were not penalized for missing responses as they are often indicative of “not applicable” responses in the SPA. Additionally, where indicators were not collected nationally, due to irrelevance or exemption from the tool, the final scores represented only the indicators that were collected and reported on.

For example, when calculating the domain that covers the provision of nutritional interventions, we first generated an average for each of the three indicators that compose that domain in order to collapse the observation-based indicators to a single value at the facility level. Once a facility-level average was calculated, the national mean was determined by calculating the mean across facilities for each indicator. The facility level averages were then compared with the national mean for each indicator and were re-coded as “1” if the facility met or exceeded the national average or “0” if the facility average was lower than the national mean. The binary scores for each of the three indicators that compose the domain were added up and divided by three, providing a final score.

While we lose the ability to compare scores across countries using this approach, constructing the composite scores this way helps analyze adherence to QoC standards in a way that is more relative to the individual country’s performance. This approach also ensures that where benchmarks are missing (e.g., the proportion of clients that should be satisfied with the amount of time they waited to see a provider in order to meet quality standards), we use the national mean to understand how facilities are performing.

L&D

The framework used for the L&D analysis differs slightly in that it is made up of three levels: domain, subdomain, and indicator. Similar to the ANC analysis, indicators represented a number of different denominators and had to be collapsed to the facility level for the reasons stated above. However, instead of re-coding the indicators as binary, as was done for the ANC analysis, for the L&D analysis we maintained the simple averages generated at the facility level (i.e., client, provider, and observation level indicators were collapsed into a single facility-level average). If data were missing for a given indicator for a facility, it

was re-coded as missing. In order to generate the subdomain-level scores, we used a simple average of the facility-level indicators for each subdomain, ignoring missing values.

To measure QoC for L&D services, we developed a composite score for each of the eight domains (quality statements within the WHO QoC framework) based on the subdomains. We determined that this type of index was appropriate in this context because the subdomains are all equally important and are largely observed variables versus latent constructs.

In order to do this, we re-coded the subdomain scores as binary variables to reflect whether a facility was above ("1") or below ("0") the average score of that subdomain using the scores from all facilities that had available data for that specific subdomain. If the information for the indicator was missing, it was re-coded as missing, and facilities were not penalized for missing responses (as they are often indicative of "not applicable" responses in the SPA). To create the final domain-level composite scores, we created a weighted additive index using the binary subdomain-level indicators. To do this, we summed the binary variables within each domain and divided them by the number of subdomains. We then multiplied by 100 and divided by the total number of subdomains included in each of the framework quality domains. This weighting technique has been described in detail by Mallick et al. for analyses of QoC data (Mallick et al., 2019).

For example, in order to calculate respect and preservation of dignity (Domain 5), we calculated the mean across facilities for each of the indicators that make up the three subdomains. Subdomain 5.1 refers to the standard that all women and newborns have privacy around the time of labor and childbirth, and their confidentiality is respected. In our analysis, this subdomain is made up of two indicators, one that asks if auditory and visual privacy are available in the service area and another that asks about the availability of national guidelines related to integrated management of pregnancy and childbirth. For each facility, we calculated the mean for the two indicators mentioned above. We then calculated the mean of these two indicators together for each facility to come up with a subdomain-level mean for each facility. We calculated a national mean for each subdomain and then created binary scores at the subdomain level by comparing the facility subdomain means to the national subdomain mean. We re-coded the facility-level subdomain scores as binary variables to reflect whether a facility was above ("1") or below ("0") the average score of that subdomain using the scores from all facilities that had available data for that specific subdomain. We then calculated a mean across the summed subdomain score to create a domain-level score for each facility.

As with ANC, this final score reflects the level of adherence to quality standards for L&D but is also comparative to national performance.

In order to better understand the reliability of the domains and their scales, we assessed the internal reliability of the scale using Cronbach's alpha, which indicates how well the items in the scale are conceptually related to each other. We used the benchmarks described by Nunnally when rating reliability. An alpha value of 0.60 to 0.69 is "acceptable," an alpha of 0.70 to 0.79 is "good," and an alpha of 0.80 or higher is "very good" (Nunnally, 1978). These benchmarks explain the degree of reliability, but as discussed in the limitations section, they should not be the only consideration when developing and reviewing scales.

Analyses to Answer the Research Questions

Research Q1: Do providers at public and private facilities in selected countries adhere to WHO process standards for MNH service provision for ANC and L&D?

Research Q2: What process standards show the largest differences in adherence between the public and private sector?

To answer research questions 1 and 2, quality scores were calculated and compared between facility management authority types using descriptive statistics to report the mean and standard deviation and one-way ANOVA. We used Levene's test to examine the homogeneity of variances and Tukey's post-hoc test to assess pairwise differences between management authorities. The nonparametric Kruskal-Wallis test and Dunn's post-hoc test were used instead of ANOVA and Tukey tests when Levene's test was statistically significant, suggesting that the assumption of homogeneity of variances was violated.

Where sample size allowed, management authorities were categorized in the analyses as public, private (for-profit), and private (NFP). However, in some countries where management authorities represented a hybrid of existing categories or something outside of these categories, we created a separate category, like in Malawi, for the Christian Health Association of Malawi (CHAM), which operates largely as a NFP, funded by large donors like USAID, but also receives technical and financial support from the government.

Research Q3: How has adherence to process standards for ANC changed over time?

To examine changes in the quality of MNH services over time, we compared data from the three countries that conducted at least two surveys since 2012 and for which the ANC observation module was included at both time points. The trend analysis includes descriptive statistics and comparisons of the QoC indices described above.

We examined changes in indicators over time using a chi-square test for binary variables (i.e., individual indicators) and independent t-tests for continuous variables (i.e., composite scores) based on assumptions made in other trend analyses using the SPA (Pant & Riese, 2024). We were unable to link facilities across the two surveys using facility ID numbers, and, as a result, had to assume independence between the samples. This assumption of independence is likely valid for observations at the client and provider levels; however, at the facility level, where higher-level facilities were likely sampled in both surveys, the assumption may have been violated. We expect that the effect of making this assumption would vary depending on the indicators. However, we are unable to quantify this impact. For our analyses, we used the primary sampling units and facility weights from the individual surveys. The facility sampling weights are required due to the non-proportional distribution of health facilities to the different provinces and health facility types. More details on the methodology to produce the sampling weights can be found in individual country SPA reports. In this analysis, we applied the facility weights by generating a survey indicator for each survey, then appending the datasets and creating unique strata and primary sampling units. We used these strata and primary sampling units along with the facility weights to run all analyses looking at trends over time. For all analyses, sampling weights were used where possible, and statistical significance was determined at the .05 level. All analyses were conducted using Stata 17.

Results: ANC

We assessed the ANC scales in each country using a Cronbach alpha. Overall, alphas were quite low for most scales, with most falling below .5. The exception to this was the satisfaction with services domain, which scored as high as .92 in the DRC. The implications of these scores are discussed further in the discussion section.

The results for adherence to ANC standards relative to national performance are presented below, organized by country. Table 6 provides background on ANC services provided by management authority and sample size information for the most recent SPA completed in each country. Facility sample sizes were adequately large for public sector facilities in all countries, but private sector samples were particularly low in Ethiopia and Senegal. Additionally, the number of observations and client exit interviews for the private sector, particularly in Senegal, was very low. The limitations related to sample size are noted in the discussion section of the report.

Table 6. Facilities providing ANC services and final analysis sample sizes by SPA module

Survey Country and Year	Management Authority	Number of Health Facilities Sampled in the SPA	% Facilities providing ANC Services % (N)	Final analysis sample sizes			
				Health Facilities	Provider Interviews	Observations	Client Exit Interview
DRC 2018	Public	855	97.3% (832)	832	5,448	2,847	2,849
	Private for-profit	164	98.8% (162)	162	845	448	449
	Private-NFP	392	98.5% (386)	386	3,034	1,217	1,219
	Total	1411	97.8% (1380)	1380	9327	4512	4517
Ethiopia 2021	Public	976	85.0% (829)	829	6,881	3,876	3,876
	Private for-profit	400	75.7% (303)	303	1,477	347	347
	Private-NFP	31	83.9% (26)	26	206	132	132
	Total	1407	82.3% (1158)	1158	8564	4355	4355
Haiti 2013	Public	344	99.4% (342)	342	1,644	711	712
	Private for-profit	214	100.0% (214)	214	815	281	282
	Private-NFP	349	100.0% (349)	349	1,569	629	634
	Total	907	99.8% (905)	905	4028	1621	1628
Haiti 2018	Public	350	98.3% (344)	344	1,694	645	647
	Private for-profit	315	95.2% (300)	300	1,319	329	329
	Private-NFP	368	98.6% (363)	363	1,667	552	552

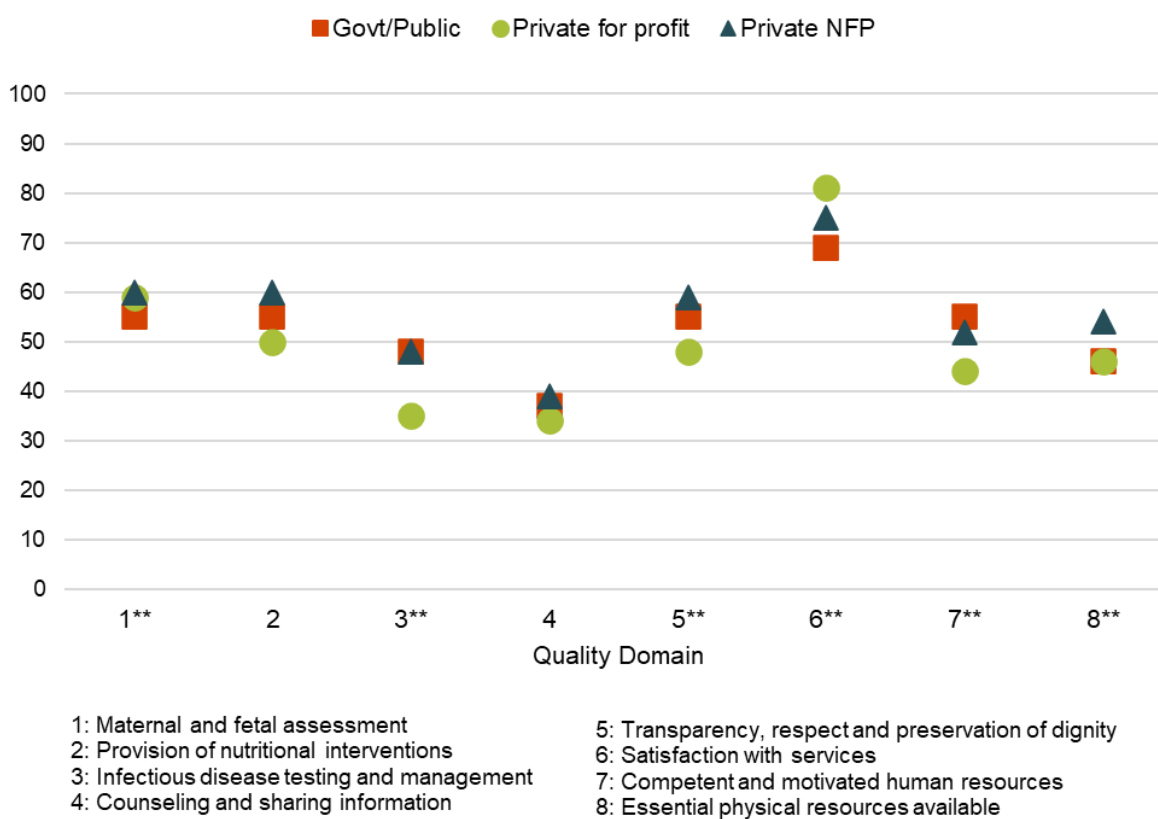
Survey Country and Year	Management Authority	Number of Health Facilities Sampled in the SPA	% Facilities providing ANC Services % (N)	Final analysis sample sizes			
				Health Facilities	Provider Interviews	Observations	Client Exit Interview
	Total	1033	97.5% (1007)	1007	4680	1526	1528
Malawi 2014	Public	509	93.9% (478)	478	1,490	1,487	1,511
	Private for-profit	322	85.4% (275)	275	493	72	78
	Private-NFP	67	95.5% (64)	64	182	31	32
	CHAM	162	98.8% (160)	160	570	478	484
	Total	551	90.6% (499)	499	1245	581	594
Nepal 2015	Public	775	99.5% (771)	771	3,109	1,243	1,269
	Private for-profit	139	84.9% (118)	118	766	193	201
	Private-NFP	78	94.9% (74)	74	355	73	74
	Total	992	97.1% (963)	963	4230	1509	1544
Nepal 2021	Public	1,286	99.3% (1,277)	1,277	5,021	1,482	1,493
	Private for-profit	254	92.5% (235)	235	1,740	403	414
	Private-NFP	86	74.4% (64)	64	304	81	84
	Total	1626	96.9% (1576)	1576	7065	1966	1991
Senegal 2014	Public	387	76.5% (296)	296	1,789	1,096	1,096
	Private for-profit	45	60.0% (27)	27	110	44	44
	Private-NFP	32	78.1% (25)	25	124	71	71
	Total	464	75.0% (348)	348	2023	1211	1211
Senegal 2018	Public	379	71.0% (269)	269	1,064	531	531
	Private for-profit	45	44.4% (20)	20	87	6	6
	Private-NFP	42	52.4% (22)	22	96	41	41
	Total	466	66.7% (311)	311	1247	578	578
Tanzania 2015	Public	783	99.6% (780)	780	4,277	2906	2,907
	Private for-profit	188	97.8% (184)	184	968	249	249

Survey Country and Year	Management Authority	Number of Health Facilities Sampled in the SPA	% Facilities providing ANC Services % (N)	Final analysis sample sizes			
				Health Facilities	Provider Interviews	Observations	Client Exit Interview
	Private-NFP	229	97.8% (224)	224	1,770	852	854
	Total	1200	99.0% (1188)	1188	7015	4007	4010

Results for each SPA survey summarized in Table 4 are presented below. These scores, assigned to the different management authorities, represent how they score relative to the national performance, which falls between all scores. The national mean and other tables with scores by country, ANC domain, and management authority are presented in [Appendix D](#) (for cross-sectional results) and [Appendix E](#) (for trend results).

DRC 2018

Figure 3. ANC service quality composite scores by domain, DRC 2018



*p<=.05, **p<=.01, for significant differences between management authorities.

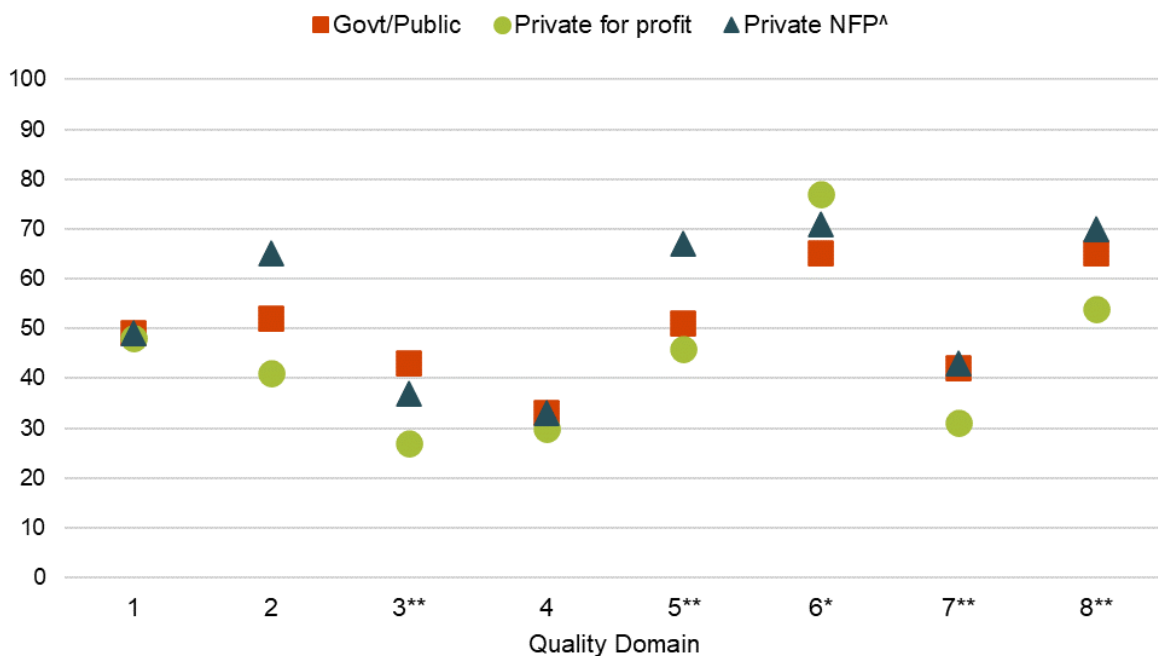
In the DRC, the analysis indicated significant differences between management authorities for six of the eight domains. The greatest discrepancies in quality composite scores were found in two domains: Domain

3, infectious disease testing and management (which includes observation of syphilis screening, testing and referral, HIV testing, malaria treatment and counseling, and TT vaccination), and Domain 6, satisfaction with services (which includes client exit interviews that cover topics such as privacy, time waited to see a provider, service hours, cleanliness, cost of treatment, treatment by staff, and overall satisfaction with services). For Domain 3, infectious disease testing and management, private for-profit facilities scored lowest, and government/public facilities scored highest, whereas the findings for Domain 6, satisfaction with services, indicated the inverse. Private NFP facilities consistently scored higher than the other two management authorities on all but two domains: Domain 6, satisfaction with services, and Domain 7, competent and motivated human resources, which includes items collected through health worker interviews and the facility inventory on staff training, supervision and mentorship, team meetings, and opportunities for promotion, among others.

Ethiopia 2021

In Ethiopia, significant differences were identified between management authorities in five of the eight domains. The largest, significant variations between management authorities were in the infectious disease testing and management domain, where government/public facilities scored higher, and in the transparency, respect, and preservation of dignity domain, which includes indicators related to transparency around fees for services, privacy, client feedback mechanisms, and others, where private NFP facilities scored higher.

Figure 4. ANC service quality composite scores by domain, Ethiopia 2021



- 1: Maternal and fetal assessment
- 2: Provision of nutritional interventions
- 3: Infectious disease testing and management
- 4: Counseling and sharing information
- 5: Transparency, respect and preservation of dignity
- 6: Satisfaction with services
- 7: Competent and motivated human resources
- 8: Essential physical resources available

*p<=.05, **p<=.01, for significant differences between management authorities.

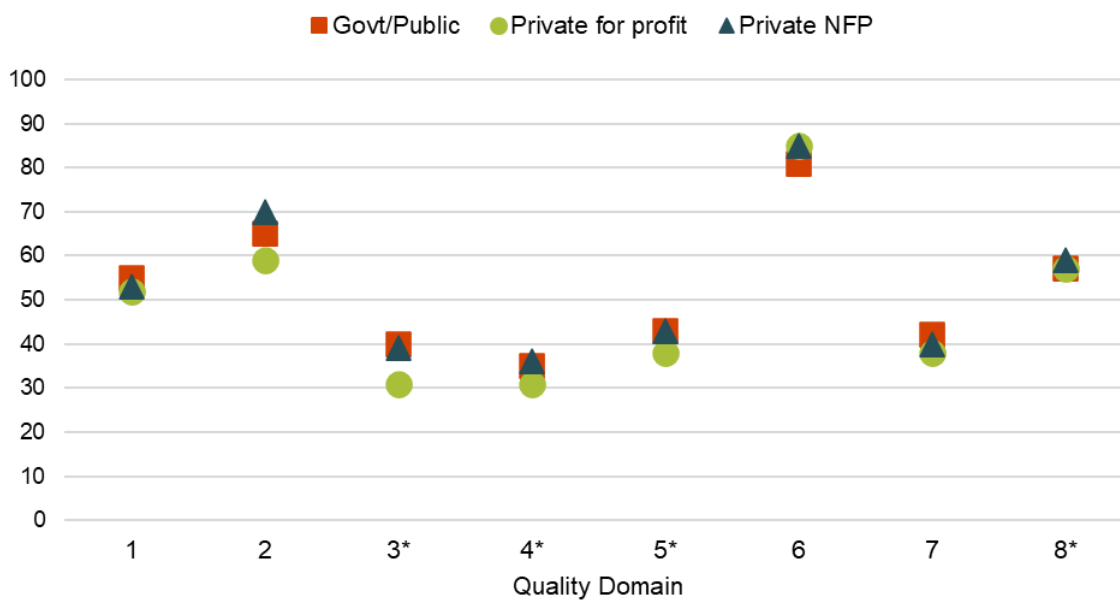
^A Note: Sample size for Private NFP for Domains 1, 2, 3, 4 & 6 <=20

Haiti 2018

Cross-Sectional Results

Each of the three facility types in Haiti scored similarly across the eight quality domains, with significant differences at the $<.05$ level observed in just half of the domains. Among the four domains for which significant differences were observed, private for-profit facilities scored lower compared to the other facility types. Satisfaction with services was the domain in which facilities scored highest, while the counseling and information sharing domain, which is collected largely by observation and includes counseling on malaria prevention and treatment, tetanus vaccination, plans for delivery, and postpartum and newborn care (among other topics), had the lowest scores in Haiti.

Figure 5. ANC service quality composite scores by domain, Haiti 2018



- | | |
|--|--|
| 1: Maternal and fetal assessment | 5: Transparency, respect and preservation of dignity |
| 2: Provision of nutritional interventions | 6: Satisfaction with services |
| 3: Infectious disease testing and management | 7: Competent and motivated human resources |
| 4: Counseling and sharing information | 8: Essential physical resources available |

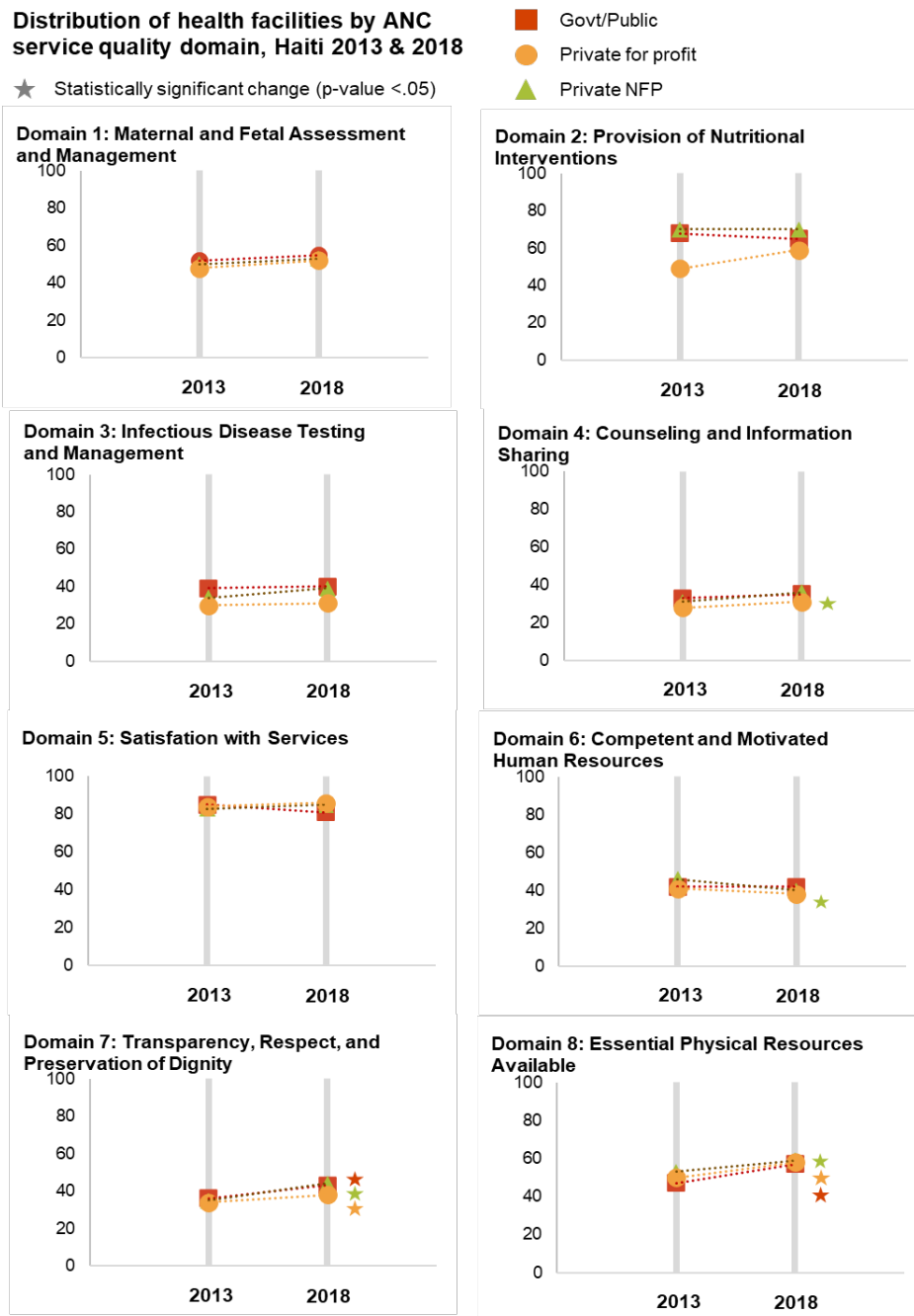
* $p < .05$, ** $p < .01$, for significant differences between management authorities.

Trend Results

In Haiti, the overall service quality composite scores increased across five of the eight domains between the 2013 and 2018 SPA surveys. The largest increases were observed in the transparency, respect, and preservation of dignity domain and the physical resource availability domain, which is collected via inventory and captures essential medicines and equipment required for ANC, with all three facility types experiencing significant increases at the $<.05$ level. While there was minimal variation in public and private NFP facility scores for the provision of nutritional interventions domain, which includes observation of iron

and folic acid, calcium supplementation, and deworming, between 2013 and 2018, the score for private for-profit facilities increased from 49 to 59. The private for-profit and private NFP facility scores for the competent and motivated human resources domain decreased between the survey years, with a significant decrease among private NFP facilities.

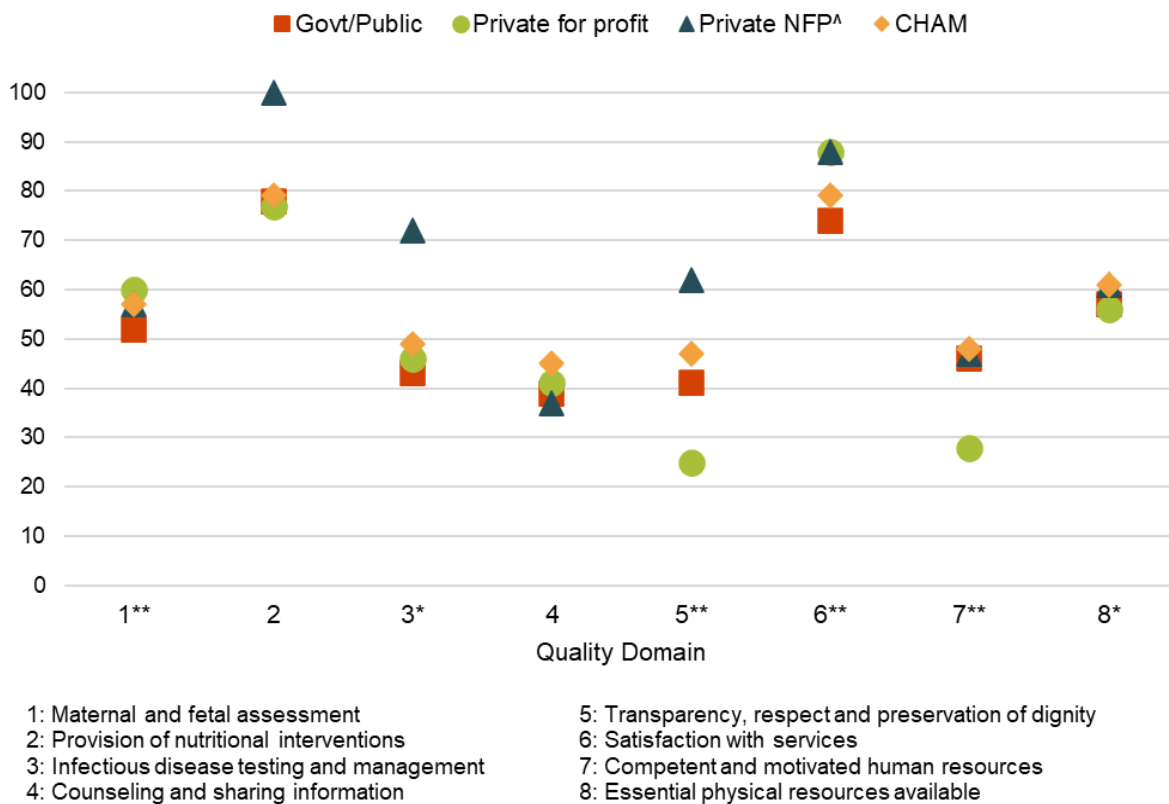
Figure 6. Distribution of health facilities by management authority and ANC service quality domain score over two surveys, Haiti 2013 and 2018



Malawi 2014

Variability in quality composite scores among management authorities was also common in Malawi, where six of the eight domains were significantly different by management authority. The analysis for Malawi included public, private for-profit, and private NFP, as well as CHAM, which reports providing 37% of Malawi’s healthcare services nationwide and as much as 83% in rural, remote areas (*Health Service Delivery – Christian Health Association of Malawi, n.d.*). In the 2014 SPA, CHAM facilities represent around 16% of the overall sample. In terms of quality of ANC, CHAM facilities commonly performed better than other facility types, with the exception of private NFP facilities, which had extremely low sample sizes in a number of cases. Overall, government and private for-profit facilities scored lower when compared with CHAM and private NFP facilities. For six of the eight domains, quality composite scores differed significantly, four of which were significant at the <01 level, indicating high variability between quality of ANC services provided by facility type. Provision of nutritional interventions was the domain in which facilities in Malawi scored highest, and competent and motivated human resources was the domain in which they scored lowest, indicating areas of strength and weakness.

