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Mothers' and Healthcare Providers' Experiences with the Implementation of the WHO Labour Care Guide in Selected Hospitals in Zambia

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Abstract

Background

The partograph is a tool that provides a pictorial presentation of labour and provides a good overview of labour progress. The partograph application remains incorrect in many settings. Even when applied correctly, birth attendants reported gaps in use for labour management due to lack of access to resources such as enough skilled staff, clinical supplies, and training and supervision. Thus, the labour care guide was designed to be the next generation labour management tool.

Objective

This study aimed to explore the experiences of healthcare workers and mothers in the application of WHO Labour Care Guide in selected hospitals of Zambia.

Methodology: A

qualitative descriptive study design was conducted in selected hospitals of Zambia. Interviews from mothers and health care providers were analysed using thematic analysis. A hybrid inductive–deductive approach was applied, allowing participants' lived experiences and language to shape the findings while maintaining alignment with the study's implementation focus on the WHO Labour Care Guide and domains reflected in the interview guides.

Findings:

Mothers associated positive childbirth experiences with respectful communication, encouragement, responsiveness, and practical labour support. Birth companionship was valued for reassurance and support but was constrained by overcrowding, privacy concerns, and partners restrictions. Providers reported that the LCG strengthened clinical reasoning by linking assessment, interpretation, planning, action, and escalation. Documentation of plans and provider initials improved accountability and clinical governance. The LCG was also perceived to allow adequate labour progress, reducing premature interventions and unnecessary caesarean sections. Implementation challenges included difficulty meeting monitoring and documentation intervals during busy shifts, resulting in delayed plotting and partial completion. Although training improved confidence, not all staff were trained, leading to reliance on manuals and peer summaries. Peer-to-peer learning supported diffusion but risked incomplete knowledge transfer and copying practices. Referral challenges arose when women arrived with partographs, underscoring the need for system-wide alignment, pre-service training, and continued mentorship.

Conclusion

The findings suggest that the WHO Labour Care Guide was generally valued by mothers and health care providers for promoting respectful care, structured clinical reasoning, accountability, and more appropriate labour management. However, effective implementation was constrained by staffing pressures, documentation workload, inconsistent training, privacy limitations, and weak referral alignment. Sustained mentorship, wider training, and system-wide integration are therefore essential to strengthen LCG use and improve the quality of intrapartum care.

Introduction

Despite substantial advances in maternal and newborn health over the past two decades, complications during labour and childbirth remain major contributors to preventable maternal and perinatal mortality, particularly in low- and middle-income countries (1, 2). More than one-third of maternal deaths, approximately half of all stillbirths, and nearly one-quarter of neonatal deaths occur during labour and childbirth, with the greatest burden borne by low-resource settings (3, 4). Sub-Saharan Africa (SSA) continues to experience the highest maternal mortality worldwide, with an estimated maternal mortality ratio of 542 deaths per 100,000 live births compared with the global average of 216 deaths per 100,000 live births (5). Although the global perinatal mortality rate has declined since 2000, progress has been uneven, and perinatal mortality remains an important public health challenge especially in many low-resource countries (2). Improving the quality of intrapartum care has therefore become a global priority, prompting the World Health Organisation (WHO) to recommend evidence-based, woman-centred labour monitoring and management through the WHO Labour Care Guide (LCG), which aims to support timely clinical decision-making, respectful maternity care, and improved maternity and newborn outcomes (6).

The quality of intrapartum care plays a pivotal role in improving maternal and neonatal outcomes. Timely recognition of labour abnormalities and prompt clinical intervention can substantially reduce preventable complications, including obstructed labour, birth asphyxia, stillbirth, postpartum haemorrhage, maternal morbidity, and maternal mortality (7, 8). Consequently, labour monitoring has remained a cornerstone of safe maternity care. The partograph has historically been recommended as the standard tool for monitoring labour progress, maternal wellbeing, and foetal condition, with the objective of facilitating early identification of abnormal labour and timely obstetric intervention. Effective use of the partograph, however, depends not only on the availability of the tool itself but also on skilled birth attendants who are adequately trained to interpret labour findings and institute appropriate clinical management (9).

Evidence suggests that inadequate or inconsistent use of the partograph is associated with an increased risk of adverse maternal and perinatal outcomes, including prolonged labour, obstructed labour, and perinatal mortality (10, 11). However, studies evaluating the effectiveness of routine partograph use have produced inconsistent findings, raising questions regarding its ability to improve clinical outcomes when implemented under routine practice conditions (12). In addition, several implementation challenges have been reported, including inadequate training and confidence among healthcare providers, retrospective

completion of partographs, heavy workloads, staff shortages, and limited capacity to initiate recommended interventions because of resource constraints (13, 14). These challenges have limited the effectiveness of the partograph in many resource-constrained settings.

Growing evidence also questioned the scientific assumptions underpinning the traditional partograph. Contemporary labour curve analyses demonstrated that labour progression is considerably more variable and generally slower than that previously described in Friedman's original labour curve and subsequent expectation of approximately 1 cm cervical dilatation per hour incorporated into the Philpott partograph. In particularly cervical dilatation before 6 cm was found to progress more slowly than previously assumed, challenging the long-held expectation of a uniform rate of cervical dilatation during active labour (15–17). These findings informed a paradigm shift in labour management and ultimately contributed to the development of the WHO LCG. Introduced in 2020, the WHO LCG is an evidence-based labour monitoring tool designed to promote individualized labour assessment while integrating respectful maternity care, supportive care practices, maternal and foetal wellbeing, and timely clinical decision-making into a single framework (18).

Although the WHO LCG has been recommended for improving the quality of intrapartum care, evidence regarding its implementation in routine clinical practice, particularly in low-resource settings, remains limited. Successful implementation depends not only on the technical attributes of the tool but also on its acceptability, usability, and perceived value among the mothers receiving care and the Health Care Providers (HCPs) responsible for its application. Understanding these experiences is essential for identifying implementation barriers and facilitators and for informing successful scale-up within national maternity care programmes.

Therefore, this study aimed to explore mothers' and HCPs experiences with the implementation of the WHO LCG in selected hospitals in Zambia, including its perceived benefits, implementation challenges, and opportunities for strengthening its routine use in maternity care.

Methods

Study Design

This study employed a qualitative descriptive study design to explore mothers' and HCPs experiences with the implementation of the WHO LCG in selected hospitals of Zambia. A qualitative descriptive approach was considered appropriate because it enables a comprehensive account of participants' experiences, perceptions, and recommendations while remaining close to their words and meanings. This design was particularly suited to understand the facilities, barriers, and contextual factors influencing routine implementation of the LCG within maternity care settings.

Qualitative interview data were analysed using reflective thematic analysis following the approach described by Braun and Clarke (19). A hybrid inductive-deductive analytical approach was employed to ensure that participants' experiences and language guided the development of themes (inductive), while

maintaining alignment with the study's implementation focus on the LCG and the domains explored in the interview guides (deductive). This approach enabled both the identified of unanticipated insights emerging from participants' narratives and the systematic examination of implementation-related issues relevant to the adoption and routine use of the LCG.

Following thematic analysis, the findings were further synthesised using the Consolidated Framework for Implementation Research (CIFR 2.0) (20) (see Fig. 1) to develop a proposed implementation framework that contextualises the facilitators, barriers, implementation processes, and system-level factors influencing successful implementation and future scale-up of the tool. This framework was used as an interpretative lens rather than a coding framework.

Study Setting

The study was conducted in six public public-sector maternity facilities in Lusaka and Copperbelt provinces of Zambia: Chilenje First Level Hospital, Kafue General Hospital, Levy Mwanawasa University Teaching Hospital, Ndola Teaching Hospital, Ronald Ross Hospital, and Roan Antelope Hospital. These facilities represent primary, secondary, and tertiary levels of maternity care and collectively manage a substantial proportion of facility-based deliveries within their respective catchment areas.

Study Participants and Sampling

A total of 21 participants were included in the study, comprising two primary groups: mothers who had received maternity care during implementation of the WHO LCG and HCPs involved in labour monitoring and intrapartum care at the participating facilities. Both groups of participants were randomly sampled from the eligible population at the study sites. Mothers provided insights into their childbirth experiences, including communication with providers, involvement in decision-making, perceptions of respectful care, expectations of labour care, and experiences with companionship. HCPs provided perspectives on the use of the LCG, including documentation, clinical reasoning, escalation of care, workload, training, feasibility, and health system factors affecting implementation.

The inclusion of both mothers and HCPs enabled triangulation of experiences across service users and service providers. Mothers' accounts were particularly important in understanding satisfaction, trust, involvement in routine and operative care, and whether the LCG was explained during labour. HCPs contributed detailed reflections on how the LCG influenced decision-making, accountability, continuity of care, and implementation fidelity. Their perspectives also highlighted practical barriers, challenges, inadequate stationery, infrastructure limitations, and need for mentorship and system alignment.