Figure 7. ANC service quality composite scores by domain, Malawi 2014



*p<=.05, **p<=.01, for significant differences between management authorities.

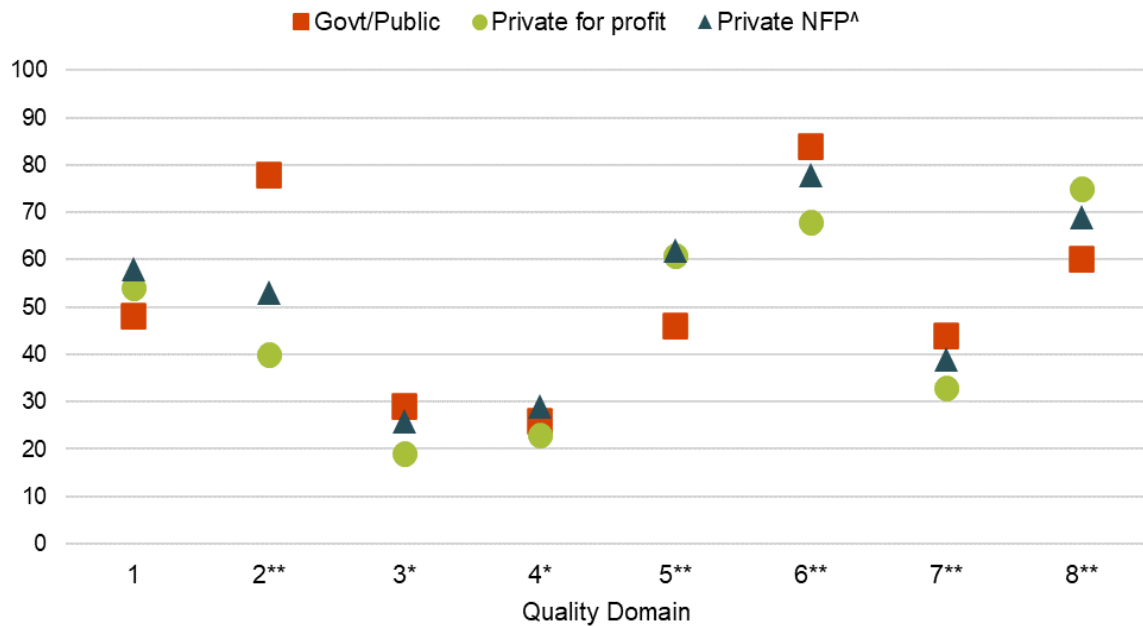
[^] Note: Sample size for Private NFP for Domains 1, 2, 3, 4 & 6 <=20 observations

Nepal 2021

Cross-Sectional Results

In Nepal, significant differences between management authorities were identified in seven of the eight domains, five of which were significant at the $<.01$ level. Private for-profit facilities scored lower than other facility types for most domains, with the exception of the transparency, respect, and preservation of dignity domain and the availability of essential physical resources domain. The largest variation between management authorities was found in the provision of nutritional interventions domain, where public facilities scored the highest and private for-profit facilities scored the lowest. Overall, satisfaction with services was the domain in which facilities scored highest, while the counseling and information sharing domain received the lowest scores.

Figure 8. ANC service quality composite scores by domain, Nepal 2021



- 1: Maternal and fetal assessment
- 2: Provision of nutritional interventions
- 3: Infectious disease testing and management
- 4: Counseling and sharing information

- 5: Transparency, respect and preservation of dignity
- 6: Satisfaction with services
- 7: Competent and motivated human resources
- 8: Essential physical resources available

* $p < .05$, ** $p < .01$, for significant differences between management authorities.

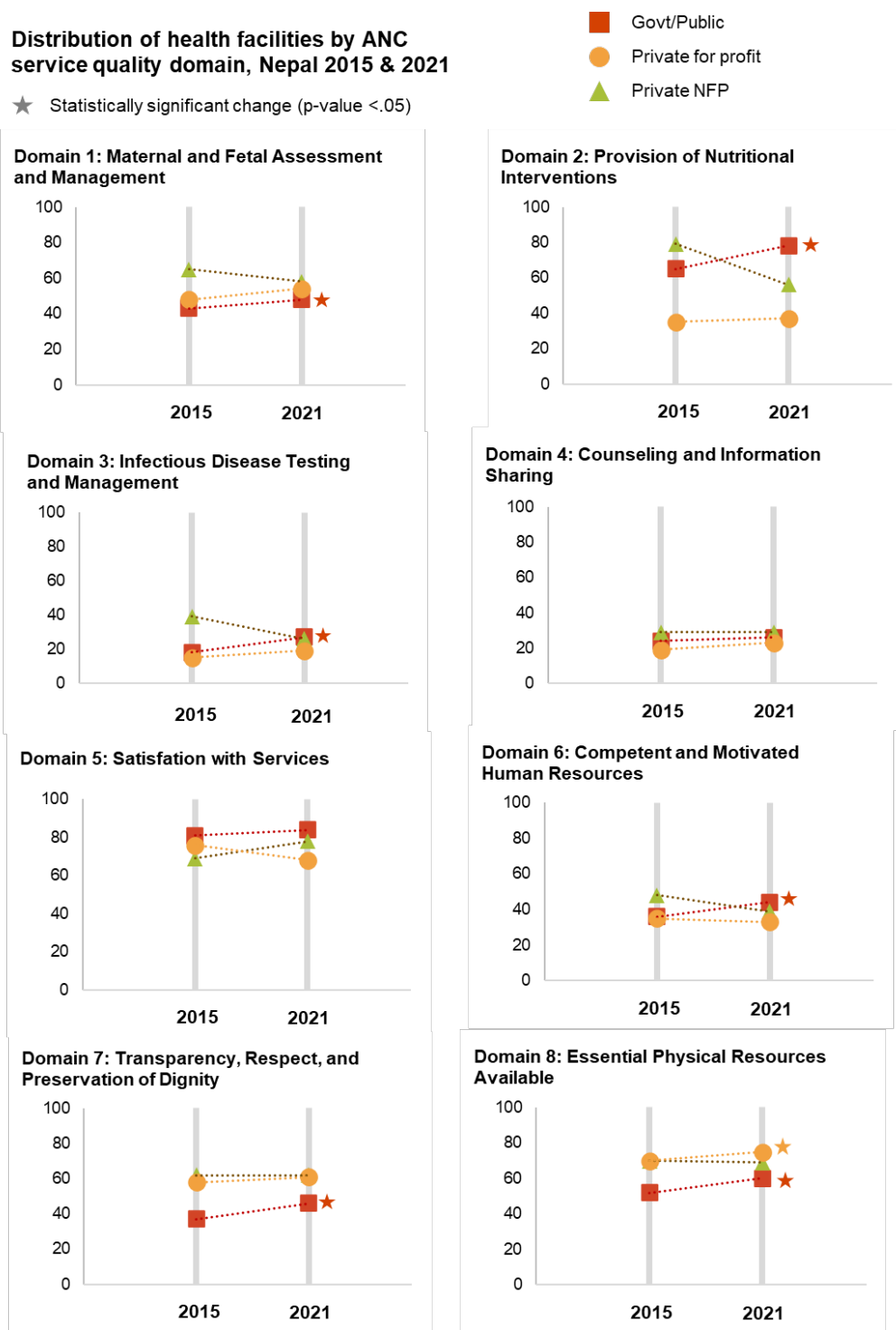
^A Note: Sample size for Private NFP for Domains 1, 2, 3, 4 & 6 ≤ 20 observations

Trend Results

Changes in service quality composite scores between 2015 and 2021 varied among management authorities in Nepal, with facility types not typically aligned as to whether they experienced increases, decreases, or no changes across the domains. For example, while government/public and private for-profit facilities performed better between the survey years in provision and content of care-related domains, such as the provision of nutritional interventions, private NFP facilities experienced a decline. Notably, however, sample sizes for private NFP facilities were extremely low for five of the eight domains.

Scores for government/public facilities increased across each of the eight domains, five of which were significant at the $<.05$ level. While government/public and private NFP facilities improved their scores for the satisfaction with services standard, private for-profit facilities experienced a decline. Both private for-profit and government/public facilities had significant improvements in the domain of availability of essential physical resources between survey years.

Figure 9. Distribution of health facilities by management authority and ANC service quality domain scores over two surveys, Nepal 2015, 2021



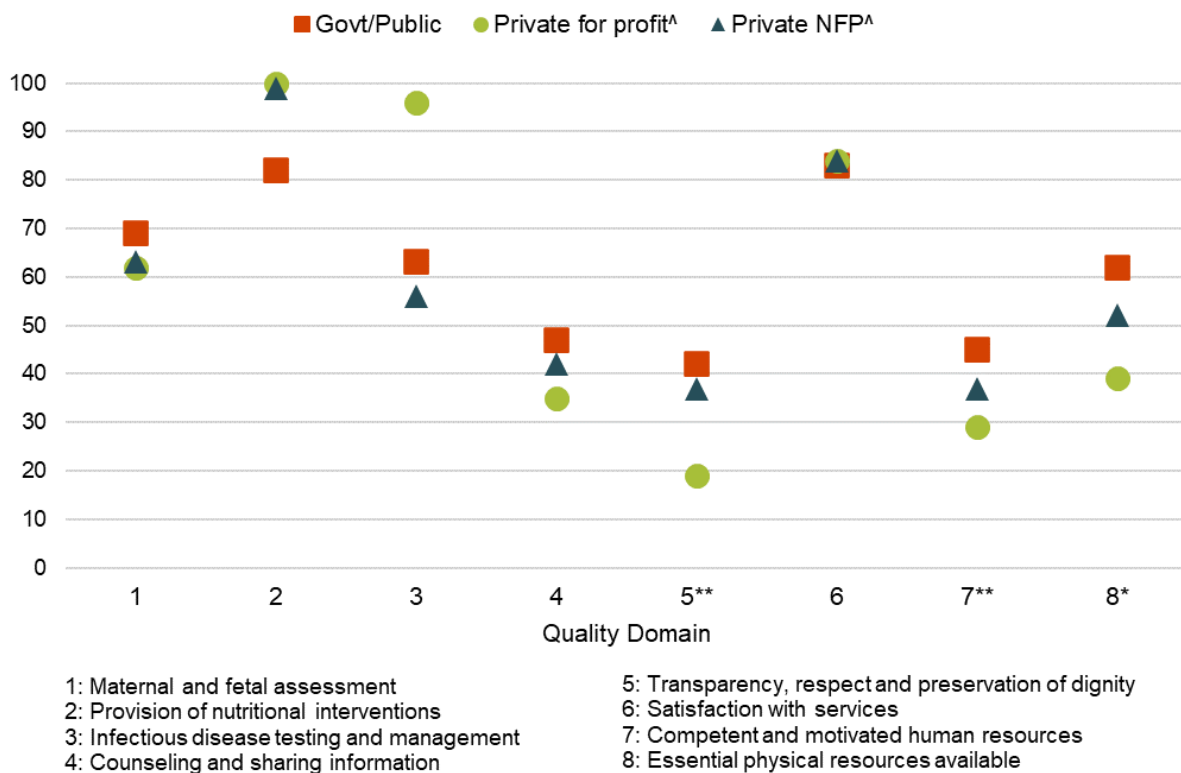
Note: Sample size for Private NFP for Domains 1, 2, 3, 4 & 5 <=20 observations

Senegal 2018

Cross-Sectional Results

Significant differences between managing authorities were identified in just three of the eight domains in Senegal, with the low sample sizes for private NFP and private for-profit facilities in five of the domains likely serving as a contributing factor. These relatively low sample sizes are likely the result of the overall smaller sample sizes in Senegal, as the country administers the SPA on a rolling basis and samples fewer facilities during each round of data collection as a result. Across the three domains in which significant differences were observed, government/public facilities scored higher than other facility types, and private for-profit facilities received lower scores. The provision of nutritional interventions was the domain in which facilities scored highest, while the transparency, respect, and preservation of dignity standards was the domain that received the lowest scores.

Figure 10. ANC service quality composite scores by domain, Senegal 2018



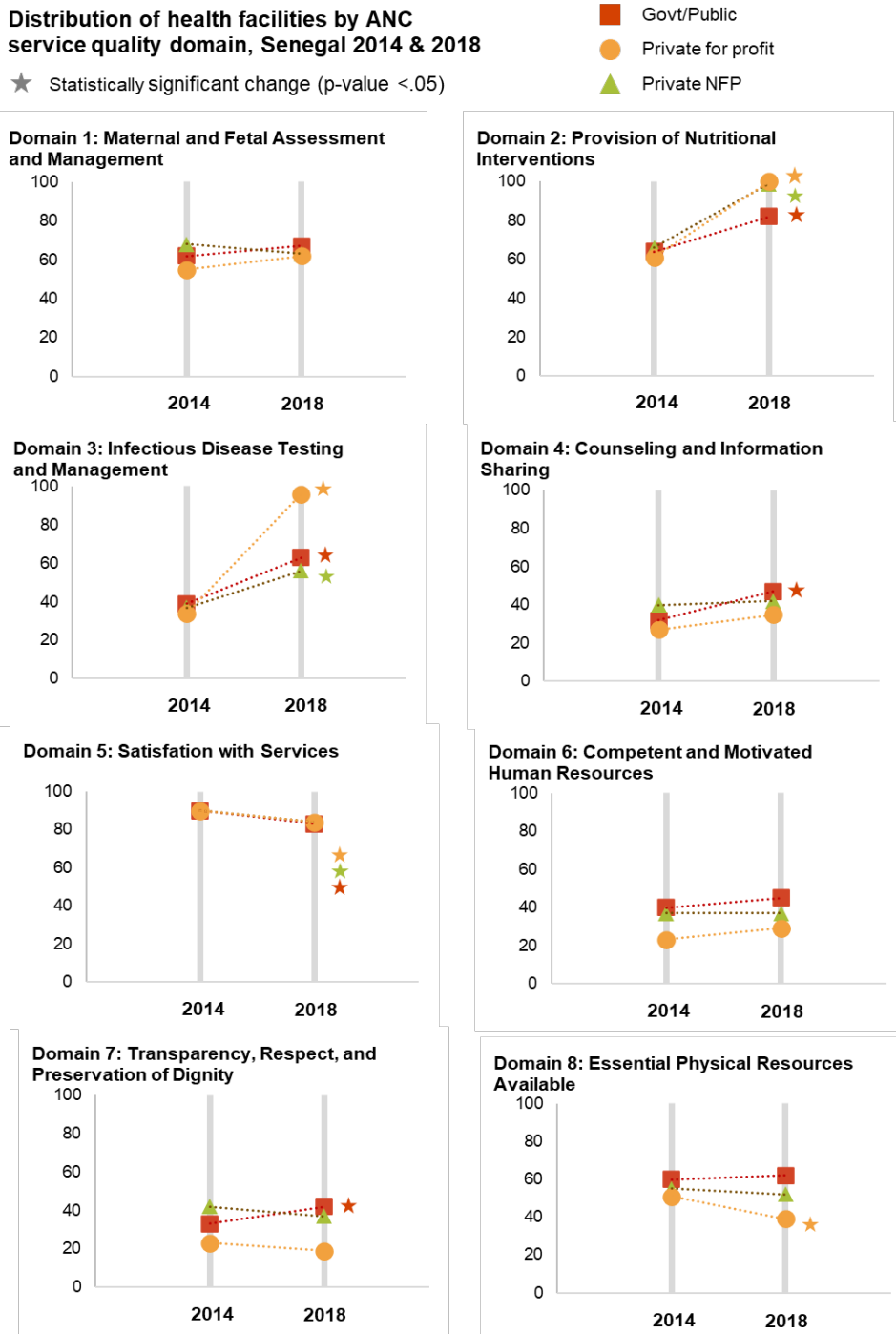
*p<=.05, **p<=.01, for significant differences between management authorities.

[^] Note: Sample sizes for Private NFP and Private for profit for Domains 1, 2, 3, 4 & 6 <=20 observations

Trend Results

All three facility types in Senegal showed significant increases in ANC service quality composite scores for the provision of nutritional interventions and infectious disease testing and management domains between the 2014 and 2018 SPA surveys. Scores for the satisfaction with services domain, however, decreased between survey years across all facility types. The sample sizes for private for-profit and private NFP facilities for these domains were extremely low, however, with fewer than 20 observations. Government/public facilities showed significant improvements in scores for the counseling and information sharing domain between 2014 and 2018. Additionally, while the government/public facility scores for the domain of transparency, respect, and preservation of dignity increased significantly, the other facility types experienced modest decreases of fewer than five percentage points. Private for-profit facilities decreased significantly in the availability of essential physical resources, while government/public facilities and private NFP facilities remained largely unchanged.

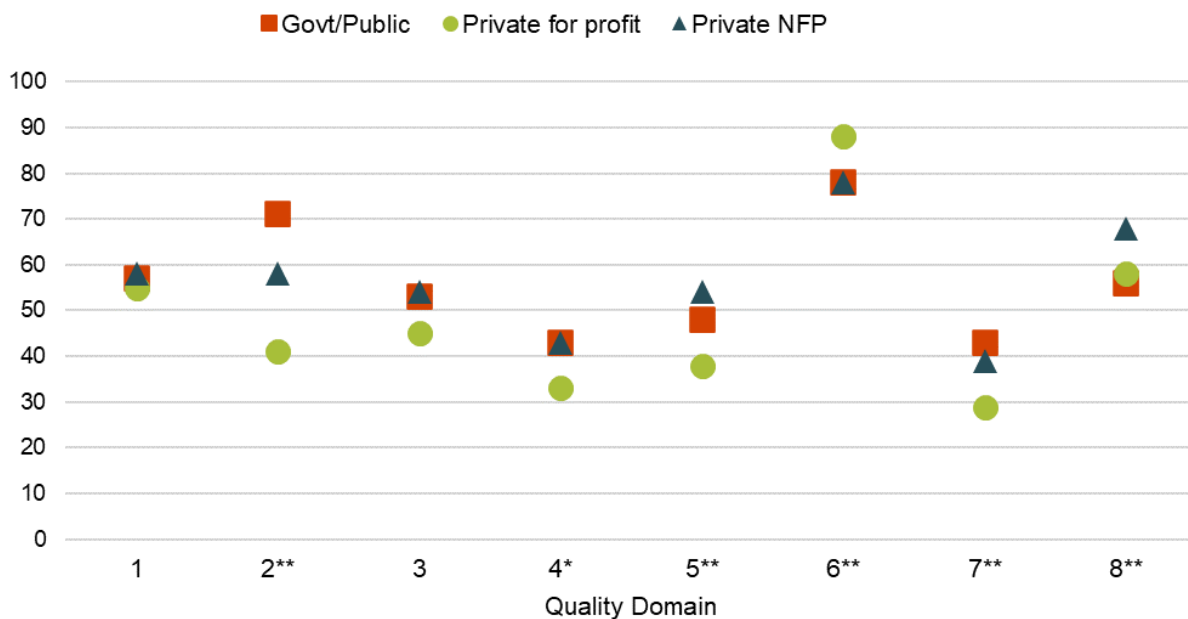
Figure 11. Distribution of health facilities by management authority and ANC service quality domain scores over two surveys, Senegal 2014, 2018



Note: Sample size for Private for profit and NFP for Domains 1, 2, 3, 4 & 5 <=20 observations

Tanzania 2015

Figure 12. ANC service quality composite scores by domain, Tanzania 2015



- 1: Maternal and fetal assessment
- 2: Provision of nutritional interventions
- 3: Infectious disease testing and management
- 4: Counseling and sharing information

- 5: Transparency, respect and preservation of dignity
- 6: Satisfaction with services
- 7: Competent and motivated human resources
- 8: Essential physical resources available

*p<=.05, **p<=.01, for significant differences between management authorities.

Significant differences between management authorities were identified in six of the eight domains in Tanzania. The largest variation between management authorities was found in the provision of nutritional interventions domain, where government/public facilities scored the highest and private for-profit facilities scored the lowest. Private for-profit facilities typically scored lower than the other facility types, with the exception of the satisfaction with services and essential physical resources quality domains. Overall, satisfaction with services was the domain in which facilities in Tanzania scored highest, while the competent and motivated human resources domain received the lowest scores.

Results: L&D

We assessed the L&D scales by subdomain in each country using a Cronbach alpha. Similar to the findings with the ANC reliability testing, alphas were quite low for most scales, with most falling below .5. The only exceptions to this were for subdomains 7.2, which measures if skilled birth attendants and support staff have the appropriate competencies and skills mix to meet the requirements of labor, childbirth, and the early postnatal period, and 8.3, which measures the availability of stocks of medicines, supplies, and equipment for routine care and management of complications. In Malawi, the alpha for subdomain 7.2 was

.72, and in Nepal, it was slightly lower (.69). In both Malawi and Nepal, the alphas for subdomain 8.3 were .75. The implications of these findings will be discussed more in the limitations section.

The results for adherence to L&D standards are presented below for Malawi and Nepal, the two countries that completed the L&D observational module during the time period of interest. Table 5 provides background on L&D services provided by management authority in each country and sample size information for the modules completed in both countries.

In both Malawi and Nepal, approximately half of the facilities sampled provided L&D services. All modules were completed in both countries, with the exception of the postpartum client exit interview in Malawi. While the postpartum client exit interview was administered in Nepal, it was only added to the standard L&D SPA module in 2022. As a result, some of the subdomains that relied on indicators from the postpartum exit interview in Malawi included fewer indicators than in Nepal. Nearly 90% of the CHAM facilities and 75% of public health facilities sampled in the survey provided L&D services, while only 13.1% of private for-profit facilities (including company facilities) and 7.8% of facilities categorized as private NFP (including mission, faith-based organizations [FBOs], and nongovernmental organization [NGO] facilities) provided L&D services. In Nepal, 57.5% of the private for-profit facilities included in the sample provided L&D services, followed by 49.4% of the public facilities in the sample and 34.4% of the private NFP facilities (which also included NGO, mission, and FBOs).

Table 7. Facilities providing L&D services and final analysis sample sizes by SPA module

Survey Country and Year	Management Authority	Number of Health Facilities Sampled in the SPA	% Facilities providing L&D Services % (N)	Final analysis sample sizes			
				Health Facilities / Inventory	Provider Interview	L&D Observation	Client Exit Interview
Malawi 2014	Total	1060	55.3 (540)	540	1901	476	0
	Public	509	74.5 (356)	356	1257	352	0
	Private-FP	322	13.1 (36)	36	96	5	0
	Private-NFP	67	7.8 (5)	5	17	0	0
	CHAM	162	89.4 (143)	143	531	119	0
Nepal 2021	Total	1626	50.0 (788)	788	4989	475	546
	Public	1286	49.4 (631)	631	3597	387	415
	Private-FP	254	57.5 (135)	135	1205	68	103
	Private-NFP	86	34.4 (22)	22	187	20	28

Overall domain scores, which represent the scores across all management authorities in Malawi, range from 37 for Domain 2 (health information system [HIS]-enabled data use) to 58 for Domain 3 (functional

referral). In Nepal, scores range from 22 for Domain 6 (emotional support) to 71 for Domain 3 (functional referral). A detailed table with the results of parametric (and non-parametric) tests by country can be found in [Appendix F](#).

Malawi 2014

Figure 13 shows the variation in L&D service quality composite scores across the eight domains by management authority in Malawi. Overall, with the exception of a few outliers, scores in Malawi across all domains remain largely consistent between 5 and 8. Additionally, with the exception of functional referral (Domain 3) and emotional support (Domain 6), facilities managed by CHAM tended to score higher than other facilities. No other management authorities were noted to score consistently high or low, but most varied their position by domain. For evidence-based practice (Domain 1), communication (Domain 4), and emotional support (Domain 6), all management authorities scored relatively consistently. Alternatively, there was significant variability between the management authorities for HIS-enabled data use (Domain 2), functional referral (Domain 3), competent and motivated human resources (Domain 7), and availability of essential physical resources (Domain 8).

Figure 13. L&D service quality composite scores by management authority and domain, Malawi 2014



- 1: Evidence based practices for routine care and management of complications
- 2: The health information system enables use of data to ensure early, appropriate action to improve the care of every woman and newborn.
- 3: Every woman and newborn with condition(s) that cannot be dealt with effectively with the available resources is appropriately referred.
- 4: Communication with women and their families is effective and responds to their needs and preferences.
- 5: Women and newborns receive care with respect and preservation of their dignity
- 6: Every woman and her family are provided with emotional support that is sensitive to their needs and strengthens the woman's capability.
- 7: For every woman and newborn, competent, motivated staff are consistently available to provide routine care and manage complications.
- 8: The health facility has an appropriate physical environment, with adequate water, sanitation and energy supplies, medicines, supplies and equipment for routine maternal and newborn care and management of complications.

*<0.05 significant difference between managing authorities
 **<0.01 significant difference between managing authorities

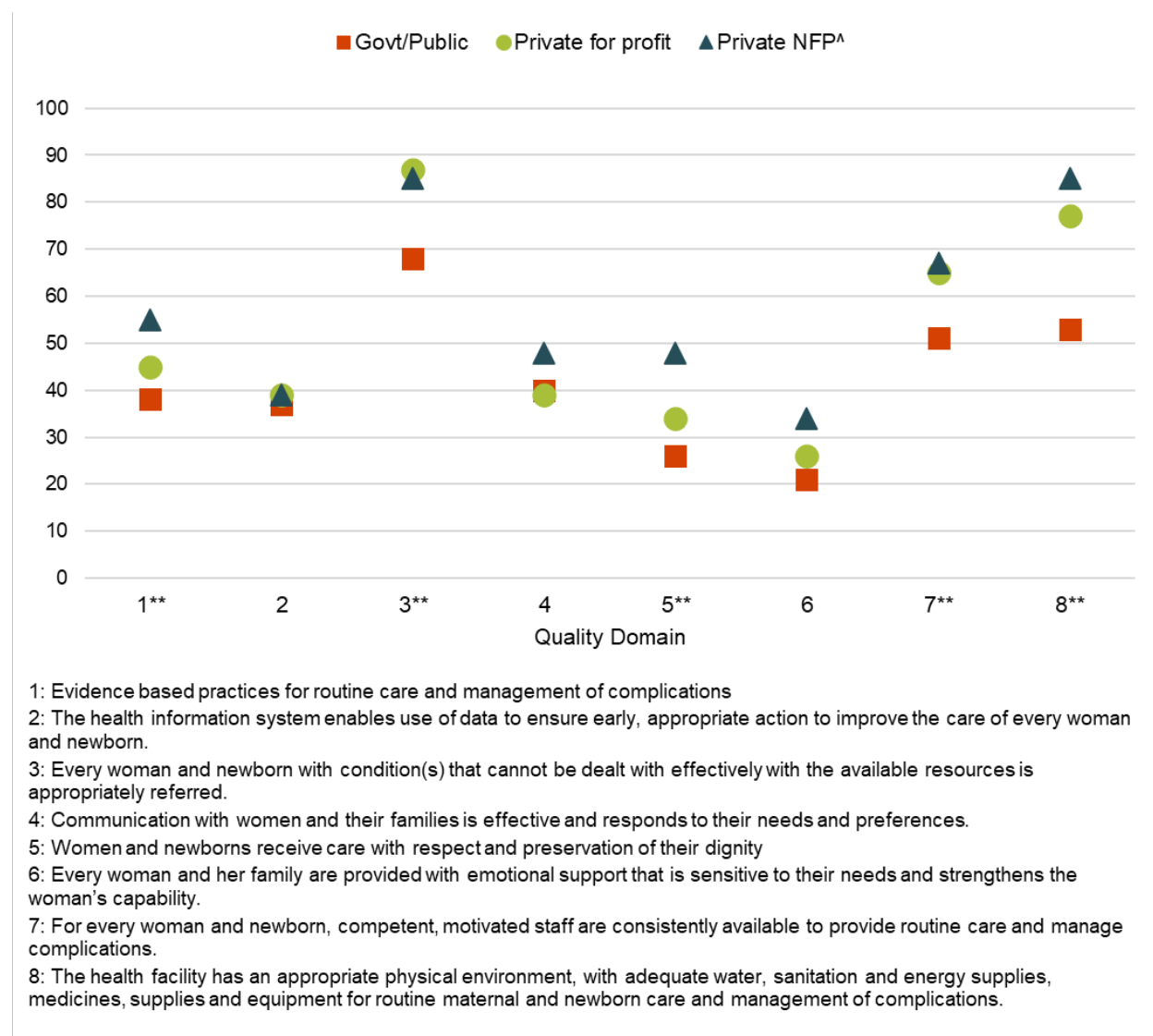
Nepal 2021

Figure 14 shows the variability in L&D quality domain scores for Nepal. In stark contrast with Malawi, in Nepal, there are only a few domains for which there is not significant variation across the management authorities. The only domain where scores across the management authorities clustered closely was for HIS-enabled data use (Domain 2). Scores were slightly varied, although not significantly, for communication (Domain 4) and emotional support (Domain 6), and then scores were significantly different between management authorities for evidence-based practices (Domain 1), functional referral (Domain 3), respect and preservation of dignity (Domain 5), competent and motivated human resources (Domain 7), and availability of essential physical resources (Domain 8).