Together, these participant groups provided a comprehensive understanding of the acceptability, and perceived effects of LCG implementation within routine maternity care. Illustrative quotations were drawn from mothers identified using codes such as M01, M02, M05, M09, M10 and M11, and from

health care providers identified using codes such as HCP01, HCP02, HCP03, HCP04, HCP06, HCP08, HCP11, HCP12, HCP15, HCP16, HCP17, HCP18, HCP20, HCP21, and HCP22

Sample Size

No predetermined sample size was set prior to data collection. Instead, participants were recruited until thematic saturation was reached, define as the point at which no substantial new themes, categories, or insights were emerging from the interviews. The final sample size was therefore determined by the richness and adequacy of the data generated during the study.

Eligibility

Mothers were eligible for inclusion of they had previously experienced labour, were managed in labour at the participating facility, and delivered vaginally. Mothers who had never experienced labour before, including nulliparous women, were excluded.

HCPs were eligible if they worked in the labour ward and were involved in conducting deliveries at the participating facilities. This included providers who had received training on the use of the LCG including those who had not been formally trained.

Data Collection

Data were collected using a standardised questionnaire and audio recordings of participant interview. Where necessary, interviews were conducted or translated into Bemba or Nyanja, the dominant local languages spoken across the study sites, to ensure that participants were able to express their views and experiences clearly. The use of standardised data collection tool supported consistency across interviews, while audio recording helped to ensure accurate capture of participants' response for subsequent transcription and analysis.

Analytical Approach

Approach and rationale

Qualitative interview data from mothers and HCPs were analysed using thematic analysis. A hybrid inductive–deductive approach was applied to ensure that (i) participants' lived experiences and language shaped the findings (inductive), while (ii) the analysis remained aligned with the study's implementation focus on the WHO LCG and domains reflected in the interview guides (deductive).

Data management and preparation

All transcripts were reviewed for completeness and readability. Interviews were conducted in multiple languages (English, Bemba, and Nyanja); where transcripts were translated, meaning was preserved as written in the transcript. Where transcripts contained ellipses ("…") or very short responses, these sections were coded only when the meaning was clear and sufficient to support an analytic point; extremely short or non-relevant files were not used to generate themes.

Coding and theme development process

Qualitative data were analysed using reflective thematic analysis following the six-phase approach described by Braun and Clarke (19), (21). Analysis involved repeated familiarisation with the transcripts, inductive open coding, and iterative development and refinement of themes through constant comparison across participant groups and care contexts. Related codes were clustered into broader themes reflecting participants' experiences with implementation of the WHO LCG. Themes were refined based on their relevance, recurrence, and implications for respectful maternity care, implementation, and future scale-up. Representative quotations were selected to illustrate both dominant and divergent perspectives.

Analytical Framework

The CFIR 2.0 was selected because it provides a comprehensive framework for understanding multilevel factors influencing implementation, including the characteristics of the intervention, individuals involved, organisational context, implementation processes, and the broader health system. In the present study, CFIR 2.0 was applied after reflective thematic analysis as an interpretive lens rather than as a coding framework. This approach allowed themes to emerge inductively from participants' experiences while subsequently situating them within an established implementation science framework. By avoiding the use of predefined CFIR constructs during coding, the analysis preserved the richness and authenticity of participants' perspectives, while enabling systematic interpretation of implementation facilitators, barriers, and contextual influences relevant to the successful implementation and future scale-up of the WHO LCG.

Figure 1shows an overview of the qualitative study design and analytical process. Semi-structured interviews were conducted with mothers and healthcare providers who had experience with the WHO LCG. Audio-recorded interviews were transcribed verbatim and analysed using hybrid inductive-deductive thematic analysis. Following theme development, findings were interpreted using the Consolidated Framework for Implementation Research (CFIR 2.0) (20), which informed the development of the proposed implementation framework for the WHO LCG.

Results

A total of 21 participants were included in the study, comprising mother who had delivered vaginally after labour and health care providers involved in labour and delivery care. This section presents the consolidated findings from mothers and HCPs, organised thematically.