Additionally, in contrast with Malawi, in Nepal, the management authorities show a more consistent scoring pattern across the domains. Across all domains, private NFP facilities scored consistently high

compared with the other management authorities. Private for-profit facilities generally scored in the middle, and public facilities received the lowest scores across most domains.

Figure 14. L&D service quality composite scores by management authority and domain, Nepal 2021



*<0.05 significant difference between managing authorities

**<0.01 significant difference between managing authorities

[^] n<30 for domains 2, 3, 4, 5 & 6

Discussion

Overall, the results of the analysis indicate that the countries included in the study are not meeting global standards for the quality of ANC and L&D services. Additionally, there is a great deal of variation within and across countries regarding which health facility management authority is providing the highest quality services. That being said, across both ANC and L&D quality domains, with only a few exceptions, private NFP facilities generally scored as well or higher than the other management authorities.

ANC

Cross-Sectional

Overall, private NFP facilities scored the highest relative to national means across all countries in the analysis. Public and private for-profit facilities were more variable in their position among management authorities across countries, domains, and service types, but private for-profit received the lowest scores for the greatest number of domains across countries. The one exception to this finding is for satisfaction with services, in which private for-profit facilities consistently scored higher than other management authorities across countries. More research is needed to better understand how patient expectations may vary between public and private facilities and how paying for services may affect satisfaction.

All countries reported significant differences between management authorities for Domain 5, which is transparency, respect, and preservation of dignity. This quality domain, which was adapted from the WHO QoC Framework's "respect and preservation of dignity," also includes transparency, which is composed of elements that capture client wait time, policies, and protocols to capture client feedback; access to private spaces; as well as transparency around fees. In most countries, the private NFP facilities generally scored highest for this domain, followed by the public sector and then the private sector facilities. Additionally, in all but one country, Haiti, we found significant differences across management authorities for Domain 7, competent and motivated human resources, and Domain 8, essential physical resources available, but without consistent management authorities leading each category across countries, indicating that readiness and quality of services provided are consistently inequitable for these two domains. As a result, across most countries in the analysis, a woman utilizing ANC in one type of facility cannot be assured that she would receive the same QoC as if she had sought care at another type of facility. However, we should also note that the reliability for Domain 5 was one of the lowest across all of the domains, suggesting that perhaps more research about how to measure complex concepts like transparency, respect, and preservation of dignity would be useful.

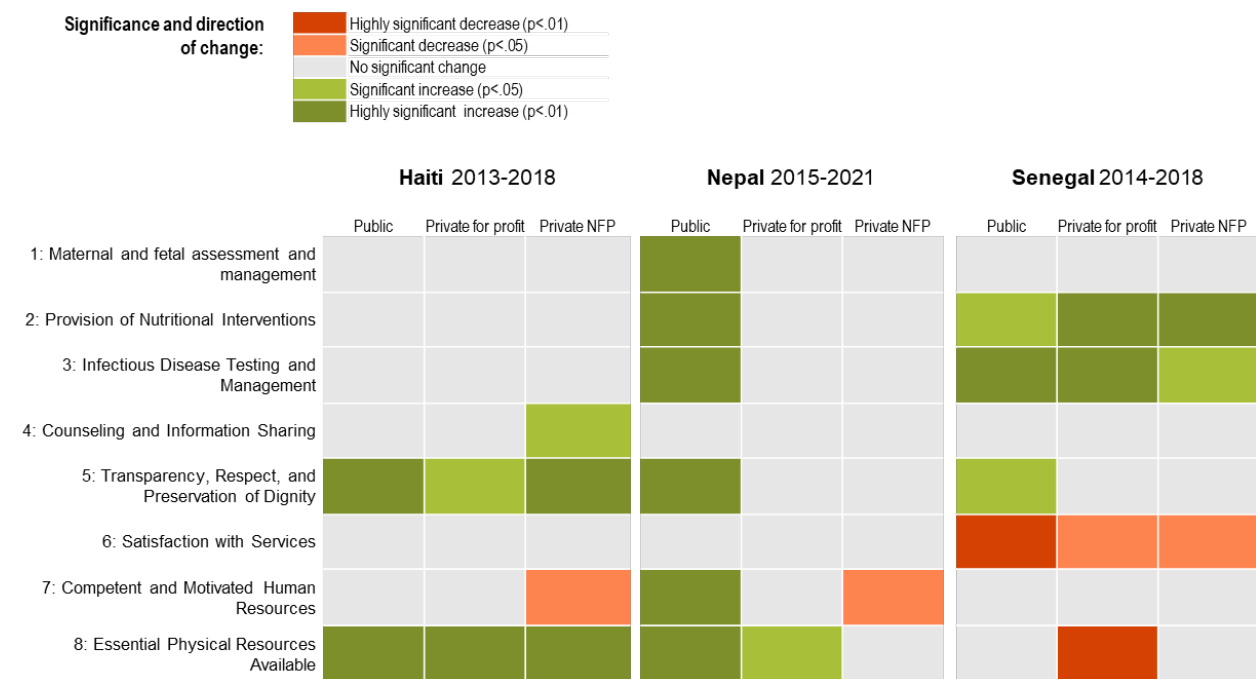
Alternatively, it is notable that management authorities differed significantly on Domain 1, maternal and fetal assessment, in only one country, the DRC. The maternal and fetal assessment domain, based solely on observation of services, captures many of the core clinical services provided during ANC visits, including maternal and fetal measurements and assessments (e.g., blood pressure, weight, fundal height, fetal heartbeat, etc.), diabetes and anemia screening, physical examinations, and review of medical and pregnancy history, among others. This finding suggests that for many of the core clinical services within

each country, the quality of maternal and fetal management is more equal across management authorities than for other domains.

Trends

When looking across countries at changes in adherence to ANC standards over time, infectious disease testing; transparency, respect, and preservation of dignity; and essential physical resources are three areas where we see progress over time (Figure 15). One particularly interesting finding is that, in the case of Nepal, where the latest SPA was conducted in 2021, the availability of essential physical resources still showed improvements despite the survey taking place in the wake of the COVID-19 pandemic, which disrupted supply chains globally.

Figure 15. Significance of changes in ANC QoC over time, by country and management authority



At the same time, when looking across countries, there are areas that have plateaued or seen a decline in adherence to quality standards over time. Satisfaction with services did not change significantly in Haiti and Nepal across the survey years and declined in Senegal between the survey time points. Domain 5, patient satisfaction with ANC services, is composed mostly of questions asked about satisfaction with services that make up the ANC client exit interviews, and these questions may ask patients to compare their experiences with their expectations. As such, from the findings, it is impossible to know whether patient experiences with ANC care have truly remained stagnant or declined over time or if expectations of services have increased without an associated increase in perceptions of quality of experience. Since the release of the SPA v6, a good deal of research has been conducted examining how to better measure the

experience of care for maternal health services in LMICs (Afulani et al., 2017; Tripathi et al., 2015). The updated SPA v7, as well as other recently published health facility assessments, like the USAID MOMENTUM Modular Health Facility Assessment (MOMENTUM Modular Health Facility Assessment, 2023), incorporate a number of these experience of care indicators and scales into the health facility assessment. The data collected and analyzed from these tools with these scales will be useful to better understand trends in experience of care for both L&D and ANC services. Additionally, the WHO has recommended that many of these ANC quality indicators are collected regularly through the national health management information systems, which, if implemented, may be another important source for this data moving forward.

Little significant change was also seen in scores for ANC counseling and information sharing, Domain 4, over time across countries. This quality domain, made up entirely of indicators from the ANC patient observation module, covers counseling on important topics such as danger signs during pregnancy, a healthy prenatal diet, preparations for birth, breastfeeding, postpartum FP, HIV testing, malaria prevention, and postpartum and postnatal care. Additional inquiry into this finding would be useful to better understand why progress has plateaued.

Additionally, across most countries, with the exception of Senegal, the availability of competent and motivated human resources appears to be a challenge and, when looking at the longitudinal data, an area where there has not been much change or improvement over time. Interestingly, the same low-scoring trend for human resources isn't seen in the L&D analysis. Many of the indicators making up the human resource standard in both the ANC and L&D analyses focused on supervision, feedback, training, and technical support. One possible explanation for this difference between ANC and L&D analyses is that ANC services in many countries are often provided at the community level, where the nurse or midwife providing ANC services is the most senior person onsite. This could mean that supervision, training, and support are provided less frequently as they require travel to central facilities or for supervisors to travel to more remote health posts. Nurses and midwives who offer L&D services may be more likely to work in higher-level facilities where supervision, support, and training opportunities are more readily available. More in-depth research is needed to better contextualize these findings.

L&D

Given the sample size of two countries, the findings for L&D are fewer and more country-specific. When comparing the variability in quality among management authorities across the two countries, the data from Malawi indicate that there is less variability across management authorities and domains compared with Nepal, potentially suggesting greater equity in QoC for L&D patients regardless of the ownership and management of the facility where their delivery takes place. Additionally, similarly to findings from the ANC analysis, private NFP facilities scored comparatively higher than other management authorities across many of the quality domains in both Nepal and Malawi. In the case of Malawi, CHAM also scored relatively well on most domains when compared with other management authorities, indicating the possibility of promising practices for L&D in the context of Malawi. We were unable to identify any domain-specific trends across the two countries.

Strengths

There are a number of strengths to be noted associated with this analysis. First, it is the first cross-country examination of the QoC for L&D and ANC services that uses data from the SPA and looks at trends over time for a subset of countries. Additionally, as noted above, the analysis is rooted in the WHO QoC framework and reports on eight domains of quality. This use of the WHO framework has its challenges (see limitations below), but we also believe that it gives decision makers greater insight into specific areas of quality where countries may be excelling or where there may be challenges, allowing for more targeted policies and programs. Another strength of the analysis is the categorization of facility management authorities and the separation of private for-profit and NFP facilities. We believe this separation allows for greater insight into how management authorities with different missions are providing care and can be useful for program and policy making. Finally, while not an objective of this study, the comprehensive mapping of SPA questions to the WHO standards and identification of gaps, particularly for L&D, could help guide future revisions of the SPA to align more closely with the WHO QoC standards. Finally, the SPA data used in the analysis are the result of a number of different data collection approaches, which strengthen the quality of the findings. For example, the SPA is the only global health facility assessment survey that uses observations of care as part of its core survey module. Observation is the “gold standard” approach when assessing QoC, so the data included in the analysis should better reflect the true quality.

Limitations

We have identified a number of limitations with the analysis above that we have outlined below:

- In order to gauge the internal reliability of the quality domains for ANC and L&D, the team calculated Cronbach alphas for all of the scales. The alphas calculated for the quality domains were very low throughout, indicating low reliability with many of the measures. Despite the low alphas, the groupings were largely based on established, and in some cases, published, predictors of QoC. Moving forward, additional exploratory analyses examining the composition of the scales would be an important contribution to the literature.
- In using the national means as benchmarks for the development of the QoC composite scores, we are unable to compare final composite scores across countries, which would be useful to better understand what QoC looks like from a more macro perspective. This can still be accomplished by a review of national means included in Appendices D and F. However, by including the national means as comparisons, we hope to provide country-level programs and policy makers with a better notion of how facilities from different management authorities are performing compared to a national score, which we hope will better inform decision making.
- As noted in the methods, we assumed independence of samples for the longitudinal analysis based on a recent publication due to our inability to match facilities over time across the different surveys (Pant & Riese, 2024). We can assume our client-level outcomes, observations, and provider interviews are likely independent over time, but the facility-level outcomes may not be. This reflects a limitation of the analysis as opposed to a limitation of the SPA sampling approach.
- The analysis is limited by measures currently included in the v6 SPA. While we used existing, published mapping of the SPA questions to the QoC Framework for L&D and followed a similar

approach for ANC, we are limited by the questions that are currently included in the SPA questionnaire. As such, there are gaps in each of the QoC domains where data was not available from the SPA. The table in Appendix A documents the gaps for L&D, many of which have been included in the latest version of the SPA (v7). However, measurement of relatively rare events during L&D, including outcomes like possible serious bacterial infections in neonates, remains difficult to measure and is an issue the global MNH measurement community continues to discuss.

- Most of the analyses represent findings from only a few LMICs. As such, overall cross-country findings are not generalizable to all LMICs.
- Additionally, for ANC services that prevent and manage illnesses like malaria, adherence to standards varies by endemicity within a country. For example, malaria is endemic only in the southernmost regions of Nepal. However, questions about the availability of malaria rapid diagnostic tests and bed net counseling during ANC were asked in all facilities and regions in Nepal, where they are rarely required, resulting in a relatively low proportion of facilities adhering to WHO standards. In cases where SPA surveys were customized to exclude these questions completely, they did not figure into the final score for the country, but in cases where questions were asked but not necessarily applicable, the low scores may have influenced the domain-specific scores, particularly for Domains 1 (maternal and fetal assessment), 3 (infectious disease testing and management), 4 (counseling and information sharing), and 8 (availability of essential physical resources). That said, for all of these domains, questions about malaria specifically made up a very small proportion of the overall number of indicators that were included.
- The process for categorization of management authorities required that all facilities fit into three or four categories: largely public, private for-profit, and private NFP. By breaking up the private categories into for-profit and NFP, we aimed to distinguish between facility types with different missions, but this separation often resulted in small sample sizes for private NFP facilities. We followed groupings that had been used before and consulted with local experts to confirm the groupings where questions arose.
- Given that a number of the SPAs were conducted as many as 11 years ago, the findings of this analysis may not accurately represent the current context in some countries. The analyses in only a few countries that completed the SPA more recently would reflect some of the effects of major recent events like the COVID-19 pandemic, which may have impacted a number of domains like availability of physical resources and motivated human resources.

Conclusion

Adherence to QoC standards for antenatal and delivery care remains a challenge both within and across countries, as evidenced by the findings of this analysis. In most settings, private for-profit and public facilities lag behind private NFP facilities in providing high-quality antenatal and L&D services, suggesting that private sector engagement and improvement activities could leverage experiences from the private NFP sector in many cases and that efforts could be focused more directly on the private for-profit sector.

Moreover, additional inquiries into domains in which significant differences exist across countries, like transparency, respect, and preservation of dignity, will be useful to promote a better understanding of how these concepts are measured and how and why they may differ across management authorities. Despite overall low adherence to quality standards for ANC and delivery care, the gains identified in three countries over time should be celebrated and are evidence that improvements in quality on a large scale are possible. Moving forward, more research contextualizing these challenges and successes in light of national programs and policies will be important to inform program and policy making in other settings.

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Appendix A. L&D Framework and Indicator Mapping

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Standard 1: Every woman and newborn receives routine, evidence-based care and management of complications during labour, childbirth and the early postnatal period, according to WHO guidelines.				
Standard 1.1a: Women are assessed routinely on admission and during labour and childbirth and are given timely, appropriate care.				
Input	The health facility has the basic essential equipment and supplies for routine care and detection of complications (thermometers, sphygmomanometers, fetal stethoscopes, urine dipsticks) available in sufficient quantities at all times in the areas of the maternity unit for labour and childbirth.	1. Use of dip sticks for urine protein, for urine glucose, for urine pregnancy test -OR- 2. Availability of thermometer, fetal stethoscope, digital BP apparatus, manual BP apparatus, stethoscope	Inventory	Please tell me if any of the following dipstick is done (used) in this location. If done or used, I will like to see one. IF USED, ASK TO SEE IT AND NOTE IF VALID/UNEXPIRED - Dip sticks for urine protein - Dip sticks for urine glucose - Dip sticks for urine pregnancy test -OR- I would like to know if the following items are available in this delivery area and are functioning. - Thermometer - Fetal stethoscope - Digital BP apparatus - Manual BP apparatus - Stethoscope
Input	The health facility has written, up-to-date clinical protocols for assessing intrapartum care and action in the labour and childbirth areas of the maternity unit that are consistent with WHO guidelines.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? (Malawi) Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal)
Input	Health-care staff in the labour and childbirth areas of the maternity unit receive in-service training and regular refresher sessions at least once every 12 months in the identification and management of obstetric emergencies during labour and childbirth.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) or Emergency obstetric care (EmOC)/Lifesaving skills (LSS) - in general in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC) - Emergency obstetric care (EmOC)/Life saving skills (LSS) - in general

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	Health-care staff in labour and childbirth areas receive at least monthly drills or simulation exercises and supportive supervision in routine care and detection of obstetric complications during labour and childbirth.	Do you receive technical support or supervision in your work?	Health Worker Interview	Now I would like to ask you some questions about supervision you have personally received. This supervision may have been from a supervisor either in this facility, or from outside the facility. Do you receive technical support or supervision in your work? IF YES, ASK: When was the most recent time?
Output/Process	The proportion of all women who gave birth in the health facility whose blood pressure, pulse and temperature were appropriately recorded during labour, childbirth and the early postpartum period (and acted on if appropriate).	Takes blood pressure in sitting or lateral position or with arm at heart level.	L&D Observation	Takes blood pressure: - Take client's blood pressure in sitting or lateral position
Output/Process	The proportion of all women who gave birth in the health facility who received oxytocin within 1 min of the birth of their baby.	Timing of uterotonic at delivery of anterior shoulder or within 1 minute of delivery of baby.	L&D Observation	Timing of administration of uterotonic - At delivery of anterior shoulder - Within 1 min of delivery of baby
Output/Process	The proportion of all women who gave birth in the health facility whose progress in labour was correctly monitored and documented with a partograph and a 4-h action line.	1. Partograph used to monitor labour OR- 2. Partograph used to monitor labour -OR- 3. Partograph used was old WHO partograph (latent phase) or new WHO partograph (at 4cm dilation) -OR- 4. Initiated use of partograph at the appropriate time according to partograph used	L&D Observation	Partograph used to monitor labor - OR - Which partograph used (Malawi only) - Old WHO partograph (latent phase) - New WHO partograph (at 4cm dilatation) - OR - Initiated use of partograph at the appropriate time
Output/Process	The proportion of all women who gave birth in the health facility whose urinalysis result was appropriately recorded during labour, childbirth and the early postpartum period (and acted on if appropriate).	Tests urine for presence of protein	L&D Observation	Tests urine for presence of protein
Output/Process	The proportion of all women who gave birth in the health facility who received any option for pain relief during labour and childbirth.**	N/A		
Standard 1.1b: Newborns receive routine care immediately after birth.				
Input	The health facility has written, up-to-date, clinical protocols for essential newborn care that are consistent with WHO guidelines and are available in the labour and childbirth areas of the maternity unit.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- 2. Do you have the national guidelines for comprehensive emergency obstetric care (CEmOC)?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- Do you have the national guidelines for CEmOC? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal)

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				- OR - Do you have the EOC job aid? (Nepal 2021)
Input	The health facility has supplies of sterile cord ties (or clamps) and scissors (or blades), available in sufficient quantities at all times for the expected number of births.	1. Availability of cord clamps -AND- 2. Availability of scissors or blade to cut cord	Inventory	Do you have any of the following items? If yes, I would like to see them - Cord clamp - Scissor or blade to cut cord
Input	The health facility has supplies of clean towels in the labour and childbirth areas for immediate drying of newborns, available in sufficient quantities at all times for the expected number of births.	Facility observes the practice of drying and wrapping newborns to keep them warm	Inventory	Does this facility routinely observe any of the following postpartum or newborns related practices? - Drying and wrapping newborns to keep them warm
Input	Health-care staff in the labour and childbirth areas of the maternity unit receive in-service training or regular refresher sessions in essential newborn care and breastfeeding support at least once every 12 months.	1. Have you received any in-service training or training updates on topics related to newborn care? -AND- 2. Have you received any in-service training or training updates in early and exclusive breastfeeding?	Health Worker Interview	Have you received any in-service training or training updates on topics related to newborn care? - AND - Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Early and exclusive breastfeeding
Input	The health facility has local arrangements and a mechanism to maintain a documented room temperature in the labour and childbirth areas at or above 25 °C and free of draughts.**	N/A		
Input	Health-care staff in the labour and childbirth areas receive at least monthly drills or simulation exercises and supportive supervision in essential newborn care and supporting breastfeeding.**	N/A		
Output/Process	The proportion of all newborns who were breastfed within 1 h of birth.	Initiation of breastfeeding within the first hour	L&D Observation	Breastfeeding initiated within the first hour after birth
Output/Process	The proportion of all newborns who were kept in skin-to-skin contact (with body and head covered) with their mothers for at least 1 h after birth.	Delivery to the abdomen (Skin to Skin)	L&D Observation	Places baby on mother's abdomen "skin-to-skin"
Output/Process	The proportion of all newborns who received all four elements of essential newborn care: immediate and thorough drying, immediate skin-to-skin contact, delayed cord clamping and initiation of breastfeeding in the first hour.	1. Covers baby with dry towel -AND- 2. Places baby on mother's abdomen "skin-to-skin" -AND- 3. Ties or clamps cord when pulsations stop, or by 2-3 minutes after birth (not immediately after birth)	L&D Observation	Covers baby with dry towel - AND - Places baby on mother's abdomen "skin-to-skin" - AND - Ties or clamps cord when pulsations stop, or by 2-3 minutes after birth (not immediately after birth) - AND - Breastfeeding initiated within the first hour after birth

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
		-AND- 4. Breastfeeding initiated within the first hour after birth		
Output/Process	The proportion of all newborns whose umbilical cord was clamped 1–3 min after birth.	Ties or clamps cord when pulsations stop, or by 2-3 minutes after birth (not immediately after birth)	L&D Observation	Ties or clamps cord when pulsations stop, or by 2-3 minutes after birth (not immediately after birth)
Output/Process	The proportion of all newborns who were dried immediately and thoroughly at birth.	1. Covers baby with dry towel -OR- 2. If not placed skin to skin, wraps baby in dry towel	L&D Observation	Covers baby with dry towel - OR - If not placed skin to skin, wraps baby in dry towel (Malawi only)
Standard 1.1c: Mothers and newborns receive routine postnatal care.				
Input	1. The health facility has written, up-to-date clinical protocols for postnatal care in the maternity and/ or postnatal care areas of the maternity unit that are consistent with WHO guidelines.	1. Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- 2. Do you have the national guidelines for comprehensive emergency obstetric care (CEmOC)?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- Do you have the national guidelines for CEmOC? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	2. The health facility practices and enables rooming-in to allow mothers and babies to remain together 24 h a day.	Mother and newborn kept in same room after delivery (rooming-in)	L&D Observation	Mother and newborn kept together in same room after delivery (rooming-in)
Input	3. The health facility has a written breastfeeding policy that is routinely communicated to all health care and support staff.**	N/A		
Input	4. Health-care staff in the maternity unit receive in-service training and regular refresher sessions in routine postnatal care and breastfeeding at least every 12 months.	Have you received any in-service training or training updates in early and exclusive breastfeeding?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Early and exclusive breastfeeding
Input	5. The health facility has local arrangements to ensure that every mother knows when and where postnatal care for herself and her newborn will be provided after discharge from the hospital.	Discussed post-natal care and importance of post-natal care	ANC observation - not included for L&D	

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	6. The health facility has local arrangements for alternative feeding methods, including cup or cup-and spoon feeding, and avoids bottle-feeding.**	N/A		
Input	7. The health facility has local arrangement to inform pregnant women and their families about the benefits and management of breastfeeding.	1. Discussed early initiation and prolonged breastfeeding -OR- 2. Discussed exclusive breastfeeding	ANC observation - not included for L&D	
Input	8. The health facility ensures that feeding of infant formula is demonstrated to mothers and family members of newborns only when needed, with a full explanation of the hazards of improper use.**	N/A		
Output/Process	1. The proportion of all newborns on postnatal care wards or areas in the health facility who received vitamin K and full vaccination as per national guidelines.	1. Administers Vitamin K to newborn -AND- 2. Give the newborn OPV prior to discharge -AND- 3. Give the newborn BCG prior to discharge	Inventory	Administer Vitamin K to newborn - AND - Give the newborn OPV prior to discharge (Malawi only) - AND - Give the newborn BCG prior to discharge
Output/Process	2. The proportion of all stable newborns in the health facility who are fed exclusively on breast milk from birth to discharge.	1. Breastfeeding initiated within the first 30 minutes after birth -OR- 2. Breastfeeding initiated within the first hour after birth	L&D Observation	Breastfeeding initiated within the first 30 minutes after birth - OR - Breastfeeding initiated within the first hour after birth
Output/Process	3. The proportion of all women in postnatal care wards or areas in the health facility who have documented problems of blood pressure, pulse rate, vaginal bleeding, lochia or breastfeeding.	1. Was woman diagnosed with severe PE/E? -OR- 2. Did the mother have blood loss of more than 500ml?	L&D Observation	Was woman diagnosed with severe PE/E? - OR - Did the mother have blood loss of more than 500ml?
Output/Process	4. The proportion of all newborns in the health facility who received a full clinical examination before discharge.	Routine, complete (head-to-toe) examination of newborn before discharge	Inventory	Does this facility routinely observe any of the following practices postpartum or related to newborns? - Routine, complete (head-to-toe) examination of newborn before discharge
Output/Process	5. The proportion of all healthy mothers and newborns who received care for at least 24 h after an uncomplicated vaginal birth in a health facility.**	N/A		
Output/Process	6. The proportion of all newborns on postnatal care wards or areas in the health facility for whom there is documented information on the newborn body temperature, respiratory rate, feeding behaviour and the absence or presence of danger signs.	1. Checks baby's temperature 15 minutes after birth -AND- 2. Breastfeeding initiated within the first hour after birth OR Breastfeeding initiated within the first 30 minutes after birth	L&D Observation	Checks baby's temperature 15 minutes after birth - AND - Breastfeeding initiated within the first 30 minutes after birth - OR - Breastfeeding initiated within the first hour after birth
Output/Process	7. The proportion of all healthy mothers on postnatal wards or areas in the health facility who	At the time of discharge did the health staff ask if the newborn is breastfeeding well?	Exit interview (Nepal only)	At the time of discharge did the health staff check/advise the following on both mother and baby? - Ask if newborn is breastfeeding well

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	received breastfeeding counselling and support from a skilled health care provider.			
Output/Process	8. The proportion of all women who gave birth in the health facility who were allowed to room-in with their newborn.**	N/A		
Output/Process	9. The proportion of all postpartum women in the health facility who were offered counselling on birth spacing and family planning methods before discharge.**	N/A		
Standard 1.2: Women with pre-eclampsia or eclampsia promptly receive appropriate interventions, according to WHO guidelines.				
Input	1. The health facility has supplies of oral and intravenous antihypertensive agents and magnesium sulfate available in sufficient quantities at all times in the antenatal, labour and childbirth areas of the maternity unit.	Availability of magnesium sulfate or injectable diazepam	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - Magnesium sulfate - Injectable diazepam
Input	2. The health facility has written, up-to-date clinical protocols on the management of pre-eclampsia that are available in the labour, childbirth and postnatal areas of the maternity unit and are consistent with WHO guidelines.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? (Malawi) Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal)
Input	3. Health-care staff in the maternity unit receive in-service training and regular refresher sessions in the use of antihypertensive agents, intravenous infusion and magnesium sulfate for treating preeclampsia and eclampsia at least once every 12 months	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) or Emergency obstetric care (EmOC)/Lifesaving skills (LSS) - in general in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC) - Emergency obstetric care (EmOC)/Life saving skills (LSS) - in general
Output/Process	1. The proportion of all women with severe pre-eclampsia or eclampsia in the health facility who received the full dose of magnesium sulfate.**	N/A		
Output/Process	2. The proportion of all women with severe pregnancy-induced hypertension in the health facility who received the recommended antihypertensives.**	N/A		

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Output/Process	3. The proportion of all women with pre-eclampsia in the health facility whose condition progressed to eclampsia.**	N/A		
Standard 1.3: Women with postpartum haemorrhage promptly receive appropriate interventions, according to WHO guidelines.				
Input	The health facility has written, up-to-date clinical protocols for post-partum haemorrhage management that are available in the childbirth and postnatal care areas and are consistent with WHO guidelines.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) or national guidelines for Basic emergency obstetric care (BEmOC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? - OR - Do you have the national guidelines for BEmOC available in this service site? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	The health facility has uterotonic drugs and supplies for intravenous fluid and blood administration (syringes, needles, intravenous cannulas, intravenous fluid solutions, blood) available in sufficient quantities at all times in the childbirth and postnatal care areas.	Availability of injectable uterotonic (e.g. oxytocin).	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - INJECTABLE UTEROTONIC (E.G., OXYTOCIN)
Input	A functional blood transfusion service is available in the health facility at all times.	Does this facility offer blood transfusion services?	Inventory	Does this facility offer any of the following client services? In other words, is there any location in this facility where clients can receive any of the following services: - Blood transfusion services
Input	Health-care staff in the labour, childbirth and postnatal care areas of the maternity unit receive in-service training and regular refresher sessions in management of post-partum haemorrhage at least once every 12 months.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) or Emergency obstetric care (EmOC)/Lifesaving skills (LSS) - in general in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC) - Emergency obstetric care (EmOC)/Life saving skills (LSS) - in general
Output/Process	The proportion of all women with post-partum haemorrhage in the health facility who received therapeutic uterotonic drugs.	Prepares uterotonic drug to use for AMTSL	L&D Observation	Prepares uterotonic drug to use for AMTSL
Output/Process	The proportion of all women in the health facility with post-partum haemorrhage due to a retained	Manual removal of placenta	Inventory	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	placenta for whom manual removal of the placenta was performed by a skilled birth attendant.			so, whether the intervention has been carried out at least once during the past 3 months. - Manual removal of placenta
Standard 1.4: Women with delay in labour or whose labour is obstructed receive appropriate interventions, according to WHO guidelines.				
Input	The health facility has written, up-to-date clinical protocols for preventing and managing prolonged labour, which are available in the labour and childbirth areas and are consistent with WHO guidelines.	Do you have the national guidelines for comprehensive emergency obstetric care (CEmOC)?	Inventory	Do you have the national guidelines for CEmOC? (Malawi) Do you have the EOC job aid? (Nepal 2021)
Input	The health facility has the essential supplies and equipment for vacuum or forceps-assisted delivery, including newborn resuscitation equipment, available in sufficient quantities at all times in the childbirth area of the maternity unit.	Availability of large or medium forceps	Inventory	Do you have any of the following items? If yes, I would like to see them - Forceps (large) - Forceps (medium)
Input	The health facility has an adequately equipped operating theatre close to the childbirth area of the maternity unit.**	N/A		
Input	The health facility has an adequate number of staff skilled in performing caesarean section, 24 h a day.	Does the facility have a health worker who can perform Caesarean section present at the facility or on call 24 hours a day (including weekends and on public holidays)?	Inventory	Does the facility have a health worker who can perform Caesarean section present at the facility or on call 24 hours a day (including weekends and on public holidays)?
Input	Health-care staff in the labour and childbirth areas of the maternity unit receive in-service training and regular refresher sessions (every 6 months) in managing prolonged and obstructed labour..	Have you received any in-service training or training updates in Active Management of Third Stage of Labour (AMTSL) in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Active Management of Third State of Labor (AMTSL)
Output/Process	The proportion of all nulliparous women in the health facility with a singleton cephalic foetus at \geq 37 weeks' gestation who underwent caesarean section during spontaneous labour (Robson group 1).**	N/A		
Output/Process	The proportion of all women in the health facility with prolonged and/or obstructed labour who gave birth by caesarean section.**	N/A		
Output/Process	The proportion of all women who gave birth in the health facility who underwent instrumental vaginal birth for delayed second stage of labour..	Type of delivery recorded was assisted (instrumental).	L&D Observation	Record type of delivery: - Assisted (instrumented)
Output/Process	The proportion of women with prolonged or obstructed labour who underwent emergency	Prepare for C-section (if action line on partograph was reached)	L&D Observation	What definitive action was taken? (Circle all that apply): - Prepare for C-section

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	caesarean section within 30 min of the decision to perform caesarean section.			
Output/Process	The proportion of all women in the health facility with confirmed delay in progress of the first stage of labour who received oxytocin for augmentation.	Augments labour with oxytocin.	L&D Observation	Augments labour with oxytocin
Output/Process	The proportion of all women who gave birth in the health facility whose active phase of first stage of labour exceeded 12 h.**	N/A		
Output/Process	The proportion of all women who gave birth in the health facility who had a prolonged second stage of labour.**	N/A		
Standard 1.5: Newborns who are not breathing spontaneously receive appropriate stimulation and resuscitation with a bag-and-mask within 1 min of birth, according to WHO guidelines				
Input	The health facility has a suction device, at least two sizes of neonatal mask and a self-inflating bag in the childbirth and neonatal areas of the maternity unit.	1. Availability of suction apparatus with catheter -AND- 2. Suction bulb -AND- 3. Newborn bag and mask	Inventory	I would like to know if the following items are available in this delivery area and are functioning. - Suction apparatus with catheter - Suction bulb or penguin sucker - Newborn bag and mask (AMBU bag and mask)
Input	The health facility has written, up-to-date clinical protocols for managing newborns who are not breathing spontaneously in the childbirth areas of the maternity unit that are consistent with WHO guidelines.	1. Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- 2. Do you have the national guidelines for comprehensive emergency obstetric care (CEmOC)?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- Do you have the national guidelines for CEmOC? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	All health-care workers providing care for pregnant and postpartum women and newborns in the health facility are skilled in basic newborn resuscitation, as demonstrated by simulating positive pressure ventilation with a bag-and-mask on a manikin.	Have you received any in-service training or training updates in neonatal resuscitation using bag and mask?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Neonatal resuscitation using bag and mask
Input	Health care staff in the childbirth and neonatal areas of the maternity unit receive in-service training and regular refresher sessions in basic newborn resuscitation at least once every 12 month.	Have you received in-service training or training updates in neonatal resuscitation using bag and mask?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				months or more than 24 months ago? - Neonatal resuscitation using bag and mask
Input	Health care staff in the childbirth and neonatal areas of the maternity unit receive monthly drills or simulation exercises and supportive supervision in basic newborn resuscitation.**	N/A		
Output/Process	The proportion of all newborns who were not breathing spontaneously after additional stimulation at the health facility who were resuscitated with a bag-and-mask.	Was there a newborn resuscitation?	L&D Observation	Was there a newborn resuscitation?
Output/Process	The proportion of all newborns who were not breathing spontaneously after additional stimulation at the health facility who were resuscitated with a bag-and-mask within 1 min of birth.	Places the correct-sized mask on the newborn's face so that it covers the chin, mouth and nose (but not eyes)		
Standard 1.6a: Women in preterm labour receive appropriate interventions for both themselves and their babies, according to WHO guidelines.				
Input	The health facility has written, up-to-date clinical protocols for management of preterm labour in the childbirth areas of the maternity unit that are consistent with WHO guidelines.	Availability of guidelines or protocols on management of pre-term labour	Inventory	Do you have guidelines or protocols on management of pre-term labor? ACCEPTABLE IF PART OF ANOTHER GUIDELINE.
Input	The health facility has supplies of antenatal corticosteroids (dexamethasone or betamethasone), antibiotics and magnesium sulfate available in sufficient quantities at all times to manage preterm birth in accordance with WHO guidelines.	Availability of magnesium sulfate	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - Magnesium sulfate
Input	Health-care staff in the maternity unit receive in-service training and regular refresher sessions in the management of preterm labour at least once every 12 months.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC)
Input	Health-care staff in the maternity unit receive monthly drills or simulation exercises and supportive supervision in the management of preterm labour.**	N/A		
Output/Process	The proportion of all preterm newborns born between 24 and 34 weeks of gestation in the health facility whose mothers received at least one dose of antenatal corticosteroids when indicated.	Corticosteroids for pre-term labour	Inventory	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if so, whether the intervention has been carried out at least once during the past 3 months. - Corticosteroids for pre-term labor (not signal function)

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Output/Process	The proportion of all preterm newborns born before 32 weeks of gestation in the health facility whose mothers received magnesium sulfate to protect their baby from foetal neurological complications.	Parenteral administration of anticonvulsant for hypertensive disorders of pregnancy (IV or IM)	Inventory	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if so, whether the intervention has been carried out at least once during the past 3 months. - Parenteral administration of anticonvulsant for hypertensive disorders of pregnancy (IV or IM)
Output/Process	The proportion of all women with preterm pre-labour rupture of membranes who gave birth in the health facility who received prophylactic antibiotics.	Antibiotics were administered for management of pre-labour rupture of membranes.	L&D Observation	Why were antibiotics administered (Circle all that apply)? - Management of pre-labor rupture of membranes
Standard 1.6b: Preterm and small babies receive appropriate care, according to WHO guidelines.				
Input	The health facility has written, up-to-date clinical protocols for the care of small and preterm babies in the childbirth areas of the maternity unit that are consistent with WHO guidelines.	1. Do you have guidelines or protocols on management of pre-term labour? -OR- 2. Does this facility practice Kangaroo Mother Care for low birth weight babies?	Inventory	Do you have guidelines or protocols on management of pre-term labor? ACCEPTABLE IF PART OF ANOTHER GUIDELINE. - OR - Does this facility practice Kangaroo Mother Care for low birth weight babies?
Input	The health facility has supplies and materials to provide optimal thermal care to stable and unstable preterm babies, including kangaroo mother care (support binders, baby hats, socks), clean incubators and radiant warmers.	Availability of corticosteroids for pre-term labour, parenteral administration of antibiotics (IV or IM), parenteral administration of anticonvulsant for hypertensive disorders of pregnancy, availability of magnesium sulfate	Inventory	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if so, whether the intervention has been carried out at least once during the past 3 months. - Parenteral administration of antibiotics (IV or IM) - Parenteral administration of anticonvulsant for hypertensive disorders of pregnancy (IV or IM) - Corticosteroids for pre-term labour Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - Magnesium sulfate
Input	The health facility has the supplies and materials to provide optimal feeding to preterm babies and support for breastfeeding or alternative feeding (feeding cups and spoons, infant formula, breast pumps, milk-storage facilities, pasteurizers, milk banks if possible, nasogastric tubes, syringe drivers, intravenous fluids and tubing).**	N/A		
Input	Healthcare staff in the health facility who work with pregnant and postpartum women and newborns receive in-service training and regular refresher	Have you received in-service training or training updates in KMC for low birth weight babies?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	sessions in appropriate care of preterm and low birth- weight babies at least once every 12 months.			months or more than 24 months ago? - Kangaroo Mother Care (KMC) for low birth weight babies
Output/Process	The proportion of all low-birth-weight newborns born in the health facility with a birth weight ≤ 2000 g who received near-continuous kangaroo mother care in the first week of life. **	N/A		
Output/Process	The proportion of all unstable low-birth-weight newborns weighing ≤ 2000 g who cannot receive kangaroo mother care in the health facility who were cared for in a thermo-neutral environment, either under radiant warmers or in incubators, as appropriate.**	N/A		
Output/Process	The proportion of all low-birth-weight newborns born in the health facility whose mothers received additional support to establish breastfeeding. **	N/A		
Standard 1.7a: Women with or at risk for infection during labour, childbirth or the early postnatal period promptly receive appropriate interventions, according to WHO guidelines.				
Input	The health facility has supplies of oral and injectable first- and second-line antibiotics (ampicillin or penicillin and gentamicin, clindamycin, cephalosporin and metronidazole) available in sufficient quantities at all times for the expected case load.	Availability of injectable antibiotic	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - INJECTABLE ANTIBIOTIC (E.G., CEFTRIAXONE)
Input	The health facility has written, up-to-date clinical protocols for treatment of women with, or at risk for, infections during labour, childbirth and the early postnatal period in the childbirth and postnatal care areas of the maternity unit that are consistent with WHO guidelines.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) or national guidelines for Basic emergency obstetric care (BEmOC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? - OR - Do you have the national guidelines for BEmOC available in this service site? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	Health care staff in the health facility who deal with pregnant and postpartum women receive in-service training and regular refresher sessions in the recognition and management of maternal peripartum infections at least once every 12 months.	Ever received any in-service training or training updates on topics related to delivery care, and training in Integrated Management of Pregnancy and Childbirth (IMPAC) in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates on topics related to delivery care? - AND - Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC)
Output/Process	The proportion of all women who underwent caesarean section in the health facility who received prophylactic antibiotics before caesarean section.	1. Antibiotics were administered for preparation for C-section; -OR- 2. Antibiotics were administered in preparation for C-section	L&D Observation	Why were antibiotics administered (Circle all that apply)? - Preparation for C-section
Output/Process	The proportion of all women who gave birth in the health facility with preterm pre-labour rupture of membranes who received antibiotics.	1. Antibiotics were administered for management of pre-labour rupture of membranes -OR- 2. Antibiotics were administered after pre-labour rupture of membranes.	L&D Observation	Why were antibiotics administered (Circle all that apply)? - Management of pre-labor rupture of membranes - OR - Why were antibiotics administered (Circle all that apply)? - After pre-labor rupture of membranes
Output/Process	The proportion of all women in the health facility with third- or fourth-degree perineal tears who received antibiotics.	Antibiotics were administered for third stage/postpartum procedure.	L&D Observation	Why were antibiotics administered (Circle all that apply)? -Third stage/postpartum procedure
Output/Process	The proportion of all birthing or postpartum women in the health facility with signs of infection who received injectable antibiotics**	1. Did the mother develop a fever of 38°C or higher during labour? -AND- 2. Was she diagnosed with chorioamnionitis during labour?	L&D Observation	Note: After consultation with USAID maternal health experts, the team did not include the SPA variables identified by Brizuela for this indicator because the WHO indicator refers to treatment of signs of infection and the SPA questions refer only to the instance of fever and infection and are, therefore, not equivalent.
Output/Process	The proportion of all women who gave birth in the health facility who had a temperature of > 38 °C or other signs of infection (foul-smelling or purulent lochia) after childbirth.	Did the mother develop a fever of 38°C or higher during labour?	L&D Observation	Did the mother develop a fever of 38°C or higher during labour?
Standard 1.7b: Newborns with suspected infection or risk factors for infection are promptly given antibiotic treatment, according to WHO guidelines.				
Input	The health facility has supplies of injectable antibiotics (at least first- and second-line antibiotics for neonatal sepsis and meningitis) available in sufficient quantities at all times for the expected case load.	Availability of injectable antibiotics: ampicillin, benzathine benzylpenicillin, ceftriaxone, gentamycin, penicillin,	Inventory	Are any of the following antibiotics available in this facility/location today? CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - AMPICILLIN (POWDER) INJECTION (Broad spectrum antibiotic) - BENZATHINE PENICILLIN INJECTION (Narrow spectrum injectable antibiotic) - CEFTRIAZONE INJECTION (Injectable antibiotic) - GENTAMYCIN INJECTION (Broad spectrum injectable antibiotic)
Input	The health facility has a written, up-to-date clinical protocol for early diagnosis and management of neonatal infection in the childbirth areas of the maternity unit that is consistent with WHO guidelines.	1. Do you have the national guidelines for comprehensive emergency obstetric care (CEmOC)? -OR- 2. Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? -OR- Do you have the national guidelines for CEmOC? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal)

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				- OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	Health care staff in the health facility who care for pregnant and postpartum women and newborns receive in-service training and regular refresher sessions in the recognition and management of suspected newborn infections at least once every 12 months.	Have you received in-service training or training updates in newborn infection management (including injectable antibiotics)?	Health Worker interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Newborn infection management (including injectable antibiotics)
Input	Health care staff in the health facility know the signs of newborn sepsis and how to treat it, according to WHO guidelines. **	N/A		
Output/Process	The proportion of all newborns in the health facility with signs of infection who received injectable antibiotics. **	N/A		
Output/Process	The proportion of all newborns of mothers with signs of infection in the health facility who received injectable antibiotics. **	N/A		
Standard 1.8: All women and newborns receive care according to standard precautions for preventing hospital-acquired infections.				
Input	The health facility has a reliable water source on site and soap and towels (preferably disposable) or alcohol-based hand rub for hand hygiene.	1. Most commonly used source of water for the facility is piped into facility or piped onto facility grounds -AND- 2. Standard conditions for client exam room: running water (piped, buckets with tap or pour pitcher), hand-washing soap (may be liquid soap), and alcohol-based hand rub	Inventory	What is the most commonly used source of water for the facility at this time? - AND - STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION - Running water (PIPED, BUCKET WITH TAP OR POUR PITCHER) - HAND-WASHING SOAP (MAY BE LIQUID SOAP) - ALCOHOL-BASED HAND RUB
Input	The health facility ensures safe handling, storage and final disposal of infectious waste.	Standard precautions observed: waste receptacle (pedal bin) with lid and plastic bin liner	Inventory	STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION: - WASTE RECEPTACLE (PEDAL BIN) WITH LID AND PLASTIC BIN LINER
Input	The health facility ensures safe handling, storage (puncture resistant) and final disposal of sharps waste.	Standard precautions observed: sharps container ("safety box").	Inventory	STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION: -SHARPS CONTAINER ("SAFETY BOX")
Input	The health facility has appropriate sterilizing facilities and disinfectants for instruments	Is medical equipment processed for re-use (i.e. sterilized or high level disinfected) in this facility?	Inventory	Are instrument that are used in the facility processed (i.e., sterilized or high-level disinfected) for re-use?

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	The health facility has a functioning incinerator or other appropriate method for treatment of infectious waste and used instruments.	Does this facility finally dispose of sharps waste (e.g., filled sharps boxes) in a 2-chamber industrial burn in incinerator or a 1 chamber drum/brick?	Inventory	Now I would like to ask you a few questions about waste management practices for sharps waste, such as needles or blades. How does this facility finally dispose of sharps waste (e.g., filled sharps boxes)?
Input	The health facility has written, up-to-date guidelines for standard infection control and precautions for transmission.	1. Do you have any guidelines on health care waste management available in this service area? -OR- 2. Does this facility have any guidelines on final processing or sterilization of equipment?	Inventory	Do you have any guidelines on health care waste management available in this service area? This may be part of the infection prevention guideline or protocol. - OR - Does this facility have any guidelines on final processing or sterilization of equipment?
Input	Health care staff in the childbirth and neonatal areas of the maternity unit receive training in standard infection control and precautions for transmission at least once every 12 months.	Have you received in-service training or any training updates on standard precautions, including hand hygiene, cleaning and disinfection, waste management, needle stick and sharp injury prevention, or safe injection practices?	Health Worker Interview	Have you received any in-service training, training update or refresher in any of the following topics [READ TOPIC]. The training or training update, or refresher may have been a component of another training. IF YES, ASK: Was the in-service training, training update or refresher within the past 24 months or more than 24 months ago? - Standard precautions, including hand hygiene, cleaning and disinfection, waste management, needle stick and sharp injury prevention - Any specific training related to injection safety practices
Output/Process	The percentage of health care staff in the health facility who clean their hands correctly as per the WHO "5 moments for hand hygiene" audit tool.	1. Washes his/her hands with soap and water or uses hand disinfectant before any initial examination -OR- 2. Washes his/her hands with soap and water or uses antiseptic prior to any examination of woman -OR- 3. Washes his/her hands with soap and water or uses antiseptic.	L&D Observation	Washes his/her hands with soap and water or uses hand disinfectant before any initial examination - OR - Washes his/her hands with soap and water or uses antiseptic prior to any examination of woman - OR - Washes his/her hands with soap and water or uses antiseptic
Output/Process	The proportion of newborns with suspected severe bacterial infection who received appropriate antibiotic therapy. **	N/A		
Output/Process	Safe management of health care waste, from the point of generation to the point of disposal.	1. Discards wet towel -OR- 2. Disposes of all contaminated waste in leak-proof containers	L&D Observation	Discards the wet towel - OR - Disposes of all contaminated waste in leak-proof containers
Output/Process	The percentage of staff members in the health facility who meet biosafety standards when administering parenteral drugs.	1. Disposes of all sharps in a puncture-proof container immediately after use.	L&D Observation	Disposes of all sharps in a puncture-proof container immediately after use

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Standard 1.9: No woman or newborn is subjected to unnecessary or harmful practices during labour, childbirth and the early postnatal period.				
Input	The health facility has written, up-to-date guidance on harmful practices and unnecessary interventions during labour, childbirth and the early postnatal period.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) or national guidelines for Basic emergency obstetric care (BEmOC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? - OR - Do you have the national guidelines for BEmONC available in this service site? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	The health facility does not display infant formula or bottles and teats, including on posters or placards.. **	N/A		
Input	The health facility does not give newborns food or drink other than breast milk, unless medically indicated, and does not give pacifiers (also called "dummies" or "soothers") to breastfeeding babies. **	N/A		
Input	Health care staff in the facility receive in-service training and regular refresher sessions on harmful practices and unnecessary interventions at least once every 12 months.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) or routine care for labour and normal vaginal delivery in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates on topics related to delivery care? - AND - Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Routine care for labor and normal vaginal delivery
Input	Health-care staff in the health facility receive monthly supportive supervision and mentoring on harmful practices and unnecessary interventions.	1. Do you receive technical support or supervision in your work? -OR- 2. Did you supervisor provide updates on administrative or technical issues related to your work?	Health Worker Interview	Now I would like to ask you some questions about supervision you have personally received. This supervision may have been from a supervisor either in this facility, or from outside the facility. Do you receive technical support or supervision in your work?IF YES, ASK: When was the most recent time? - OR - The last time you were personally supervised, did your supervisor do any of the following: - Provide updates on administrative or technical issues related to your work

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Output/Process	The proportion of all uncomplicated, spontaneous vaginal births in the health facility in which an episiotomy was performed.	Use of episiotomy was seen without an appropriate indication.	L&D Observation	Did you see any of the following practices done without an appropriate indication? Circle all that apply: - Use of episiotomy
Output/Process	The proportion of women undergoing caesarean section in the health facility according to Robson classification groups.	Type of delivery recorded was a C-section.	L&D Observation	Record type of delivery: - Caesarean
Output/Process	The proportion of all women who gave birth in the health facility who received augmentation of labour with no indication of delay in progress of labour.	Augments labour with oxytocin.	L&D Observation	Augments labour with oxytocin
Output/Process	The proportion of all babies born in the health facility who received early bathing and removal of the vernix within 6 h of birth.	Baby bathed within the first hour after birth	L&D Observation	Baby bathed within the first hour after birth
Output/Process	The proportion of all women who gave birth in the health facility who received routine pubic or perineal shaving before a vaginal birth.	Pubic shaving was seen without an appropriate indication.	L&D Observation	Did you see any of the following harmful or inappropriate practices by health workers? Circle all that apply: - Pubic shaving
Output/Process	The proportion of all babies born through clear amniotic fluid in the health facility who received routine suctioning. **	N/A		
Standard 2: The health information system enables use of data to ensure early, appropriate action to improve the care of every woman and newborn.				
Standard 2.1: Every woman and newborn has a complete, accurate, standardized medical record during labour, childbirth and the early postnatal period.				
Input	The health facility has registers, data collection forms, clinical and observation charts in place at all time for routine recording and monitoring of all care processes for women and newborns.	Does this facility have a system in place to regularly collect health services data?	Inventory	Does this facility have a system in place to regularly collect health services data?
Input	The health facility has a birth and death registration system in place that is linked to the national vital registration system at all times.	Does the facility conduct regular reviews of maternal or newborn deaths or "near-misses"?	Inventory	Does the facility conduct regular reviews of maternal or newborn deaths or "near-misses"?
Input	The health facility has a system for classifying diseases and birth outcomes, including death, which is aligned with the ICD. **	N/A		
Output/Process	The proportion of all newborns currently in the health facility who have a patient identifier and individual clinical medical record*. **	N/A		
Output/Process	The proportion of all newborns discharged from the health facility within the past 24 h who had an accurately completed record of processes of care, treatments, outcomes and diagnoses (with ICD code). **	N/A		
Output/Process	The proportion of all women discharged postpartum within the past 24 h who had an accurately	N/A		

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	completed record of processes of care, treatments, outcomes and diagnoses (with ICD code). **			
Standard 2.2: Every health facility has a mechanism for data collection, analysis and feedback as part of its activities for monitoring and improving performance around the time of childbirth.				
Input	The health facility has conducted reviews of maternal and perinatal deaths and near-misses at least once a month within the past six months and has a mechanism for implementing the recommendations of reviews.	Reviews of maternal deaths or "near misses" are carried out every 4 weeks or less.	Inventory	Does the facility conduct regular reviews of maternal or newborn deaths or "near-misses"?
Input	The health facility has standard operating procedures and protocols in place at all times for checking, validating and reporting data.	1. Does this facility regularly compile any reports containing health services information? -OR- 2. Does this facility have a designated person, such as a data manager, who is responsible for health services data in this facility?	Inventory	Does this facility have a designated person, such as a data manager, who is responsible for health services data in this facility? - OR - Does this facility have a designated person, such as a data manager, who is responsible for health services data in this facility?
Input	The health facility has a data system for collecting and analysing relevant indicators and can produce visual outputs and timely reporting on paper or digitally at all times.	Does this facility have a designated person, such as a data manager, who is responsible for health services data in this facility?	Inventory	Does this facility regularly compile any reports containing health services information?
Input	Managers and health care workers in the health facility met at least once a month within the past six months to review process and outcome data.	Compiled reports are submitted to someone or to an office outside of this facility monthly or more often.	Inventory	Does this facility regularly compile any reports containing health services information?
Input	Managers and health care workers in the health facility used the recommendations in reviews of data for decision-making and for mentoring improved performance within the past six months. **	N/A		
Output/Process	The proportion of all perinatal deaths occurring in the health facility that were reviewed with standard audit tools*. **	N/A		
Output/Process	The proportion of all maternal deaths and near-misses occurring in the health facility that were reviewed with standard audit tools*. **	N/A		
Output/Process	The proportion of all maternal deaths and near-misses occurring in the health facility that were notified. **	N/A		

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Standard 3: Every woman and newborn with condition(s) that cannot be dealt with effectively with the available resources is appropriately referred.				
Standard 3.1: Every woman and newborn is appropriately assessed on admission, during labour and in the early postnatal period to determine whether referral is required, and the decision to refer is made without delay.				
Input	The health facility has written, up-to-date clinical protocols and guidelines for the identification, management (including pre-referral care) and referral of women with complications related to pregnancy and childbirth and in newborns.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) or national guidelines for Basic emergency obstetric care (BEmOC) available in this service site?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? - OR - Do you have the national guidelines for BEmONC available in this service site? Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal) - OR - Do you have the EOC job aid? (Nepal 2021)
Input	The health facility is equipped with appropriate medicines and medical supplies for stabilization and pre-referral treatment for referred women and newborns.	Availability of injectable antibiotics, injectable uterotonics or magnesium sulfate	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - INJECTABLE ANTIBIOTIC (E.G., CEFTRIAXONE) - INJECTABLE UTEROTONIC (E.G., OXYTOCIN) - Magnesium sulfate
Input	Health care staff in the maternity unit receive in-service training and regular refresher sessions in referral protocols and guidelines at least once every 12 months*. **	N/A		
Output/Process	The proportion of women and newborns seen in the health facility in the past three months who fulfilled the facility's criteria for referral who were actually referred.	1. Definitive action taken was a referral to another facility for a specialist -OR- 2. Was the woman referred to another facility for care before she went into active labour/second stage of labour? -OR- 3. Arranges transfer to special care either in facility or outside facility -OR- 4. Outcome for the mother: referred to another facility -OR- 5. Definitive action taken was a referral to other facility for care	L&D Observation	What definitive action was taken? (Circle all that apply): - Refer to other facility for specialist - OR - Was the woman referred to another facility for care before she went into active labor/second stage of labor? - OR - Arranges transfer to special care either in facility or to outside facility - OR - Record outcome for the mother