The analysis generated 15 themes, which were grouped into four broad domains: (i) women's experiences of labour and childbirth, including respectful communication and labour coaching, community narratives, involvement in decision-making, companionship, and the boundaries of companionship; (ii) perceived clinical and professional benefits of the WHO LCG, including improved clinical decision-making, greater accountability, patient-facing visibility of care, and the principle of giving women sufficient time to progress through labour, (iii) implementation challenges, including feasibility constraints, fidelity problems, training and diffusion, usability and interpretability concerns, and resource and infrastructure limitations; and (iv) sustainability and health system alignment. Each theme is presented using illustrative quotations from mothers and HCPs.

Respectful communication and labour coaching as the primary driver of satisfaction and trust

Women consistently described positive childbirth experiences through respectful tone, encouragement, responsiveness, and practical coaching during labour. These interpersonal practices appeared to correct fears shaped by community narratives and functioned as a trust-building mechanism. Providers described the LCG environment as encouraging engagement with women and families, although women did not consistently link these improvements to the LCG tool itself.

Illustrative quotes:

- *"The interaction was so friendly. Whenever I call upon them, they were there… they explained everything… 'do not push without us telling you to do so… do not go to the toilet… those are the signs of labour.'" (M01)*
- *"They were just talking like I knew them for a long time… not like shouting, shouting… I only heard that they shout, but they didn't shout." (M11)*
- *"It… encouraged us to engage our patients and their families… explain exactly how we are treating and managing… they appreciated being involved… they were aware of what was going on." (HCP12, medical doctor)*

Community narratives shape expectations: trust repair on one hand, but harmful norms can be normalised

Some women arrived with anxiety shaped by stories of harsh treatment or being taken to theatre, but later reported a better-than-expected experience. Alongside this trust-repair dynamic, a high-signal risk emerged: coercion (including beating) could be framed as acceptable when a woman is perceived as 'not pushing', indicating broader norms that can undermine respectful care.

Illustrative quotes:

- *“People have been discouraging us… I had that in my mind that I might be taken to theatre… But when I came here… everything went well.” (M01)*
- *“They say they are bad, they beat… okay beating is not bad because if you’re not pushing you can kill the baby… but I didn’t experience any of that.” (M11)*

Women’s involvement in decisions: stronger in routine labour, weaker or less clear during operative pathways

In routine labour, women often described being guided and reassured, sometimes perceiving alignment between their preferences and provider plans. However, operative pathways revealed clearer gaps: some women reported limited explanations before theatre or remembered only procedural instructions. Providers emphasised women’s right to information and family involvement, suggesting variability in practice and/or in what women retain during high-stress moments.

Illustrative quotes:

- *“My plan and their plans were just moving at the same page.” (M09)*
- *“They didn’t tell me everything… they just took me to theatre… then started working and gave instructions—those are what I remember.” (M05)*
- *“Every examination… we are informing them… the family is involved… they have that right to have information.” (HCP15, medical doctor)*

Companionship: valued for support and reassurance, but constrained by space, privacy and inconsistent practice

Companionship was framed as beneficial for encouragement, reassurance, and practical support, particularly where staffing was constrained. Implementation was inconsistent due to crowded wards, privacy concerns, and limitations on allowing partners in shared spaces. Some narratives suggested companionship is particularly important post-operation and postpartum when women’s support needs increase.

Illustrative quotes:

- *“Space is small… because there are many women… it was difficult for them to enter.” (M10)*
- *“I didn’t see my mom… I only saw her today… has she been allowed to be with you on your bedside? No.” (M11)*
- *“Our labour ward does not allow for every patient to have a companion because of space and privacy.” (HCP12)*

Boundaries of companionship: helpful support vs interference—and the need for clear guardrails

Providers highlighted that companions can sometimes interfere with clinical work or create privacy concerns. This indicates companionship is not simply 'allowed vs not allowed', but requires facility-level guidance on companion roles, timing (e.g., stepping out at delivery), and respectful conduct.

Illustrative quotes:

- *"At the point of delivering… companion should be removed… [they may] try to guide you." (HCP08, RNM)*
- *"A husband… other women felt uncomfortable… hearing a man's voice." (HCP17, midwife)*

Perceived clinical benefits of the LCG: improved decision-making, escalation and continuity of care

Providers frequently described the LCG as strengthening clinical reasoning (assessment → interpretation → plan → action/escalation) and improving continuity across shifts. The LCG was often contrasted with the partograph and described as more directly linked to decision-making and documentation of interventions.