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				- Referred, other facility - OR - What definitive action was taken? (Circle all that apply): - Refer to other facility for care
Output/Process	The proportion of all pregnant or postpartum women who could not be managed at the health facility who were transferred to a higher-level facility for childbirth or further management without delay, accompanied by a health care professional and a completed standardized referral note.	1. If action line reached on partograph, was (woman) referred to other facility for specialist? -OR- 2. Was the woman referred to another facility for care before she went into active labour/second stage of labour?	L&D Observation	What definitive action was taken? (Circle all that apply): - Refer to other facility for specialist - OR - Was the woman referred to another facility for care before she went into active labor/second stage of labor?
Output/Process	The proportion of all sick, preterm or small newborns who could not be managed at the health facility who were transferred to an appropriate level of care within 1 h of a decision, accompanied by a health care professional and a completed standardized referral note.	1. Arranges transfer to special care either in facility or to outside facility -OR- 2. Record outcome for the newborn or fetus: referred to specialist, same facility or referred, other facility	L&D Observation	Arranges transfer to special care either in facility or to outside facility -OR- Record outcome for the newborn or fetus - Referred to specialist, same facility - Referred, other facility
Standard 3.2: For every woman and newborn who requires referral, the referral follows a pre-established plan that can be implemented without delay at any time.				
Input	The health facility has ready access to a functioning ambulance or other vehicle for emergency transport of women and newborns to referral facilities.	Does this facility have a functional ambulance or other vehicle for emergency transportation for clients that is stationed at this facility and that operates from this facility?	Inventory	Does this facility have a functional ambulance or other vehicle for emergency transportation for clients that is stationed at this facility and that operates from this facility?
Input	There is an up-to-date list of network facilities in the same geographical area that provide referral care for women and children. **	N/A		
Input	The health facility has local arrangements to ensure that women and newborns who cannot be managed at the health facility are referred to an appropriate level of care without delay, 24 h a day, 7 days a week. **	N/A		
Output/Process	The proportion of all newborns who died before or during transfer to a higher-level facility for further management.	1. Outcome for newborn or fetus: newborn death, fresh stillbirth, or macerated stillbirth -OR- 2. Was resuscitation successful: No	L&D Observation	Record outcome for the newborn or fetus - Newborn death - Fresh stillbirth - Macerated stillbirth - OR - Was the resuscitation successful?
Output/Process	The proportion of all pregnant or postpartum women who died before or during transfer to a	Outcome for the mother: death	L&D Observation	Record outcome for the mother - Death of mother

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	higher level facility for childbirth for further management.			
Output/Process	The proportion of pregnant and postpartum women and newborns who were referred without appropriate emergency transport. **	N/A		
Standard 3.3: For every woman and newborn referred within or between health facilities, there is appropriate information exchange and feedback to relevant health care staff.				
Input	The health facility has a standardized referral form to document relevant demographic and clinical information, which includes clinical findings, diagnosis, pre-referral interventions or treatment given and reason for referral*. **	N/A		
Input	The health facility has reliable communication methods, including a mobile phone, land line or radio, which is functioning at all times, for referrals and consultation on complicated cases.	Does this facility have a land line telephone, or cellular phone/private cellular phone, or short-wave radio that is available to call outside at all times client services are offered 24 hours a day?	Inventory	Does this facility have a land line telephone that is available to call outside at all times client services are offered? - OR - Does this facility have a cellular telephone or a private cellular phone that is supported by the facility? - OR - Does this facility have a short-wave radio for radio calls?
Input	Evidence that the health facility has formal agreements, communication arrangements and a feedback system with referral centre(s). **	N/A		
Output/Process	The proportion of all referred women seen at the referring facility for whom there was complete counter-referral feedback information. **	N/A		
Output/Process	The proportion of all referred newborns seen at the referring facility for whom there was complete counter-referral feedback information. **	N/A		
Output/Process	The proportion of all referred women and newborns seen at the referring facility who received timely care at the referral facility. **	N/A		
Standard 4: Communication with women and their families is effective and responds to their needs and preferences.				
Standard 4.1: All women and their families receive information about the care and have effective interactions with staff.				
Input	Easily understood health education materials, in an accessible written or pictorial format, are available in the languages of the communities served by the health facility. **	N/A		
Input	Health care staff in the maternity unit are oriented and receive in-service training at least once every 12 months to improve their interpersonal communication and counselling skills and cultural competence.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC)
Input	The health facility has a written, up-to-date policy that outlines clear goals, operational plans and monitoring mechanisms to promote the interpersonal communication and counselling skills of health care staff. **	N/A		
Input	Health care staff in the maternity unit receive supportive supervision in interpersonal communication, counselling and cultural competence every three months. **	N/A		
Output/Process	The proportion of all women discharged from the labour and childbirth area of the facility who received written and verbal information and counselling on the following elements before discharge: nutrition and hygiene, birth spacing and family planning, exclusive breastfeeding and maintaining lactation, keeping their baby warm and clean, communication and play with the baby, danger signs for the mother and newborn and where to go in case of complications. **	N/A		
Output/Process	The proportion of all women who gave birth in the health facility who reported that they were given the opportunity to discuss their concerns and preferences. **	N/A		
Output/Process	The proportion of health care staff in the health facility who demonstrated the following skills: active listening, asking questions, responding to questions, verifying the understanding of women and their families and supporting women in problem-solving.	1. Asks women (and support person) if she has any questions -OR- 2. Explains procedures to woman (support person) before proceeding -OR- 3. Informs pregnant woman of findings -OR- 4. At least once, explains what will happen in labour to woman (support person) -OR- 5. Tells the woman (and her support person) what is going to be done -OR- 6. Listens to woman and provides support and reassurance -OR-	L&D Observation	Asks women (and support person) if she has any questions - OR - Explains procedures to woman (support person) before proceeding - OR - Informs pregnant woman of findings - OR - At least once, explains what will happen in labor to woman (support person) - OR - Tells the woman (and her support person) what is going to be done - OR - Listens to woman and provides support and reassurance - OR - Explains to the mother (and her support person if available) what happened - OR -

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
		7. Explains to the mother (and her support person if available) what happened -OR- 8. Listens to mother and responds attentively to her questions and concerns		Listens to mother and responds attentively to her questions and concerns
Standard 4.2: All women and their families experience coordinated care, with clear, accurate information exchange between relevant health and social care professionals.				
Input	The health facility has a standard form for clinical progress notes and monitoring events during labour (partograph), birth and after birth to facilitate written hand-over.	1. Do providers of delivery services in this facility use partographs to monitor labour and delivery? -OR- 2. Are partographs used routinely for all cases to monitor labour and delivery in this facility?	Inventory	Do providers of delivery services in this facility use partographs to monitor labour and delivery? - OR - Are partographs used routinely (for all cases) or selectively (only for some cases) to monitor labor and delivery in this facility?
Input	The health facility has written, up-to-date protocols for verbal and written hand-over of women and newborns at shift changes, during intra-facility transfer, on referral to other facilities and at discharge. **	N/A		
Input	Health-care staff in the maternity unit are oriented and receive in-service training and regular refresher sessions at least once every 12 months in the clinical hand-over policy and communication of important information for hand-over, referral or discharge. **	N/A		
Input	The health facility has a functioning, reliable communication system for information exchange among relevant service providers.	1. Does this facility have a land line telephone that is available to call outside at all times client services are offered? -OR- 2. Does this facility have a cellular telephone or a private cellular phone that is supported by the facility? -OR- 3. Does this facility have a computer? -OR- 4. Is there access to email or internet via computer and/or mobile phone within the facility? -AND- Is the email or internet routinely available for at least 2 hours on days that client services are offered?	Inventory	Does this facility have a land line telephone that is available to call outside at all times client services are offered? - OR - oes this facility have a cellular telephone or a private cellular phone that is supported by the facility? - OR - Does this facility have a computer? - OR - Is there access to email or internet via computer and/or mobile phone within the facility? -AND- Is the email or internet routinely available for at least 2 hours on days that client services are offered?
Output/Process	The proportion of women attended during labour and childbirth for whom a partograph has been completed.	1. Partograph used to monitor labour -OR- 2. Partograph used to monitor labour.	L&D Observation	Partograph used to monitor labor
Output/Process	The proportion of all women who gave birth in the health facility who reported that health care staff	1. Respectfully greets the pregnant woman -OR-	L&D Observation	Respectfully greets the pregnant woman - OR -

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
	introduced themselves and showed good knowledge of the women's history and the care that had been given to date.	2. Informs pregnant woman of findings -OR- 3. At least once, explains what will happen in labour to the woman (support person) -OR- 4. Explains procedures to woman (support person) before proceeding -OR- 5. Tells the woman (and her support person) what is going to be done -OR- 6. Listens to woman and provides support and reassurance -OR- 7. Explains to the mother (and her support person if available) what happened -OR- 8. Listens to the mother and responds attentively to her questions and concerns -OR- 9. Explains procedures to woman (support person) before proceeding.		Informs pregnant woman of findings - OR - At least once, explains what will happen in labor to woman (support person) - OR - Explains procedures to woman (support person) before proceeding - OR - Tells the woman (and her support person) what is going to be done - OR - Listens to woman and provides support and reassurance - OR - Explains to the mother (and her support person if available) what happened - OR - Listens to mother and responds attentively to her questions and concerns - OR - Explains procedures to woman (support person) before proceeding
Standard 5: Women and newborns receive care with respect and preservation of their dignity.				
Standard 5.1: All women and newborns have privacy around the time of labour and childbirth, and their confidentiality is respected				
Input	The physical environment of the health facility allows privacy and the provision of respectful, confidential care, including the availability of curtains, screens, partitions and sufficient bed capacity.	The delivery service room or area is either a private room, a room with auditory and visual privacy or a room with visual privacy only.	Inventory	Describe the setting of the delivery service room or area.
Input	The health facility has written, up-to-date protocols to ensure privacy and confidentiality for all women and newborns in all aspects of care.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC)?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? (Malawi) Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal)
Input	The health facility has accountability mechanisms for redress in the event of violations of privacy, confidentiality or consent, **	N/A		

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Output/Process	The proportion of procedures in the health facility that require written consent for which there is an associated record of the woman's consent. **	N/A		
Output/Process	The proportion of all women undergoing examinations or procedures in the health facility who reported that their permission was sought before the examination or procedures were performed. **	N/A		
Standard 5.2: No woman or newborn is subjected to mistreatment, such as physical, sexual or verbal abuse, discrimination, neglect, detainment, extortion or denial of services.				
Input	The health facility has written, up-to-date, zero-tolerance non-discriminatory policies with regard to mistreatment of women and newborns. **	N/A		
Input	The health facility has a system whereby the mothers of small, sick newborns can be close to and nurse their babies.	Is there a separate room or space for Kangaroo Mother Care?	Inventory	Is there a separate room or space for Kangaroo Mother Care or is it integrated into the main postnatal ward?
Input	The fee structures for maternity and newborn care are equitable, affordable and clearly displayed.	1. Are the official fees posted or displayed so that the client can easily see them? -AND- 2. If a client is unable to pay for any of the fees, fee exempted/discounted, no payment expected.	Inventory	Are the official fees posted or displayed so that the client can easily see them? - AND - What is the procedure if a client is unable to pay for any of the fees associated with health care provided in this facility?
Input	The health facility has written accountability mechanisms for redress in the event of mistreatment. **	N/A		
Input	The health facility has a written, up-to-date policy and protocols that outline women's and families' right to make a complaint about the care received and has an easily accessible mechanism (e.g. a box) for handling in complaints.	1. Does this facility have any system for determining clients' opinions about the health facility or its services? OR- 2. Does this facility have any system for determining clients' opinions about the health facility or its services?	Inventory	Does this facility have any system for determining clients' opinions about the health facility or its services?
Input	Health care staff in the maternity unit receive in-service training and supportive supervision in respecting the rights of mothers and newborns, respectful care and accountability mechanisms. Orientation is provided for new staff. **	N/A		
Input	The health facility policy for payment specifically precludes detention of a woman or baby for nonpayment.	1. Are official fees posted or displayed so that the client can easily see them? -OR- 2. If client is unable to pay for any of the fees associated with health care provided in this facility, fee is exempted /discounted, no payment	Inventory	Are the official fees posted or displayed so that the client can easily see them? - AND - What is the procedure if a client is unable to pay for any of the fees associated with health care provided in this facility?

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
		is expected; fee is exempted /discounted, payment expected later; or in-kind payment is accepted		
Input	The health facility has a complaints box, which is easily accessible to women and their families, is periodically emptied and the contents reviewed.	The facility uses a suggestion box to elicit client opinions.	Inventory	Please tell me all the methods that this facility uses to elicit client opinion - Suggestion box
Output/Process	The proportion of all women who gave birth in the health facility who reported physical, verbal or sexual abuse, to themselves or their newborns, during labour or childbirth or after birth.	1. Did any of the staff scold you/treat you disrespectfully? (Nepal) -OR- 2. How satisfied are you with the politeness and empathy of the staff with whom you consulted? -OR- 3. Did you see any harmful or inappropriate practices by the health workers: slap newborn, shout insult or threaten the woman during labour or after, slap hit or pinch the woman during labour or after	L&D Observation/Exit interview (Nepal only)	Did any of the staff scold you / treat you disrespectfully? - OR - How satisfied are you with the politeness and empathy of the staff with whom you consulted? - OR - Did you see any of the following harmful or inappropriate practices by health workers? Circle all that apply: - Slap newborn - Shout, insult or threaten the women during labor or after - Slap, hit or pinch the woman during labor and after
Output/Process	The proportion of women who gave birth in the health facility who were satisfied that the facility met their religious and cultural needs. **	N/A		
Output/Process	The proportion of women who attended the health facility who were refused care because of their inability to pay.	Were you told to pay or did you voluntarily offer to pay? (Nepal)		
Output/Process	The proportion of complaints received about respect and preservation of the dignity of women and their families. **	N/A		
Output/Process	The proportion of women who gave birth in the health facility who were aware of the existence and location of a complaints box. **	N/A		
Standard 5.3: All women have informed choices in the services they receive, and the reasons for interventions or outcomes are clearly explained.				
Input	The health facility has a written, up-to-date policy for obtaining informed consent from women before examinations and procedures. **	N/A		
Input	The health facility has a standard informed consent form that helps health care staff to provide easily understandable information to women in order to obtain their fully informed consent.	1. Explains procedures to woman (support person) before proceeding -OR- 2. Informs pregnant woman of findings -OR- 3. At least once, explains what will happen in labour to the woman (support person) -OR-	L&D Observation	Explains procedures to woman (support person) before proceeding - OR - Informs pregnant woman of findings - OR - At least once, explains what will happen in labor to woman (support person) - OR - Explains procedures to woman (support person) before proceeding

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
		4. Explains procedures to woman (support person) before proceeding -OR- 5. Tells the woman (and her support person) what is going to be done -OR- 6. Listens to woman and provides support and reassurance -OR- 7. Explains to the mother (and her support person if available) what happened -OR- 8. Listens to mother and responds attentively to her questions and concerns		- OR - Tells the woman (and her support person) what is going to be done - OR - Listens to woman and provides support and reassurance - OR - Explains to the mother (and her support person if available) what happened - OR - Listens to mother and responds attentively to her questions and concerns
Input	Health care staff in the health facility receive in-service training and supportive supervision in effective informed consent procedures and in women's right to choose care at childbirth. Orientation is provided for new staff. **	N/A		
Input	The health facility has written accountability mechanisms for redress in the event that women are denied informed choice, and the mechanism is displayed. **	N/A		
Output/Process	The proportion of procedures in the health facility that require written consent for which there is an associated record of consent signed by the woman or a family member. **	N/A		
Output/Process	The proportion of all women who gave birth in the health facility who felt adequately informed by health care staff regarding decisions taken about their care.	How satisfied are you with the information you received from the providers?		
Output/Process	The proportion of women who received care in the health facility who were aware that they had the right to accept or refuse treatment. **	N/A		
Standard 6: Every woman and her family are provided with emotional support that is sensitive to their needs and strengthens the woman's capability.				
Standard 6.1: Every woman is offered the option to experience labour and childbirth with the companion of her choice.				
Input	The labour and childbirth areas are organized in such a way as to allow a physical private space for the woman and her companion at the time of birth.	1. The delivery service room or area is either a private room, a room with auditory and visual privacy or a room with visual privacy only. -OR- 2. Were the following things in place to maintain your privacy: Delivered in a separate room	Inventory/Exit interview (Nepal only)	Describe the setting of the delivery service room or area. - OR - Were the following things in place to maintain your privacy? - Delivered in separate room? - Are there curtains on windows (including any openings in the door)?

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
		-OR- 3. Are there curtains on windows (including any openings in the door?) -OR- 4. Divider between beds? -OR- 5. Curtain between/around beds?		- Divider between beds? - Curtain between/around beds?
Input	The health facility has a written, up-to-date protocol, which is explained to women and their families, to encourage all women to have at least one person of their choice, as culturally appropriate, with them during labour, childbirth and the immediate postnatal period.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC)?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? (Malawi) Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal)
Input	Health care staff in the health facility are oriented and receive in-service refresher training sessions at least once every 12 months on the evidence for and positive impact of the presence of a chosen companion during labour and birth.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC) or routine care for labour and normal vaginal delivery in the past 24 months?	Health Worker Interview	Have you received any in-service training or training updates on topics related to delivery care? - AND - Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Routine care for labor and normal vaginal delivery
Input	Orientation sessions and information (written or pictorial) are available to orient the companion on his or her role in supporting the woman during labour and birth. **	N/A		
Output	The proportion of all women who gave birth in the health facility who had a companion of their choice during labour and childbirth.	1. The support person was present at some point during labour -OR- 2. Support person was present for mother at birth -OR- 3. A support person for mother was present	L&D Observation	Observer: Is the support person present at some point during labor? - OR - Observer: Was a support person for mother present at birth? - OR - Observer: Is a support person for mother present?
Output	The proportion of all companions who were satisfied with the orientation given on their role during labour and childbirth. **	N/A		

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Standard 6.2: Every woman receives support to strengthens her capability during childbirth.				
Input	Health care staff in the labour and childbirth areas of the maternity unit were oriented in nonpharmacological and pharmacological pain relief and received in-service training or sessions at least once in the preceding 12 months. **	N/A		
Input	The health facility has a written, up-to-date protocol, which is explained to women and their families, to minimize unnecessary interventions, support normal labour and strengthen the woman's capability, so that she feels in control of her childbirth experience.	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC)?	Inventory	Do you have the national guidelines for Integrated Management of pregnancy and childbirth (IMPAC) available in this service site? (Malawi) Do you have the national medical standard Volume III guidelines available in this service site? (NMH VOL III) (Nepal) - OR - Do you have the RH clinical guidelines? (Nepal)
Input	Health care staff in the labour and childbirth areas of the maternity unit were oriented and received in-service training or refresher sessions at least once in the preceding 12 months to strengthen their interpersonal and cultural competence in providing emotional support. **	N/A		
Input	The health facility has a referral mechanism for women and families with complex emotional needs, and refers them for specialist care. **	N/A		
Output	The proportion of all women who gave birth in the health facility who did so in the labour position of their choice.	1. Did the mother give birth in the lithotomy position -OR- 2. At least once, encourages/assists woman to ambulate and assume different positions during labour.	L&D Observation	Observer: did mother give birth in the lithotomy position? - OR - At least once, encourages/assists woman to ambulate and assume different positions during labor
Output	The proportion of all women undergoing bereavement or an adverse outcome who received additional emotional support from health facility staff. **	N/A		
Output	The proportion of all women who gave birth in the health facility who reported having sufficient food and drink during labour.	At least once, encourages woman to consume fluids/food during labour.	L&D Observation	At least once, encourages woman to consume fluids/food during labor
Output	The proportion of all women who gave birth in the health facility who were ambulatory during the first stage of labour..	At least once, encourages/assists woman to ambulate and assume different positions during labour.	L&D Observation	At least once, encourages/assists woman to ambulate and assume different positions during labor

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Standard 7: For every woman and newborn, competent, motivated staff are consistently available to provide routine care and manage complications.				
Standard 7.1: Every woman and child has access at all times to at least one skilled birth attendant and support staff for routine care and management of complications.				
Input	The health facility has skilled birth attendants available at all times, in sufficient numbers to meet the anticipated work load.	Is a person skilled in conducting deliveries present at the facility or on call at all times (24 hours a day), including weekends, to provide delivery care?	Inventory	Is a person skilled in conducting deliveries present at the facility or on call at all times (24 hours a day), including weekends, to provide delivery care?
Input	The health facility has a written, up-to-date staffing policy, listing the numbers, types and competence of staff, that is reviewed continuously according to the work load. **	N/A		
Input	The health facility has a roster that is displayed in all areas, giving the names of staff on duty, the times of their shifts and their specific roles and responsibilities.	A duty schedule or call list for 24-HR staff assignment is observed.	Inventory	Is there a duty schedule or call list for 24-hr staff assignment?
Input	The health facility has a written, up-to-date policy on triage and waiting times for emergency and non-emergency consultations and treatment. **	N/A		
Input	The health facility has clear communication channels to reach staff on duty at all times.	Does this facility have a land line telephone, or cellular phone/private cellular phone, or short-wave radio that is available to call outside at all times client services are offered 24 hours a day?	Inventory	Does this facility have a land line telephone that is available to call outside at all times client services are offered? - OR - Does this facility have a cellular telephone or a private cellular phone that is supported by the facility? - OR - Does this facility have a short-wave radio for radio calls?
Output	The proportion of available posts in the health facility that were filled by staff with the necessary competence for the job description to allow the facility to provide 24-h service. **	N/A		
Output	The proportion of staff who have been oriented to their functions, roles and responsibilities in the facility or unit to which they are assigned.	Ever received any in-service training or training updates on topics related to delivery care	Health Worker Interview	Have you received any in-service training or training updates on topics related to delivery care?
Output	The proportion of women who attended the health facility who reported receiving attention within the appropriate time for their condition as per facility policy on triage and waiting time. **	N/A		
Standard 7.2: The skilled birth attendants and support staff have appropriate competence and skills mix to meet the requirements of labour, childbirth and the early postnatal period.				
Input	The health facility has a programme for continuing professional development and skills development for all skilled birth attendants and other support staff and conducts regular training.	Ever received any in-service training or training updates on topics related to delivery care, and training in Integrated Management of Pregnancy and Childbirth (IMPAC), in CEmOC, routine care	Health Worker Interview	Have you received any in-service training or training updates on topics related to delivery care? - AND - Have you received any in-service training or training updates in

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
		for labour and normal vaginal delivery, in AMTSL, EmOC, in post-abortion care, and in PMTCT in the past 24 months?		any of the following topics [READ TOPIC]. The training or training update may have been a component of another training IF YES: Was the training or training update within the past 24 months or more than 24 months ago? - Integrated Management of Pregnancy and Childbirth (IMPAC) - Comprehensive Emergency Obstetric Care (CEmOC) - Routine care for labor and normal vaginal delivery - Active Management of Third State of Labor (AMTSL) - Emergency obstetric care (EmOC)/Life saving skills (LSS) - in general - Post abortion care - Special delivery care practices for preventing mother-to-child transmission of HIV
Input	The health facility has standard procedures and plans for recruitment, deployment, motivation (recognition and reward scheme) and retention of all staff. **	N/A		
Input	The health facility periodically appraises all staff and has a mechanism for recognizing good performance.	1. How many times in the past six months has your work been supervised? -AND- 2. The last time you were personally supervised, did your supervisor Provide any feedback (either positive or negative) on your performance?	Health Worker Interview	How many times in the past six months has your work been supervised? - AND - The last time you were personally supervised, did your supervisor do any of the following: - Provide any feedback (either positive or negative) on your performance
Input	The health facility has sufficient numbers of educated, competent, licensed, motivated, regulated skilled birth attendants with an appropriate skills mix, working in multidisciplinary teams.	1. Staffing by: midwifery professionals [excluding degree midwife, degree midwife, enrolled nurse / enrolled midwife	Inventory	Please tell me how many staff in each of the following occupational categories are currently assigned to, employed by, or seconded to this facility, whether full time or part-time. I am interested in the highest occupational category (such as nurse or doctor) regardless of the person's actual assignments or duties. For doctors, I would like to know how many are part-time in this facility.
Input	The health facility provides an enabling, supportive environment for professional staff development, with regular supportive supervision and mentoring.	1. Do you receive technical support or supervision in your work? -OR- 2. The last time you were personally supervised, did your supervisor provide any feedback (either positive or negative) on your performance, or give you verbal or written feedback that you were doing your work well, or provide updates on administrative or technical issues related to your work?	Health Worker Interview	Now I would like to ask you some questions about supervision you have personally received. This supervision may have been from a supervisor either in this facility, or from outside the facility. Do you receive technical support or supervision in your work?IF YES, ASK: When was the most recent time? - OR - The last time you were personally supervised, did your supervisor do any of the following:

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				<ul style="list-style-type: none"> - Provide updates on administrative or technical issues related to your work - Give you verbal or written feedback that you were doing your work well - Provide updates on administrative or technical issues related to your work
Input	The health facility facilitates inter-professional collaborative practice, with clear roles and responsibilities based on the professional scope of practice and care needs during labour, childbirth and the early postnatal period. **	N/A		
Output	The proportion of skilled birth staff at the health facility who received a written job description on deployment to the facility.	The last time you were personally supervised, did your supervisor give you verbal or written feedback that you were doing your work well?	Health Worker Interview	The last time you were personally supervised, did your supervisor do any of the following: <ul style="list-style-type: none"> - Give you verbal or written feedback that you were doing your work well
Output	The proportion of skilled birth attendants at the health facility who received in-service training, a refresher session or mentoring within the past 12 months.	Have you received any in-service training or training updates in Integrated Management of Pregnancy and Childbirth (IMPAC), in CEmOC, routine care for labour and normal vaginal delivery, in AMTSL, EmOC, in post-abortion care, and in PMTCT in the past 24 months?	Health Worker Interview	<p>Have you received any in-service training or training updates on topics related to delivery care?</p> <p>- AND -</p> <p>Have you received any in-service training or training updates in any of the following topics [READ TOPIC]. The training or training update may have been a component of another training</p> <p>IF YES: Was the training or training update within the past 24 months or more than 24 months ago?</p> <ul style="list-style-type: none"> - Integrated Management of Pregnancy and Childbirth (IMPAC) - Comprehensive Emergency Obstetric Care (CEmOC) - Routine care for labor and normal vaginal delivery - Active Management of Third State of Labor (AMTSL) - Emergency obstetric care (EmOC)/Life saving skills (LSS) - in general - Post abortion care - Special delivery care practices for preventing mother-to-child transmission of HIV
Output	The number of supervisory visits to support clinical competence and performance improvement (in the past three months).	Do you receive technical support or supervision in your work?	Health Worker Interview	Now I would like to ask you some questions about supervision you have personally received. This supervision may have been from a supervisor either in this facility, or from outside the facility. Do you receive technical support or supervision in your work? IF YES, ASK: When was the most recent time?
Output	The proportion of staff at the health facility who were assessed at least once in the preceding 12 months.	Do you receive technical support or supervision in your work?	Health Worker Interview	Now I would like to ask you some questions about supervision you have personally received. This supervision may have been from a supervisor either in this facility, or from outside the facility. Do you receive technical support or supervision in your work? IF YES, ASK: When was the most recent time?

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Output	The number of team meetings held per month to review competence and quality improvement activities.	1. Does this facility routinely carry out quality assurance activities? -OR- 2. Is there an official record of any quality assurance activities carried out during the past year?	Inventory	Does this facility routinely carry out quality assurance activities? - OR - Is there an official record of any quality assurance activities carried out during the past year?
Output	The number of interactions per month with professional mentors to ensure clinical competence and improve performance.	How many times in the past six months has your work been supervised?	Health Worker Interview	How many times in the past six months has your work been supervised?
Standard 7.3: Every health facility has managerial and clinical leadership that is collectively responsible for developing and implementing appropriate policies and fosters an environment that supports facility staff in continuous quality improvement.				
Input	The health facility has a written, up-to-date plan for improving the quality of care and a patient safety programme.	1. Does this facility routinely carry out quality assurance activities? -OR- 2. Is there an official record of any quality assurance activities carried out during the past year?	Inventory	Does this facility routinely carry out quality assurance activities? - OR - Is there an official record of any quality assurance activities carried out during the past year?
Input	The health facility has a written, up-to-date leadership structure, with defined roles and responsibilities and lines of accountability for reporting.**	N/A		
Input	The health facility has a designated quality improvement team and responsible personnel. **	N/A		
Input	The health facility has a mechanism for regular collection of information on patient and provider satisfaction.	1. Does this facility have any system for determining clients' opinions about the health facility or its services? -OR- 2. Is there a procedure for reviewing or reporting on clients' opinion?	Inventory	Does this facility have any system for determining clients' opinions about the health facility or its services? - OR - Is there a procedure for reviewing or reporting on clients' opinion?
Input	The health facility holds at least one monthly meeting to review data, monitor quality improvement performance, make recommendations to address any identified problems, honour those who have performed well and encourage staff who are struggling to improve.	1. Does this facility routinely carry out quality assurance activities? -OR- 2. Does this facility have routine facility management meetings? How frequently do these facility management meetings take place? -OR- 3. Are there any routine meetings about facility activities or management issues that include both facility staff and community members? Frequency of meetings: MONTHLY OR LESS	Inventory	Does this facility routinely carry out quality assurance activities? - OR - Does this facility have routine facility management meetings? How frequently do these facility management meetings take place? - OR - Are there any routine meetings about facility activities or management issues that include both facility staff and community /community committee members?

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	All standard governing procedures (policies and protocols) are in place and accessible to all relevant staff.**	N/A		
Input	The proportion of all health facility leaders who were trained in quality improvement and leading change (use of information, enabling behaviour, continuous learning).**	N/A		
Input	The health facility holds at least two annual meetings with stakeholders (e.g. the community, service users, partners) to review its performance, identify problems and make recommendations for joint actions to improve quality.	1. Are there any routine meetings about facility activities or management issues that include both facility staff and community members? -OR- 2. Routine meetings are held with both facility staff and community members at least monthly?	Inventory	Are there any routine meetings about facility activities or management issues that include both facility staff and community /community committee members? - OR - How frequently are routine meetings held with both facility staff and community members?
Input	The proportion of all health facility leaders who were trained in leadership and management skills.**	N/A		
Input	A policy is in place for staff to provide feedback to the facility management on quality improvement and their performance.**	N/A		
Output	Health facility leaders communicated the performance of the facility through established mechanisms for monitoring (e.g. a dashboard of key metrics) to all relevant staff.**	N/A		
Output	The proportion of monthly meetings on the quality of care that were actually held in the preceding 12 months.**	N/A		
Standard 8: The health facility has an appropriate physical environment, with adequate water, sanitation and energy supplies, medicines, supplies and equipment for routine maternal and newborn care and management of complications.				
Standard 8.1: Water, energy, sanitation, hand hygiene and waste disposal facilities are functional, reliable, safe and sufficient to meet the needs of staff, women and their families.				
Input	The health facility has a functioning source of safe water located on the premises that is adequate to meet all demands for drinking, personal hygiene, medical interventions, cleaning, laundry and cooking for use by staff, women, newborns and their families.	1. Water outlet from this source available onsite -AND- 2. There is no time of year when the facility routinely has a severe shortage or lack of water? -AND- 3. There is running water (piped, bucket with tap, or pour pitcher in the exam room	Inventory	Is water outlet from this source available onsite, within 500 meters of the facility, or beyond 500M of facility? - AND - Is there routinely a time of year when the facility has a severe shortage or lack of water? - AND - STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION: - RUNNING WATER (PIPED, BUCKET WITH TAP OR POUR PITCHER)

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	The health facility has leak-proof, covered, labelled waste bins and impermeable sharps containers available in every treatment area, to allow segregation of waste into four categories: sharps, nonsharps infectious waste, general non-infectious waste (e.g. food, packaging) and anatomical waste (e.g. placenta).	1. There is a waste receptacle (pedal bin) with lid and plastic bin liner in the exam room -AND- 2. There is a sharps container ("safety box") in the exam room	Inventory	STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION - WASTE RECEPTACLE (PEDAL BIN) WITH LID AND PLASTIC BIN LINER - SHARPS CONTAINER ("SAFETY BOX")
Input	The health facility has at least one functioning hand hygiene station per 10 beds, with soap and water or alcohol-based hand rubs, in all wards.	1. There is hand washing soap in the exam room -OR- 2. There is alcohol-based hand rub in the exam room	Inventory	STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION - Hand-washing soap (may be liquid soap) - There is alcohol-based hand rub
Input	The health facility has energy infrastructure (e.g. solar, generator, grid) that can meet all the electricity demands of the facility and associated infrastructure at all times, with a back-up power source.	Does this facility have other sources of electricity, such as a generator or solar system?	Inventory	Does this facility have other sources of electricity, such as a generator or solar system?
Input	The health facility has written, up-to-date protocols and awareness-raising materials (posters) on cleaning and disinfection, hand hygiene, operating and maintaining water, sanitation and hygiene facilities and safe waste management; these are posted in the areas in which the activities are conducted.	1. Guidelines for standard precautions; -OR- 2. Does this facility have any guidelines on final processing or sterilization of equipment? -OR- 3. Do you have any guidelines on health care waste management available in this service area?	Inventory	STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION: - Guidelines for standard precautions - OR - Does this facility have any guidelines on final processing or sterilization of equipment? - OR - Do you have any guidelines on health care waste management available in this service area? This may be part of the infection prevention guideline or protocol.
Input	The health facility has sanitation facilities on premises that are usable, appropriately illuminated at night, accessible to people with limited mobility and separated by gender for staff and patients; they include at least one toilet that meets the needs for menstrual hygiene management, with handwashing stations and soap and water (at least 1 latrine per 20 users for inpatient settings).	Is there a toilet (latrine) in functioning condition that is available for general outpatient client use?	Inventory	Is there a toilet (latrine) in functioning condition that is available for general outpatient client use?
Input	The health facility has sufficient trained, competent staff on site when needed, with clear descriptions of their responsibilities for cleaning, operating and maintaining water, sanitation, hygiene and health care waste facilities.	Have you received any in-service training, training update or refresher in standard precautions, including hand hygiene, cleaning and disinfection, waste management, needle stick and sharp injury prevention?	Health Worker Interview	Have you received any in-service training, training update or refresher in any of the following topics [READ TOPIC]. The training or training update, or refresher may have been a component of another training. IF YES, ASK: Was the in-service training, training update or refresher within the past 24 months or more than 24 months ago? - Standard precautions, including hand hygiene, cleaning and

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				disinfection, waste management, needle stick and sharp injury prevention
Input	The health facility has sufficient funds for rehabilitation, improvement and continuous operation and maintenance of water, sanitation, hygiene and health care waste services. **	N/A		
Input	The health facility has a fuel management plan and a local buffer stock, supported by an adequate budget for all the fuel needs for vehicles, cooking and heating, as relevant and as required, at all times. **	N/A		
Input	The health facility has a preventive risk plan for managing and improving water, sanitation and hygiene services, including for infection prevention and control. **	N/A		
Input	The health facility has an energy management plan supported by an adequate budget, maintained by appropriately trained staff and regulated by a competent authority. **	N/A		
Standard 8.2: Areas for labour, childbirth and postnatal care are designed, organized and maintained so that every woman and newborn can be cared for according to their needs in private, to facilitate the continuity of care.				
Input	The health facility has a dedicated area in the labour and childbirth area for resuscitation of newborns, which is adequately equipped with a table or resuscitator, radiant warmer, light and appropriate resuscitation equipment and supplies.	Neonatal resuscitation; examination light; newborn bag & mask	Inventory	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if so, whether the intervention has been carried out at least once during the past 3 months. - Neonatal resuscitation I would like to know if the following items are available in this delivery area and are functioning. - Examination light (flashlight ok) - Newborn bag & mask (Ambu bag & mask)
Input	The health facility has a labour ward and an adequate number of birthing rooms or areas for the estimated number of births in the service area.	How many dedicated delivery beds are available in this facility?		
Input	The health facility has clean, appropriately illuminated, well-ventilated labour, childbirth and neonatal areas and surroundings that allow for privacy and are adequately equipped, regularly cleaned and maintained. **	N/A		

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	The health facility practises and enables rooming-in for all women to allow mothers and babies to remain together 24 h a day. **	N/A		
Input	The health facility has a labour and childbirth area or room with a functional, clean and accessible bathroom or shower room and toilet for use only by women in labour.**	N/A		
Input	A facility offering surgical services has an adequately equipped operating theatre located close to and easily accessible from the labour and childbirth areas. **	N/A		
Input	The facility has a dedicated recovery room or area for care of women with complications. **	N/A		
Input	The health facility has a dedicated ward for admitting sick and unstable small babies. **	N/A		
Output	The proportion of all pregnant women who attended the health facility who reported that it has a clean physical environment conducive for childbirth.	How satisfied are you with the cleanliness of the facility?	Exit interview (Nepal only)	How satisfied are you with the cleanliness of the facility?
Standard 8.3: An adequate stock of medicines, supplies and equipment is available for routine care and management of complications.				
Input	The health facility has supplies of antihypertensive agents and magnesium sulfate in sufficient quantities, available at all times, in antenatal, labour, childbirth and postnatal areas for the management of women with pre-eclampsia.	Availability of magnesium sulfate or injectable diazepam	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - Magnesium sulfate - Injectable diazepam
Input	The health facility has uterotonic drugs and supplies for intravenous infusion (syringes, needles, infusion sets, intravenous fluid solutions and blood) available in sufficient quantities at all times in the childbirth and postnatal care areas for the management of women with postpartum haemorrhage.	Availability of injectable uterotonic (e.g. oxytocin).	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED) - INJECTABLE UTEROTONIC (E.G., OXYTOCIN)
Input	The health facility has supplies of antenatal corticosteroids (dexamethasone or betamethasone), antibiotics and magnesium sulfate available in sufficient quantities at all times to manage preterm births.	Availability of corticosteroids for preterm labour; parenteral administration of antibiotics (IV or IM); parenteral administration of anticonvulsant for hypertensive disorders of pregnancy (IV or IM); availability of magnesium sulfate	Inventory	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if so, whether the intervention has been carried out at least once during the past 3 months. - Parenteral administration of antibiotics (IV or IM) - Parenteral administration of anticonvulsant for hypertensive disorders of pregnancy (IV or IM) - Corticosteroids for pre-term labour

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	The health facility has functioning essential equipment and supplies for the detection of complications (e.g. thermometers, sphygmomanometers, foetal stethoscopes, urine dipsticks, pulse oximeter) in sufficient quantities at all times in the labour and childbirth areas of the maternity unit.	Availability of all of: thermometer, fetal stethoscope, digital BP apparatus, manual BP apparatus, stethoscope, and oxygen concentrator	Inventory	<p>I would like to know if the following items are available in this delivery area and are functioning.</p> <ul style="list-style-type: none"> - Thermometer - Fetal stethoscope - Digital BP apparatus - Manual BP apparatus - Stethoscope <p>I would like to know if the following items are available today in the main service area and are functioning:</p> <ul style="list-style-type: none"> - Oxygen concentrator
Input	The health facility has supplies of first- and second-line injectable antibiotics and other essential medicines available at all times for the management of women and newborns with, or at risk for, infections during labour, childbirth and the early postnatal period.	Availability of injectable antibiotic	Inventory	<p>Please tell me if any of the following medicines or items are available at this service site today.</p> <p>I would like to see them. CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED)</p> <ul style="list-style-type: none"> - INJECTABLE ANTIBIOTIC (E.G., CEFTRIAXONE)
Input	The health facility has essential laboratory supplies and tests (blood glucose, haemoglobin or packed cell volume, blood group and cross-matching, bilirubin, urine protein, full blood count, blood culture, electrolytes, renal and liver function tests, syphilis, HIV and malaria rapid diagnostic tests) to support the management of women and newborns.	Does this facility do any haemoglobin testing on site, i.e. in the facility?	Inventory	<p>Does this facility do any hemoglobin testing on site, i.e. in the facility?</p>
Input	The health facility has essential supplies and functioning equipment (including childbirth beds, vacuum, forceps, incubators, weighing machine, sterile gloves) available in sufficient quantities at all times in the labour and childbirth areas.	Availability of all the following: large and medium forceps, delivery bed, manual vacuum extractor, vacuum aspiration kit or D&C kit, manual BP apparatus, disposable latex gloves, infant weighing scale	Inventory	<p>Do you have any of the following items? If yes, I would like to see them</p> <ul style="list-style-type: none"> - Forceps (large) - Forceps (medium) - Delivery bed <p>I would like to know if the following items are available in this delivery area and are functioning.</p> <ul style="list-style-type: none"> - Manual vacuum extractor (for vacuum-assisted delivery) - Vacuum aspiration kit or D&C kit - Manual blood pressure machine <p>STANDARD PRECAUTIONS AND CONDITIONS FOR CLIENT EXAMINATION</p> <ul style="list-style-type: none"> - Disposable latex gloves <p>I would like to know if the following items are available today in the main service area and are functioning</p> <ul style="list-style-type: none"> - Infant weighing scale [100 gram gradation]

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
Input	The health facility has supplies and functioning equipment for the emergency care and resuscitation of women (well-stocked resuscitation trolley, suction device, pulse oximeter, airways, laryngoscope, endotracheal tubes, adult bag valve masks, infusion sets, intravenous fluids) available in sufficient quantities all times in areas designated for labour, childbirth and postnatal care.	Availability of all the following: suction apparatus with catheter, oxygen concentrator, tubings and connectors, oropharyngeal airway, endotracheal tubes, intubating stylet	Inventory	<p>I would like to know if the following items are available in this delivery area and are functioning.</p> <ul style="list-style-type: none"> - Suction apparatus with catheter <p>I would like to know if the following items are available today in the main service area and are functioning</p> <ul style="list-style-type: none"> - Oxygen concentrators <p>Please tell me if the following equipment are available at this site today and is functioning. I would like to see them:</p> <ul style="list-style-type: none"> - Tubings and connectors (to connect endotracheal tube) - Oropharyngeal airway (adult) - Endotracheal tube cuffed sizes 5.5 - 9.0 - Intubating stylet
Input	The health facility has a safe, uninterrupted oxygen source and delivery supplies (nasal prongs, catheters and masks), including nasal continuous positive airway pressure, available at all times in labour, childbirth and neonatal areas and the operating theatre (when available).	Availability of all of: oxygen concentrator, self-inflating bag and mask (adult, paediatric)	Inventory	<p>I would like to know if the following items are available today in the main service area and are functioning</p> <ul style="list-style-type: none"> - Self-inflating bag and mask (adult) - Self-inflating bag and mask (paediatric) - Oxygen concentrators
Input	The health facility has supplies and functioning equipment for emergency care and resuscitation of newborns (resuscitation table, well-stocked neonatal resuscitation trolley, warmer, suction device, pulse oximeter, laryngoscope) available all times in areas designated for labour, childbirth and neonatal care.	Availability of all of: oropharyngeal airway, suction apparatus with catheter, oxygen concentrator, neonatal resuscitation, and newborn bag & mask	Inventory	<p>Please tell me if the following equipment are available at this site today and is functioning. I would like to see them:</p> <ul style="list-style-type: none"> - Oropharyngeal airway (pediatric) <p>I would like to know if the following items are available in this delivery area and are functioning.</p> <ul style="list-style-type: none"> - Suction apparatus with catheter <p>I would like to know if the following items are available today in the main service area and are functioning</p> <ul style="list-style-type: none"> - Oxygen concentrators <p>Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility, and if so, whether the intervention has been carried out at least once during the past 3 months.</p> <ul style="list-style-type: none"> - Neonatal resuscitation <p>I would like to know if the following items are available in this</p>

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				delivery area and are functioning. - Newborn bag & mask (Ambu bag & mask)
Input	The health facility has an on-site pharmacy and a medicine and supplies stock management system managed by a trained pharmacist or dispenser.	Staffing by a pharmacy technologist, pharmacy technician /assistant	Inventory	Please tell me how many staff in each of the following occupational categories are currently assigned to, employed by, or seconded to this facility, whether full time or part-time. I am interested in the highest occupational category (such as nurse or doctor) regardless of the person's actual assignments or duties. - PHARMACIST - PHARMACEUTICAL TECHNICIAN - PHARMACEUTICAL ASSISTANT
Input	The health facility has a dedicated budget for essential medicines, equipment (and its maintenance) and medical supplies for maternal and newborn care. **	N/A		
Input	The health facility has a functioning diagnostic ultrasound machine and trained health staff who can conduct a basic obstetric ultrasound examination to determine the number of fetuses present, gestational age, prenatal diagnosis of foetal anomalies or early diagnosis of placental insufficiency.	1. Does this facility perform diagnostic ultrasound, or computerized tomography? -AND- 2. Is equipment available?	Inventory	Does this facility perform diagnostic X-rays, ultrasound, or computerized tomography? - AND - Please tell me if: a) If any of the following imaging equipment b) if it is available today, and c) if it is functioning today - ULTRASOUND SYSTEM / MACHINE - CT SCAN
Output	Availability of essential life-saving medicines (oxytocin, magnesium sulfate, dexamethasone, vitamin K, injectable and oral amoxicillin, benzyl penicillin, gentamicin, ceftriaxone, metronidazole, antimalarial drugs, antiretroviral drugs and vaccines against tuberculosis, hepatitis B, poliomyelitis) in the past three months.	Availability of: injectable antibiotic, injectable uterotonic, magnesium sulfate, vitamin K, ARVs for PMTCT, amoxicillin (tablet/syrup), benzyl penicillin, metronidazole, dexamethasone, antimalarial medicines (13 different types/prescriptions), oral polio vaccine, and BCG vaccine and diluent.	Inventory	Please tell me if any of the following medicines or items are available at this service site today. I would like to see them. - Injectable antibiotic (e.g., ceftriaxone) - Injectable uterotonic (e.g., oxytocin) - Magnesium sulphate - Vitamin K Do you stock any ARVs for PMTCT in this service area? Are any of the following antibiotics available in this facility/location today? - AMOXICILLIN TABLET/CAPSULE (Bacterial infections in adults) - AMOXICILLIN SYRUP/SUSPENSION OR DISPERSIBLE PEDIATRIC- DOSED TABLETS (Oral antibiotics for children) - BENZATHINE BENZYL PENICILLIN (POWDER) FOR

Measure Type	SPA Indicator	SPA Indicators Identified by Brizuela, et al (2019)	SPA Module	SPA Question
				<p>INJECTION</p> <ul style="list-style-type: none"> - METRONIDAZOLE TABLETS [antibiotic/amebecide/antiprotozoal] - METRONIDAZOLE INJECTION <p>Are any of the following medicines for the management of non-communicable diseases available in the facility/location today?</p> <ul style="list-style-type: none"> - DEXAMETHASONE INJECTION <p>Are any of the following antimalarial medicines available in the facility/location today?</p> <ul style="list-style-type: none"> - ARTEMETHER LUMEFANTRINE (ALU) 6 TABLETS/PACK - ARTEMETHER LUMEFANTRINE (ALU) 12 TABLETS/PACK - ARTEMETHER LUMEFANTRINE (ALU) 18 TABLETS/PACK - ARTEMETHER LUMEFANTRINE (ALU) 24 TABLETS/PACK - SULFADOXINE + PYRIMETHAMINE (SP) - QUININE TABLETS - QUININE INJECTION - INJECTABLE ARTESUNATE - ARTESUNATE SUPPOSITORIES / RECTAL ARTESUNATE - OTHER ANTI-MALARIAL MEDICINE 1 3 4 5 [OTHER THAN ARTESUNATE + AMODIAQUINE TABS] - ARTESUNATE + AMODIAQUINE (25mg/67.5mg) TABLET - ARTESUNATE + AMODIAQUINE (50mg/135mg) TABLET - ARTESUNATE + AMODIAQUINE (100mg/270mg) TABLET <p>Please tell me if each of the following vaccines is available in the facility today. If available, I would like to see it.</p> <ul style="list-style-type: none"> - ORAL POLIO VACCINE - BCG VACCINE AND DILUENT
Output	The proportion of all women who had severe pre-eclampsia or eclampsia in the health facility who did not receive the full dose of magnesium sulfate because of a stock-out. **	N/A		
Output	The proportion of all women who gave birth in the health facility who purchased gloves and other necessary items. **	N/A		
**No corresponding SPA indicator				

Appendix B. Gaps in SPA Mapping to WHO QoC Standards for L&D

WHO L&D Sub-Standard/Subdomain	Components missing from the SPA Version 6
Subdomain 1.1c: Mothers and newborns receive routine postnatal care	Infant feeding i.e. written breastfeeding policies communicated to staff, local arrangement for alternative feeding methods and demonstration and use of formula only when needed with an explanation of hazards of improper use.)
Subdomain 1.2: Women with pre-eclampsia or eclampsia promptly receive appropriate interventions, according to WHO guidelines	Output/Process data including the proportion of pre-eclamptic or eclamptic women receiving magnesium sulfate, the proportion of pregnancy -induced hypertensive women receiving anti-hypertensives and the proportion of pre-eclamptic women who progressed to eclampsia
Subdomain 1.4: Women with delay in labor or whose labor is obstructed receive appropriate interventions, according to WHO guidelines.	Location of operating theater, output/process indicators related to c-section outcomes as well as overall proportions of women with prolonged labor (first and second stages)
Subdomain 1.6b: Preterm and small babies receive appropriate care, according to WHO guidelines.	Supplies and materials for supporting breastfeeding or alternative feeding and output/process indicators related to kangaroo care, care of unstable LBW infants in thermo-neutral environments and mothers of LBW infants who received additional breastfeeding support
Subdomain 1.7b: Newborns with suspected infection or risk factors for infection are promptly given antibiotic treatment, according to WHO guidelines.	Healthcare worker knowledge of signs and management of newborn sepsis and proportion of newborn and mothers with signs of infection who received antibiotics.
Subdomain 1.8: All women and newborns receive care according to standard precautions for preventing hospital-acquired infections.	Proportion of newborns with suspected PSBI receiving antibiotics
Subdomain 1.9: No woman or newborn is subjected to unnecessary or harmful practices during labor, childbirth and the early postnatal period.	Display/promotion of breastmilk alternatives, administration of formula without medical necessity
* Subdomain 2.1: Every woman and newborn has a complete, accurate, standardized medical record during labor, childbirth and the early postnatal period.*	Alignment of facility system for classifying diseases and birth outcomes with the ICD and output/process indicators included proportion of newborns with individual medical record and mothers and newborns discharged with a complete record.
Subdomain 2.2: Every health facility has a mechanism for data collection, analysis and feedback as part of its activities for monitoring and improving performance around the time of childbirth.	Use of recommendations from review process to inform decision-making and mentoring and output/process indicators including proportion of perinatal and maternal deaths and near-misses that were reviewed and proportion of maternal deaths and near-misses that were notified.
Subdomain 3.2: For every woman and newborn who requires referral, the referral follows a pre-established plan that can be implemented without delay at any time.	Available, up to date list of network facilities that provide referral care, local arrangements with referral facilities for 24/7 care, proportion of pregnant, postpartum women and newborns who were referred without emergency transport.
* Subdomain 3.3: For every woman and newborn referred within or between health facilities, there is	Existence of a standardized referral form, formal agreements, communications or feedback systems with referral centers, proportion of referred women and newborns seen for whom there was counter-

appropriate information exchange and feedback to relevant health care staff.*	referral feedback information and who received timely care at the referral facility.
* Subdomain 4.1: All women and their families receive information about the care and have effective interactions with staff.*	Easily understood health education materials are available in local languages, existence of policy related to interpersonal communication and counseling skills, supportive supervision on communication, counseling and cultural competence, proportion of women discharged from L&D with written and verbal instructions and counseling, proportion of women given opportunity to discuss concerns and preferences.
Subdomain 4.2: All women and their families experience coordinated care, with clear, accurate information exchange between relevant health and social care professionals.	Up to date protocols for verbal and written hand-over of women/newborns during transitions (shift changes, referrals, etc.), orientation and refresher training on clinical hand-over policy and communication.
Subdomain 5.1: All women and newborns have privacy around the time of labor and childbirth, and their confidentiality is respected	Accountability mechanisms in place for redress in the event of violations, proportion of procedures that require consent that received it, proportion of women reporting that permission was sought before specific exams or procedures
* Subdomain 5.2: No woman or newborn is subjected to mistreatment, such as physical, sexual or verbal abuse, discrimination, neglect, detainment, extortion or denial of services.*	Existence of zero-tolerance non-discriminatory policies regarding mistreatment of women and newborns, accountability mechanisms for redress, orientation, training and supportive supervision on respectful care and rights of mothers and newborns, proportion of women reporting satisfaction that facility met religious and cultural needs, proportion of complaints received about respect and preservation of dignity, proportion of women aware of the complaint box
* Subdomain 5.3: All women have informed choices in the services they receive, and the reasons for interventions or outcomes are clearly explained.*	Existence of policy for obtaining consent, training on consent for health care staff, written and displayed accountability mechanisms for redress, proportion of procedures that require consent in which consent was received, proportion of women aware of right to accept or refuse treatment
Subdomain 6.2: Every woman receives support to strengthens her capability during childbirth.*	L&D staff oriented on pain relief, interpersonal and cultural competence in providing emotional support and received training over the last year, referral mechanism in place for clients/families with complex emotional needs, the proportion of women receiving additional emotional support for bereavement or adverse outcomes
Subdomain 7.1: Every woman and child has access at all times to at least one skilled birth attendant and support staff for routine care and management of complications.	Availability of up to date staffing policy, policy on triage and waiting times, proportion of available posts filled by appropriate staff to allow for 24 hour service, the proportion of women receiving care within the appropriate time frame for their condition per policy.
Subdomain 7.2: The skilled birth attendants and support staff have appropriate competence and skills mix to meet the requirements of labor, childbirth and the early postnatal period.	Existence of standard procedures and plans for staff recruitment, facility facilitates inter-professional collaborative practice clearly defining roles, responsibilities
* Subdomain 7.3: Every health facility has managerial and clinical leadership that is collectively responsible for developing and implementing appropriate policies and fosters an environment that supports facility staff in continuous quality improvement.*	Existence of up to date leadership structure with information about roles and responsibilities and lines of accountability, existence of a designated quality improvement team, existence of standard governing procedures in place and accessible, the proportion of all health leaders trained in quality improvement and leading change, leadership and management skills and a policy in place for staff feedback to management
Subdomain 8.1: Water, energy, sanitation, hand hygiene and waste disposal facilities are functional, reliable, safe and sufficient to meet the needs of staff, women and their families.	Sufficient funding for WASH operation and maintenance, budget for fuel needs, existence of a fuel management plan and local buffer stock, preventive risk plan for managing and improving WASH, existence of an energy management plan with adequate budget
*Subdomain 8.2: Areas for labor, childbirth and postnatal care are designed, organized and maintained so that every woman and newborn can	Existence of clean, illuminated and ventilated labor, childbirth and neonatal areas, allowing for privacy that are equipped, clean and maintained, allowing for rooming in, L&D with bathroom and shower room and toilet for use by women in labor, surgical services that are

be cared for according to their needs in private, to facilitate the continuity of care.	adequately equipped and easily accessible, dedicated recovery room for care of women with complications, dedicated ward for admitting SSNB
Subdomain 8.3: An adequate stock of medicines, supplies and equipment is available for routine care and management of complications.	Facility has a dedicated budget for essential medicines, equipment (and maintenance and medical supplies for MNH), the proportion of women who did not receive MGSO4 due to stockout and proportion of women who gave birth in a facility who purchased their own gloves and other necessary items.
*indicates subdomains for which a greater proportion of components are not included in the SPA V6.	