Illustrative quotes:

- *"Whenever I assess… I'm able to make a decision right there and then… and… escalate… You see clearly the steps… and… continue properly." (HCP01, medical licentiate)*
- *"It gives provision where you do your assessment and intervention… you would see what interventions have been carried out… using just the Labour Care Guide." (HCP11, senior OBGYN)*

Accountability shift: the LCG increases visibility of decisions and shapes documentation behaviour

The requirement to document assessment/plan and adds initials was described as increasing accountability and clinical governance. At the same time, incomplete documentation was attributed to workload, uneven training, and in some situations avoidance of responsibility—highlighting a risk to fidelity and data quality.

Illustrative quotes:

- *"It holds us accountable… we can write our assessment… and the plan… it holds us accountable of our decisions." (HCP15)*

- *“Interventions have been done, but they are not documented… maybe… shunning away from responsibility… because… you put your initials.” (HCP11)*

Patient-facing visibility of the LCG: women rarely recalled the tool being explained

Despite reporting positive care experiences, many women did not report being told what the LCG was or what clinicians were recording. Providers often reported improved engagement and explanation. This divergence suggests uneven practice and/or that explanations may not be retained or recognised as ‘about the tool’, especially during stressful moments.

Illustrative quotes:

- *“Did they explain the Labour Care Guide? No. They didn’t explain.” (M01)*
- *“Because now it’s out there… we’re using the LCG… we’re involving the mothers.” (HCP15)*

The ‘give women a chance’ principle: central tension between avoiding unnecessary intervention and concerns about delayed action

Many providers valued the LCG for giving women time to progress and reducing perceived premature interventions and unnecessary caesarean sections, including community trust benefits. A dissenting but strong view argued that ‘give chance’ can lead to prolonged labour and delayed intervention in contexts with limited staffing/monitoring, potentially contributing to foetal distress and lower Apgar scores. This reflects tool–context interaction rather than opinion alone.

Illustrative quotes:

- *“This labour care guide has really spoken for women… ‘once you go… they will take you to theatre’… now… giving these women a chance.” (HCP20)*
- *“With the LCG… ‘give chance, give chance’… then you find… baby goes into fetal distress… Apgar score of five, six… With the old one… you notify… and… Apgar score nine and ten.” (HCP21, RNM)*

Feasibility constraints and fidelity problems: workload, time pressure and documentation gaps

Providers described difficulties meeting the LCG’s intended monitoring and documentation intervals during busy shifts. This led to gaps, delayed plotting, and partial completion, especially when trained

staff were not consistently present. These findings indicate that acceptability is high but fidelity is vulnerable without workflow redesign, staffing support and supervision.

Illustrative quotes:

- *“Documentation… based on the number of patients… every 30 minutes… not attainable… staffing has been a challenge.” (HCP02, maternity in-charge)*
- *“I’ve never received the training… I was forced to copy what the other person was writing… not knowing what it really meant.” (HCP21)*

Training and diffusion: peer ‘summary orientation’ helps, but uneven coverage spreads confusion

Formal training was described as building confidence; however, not all staff were trained, leading to reliance on manuals and colleague summaries. Peer-to-peer diffusion enabled rapid spread but also risked incomplete transfer of knowledge and ‘copying’ behaviour. Participants called for refresher training, mentorship and pre-service integration to sustain capability through staff rotation.

Illustrative quotes:

- *“I didn’t receive any training, except just reading from the manual… it wasn’t sufficient.” (HCP06, midwife)*
- *“I just learned from my fellow midwife… it was just a summary on how to use it.” (HCP22, RN)*

Usability and interpretability challenges: timing rules, second stage, space and posture options

Providers reported recurring confusion about time recording (including full dilatation), where to record 10 cm and second-stage details, and limited writing space/small font. Some also noted challenges documenting maternal position truthfully when the form emphasises supine. These usability issues can slow adoption, create inconsistency, and fuel resistance.

Illustrative quotes:

- *“Time of full dilatation… 12.30… how to indicate it… it has been a challenge.” (HCP04, midwife)*
- *“There are times a woman is in lateral… should I just continue writing SP… which is a lie?” (HCP21)*
- *“Risk factor… assessment… not enough space.” (HCP03, midwife)*

Resource and infrastructure constraints: monitoring equipment, privacy limitations and stationery stock-outs

Equipment gaps (notably CTG availability) limited the ability to complete some LCG components and contributed to perceptions that the tool fits better in better-resourced settings. Infrastructure constraints limited companionship. A practical system barrier—running out of printed forms—resulted in immediate reversion to partograph use, undermining continuity and institutionalisation.