Appendix C. ANC Framework Indicator Mapping.xlsx

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
Provision and content of care	Maternal and fetal assessment and management	Percentage of women who were told about pregnancy danger signs during ANC	Latoff et al 2020	Record whether the provider asked about or the client mentioned any of the following for current pregnancy: - Vaginal bleeding - Fever - Headache or blurred vision - Swollen face or hands or extremities - Tiredness or breathlessness - Fetal movement (loss of, excessive, normal) - Cough or difficulty breathing for 2 weeks or longer - Frequent and painful urination - Foul smelling vaginal discharge - Any other symptoms or problems the client thinks might be related to this pregnancy - None of the above	ANC Observation
		Percentage of pregnant women with at least one blood pressure measure during ANC OR Percentage of pregnant women with at least one blood pressure measure in the third semester during ANC	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider performed the following procedures: take the client's blood pressure	ANC Observation
		Percentage of pregnant women whose baby's heartbeat was listened to at least once during ANC OR Monitoring of fetal heart rate	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider performed the following procedures: Listen to the client's abdomen for fetal heartbeat	ANC Observation
		Percentage of pregnant women with an ultrasound scan before 24 weeks	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018	Record whether the provider performed the following procedures: Conduct an ultrasound/refer client for ultrasound/look at recent ultrasound report	ANC Observation
		Daily foetal movement counting OR fetal presentation by abdominal palpation	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018	Record whether the provider performed the following procedures: Palpate the client's abdomen for fetal presentation	ANC Observation
		Symphysis-fundal height measurement	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider performed the following procedures: Palpate the client's abdomen for fundal height - OR - Measure fundal height using tape measure	ANC Observation
		On-site hemoglobin testing for anemia / screening for anemia/hemoglobin	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider A) Asked about, B) performed or, C) referred the client for the following tests: Hemaglobin test - AND/OR - Record whether the provider performed the following procedures: examine conjunctiva/palms for anemia	ANC Observation

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
		On-site testing for asymptomatic bacteriuria	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018	Record whether the provider A) Asked about, B) performed or, C) referred the client for the following tests: any urine test	ANC Observation
		Weight measurement	Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider performed the following procedures: Weigh the client	ANC Observation
		Gestational diabetes mellitus assessment	Moron-Duarte et al 2018	Record whether the provider A) Asked about, B) performed or, C) referred the client for the following tests: any urine test	ANC Observation
		Assessment of recorded information on health card	Moron-Duarte et al 2018	Record whether the provider looked at the client's ANC card (either before beginning the exam, while connecting information or examining the client	ANC Observation
		Antenatal care procedures - medical history and physical exam	Moron-Duarte et al 2018	Record whether the provider asked about or the client mentioned any of the following facts: - Client's age - Medications the client is taking - Date client's last menstrual period began - Number of prior pregnancies client has had - None of the above	ANC Observation
		Antenatal care procedures - prior pregnancy history	Moron-Duarte et al 2018	Record whether the provider or the client discussed an of the following aspects of the client's prior pregnancies (where applicable) - Prior stillbirth(s) - Infant(s) who died in the first week of life - Heavy bleeding, during, or after pregnancy - Previous assisted delivery (C-section, vacuum, forceps) - Previous spontaneous abortions - Previous multiple pregnancies - Previous prolonged labor - Previous pregnancy-induced hypertension - Previous pregnancy related convulsions - High fever or infection during prior pregnancy/pregnancies - None of the above	ANC Observation
		Antenatal care procedures - breast exam	Moron-Duarte et al 2018	Record whether the provider performed the following procedures: Examine the client's breasts	ANC Observation
		Antenatal care procedures - gynecology-pelvic exam	Moron-Duarte et al 2018	Record whether the provider performed the following procedures: Conduct vaginal examination/exam of perineal areas	ANC Observation
		Antenatal care procedures - hands and legs swelling assessment	Moron-Duarte et al 2018	Record whether the provider performed the following procedures: Examine legs/feet/hands for edema	ANC Observation

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
	Provision of nutritional interventions	Percentage of women who received iron and folic acid supplements for 90+ days / iron and folic acid supplementation	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider gave the client any of the following treatment or counselling: - Prescribed or gave iron pills or folic acid or both - Explained the purpose of iron or folic acid - Explained how to take iron or folic-acid pills - Explained side effects of iron or folic-acid pills - None of the above	ANC Observation
		Percentage of pregnant women reporting having received any drug for intestinal worms / Treatment for helminths/prescription of preventive anthelmintic treatment / de-worming medication	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider gave the client any of the following treatment or counselling: - Prescribed or gave Mebendazole - Explained the purpose of Mebendazole	ANC Observation
		Calcium supplementation	Latoff et al 2020, Latoff et al 2019	RECORD WHETHER THE PROVIDER GAVE THE CLIENT ANY OF THE FOLLOWING TREATMENT OR COUNSELLING: Prescribed or gave calcium tablets	ANC Observation (Nepal 2021)
	Infectious disease testing and management (e.g. HIV, tuberculosis, malaria)	Percentage of pregnant women screened for syphilis during ANC / testing for syphilis / syphilis assessment	Latoff et al 2020	Record whether the provider A) Asked about, B) performed or, C) referred the client for the following tests: syphilis test	ANC Observation
		Percentage of pregnant women counseled and tested for HIV OR Percentage women counseled and test for HIV and know their results	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider did any of the following: - Asked if the client knew her HIV status - Provide counseling related to HIV test - Refer for counseling related to HIV test - Perform HIV test - Refer for HIV test - None of the above	ANC Observation
		Intermittent preventive treatment for malaria / Number of ANC clients receiving all preventive interventions during antenatal care visits including a) IPTp (adapted to reflect national policies), d) provision of an insecticide treated net (ITN) (in malaria endemic areas)	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider gave the client any of the following treatment or counselling: - Gave malaria prophylaxis medicine to client during the consultation - Prescribed malaria prophylaxis medicine to client to obtain elsewhere - Explained the purpose of the preventive treatment with anti-malaria medicine - Explained how to take the anti-malaria medicine - Explained possible side effects of the anti-malaria medicine - Provided ITN to client as part of consultation or instructed client where to obtain ITN - Dose of IPT is taken in presence of provider as part of consultation (Direct Observation) - Importance of further doses of IPT explained (Direct Observation) - None of the above	ANC Observation (excl. Nepal 2021)

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
		Tetanus toxoid vaccination	Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider gave the client any of the following treatment or counselling: - Prescribed or gave a tetanus toxoid (TT) injection - Explained the purpose of the TT injection - None of the above	ANC Observation
	Counseling and information sharing	Counseling on diet and exercise in pregnancy/counseling on healthy eating	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, Moron-Duarte et al 2018	Record whether the provider gave the client any of the following advice or counsel about preparations: discussed nutrition (i.e., quantity or quality of food to eat) during the pregnancy	ANC Observation
		Counseling on birth preparedness and complication readiness	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider advised or counselled about delivery in any of the following ways: - Asked the client where she will deliver - Advised the client to prepare for delivery (e.g. set aside money, arrange for emergency transportation) - Advised the client to use a skilled health worker for delivery - Advise the client what items to have in hands in case of emergency and it's importance (e.g., blade) - None of the above	ANC Observation
		Counseling on postpartum family planning	Latoff et al 2020, Latoff et al 2019, MOMENTUM HFA Indicators	Record whether the provider advised or counselled about newborn or postpartum care in any of the following ways: - Discussed family planning options for after delivery	ANC Observation
		Counseling on breastfeeding	Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider advised or counselled about newborn or postpartum care in any of the following ways: - Discussed early initiation and prolonged breastfeeding - Discussed exclusive breastfeeding	ANC Observation
		Percentage of pregnant women counseled and tested for HIV OR Percentage women counseled and test for HIV and know their results	Latoff et al 2020, Latoff et al 2019, Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider did any of the following: - Asked if the client knew her HIV status - Provide counseling related to HIV test - Refer for counseling related to HIV test - None of the above	ANC Observation
		Counseling on postnatal care	Moron-Duarte et al 2018	Record whether the provider advised or counselled about newborn or postpartum care in any of the following ways: - Discussed care for the newborn - Discussed importance of vaccination for the newborn	ANC Observation
		Counseling on malaria prevention / Number of ANC clients who report discussing all or none of the following specific pregnancy and anticipatory postnatal care elements with their provider: ITN use	Moron-Duarte et al 2018, MOMENTUM HFA Indicators	Record whether the provider explicitly explained importance of using ITN to client	ANC Observation

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
		Counseling on danger signs	Latoff et al 2020	Record whether the provider counselled on the danger signs: - Vaginal bleeding - Fever - Headache or blurred vision - Swollen face or hands or extremities - Tiredness or breathlessness - Fetal movement (loss of, excessive, normal) - Cough or difficulty breathing for 3 weeks or longer - Any other symptoms or problems the client thinks might be related to this pregnancy - None of the above	ANC Observation
Experience of Care	Transparency, respect and preservation of dignity	The fee structures for ANC are equitable, affordable and clearly displayed.	<i>Adapted from</i> WHO QOC Framework/Brizuela et al 2019	1. Are the official fees posted or displayed so that the client can easily see them? -AND- 2. What is the procedure if a client is unable to pay for any of the fees associated with the health care provided at this facility?	Inventory
		The health facility has a written, up-to-date policy and protocols that outline women's and families' right to make a complaint about the care received and has an easily accessible mechanism (e.g. a box) for handing in complaints.	WHO QOC Framework/Brizuela et al 2019	Does this facility have any system for determining clients' opinions about the health facility or its services?	Inventory
		The health facility has a complaints box, which is easily accessible to women and their families, is periodically emptied and the contents reviewed	WHO QOC Framework/Brizuela et al 2019	Please tell me all the methods that this facility uses to elicit client opinion --> suggestion box	Inventory
		Waiting time	Do et al 2017 Latoff et al 2020	How long did you wait between the time you arrived at this facility and the time you were able to see a provider for the consultation?	ANC Client Exit Interview
	Satisfaction with services	Client satisfaction / complaint score	Do et al 2017	Now I am going to ask about some problems clients have at health facilities. As I mention each one, please tell me whether any of these were problems for you today, and if so, whether they were major or minor problems for you: - Time you waited to see a provider -Ability to discuss problems or concerns about your pregnancy - Amount of explanation you received about the problem or treatment - Privacy from having others see the examination - Privacy from having others hear your consultation discussion - Availability of medicines at this facility - The hours of services at this facilities, i.e., when they open	ANC Client Exit Interview

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
			Diamond-Smith et al 2016	and close - The number of days services are available to you - The cleanliness of the facility - How the staff treated you - Cost for services or treatments	
			Khatri et al 2021		
			Sheffel et al 2018		
			Sheffel et al 2019		
	Communication	Good communication between health care worker and client	Sheffel et al 2019	Record whether the provider used any visual aids for health education or counselling during the consultation	ANC Observation
				Record whether the provider asked if the client had any questions and encouraged questions	ANC Observation
Transparency, respect and preservation of dignity	Fees for services	Khatri et al 2021	Were you charged, or did you pay fees for any services you received or were provided today?	ANC Client Exit Interview	
	The ANC service areas are organized in such a way as to allow a physical private space for the woman during her visit.	<i>Adapted from</i> WHO QOC Framework/Brizuela et al 2019	Describe the setting of the ANC service room or area: - Private room - Other room with auditory and visual privacy - Visual privacy only - No privacy	Inventory	
Competent, motivated human resources	Competent, motivated human resources	The proportion of staff who have been oriented to their functions, roles and responsibilities in the facility or unit to which they are assigned.	WHO QOC Framework/Brizuela et al 2019	Have you received any in-service training, training updates or refresher training on topics related to antenatal care or postnatal care?	Health Worker Interview
		Providers received ANC training in past X years	Do et al 2017, Shefferl et al 2019		
		The health facility has a programme for continuing professional development and skills development for staff who provided antenatal care and conducts regular training	<i>Adapted from</i> WHO QOC Framework/Brizuela et al 2019	Have you received any in-service training, training updates or refresher training in any of the following topics: ANC screening, counseling for ANC, complications of pregnancy and their management, nutritional assessment of the pregnant woman, such as BMI calculation and Mid-Upper Arm circumference measurement? -AND- If YES: was the training, training update or referesh training within the past 24 months or more than 24 months ago?	Health Worker Interview

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
		The health facility periodically appraises all staff and has mechanism for recognizing good performance.	WHO QOC Framework/Brizuela et al 2019	1. How many times in the past six months has your work been supervised? -AND- 2. The last time you were personally supervised, did your supervisor Provide any feedback (either positive or negative) on your performance?	Health Worker Interview
		The proportion of ANC staff at the health facility who received a written job description on deployment to the facility.	<i>Adapted from</i> WHO QOC Framework/Brizuela et al 2019	Do you have a written job description of your current job or position in this facility?	Health Worker Interview
		The number of supervisory visits to support clinical competence and performance improvement (in the past three months).	WHO QOC Framework/Brizuela et al 2019, Do et al 2017, Sheffel et al 2019	How many times in the past six months has your work been supervised?	Health Worker Interview
		The number of interactions per month with professional mentors to ensure clinical competence and improve performance.	WHO QOC Framework/Brizuela et al 2019	How many times in the past six months has your work been supervised?	Health Worker Interview
		The health facility has a mechanism for regular collection of information on patient and provider satisfaction.	WHO QOC Framework/Brizuela et al 2019	1. Does this facility have any system for determining clients' opinions about the health facility or its services? -AND- 2. Is there a procedure for reviewing or reporting on clients' opinion?	Inventory
		The health facility holds at least one monthly meeting to review data, monitor quality improvement performance, make recommendations to address any identified problems, honour those who have performed well and encourage staff who are struggling to improve.	WHO QOC Framework/Brizuela et al 2019	1. Does this facility routinely carry out quality assurance activities? -OR- 2. Does this facility have routine facility management meetings? How frequently do these facility management meetings take place? -OR- 3. Are there any routine meetings about facility activities or management issues that include both facility staff and community members? Frequency of meetings: MONTHLY OR LESS	Inventory
		The health facility holds at least two annual meetings with stakeholders (e.g. the community, service users, partners) to review its performance, identify problems and make recommendations for joint actions to improve quality.	WHO QOC Framework/Brizuela et al 2019	1. Are there any routine meetings about facility activities or management issues that include both facility staff and community members? -AND- 2. Routine meetings are held with both facility staff and community members at least monthly?	Inventory
		The health facility has a written, up-to-date plan for improving the quality of care and a patient safety programme.	WHO QOC Framework/Brizuela et al 2019	1. Does this facility routinely carry out quality assurance activities? -OR- 2. Is there an official record of any quality assurance activities carried out during the past year?	Inventory

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
		The health facility has a roster that is displayed in all areas, giving the names of staff on duty, the times of their shifts and their specific roles and responsibilities.	WHO QOC Framework/Brizuela et al 2019	A duty schedule or call list for 24-HR staff assignment is observed.	Inventory (Nepal 2021)
		The number of team meetings held per month to review competence and quality improvement activities.	WHO QOC Framework/Brizuela et al 2019	1. Does this facility routinely carry out quality assurance activities? -OR- 2. Is there an official record of any quality assurance activities carried out during the past year?	Inventory
		Proportion of staff reporting opportunities for promotion	Sheffel et al 2019	Are there opportunities for promotion in your current job?	Health Worker Interview
Physical resources available		The health facility has sufficient trained, competent staff on site when needed, with clear descriptions of their responsibilities for cleaning, operating and maintaining water, sanitation, hygiene and health care waste facilities.	WHO QOC Framework/Brizuela et al 2019	Have you received any in-service training, training update or refresher in standard precautions, including hand hygiene, cleaning and disinfection, waste management, needle stick and sharp injury prevention?	Health Worker Interview
		The health facility has a functioning source of safe water located on the premises that is adequate to meet all demands for drinking, personal hygiene, medical interventions, cleaning, laundry and cooking for use by staff, women, newborns and their families*.	WHO QOC Framework/Brizuela et al 2019	1. Water outlet from this source available onsite -AND- 2. There is no time of year when the facility routinely has a severe shortage or lack of water? -AND- 3. There is running water (piped, bucket with tap, or pour pitcher in the exam room)	Inventory
		The health facility has leak-proof, covered, labelled waste bins and impermeable sharps containers available in every treatment area, to allow segregation of waste into four categories: sharps, nonsharps infectious waste, general non-infectious waste (e.g. food, packaging) and anatomical waste (e.g. placenta)*.	WHO QOC Framework/Brizuela et al 2019	1. There is a waste receptacle (pedal bin) with lid and plastic bin liner in the exam room -AND- 2. There is a sharps container ("safety box") in the exam room	Inventory
		The health facility has at least one functioning hand hygiene station per 10 beds, with soap and water or alcohol-based hand rubs, in all wards*.	WHO QOC Framework/Brizuela et al 2019	1. There is hand washing soap in the exam room -OR- 2. There is alcohol-based hand rub in the exam room	Inventory
		The health facility has energy infrastructure (e.g. solar, generator, grid) that can meet all the electricity demands of the facility and associated infrastructure at all times, with a back-up power source.	WHO QOC Framework/Brizuela et al 2019	Does this facility have other sources of electricity, such as a generator or solar system?	Inventory
		The health facility has written, up-to-date protocols and awareness-raising materials (posters) on cleaning and disinfection, hand hygiene, operating and maintaining water, sanitation and hygiene facilities and safe waste management; these are posted in the areas in which the activities are conducted.	WHO QOC Framework/Brizuela et al 2019	1. Guidelines for standard precautions; -OR- 2. Does this facility have any guidelines on final processing or sterilization of equipment? -OR- 3. Do you have any guidelines on health care waste management available in this service area?	Inventory

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
		The health facility has sanitation facilities on premises that are usable, appropriately illuminated at night, accessible to people with limited mobility and separated by gender for staff and patients; they include at least one toilet that meets the needs for menstrual hygiene management, with handwashing stations and soap and water (at least 1 latrine per 20 users for inpatient settings).	WHO QOC Framework/Brizuela et al 2019	Is there a toilet (latrine) in functioning condition that is available for general outpatient client use?	Inventory
		The health facility has essential laboratory supplies and tests (blood glucose, haemoglobin or packed cell volume, blood group and cross-matching, bilirubin, urine protein, full blood count, blood culture, electrolytes, renal and liver function tests, syphilis, HIV and malaria rapid diagnostic tests) to support the management of women and newborns. -OR- commodities (t. HIV tests, u. syphilis tests, v. proteinuria tests) (no stock-outs in the past 3 months) to provide ANC services, including IPTp (where applicable).	WHO QOC Framework/Brizuela et al 2019, MOMENTUM HFA Indicators	Does this facility do any haemoglobin testing on site, i.e. in the facility? - AND - Does this facility conduct any HIV tests, including HIV RDT, either in the facility or through referral? - AND - Does this facility do any blood glucose testing in this facility? - AND - Does this facility do any urine chemistry testing using dipsticks and/or urine pregnancy test on site? - AND/OR - Please tell me if any of the following dipstick test is done (or used) in this location: - Dip sticks for urine protein - Dip sticks for urine glucose - Urine pregnancy test - AND - Does this facility do any malaria tests (microscopy or mRDT) on site, i.e., in this facility? - AND - Does this facility do any syphilis testing on site, i.e., in the facility?	Inventory
		The health facility has an on-site pharmacy and a medicine and supplies stock management system managed by a trained pharmacist or dispenser.	WHO QOC Framework/Brizuela et al 2019	Staffing by a pharmacist, pharmacy technologist, pharmacy technician /assistant	Inventory
		The health facility has a functioning diagnostic ultrasound machine and trained health staff who can conduct a basic obstetric ultrasound examination to determine the number of fetuses present, gestational age, prenatal diagnosis of foetal anomalies or early diagnosis of placental insufficiency.	WHO QOC Framework/Brizuela et al 2019	Does this facility perform diagnostic X-rays, ultrasound, or computerized tomography? - AND - Please tell me if a) if any of the following imaging equipment is used in the facility, b) if it is available today, and c) if it is functioning today: - Ultrasound system/machine	Inventory
		Availability of medicines for worm infestation	MOMENTUM HFA Indicators	Are any of the following medicines for the treatment of worm infestations available in the facility/location today?	Inventory

Component	Domain	Indicator	Indicator Source	SPA Question(s)	SPA Tool
				- Albendazole - Mebendazole	
		Availability of tetanus-toxoid vaccine	MOMENTUM HFA Indicators	Are any of the following medicines for maternal health availability in the facility/location today? - Tetanus Toxoid Vaccine - OR - Do ANC providers provide any of the following services to pregnant women as part of routine ANC? - Tetanus toxoid vaccination	Inventory
		Availability of guidelines (c. national ANC guidelines, d. any ANC checklists or job aids, e. national guidelines on IPTp, f. any IPTp checklists or job aids)	MOMENTUM HFA Indicators	Do you have the national ANC guidelines available in the service area today? - AND - Do you have any other ANC guidelines available in the service area today? - AND - Do you have IPT guidelines available in this service area?	Inventory
		Availability of basic equipment	MOMENTUM HFA Indicators	I would like to know if the following items are available in this service area and are functioning: -Digital BP apparatus -Manual BP apparatus - Stethoscope - Examination light (flashlight ok) - Fetal stethoscope/pinnard - Adult weight scale - Examination bed or couch - Tape measure for fundal height	Inventory
		Availability of emergency transportation	Sheffel et al 2019	Does this facility have a functional ambulance or other vehicle for emergency transportation for clients that is stationed at this facility or that operates from this facility?	Inventory

Appendix D. ANC Cross-Sectional Analysis Tables

DRC 2018									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		Anova P-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.55b** (556)	.19	.59 (102)	.18	.60b** (241)	.18	.57 (899)	.19	<0.01
Quality Domain 2: Provision of Nutritional Interventions	.55 (556)	.49	.50 (102)	.50	.60 (241)	.49	.56 (899)	.50	0.29 (KW)
Quality Domain 3: Infectious Disease Testing and Management	.48a** (556)	.30	.35a**c** (102)	.30	.48c** (241)	.32	.46 (899)	.31	<0.01
Quality Domain 4: Counseling and Information Sharing	.37 (556)	.24	.34 (102)	.19	.39 (241)	.23	.38 (899)	.23	0.11 (KW)
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.55a** (855)	.21	.48a**b*c** (164)	.23	.59b*c** (392)	.21	.55 (1,411)	.22	<0.01
Quality Domain 6: Satisfaction with Services	.69a**b* (556)	.32	.81a** (102)	.22	.75b* (241)	.28	.72 (899)	.30	<0.01 (KW)
Quality Domain 7: Competent and motivated human resources	.55a** (832)	.22	.44a**c** (162)	.23	.52c** (386)	.23	.52 (1,380)	.23	<0.01
Quality Domain 8: Essential physical resources available	.46b** (855)	.20	.46c** (164)	.20	.54b**c** (392)	.20	.48 (1,411)	.20	<0.01

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
DRC Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c Private vs Private NFP
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Ethiopia 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		Anova p-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.49 (567)	.16	.48 (79)	.16	.49 (17)	.20	.48 (663)	.16	.91
Quality Domain 2: Provision of Nutritional Interventions	.52 (567)	.50	.41 (79)	.49	.65 (17)	.49	.51 (663)	.50	0.15 (KW)
Quality Domain 3: Infectious Disease Testing and Management	.43a** (567)	.30	.27a** (79)	.29	.37 (17)	.32	.41 (663)	.30	<0.01
Quality Domain 4: Counseling and Information Sharing	.33 (567)	.21	.30 (79)	.16	.33 (17)	.26	.33 (663)	.21	0.66 (KW)
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.51a*b** (829)	.22	.46a*c** (303)	.34	.67b**c** (26)	.23	.50 (1,158)	.26	<0.01 (KW)
Quality Domain 6: Satisfaction with Services	.65a** (567)	.28	.77a** (79)	.19	.71 (17)	.18	.66 (663)	.27	<0.01 (KW)
Quality Domain 7: Competent and motivated human resources	.42a** (829)	.20	.31a**c** (303)	.20	.43c** (26)	.21	.38 (1,158)	.21	<0.01
Quality Domain 8: Essential physical resources available	.65a** (976)	.17	.54a**c** (400)	.20	.70c** (31)	.20	.62 (1,407)	.19	<0.01

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
Ethiopia Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c private for-profit vs Private NFP
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Haiti 2018									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		Anova p-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.55 (159)	.17	.52 (108)	.16	.53 (151)	.17	.53 (418)	.17	0.26
Quality Domain 2: Provision of Nutritional Interventions	.65 (159)	.48	.59 (108)	.49	.70 (151)	.46	.63 (418)	.48	0.34
Quality Domain 3: Infectious Disease Testing and Management	.40a** (159)	.27	.31a** (108)	.31	.39 (151)	.27	.36 (418)	.29	<0.05
Quality Domain 4: Counseling and Information Sharing	.35 (159)	.21	.31 (108)	.18	.36 (151)	.19	.33 (418)	.20	<0.05
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.43a* (344)	.20	.38a*c* (300)	.20	.43c* (363)	.19	.41 (1,007)	.19	<0.05
Quality Domain 6: Satisfaction with Services	.81 (159)	.22	.85 (108)	.20	.85 (151)	.18	.83 (418)	.19	0.29
Quality Domain 7: Competent and motivated human resources	.42 (344)	.22	.38 (300)	.23	.40 (363)	.23	.41 (1,007)	.23	0.18
Quality Domain 8: Essential physical resources available	.57b* (350)	.17	.57 (315)	.19	.59b* (368)	.19	.59 (1,033)	.17	<0.05

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
Haiti Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c private for-profit vs Private NFP
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National)		Anova P-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.52a*c* (275)	.14	.60a* (27)	.11	.57 (8)	.20	.57c* (102)	.14	.54 (412)	.14	<0.01
Quality Domain 2: Provision of Nutritional Interventions	.78 (275)	.41	.77 (27)	.42	1.0 (8)	0	.79 (102)	.41	.78 (412)	.41	.77 (KW)
Quality Domain 3: Infectious Disease Testing and Management	.43b* (275)	.28	.46 (27)	.27	.72b* (8)	.21	.49 (102)	.28	.45 (412)	.28	<0.05
Quality Domain 4: Counseling and Information Sharing	.39 (275)	.25	.41 (27)	.18	.37 (8)	.23	.45 (102)	.20	.41 (412)	.24	0.27 (KW)
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.41a**b**c* (478)	.23	.25a**d**e** (275)	.29	.62b**d**f** (64)	.30	.47c*e**f** (160)	.20	.39 (977)	.27	<0.01 (KW)
Quality Domain 6: Satisfaction with Services	.74a** (275)	.21	.88a** (27)	.14	.88 (8)	.14	.79 (102)	.19	.76 (412)	.21	<0.01 (KW)
Quality Domain 7: Competent and motivated human resources	.46a** (478)	.20	.28a**d**e** (275)	.21	.47d** (64)	.21	.48e** (160)	.21	.41 (977)	.22	<0.01
Quality Domain 8: Essential physical resources available	.57 (509)	.19	.56 (322)	.26	.61 (67)	.19	.61 (162)	.17	.57 (1,060)	.21	<0.01 (KW)

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
Malawi Tukey comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c Govt/Public vs CHAM, d private for-profit vs Private NFP, e private for-profit vs CHAM, f Private NFP vs CHAM
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		Anova P-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.48 (445)	.16	.54 (83)	.16	.58 (17)	.16	.49 (545)	.16	0.08
Quality Domain 2: Provision of Nutritional Interventions	.78 (445)	.45	.40c** (83)	.49	.53c** (17)	.51	.67 (545)	.47	<0.01 (KW)
Quality Domain 3: Infectious Disease Testing and Management	.29a* (445)	.27	.19a* (83)	.23	.26 (17)	.29	.27 (545)	.26	<0.05
Quality Domain 4: Counseling and Information Sharing	.26a* (445)	.17	.23a* (83)	.14	.29 (17)	.15	.26 (545)	.16	<0.05
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.46a**b** (1,277)	.21	.61 (235)	.25	.62a**b** (64)	.29	.47 (1,576)	.23	<0.01 (KW)
Quality Domain 6: Satisfaction with Services	.84a** (445)	.23	.68a** (83)	.22	.78a (17)	.24	.83 (545)	.23	<0.01
Quality Domain 7: Competent and motivated human resources	.44a** (1,276)	.20	.33a**c** (235)	.18	.39c** (64)	.17	.43 (1,575)	.19	<0.01
Quality Domain 8: Essential physical resources available	.60a**b** (1,286)	.15	.75a** (254)	.14	.69b** (86)	.21	.61 (1,626)	.16	<0.01 (KW)

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
Nepal Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c private for-profit vs Private NFP
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Senegal 2018									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.69 (186)	.22	.62 (4)	.14	.63 (15)	.11	.68 (205)	.22	0.23 (KW)
Quality Domain 2: Provision of Nutritional Interventions	.82 (186)	.41	1.0 (4)	0	.99 (15)	.26	.86 (205)	.40	0.50 (KW)
Quality Domain 3: Infectious Disease Testing and Management	.63 (186)	.24	.96 (4)	.20	.56 (15)	.24	.65 (205)	.33	0.75 (KW)
Quality Domain 4: Counseling and Information Sharing	.47 (186)	.25	.35 (4)	.24	.42 (15)	.19	.45 (204)	.25	0.55
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.42a** (379)	.27	.19a** (45)	.25	.37 (42)	.32	.36 (466)	.28	<0.01 (KW)
Quality Domain 6: Satisfaction with Services	.83 (186)	.14	.84 (4)	.04	.84 (15)	.07	.83 (205)	.14	0.53
Quality Domain 7: Competent and motivated human resources	.45a**b* (345)	.22	.29a** (32)	.31	.37b* (36)	.28	.37 (413)	.24	<0.01 (KW)
Quality Domain 8: Essential physical resources available	.62b* (379)	.17	.39 (45)	.27	.52b* (42)	.25	.56 (466)	.19	0.10 (KW)

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
Senegal Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c private for-profit vs Private NFP
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Tanzania 2015									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	Mean (n)	SD	
Quality Domain 1: Maternal and Fetal Assessment and Management	.57 (606)	.14	.55 (59)	.11	.58 (150)	.20	.57 (815)	.16	0.50
Quality Domain 2: Provision of Nutritional Interventions	.71a**b** (606)	.45	.41a** (59)	.49	.58b** (150)	.49	.67 (815)	.47	<0.01 (KW)
Quality Domain 3: Infectious Disease Testing and Management	.53 (606)	.30	.45 (59)	.32	.54 (150)	.32	.53 (815)	.31	0.22
Quality Domain 4: Counseling and Information Sharing	.43a** (606)	.25	.33a**c* (59)	.22	.43c* (150)	.25	.43 (815)	.25	<0.05
Quality Domain 5: Transparency, Respect, and Preservation of Dignity	.48a**b** (780)	.21	.38a**c** (184)	.32	.54b**c** (224)	.23	.47 (1,188)	.24	<0.01 (KW)
Quality Domain 6: Satisfaction with Services	.78a** (606)	.21	.88a**c* (59)	.14	.78c* (150)	.19	.79 (815)	.21	<0.01 (KW)
Quality Domain 7: Competent and motivated human resources	.43a** (780)	.21	.29a**c** (184)	.21	.39c** (224)	.21	.40 (1,188)	.21	<0.01
Quality Domain 8: Essential physical resources available	.56a**b** (780)	.18	.58a*c** (188)	.22	.68b**c** (204)	.18	.58 (1,200)	.20	<0.01 (KW)

*<0.05 significant difference between managing authorities
**<0.01 significant difference between managing authorities
Tanzania Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c private for-profit vs Private NFP
KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test.

Appendix E. ANC Trend Analysis Tables

	Haiti			Senegal			Nepal		
	2013 mean (n)	2018 mean (n)	p-value	2014 mean (n)	2018 mean (n)	p-value	2015 mean (n)	2021 mean (n)	p-value
Quality Domain 1: Maternal and Fetal Assessment and Management (National Mean)	.51 (452)	.53 (418)	.08	.62 (300)	.68 (205)	.15	.44 (458)	.49 (545)	.00
<i>Government/Public</i>	.52 (190)	.55 (159)	.25	.62 (264)	.69 (186)	.09	.43 (388)	.48 (445)	.00
<i>Private for-profit</i>	.48 (88)	.52 (108)	.09	.55 (16)	.62 (4)	.20	.48 (53)	.54 (83)	.24
<i>Private NFP</i>	.50 (174)	.53 (151)	.20	.68 (20)	.63 (15)	.58	.65 (17)	.58 (17)	.25
Quality Domain 2: Provision of Nutritional Interventions (National Mean)	.65 (452)	.63 (418)	.49	.64 (300)	.86 (205)	.00	.63 (458)	.75 (545)	.01
<i>Government/Public</i>	.68 (190)	.65 (159)	.52	.64 (264)	.82 (186)	.01	.65 (388)	.78 (445)	.00
<i>Private for-profit</i>	.49 (88)	.59 (108)	.12	.61 (16)	1.0 (4)	.00	.35 (53)	.37 (83)	.77
<i>Private NFP</i>	.70 (174)	.70 (151)	.98	.66 (20)	.99 (15)	.00	.79 (17)	.56 (17)	.16
Quality Domain 3: Infectious Disease Testing and Management (National Mean)	.35 (452)	.36 (418)	.76	.39 (300)	.65 (205)	.00	.18 (458)	.27 (545)	.00
<i>Government/Public</i>	.39 (190)	.40 (159)	.78	.39 (264)	.63 (186)	.00	.18 (388)	.27 (445)	.00
<i>Private for-profit</i>	.30 (88)	.31 (108)	.91	.34 (16)	.96 (4)	.00	.15 (53)	.19 (83)	.46
<i>Private NFP</i>	.34 (174)	.39 (151)	.27	.37 (20)	.56 (15)	.04	.39 (17)	.26 (17)	.17

	Haiti			Senegal			Nepal		
	2013 mean (n)	2018 mean (n)	p-value	2014 mean (n)	2018 mean (n)	p-value	2015 mean (n)	2021 mean (n)	p-value
Quality Domain 4: Counseling and Information Sharing (National Mean)	.31 (452)	.33 (418)	.22	.33 (300)	.45 (204)	.00	.24 (458)	.26 (545)	.13
<i>Government/Public</i>	.33 (190)	.35 (159)	.35	.32 (264)	.47 (186)	.00	.24 (388)	.26 (445)	.15
<i>Private for-profit</i>	.28 (88)	.31 (108)	.33	.27 (16)	.35 (4)	.12	.19 (53)	.23 (83)	.35
<i>Private NFP</i>	.31 (174)	.36 (151)	.03	.40 (20)	.42 (15)	.88	.29 (17)	.29 (17)	.94
Quality Domain 5: Transparency, respect and preservation of dignity (National Mean)	.35 (905)	.41 (1,007)	.00	.40 (348)	.51 (311)	.44	.39 (963)	.47 (1,576)	.00
<i>Government/Public</i>	.36 (342)	.43 (344)	.00	.40 (296)	.52 (269)	.01	.37 (771)	.46 (1,277)	.00
<i>Private for-profit</i>	.34 (214)	.38 (300)	.04	.35 (27)	.19 (20)	.62	.58 (118)	.61 (235)	.49
<i>Private NFP</i>	.35 (349)	.43 (363)	.00	.43 (25)	.57 (22)	.47	.62 (74)	.62 (64)	.95
Quality Domain 6: Satisfaction with services (National Mean)	.84 (452)	.83 (418)	.85	.90 (300)	.83 (205)	.00	.81 (458)	.83 (545)	.35
<i>Government/Public</i>	.85 (190)	.81 (159)	.21	.90 (264)	.83 (186)	.00	.81 (388)	.84 (445)	.26
<i>Private for-profit</i>	.84 (88)	.85 (108)	.65	.90 (16)	.84 (4)	.01	.76 (53)	.68 (83)	.21
<i>Private NFP</i>	.83 (174)	.85 (151)	.56	.90 (20)	.84 (15)	.02	.69 (17)	.78 (17)	.62

	Haiti			Senegal			Nepal		
	2013 mean (n)	2018 mean (n)	p-value	2014 mean (n)	2018 mean (n)	p-value	2015 mean (n)	2021 mean (n)	p-value
Quality Domain 7: Competent and motivated human resources (National Mean)	.44 (905)	.41 (1,007)	.06	.42 (347)	.47 (311)	.76	.37 (963)	.43 (1,575)	.00
<i>Government/Public</i>	.42 (342)	.42 (344)	.77	.44 (295)	.49 (269)	.15	.36 (771)	.44 (1,276)	.00
<i>Private for-profit</i>	.41 (214)	.38 (300)	.36	.28 (27)	.28 (20)	.09	.35 (118)	.33 (235)	.55
<i>Private NFP</i>	.46 (349)	.40 (363)	.02	.37 (25)	.47 (22)	.99	.48 (74)	.39 (64)	.01
Quality Domain 8: Essential physical resources available (National Mean)	.49 (832)	.57 (922)	.00	.63 (348)	.64 (311)	.43	.53 (902)	.64 (1,494)	.00
<i>Government/Public</i>	.47 (330)	.56 (332)	.00	.64 (296)	.64 (269)	.25	.57 (764)	.62 (1,247)	.00
<i>Private for-profit</i>	.50 (186)	.56 (267)	.00	.56 (27)	.53 (20)	.00	.68 (101)	.75 (205)	.01
<i>Private NFP</i>	.49 (316)	.59 (323)	.00	.58 (25)	.66 (22)	.42	.70 (37)	.72 (42)	.68

Appendix F. L&D Composite Score Analysis Tables

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
Quality Domain 1: Evidence-based practices for routine care and management of complications	.50 (356)	.28	.48 (36)	.27	.49 (5)	.42	.55 (143)	.28	.51 (540)	.28	p=.30
Subdomain 1.1a: <i>Women are assessed routinely on admission and during labor and childbirth and are given timely, appropriate care</i>	.42c** (356)	.18	.46 (36)	.21	.40 (5)	.55	.51c** (143)	.19	.45 (540)	.19	p=.0001
Subdomain 1.1b: <i>Newborns receive routine care immediately after birth</i>	.58 (356)	.20	.57 (36)	.20	.61 (5)	.21	.59 (143)	.18	.58 (540)	.19	p=.92
Subdomain 1.1c: <i>Mothers and newborns receive routine postnatal care</i>	.42 (356)	.15	.47 (36)	.20	.46 (5)	.15	.44 (143)	.15	.43 (540)	.15	p=.23
Subdomain 1.2: <i>Women with pre-eclampsia or eclampsia promptly receive appropriate interventions, according to WHO guidelines.</i>	.54 (356)	.21	.46 (36)	.24	.52f* (5)	.29	.57f* (143)	.21	.55 (540)	.22	p=.04
Subdomain 1.3: <i>Women with postpartum hemorrhage promptly receive appropriate interventions, according to WHO guidelines.</i>	.51 (356)	.18	.46 (36)	.17	.47f* (5)	.10	.55f* (143)	.18	.52 (540)	.18	p=.04
Subdomain 1.4:	.49 (356)	.18	.42 (36)	.21	.53 (5)	.19	.49 (143)	.16	.48 (540)	.18	p=.18

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
<i>Women with delay in labor or whose labor is obstructed receive appropriate interventions, according to WHO guidelines.</i>											
Subdomain 1.5: <i>Newborns who are not breathing spontaneously receive appropriate stimulation and resuscitation with a bag-and-mask within 1 min of birth, according to WHO guidelines</i>	.41 (356)	.24	.38 (36)	.25	.51 (5)	.33	.41 (143)	.24	.41 (540)	.24	p=.67
Subdomain 1.6a: <i>Women in preterm labor receive appropriate interventions for both themselves and their babies, according to WHO guidelines.</i>	.41a** (356)	.20	.29a**e** (36)	.25	.37 (5)	.34	.44e** (143)	.18	.41 (540)	.20	p=.002 (KW)
Subdomain 1.6b: <i>Preterm and small babies receive appropriate care, according to WHO guidelines.</i>	.36 (356)	.23	.32 (36)	.24	.30 (5)	.30	.38 (143)	.22	.36 (540)	.22	p=.52
Subdomain 1.7a: <i>Women with or at risk for infection during labor, childbirth or the early postnatal period promptly receive appropriate interventions, according to WHO guidelines.</i>	.33 (356)	.23	.37 (36)	.25	.42 (5)	.24	.32 (143)	.23	.33 (540)	.23	p=.49
Subdomain 1.7b: <i>Newborns with suspected infection or risk factors for infection are promptly given antibiotic treatment, according to WHO guidelines.</i>	.28 (356)	.18	.23 (36)	.24	.34 (5)	.29	.30 (143)	.21	.28 (540)	.19	p=.25 (KW)

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
Subdomain 1.8: <i>All women and newborns receive care according to standard precautions for preventing hospital-acquired infections.</i>	.64c** (356)	.17	.67 (36)	.19	.68 (5)	.24	.71c** (143)	.15	.66 (540)	.17	p=.0001 (KW)
Subdomain 1.9: <i>No woman or newborn is subjected to unnecessary or harmful practices during labor, childbirth and the early postnatal period.</i>	.62a* (356)	.17	.53a*e* (36)	.21	.56 (5)	.14	.63e* (143)	.17	.61 (540)	.17	p=.02
Quality Domain 2: The health information system enables use of data to ensure early, appropriate action to improve the care of every woman and newborn.	.37a* (356)	.26	.25a*e* (36)	.25	.4 (5)	.22	.39e* (143)	.29	.37 (540)	.22	p=0.05
Subdomain 2.1: <i>Every woman and newborn has a complete, accurate, standardized medical record during labor, childbirth and the early postnatal period.</i>	.64 (356)	.24	.60 (36)	.20	.80 (5)	.27	.66 (143)	.25	.65 (540)	.24	p=.23
Subdomain 2.2: <i>Every health facility has a mechanism for data collection, analysis and feedback as part of its activities for monitoring and improving performance around the time of childbirth.</i>	.74a* (356)	.26	.61a*e* (36)	.29	.63 (5)	.25	.74e* (143)	.25	.73 (540)	.26	p=.03
Quality Domain 3: Every woman and newborn with condition(s) that cannot be dealt with effectively with the available resources is appropriately referred.	.57a** (356)	.33	.81a**e** (36)	.23	.93f* (5)	.15	.55e*** (143)	.33	.58 (540)	.33	P=0.0001 (KW)

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
Subdomain 3.1: <i>Every woman and newborn is appropriately assessed on admission, during labor and in the early postnatal period to determine whether referral is required, and the decision to refer is made without delay.</i>	.67a* (356)	.30	.81a*e* (36)	.31	.90 (5)	.22	.65e* (143)	.31	.68 (540)	.31	p=.01(KW)
Subdomain 3.2: <i>For every woman and newborn who requires referral, the referral follows a pre-established plan that can be implemented without delay at any time.</i>	.66a* (356)	.36	.84a*e* (36)	.33	1 (5)	0	.65e* (143)	.36	.67 (540)	.36	p=.02 (KW)
Subdomain 3.3: <i>For every woman and newborn referred within or between health facilities, there is appropriate information exchange and feedback to relevant health care staff. ↓</i>	.73 (356)	.45	.92 (36)	.28	1 (5)	0	.72 (143)	.45	.74 (540)	.44	p=.19 (KW)
Quality Domain 4: Communication with women and their families is effective and responds to their needs and preferences.	.54 (356)	.35	.49 (36)	.28	.50 (5)	0	.58 (143)	.36	.54 (540)	.35	0.40 (KW)
Subdomain 4.1: <i>All women and their families receive information about the care and have effective interactions with staff</i>	.27a** (354)	.28	.10a**e** (36)	.23	.05 (5)	.11	.27e** (142)	.27	.26 (537)	.28	p=.002 (KW)
Subdomain 4.2: <i>All women and their families experience coordinated care, with clear, accurate information</i>	.81 (356)	.24	.89 (36)	.20	1 (5)	0	.85 (143)	.23	.83 (540)	.24	p=.01 (KW)

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
<i>exchange between relevant health and social care professionals.</i>											
Quality Domain 5: Women and newborns receive care with respect and preservation of their dignity	.58 (356)	.36	.44e* (36)	.31	.6 (5)	.42	.61e* (143)	.32	.58 (540)	.35	0.07
Subdomain 5.1: <i>All women and newborns have privacy around the time of labor and childbirth, and their confidentiality is respected</i>	.76 (356)	.26	.79 (36)	.25	.80 (5)	.27	.81 (143)	.24	.78 (540)	.26	p=.47 (KW)
Subdomain 5.2: <i>No woman or newborn is subjected to mistreatment, such as physical, sexual or verbal abuse, discrimination, neglect, detainment, extortion or denial of services</i>	.56a**c* (356)	.20	.44a** (36)	.16	.53 (5)	.20	.51c* (143)	.15	.54 (540)	.19	p=.0001 (KW)
Subdomain 5.3: <i>All women have informed choices in the services they receive, and the reasons for interventions or outcomes are clearly explained. ↓</i>	.97 (154)	.15	1.0 (4)	0	-	-	1.0	.03 (64)	.98 (222)	.12	p=.40
Quality Domain 6: Every woman and her family are provided with emotional support that is sensitive to their needs and strengthens the woman's capability.	.51 (356)	.47	.58 (36)	.49	.6 (5)	.55	.52 (143)	.47	.52 (540)	.47	0.78
Subdomain 6.1: <i>Every woman is offered the option to experience labor and childbirth with the companion of her choice.</i>	.53 (356)	.19	.54 (36)	.17	.55 (5)	.20	.54 (143)	.18	.53 (540)	.18	p=.95
Subdomain 6.2:	.55	.39	.61	.47	.60	.55	.60	.37	.56	.39	p=.35 (KW)

Malawi 2014											
	Govt/Public		Private for-profit		Private NFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
<i>Every woman receives support to strengthen her capability during childbirth.</i>	(356)		(36)		(5)		(143)		(540)		
Quality Domain 7: For every woman and newborn, competent, motivated staff are consistently available to provide routine care and manage complications.	.51c* (356)	.02	.5 (36)	.05	.47 (5)	.18	.59c* (143)	.28	.53 (540)	.29	p=.03
Subdomain 7.1: <i>Every woman and child has access at all times to at least one skilled birth attendant and support staff for routine care and management of complications.</i>	.65c* (356)	.19	.69 (36)	.17	.75 (5)	.14	.71c* (143)	.17	.67 (540)	.19	p=.01 (KW)
Subdomain 7.2: <i>The skilled birth attendants and support staff have appropriate competence and skills mix to meet the requirements of labor, childbirth and the early postnatal period.</i>	.50 (356)	.14	.46e* (36)	.16	.48 (5)	.03	.53e* (143)	.12	.51 (540)	.14	p=.10 (KW)
Subdomain 7.3: <i>Every health facility has managerial and clinical leadership that is collectively responsible for developing and implementing appropriate policies and fosters an environment that supports facility staff in continuous quality improvement.</i>	.63 (356)	.20	.62 (36)	.16	.56 (5)	.18	.65 (143)	.18	.63 (540)	.19	p=.74(KW)
Quality Domain 8: The health facility has an appropriate physical environment, with adequate water, sanitation and energy supplies, medicines, supplies and equipment	.40a**c** (356)	.02	.60 (36)	.05	.6 (5)	.14	.58a**c** (143)	.02	.47 (540)	.33	p=0.000

Malawi 2014											
	Govt/Public		Private for-profit		PrivatFP		CHAM		Total (National Mean)		ANOVA p-value
	Score (n)	SD	Score(n)	SD	Score(n)	SD	Score(n)	SD	Score (n)	SD	
for routine maternal and newborn care and management of complications.											
Subdomain 8.1: <i>Water, energy, sanitation, hand hygiene and waste disposal facilities are functional, reliable, safe and sufficient to meet the needs of staff, women and their families.</i>	.54a**c** (356)	.16	.65a** (36)	.19	.65 (5)	.30	.62c** (143)	.15	.57 (540)	.17	p=0.0001 (KW)
Subdomain 8.2: <i>Areas for labor, childbirth and postnatal care are designed, organized and maintained so that every woman and newborn can be cared for according to their needs in private, to facilitate the continuity of care.</i> †	.26a* (356)	.44	.47a* (36)	.51	.6 (5)	.55	.35 (143)	.48	.3	.46	p=.05 (KW)
Subdomain 8.3: <i>An adequate stock of medicines, supplies and equipment is available for routine care and management of complications.</i>	.43a** (356)	.16	.46 (36)	.18	.62 (5)	.21	.51a** (143)	.20	.45 (540)	.18	p=0.0001 (KW)
<p>*<0.05 significant difference between managing authorities **<0.01 significant difference between managing authorities Malawi Tukey comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c Govt/Public vs CHAM, d private for-profit vs Private NFP, e private for-profit vs CHAM, f Private NFP vs CHAM KW: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated and p value represents the result of the kruskal wallis test. †Indicates that subdomain is made up of only one indicator.</p>											

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
Quality Domain 1: Evidence- based practices for routine care and management of complications	.38a**b** (631)	.253	.45a** (135)	.24	.55b** (22)	.28	.40 (788)	.25	p=0.0002
Subdomain 1.1a: <i>Women are assessed routinely on admission and during labor and childbirth and are given timely, appropriate care</i>	.33a* (631)	.15	.36a* (135)	.14	.36 (22)	.13	.33 (788)	.15	p=.02
Subdomain 1.1b: <i>Newborns receive routine care immediately after birth</i>	.39 (631)	.11	.37 (135)	.11	.43 (22)	.16	.39 (788)	.12	p=.05 (KW)
Subdomain 1.1c: <i>Mothers and newborns receive routine postnatal care</i>	.29b* (631)	.11	.30 (135)	.12	.36 b* (22)	.19	.30 (788)	.11	p=.54 (KW)
Subdomain 1.2: <i>Women with pre-eclampsia or eclampsia promptly receive appropriate interventions, according to WHO guidelines.</i>	.30 (631)	.17	.28c* (135)	.16	.38c* (22)	.18	.30 (788)	.17	p=.04
Subdomain 1.3: <i>Women with postpartum hemorrhage promptly receive appropriate interventions, according to WHO guidelines.</i>	.35a**b** (631)	.17	.50a** (135)	.16	.51b** (22)	.21	.38 (788)	.18	p=0.000
Subdomain 1.4:	.37a**b** (631)	.12	.42a**c* (135)	.12	.49b**c* (22)	.14	.38 (788)	.12	p=0.0001(KW)

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
<i>Women with delay in labor or whose labor is obstructed receive appropriate interventions, according to WHO guidelines.</i>									
Subdomain 1.5: <i>Standard 1.5: Newborns who are not breathing spontaneously receive appropriate stimulation and resuscitation with a bag-and-mask within 1 min of birth, according to WHO guidelines</i>	.17b* (631)	.20	.20 (135)	.19	.27b* (22)	.18	.18 (788)	.19	p=.02
Subdomain 1.6a: <i>Women in preterm labor receive appropriate interventions for both themselves and their babies, according to WHO guidelines.</i>	.23a**b** (631)	.17	.29a** (135)	.23	.38b** (22)	.22	.24 (788)	.19	p=0.0003 (KW)
Subdomain 1.6b: <i>Preterm and small babies receive appropriate care, according to WHO guidelines.</i>	.35 (631)	.15	.36 (135)	.22	.39 (22)	.16	.35 (788)	.16	p=.72 (KW)
Subdomain 1.7a: <i>Women with or at risk for infection during labor, childbirth or the early postnatal period promptly receive appropriate interventions, according to WHO guidelines.</i>	.04 (631)	.12	.03 (135)	.11	.10 (22)	.16	.04 (788)	.12	p=.12 (KW)
Subdomain 1.7b: <i>Newborns with suspected infection or risk factors for infection are promptly</i>	.07b* (631)	.13	.07c* (135)	.14	.15b*c* (22)	.24	.07 (788)	.14	p=.30 (KW)

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
<i>given antibiotic treatment, according to WHO guidelines.</i>									
Subdomain 1.8: <i>All women and newborns receive care according to standard precautions for preventing hospital-acquired infections.</i>	.43b** (631)	.17	.46 (135)	.15	.55b** (22)	.16	.44 (788)	.17	p=.001
Subdomain 1.9: <i>No woman or newborn is subjected to unnecessary or harmful practices during labor, childbirth and the early postnatal period.</i>	.28a* (631)	.16	.24a* (135)	.15	.29 (22)	.20	.28 (788)	.16	p=.02
Quality Domain 2: The health information system enables use of data to ensure early, appropriate action to improve the care of every woman and newborn.	.37 (631)	.24	.39 (135)	.25	.39 (22)	.21	.38 (788)	.24	p=0.73
Subdomain 2.1: <i>Every woman and newborn has a complete, accurate, standardized medical record during labor, childbirth and the early postnatal period.</i>	.67a* (631)	.24	.60a* (135)	.34	.72 (22)	.25	.66 (788)	.26	p=.17(KW)
Subdomain 2.2: <i>Every health facility has a mechanism for data collection, analysis and feedback as part of its activities for monitoring and improving performance around the time of childbirth.</i>	.72 (631)	.26	.73 (135)	.28	.74 (22)	.20	.72 (788)	.26	p=.61 (KW)
Quality Domain 3: Every woman and newborn with condition(s) that cannot be dealt with effectively with the available resources is appropriately referred.	.68a**b** (631)	.25	.87a** (135)	.24	.85b** (22)	.27	.71 (788)	.26	p=0.000

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
Subdomain 3.1: <i>Every woman and newborn is appropriately assessed on admission, during labor and in the early postnatal period to determine whether referral is required, and the decision to refer is made without delay.</i>	.49a** (631)	.15	.44a** (135)	.21	.52 (22)	.17	.48 (788)	.16	p=.14 (KW)
Subdomain 3.2: <i>For every woman and newborn who requires referral, the referral follows a pre-established plan that can be implemented without delay at any time.</i>	.80a** (631)	.37	.90a** (135)	.25	.88 (22)	.26	.82 (788)	.35	p=.12 (KW)
Subdomain 3.3: <i>For every woman and newborn referred within or between health facilities, there is appropriate information exchange and feedback to relevant health care staff. ↓</i>	.39a**b** (631)	.49	.97a** (135)	.17	.91b** (22)	.29	.51	.50	p=.0001 (KW)
Quality Domain 4: Communication with women and their families is effective and responds to their needs and preferences.	.4 (631)	.33	.39 (135)	.32	.48 (22)	.29	.40 (788)	.32	p=0.46
Subdomain 4.1: <i>All women and their families receive information about the care and have effective interactions with staff</i>	.06 (631)	.15	.06 (135)	.16	.10 (22)	.17	.06 (788)	.15	p=.71
Subdomain 4.2: <i>All women and their families experience coordinated care, with clear, accurate information exchange between relevant health and social care professionals.</i>	.77 (631)	.31	.81 (135)	.25	.86 (22)	.22	.78 (788)	.30	p=.57 (KW)

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
Quality Domain 5: Women and newborns receive care with respect and preservation of their dignity	.26a**b** (631)	.29	.34a** (135)	.28	.48b** (22)	.32	.28 (788)	.30	p=0.0002 (KW)
Subdomain 5.1: <i>All women and newborns have privacy around the time of labor and childbirth, and their confidentiality is respected</i>	.53b* (631)	.15	.52c* (135)	.13	.61b*c* (22)	.21	.53 (788)	.15	p=.37 (KW)
Subdomain 5.2: <i>No woman or newborn is subjected to mistreatment, such as physical, sexual or verbal abuse, discrimination, neglect, detainment, extortion or denial of services</i>	.53a*b** (631)	.23	.60a*c* (135)	.25	.74b**c* (22)	.23	.55 (788)	.24	p=0.000
Subdomain 5.3: <i>All women have informed choices in the services they receive, and the reasons for interventions or outcomes are clearly explained.</i>	.84 (107)	.25	.92 (43)	.15	.89 (7)	.16	.87 (157)	.23	p=.28 (KW)
Quality Domain 6: Every woman and her family are provided with emotional support that is sensitive to their needs and strengthens the woman's capability.	.21 (631)	.38	.26 (135)	.39	.34 (22)	.45	.22 (788)	.38	0.18 (KW)
Subdomain 6.1: <i>Every woman is offered the option to experience labor and childbirth with the companion of her choice.</i>	.39b* (631)	.13	.41 (135)	.12	.46 (22)b*	.18	.40 (788)	.13	p=.28 (KW)
Subdomain 6.2: <i>Every woman receives support to strengthens her capability during childbirth.</i>	.11 (631)	.26	.10 (135)	.25	.21 (22)	.36	.11 (788)	.26	p=.63 (KW)
Quality Domain 7: For every woman and newborn, competent, motivated staff	.51a**b* (631)	.31	.65a** (135)	.30	.67b* (22)	.23	.54 (788)	.31	p=0.0001 (KW)

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
are consistently available to provide routine care and manage complications.									
Subdomain 7.1: <i>Every woman and child has access at all times to at least one skilled birth attendant and support staff for routine care and management of complications.</i>	.57a**b** (631)	.20	.70a** (135)	.10	.73b** (22)	.06	.60 (788)	.19	P=0.0001 (KW)
Subdomain 7.2: <i>The skilled birth attendants and support staff have appropriate competence and skills mix to meet the requirements of labor, childbirth and the early postnatal period.</i>	.39a** (631)	.12	.36a** (135)	.10	.36 (22)	.11	.39 (788)	.12	p=.005 (KW)
Subdomain 7.3: <i>Every health facility has managerial and clinical leadership that is collectively responsible for developing and implementing appropriate policies and fosters an environment that supports facility staff in continuous quality improvement.</i>	.59a**b** (631)	.25	.69a** (135)	.27	.76b** (22)	.24	.61 (788)	.25	p=0.000
Quality Domain 8: The health facility has an appropriate physical environment, with adequate water, sanitation and energy supplies, medicines, supplies and equipment for routine maternal and newborn care and management of complications.	.53a**b** (631)	.31	.77a** (135)	.30	.85b** (22)	.25	.58 (788)	.32	p=0.0001 (KW)
Subdomain 8.1: <i>Water, energy, sanitation, hand hygiene and waste disposal facilities are functional, reliable, safe and sufficient to meet the needs of staff, women and their families.</i>	.47a**b** (631)	.16	.63a** (135)	.12	.62b** (22)	.10	.50 (788)	.16	p=0.0001 (KW)

Nepal 2021									
	Govt/Public		Private for-profit		Private NFP		Total (National Mean)		P-value
	Score (n)	SD	Score (n)	SD	Score (n)	SD	Score (n)	SD	
Subdomain 8.2: <i>Areas for labor, childbirth and postnatal care are designed, organized and maintained so that every woman and newborn can be cared for according to their needs in private, to facilitate the continuity of care.</i>	.87 (631)	.33	.83 (135)	.38	.95 (22)	.21	.87 (788)	.34	p=.56 (KW)
Subdomain 8.3: <i>An adequate stock of medicines, supplies and equipment is available for routine care and management of complications.</i>	.52a**b** (631)	.19	.64a** (135)	.21	.68b** (22)	.20	.54 (788)	.20	p=0.000
<p>*<0.05 significant difference between managing authorities **<0.01 significant difference between managing authorities Nepal Tukey Comparisons: a Govt/Public vs private for-profit, b Govt/Public vs Private NFP, c private for-profit vs Private NFP LT: Levene's test of homogeneity reported is p<0.05 indicating that the assumption of equal variances is violated. ‡Indicates that subdomain is made up of only one indicator.</p>									

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