Illustrative quotes:

- *"You can only pick a fetal deceleration using the CTG… we only have one CTG." (HCP18, midwife)*
- *"We had run out of the stationary… we reverted back to the use of the partograph." (HCP16, medical doctor)*

Sustainability and system alignment: referrals, pre-service integration, continued mentorship and postpartum integration gaps

Providers noted friction when women are referred in with partographs, highlighting the need for system-wide alignment. Many called for integrating LCG into pre-service curricula and ensuring continued mentorship to reduce dependence on champions. Even with high satisfaction, women's narratives suggested postpartum counselling and post-operative support needs are inconsistently addressed.

Illustrative quotes:

- *"Facilities referring… prolonged labour with the partograph… transitioning is a little bit challenging." (HCP15)*
- *"Continued mentorship… when the mentored people are not there… gaps." (HCP18)*
- *"No, it's about my personal issues… With the care, it's fine." (M09)*
- *"After operation… there should be someone to be with you… the baby cries… nurses are busy…" (M02)*

Discussion

This study explored mothers' and HCPs' experiences with the implementation of the WHO LCG in selected hospitals of Zambia. Overall, the findings suggest that the LCG was widely perceived as a valuable tool for improving the quality of intrapartum care. Participants reported that the LCG strengthened respectful communication, promoted share decision-making, enhanced clinical decision-making and continuity of care, increased accountability through more structured documentation, and helped avert unnecessary obstetric interventions. Mothers also described greater trust in HCPs and valued the facilitation of birth companionship where feasible. However, these perceived benefits were

tempered by important implementation challenges, including heavy documentation workload, time pressures during shifts, inconsistent fidelity to the LCG, limited training opportunities, usability concerns related to interpretation of sections of the toll, shortages of essential monitoring equipment, inadequate infrastructure to support privacy and companionship, and difficulties integrating care across facilities that had not yet adopted the LCG. Collectively, these findings demonstrate that while the WHO LCG is both acceptable and perceived as beneficial in routine maternity care, its successful implementation depends on strengthening health system readiness, provider capacity, and sustained institutional support.

Respectful maternity care and women's experiences

This study demonstrated positive childbirth experience. HCPs and women in labour interpersonal practices seemed to rectify fears about negative community beliefs and narratives. This probably resulted in a trust-repair and building dynamics. HCPs found that the LCG created an enabling environment to engage women and their families through communication. Negative experiences lead to break in trust and is deterrent from seeking care from the same facility according to Sripad, Merritt (22). Furthermore, the requirement of birth companionship on the LCG helped to facilitate share decision-making in the process mitigated anxieties on the women in labour. Previous authors have demonstrated that share decision-making improves women's confidence, reduces fear and uncertainty, builds trust in health care providers, and ultimately contributes to positive childbirth experience (23).

Clinical decision-making and quality of care

Women frequently described being informed and reassured to a point of between preferences and provider plans. The emphasis by the HCPs on women's entitlement to information and family informed not only showed improvement in quality of care but helped ensure shared decision-making. This study shows that the LCG facilitated more individualised labour management, thereby helping to avoid unnecessary obstetric interventions. This finding is consistent with the evidence underpinning the development of the LCG, which challenged the traditional expectation of uniform labour progression based on Friedman's labour curve and the subsequent use of Philpott's alert and actions line (16, 24). Contemporary evidence has demonstrated that labour progression is highly variable, particularly before, 6 cm cervical dilatation, supporting a shift from rigid labour thresholds towards individualised clinical assessment and decision-making (15). These advances informed the development of the WHO LCG, which promotes individualised labour, management, evidence-based decision-making, and women-centred intrapartum care (6, 8). Health care providers in this study perceived the WHO LCG as facilitating a more individualised approach to labour management by allowing adequate time for physiological labour progression. They believed that this reduced the likelihood of premature obstetric interventions and unnecessary caesarean sections, while supporting evidence-based clinical decision-making.

Accountability and documentation

A particularly novel finding of this study was that the structured documentation requirement of the WHO LCG appeared to strengthen professional accountability and reinforce clinical governance. By requiring HCPs to document clinical assessments, management plans, and provider initials, the LCG increased the transparency, visibility, and traceability of clinical decision-making. HCPs perceived that this encouraged greater diligence in labour monitoring, fostered ownership of clinical decisions, and promoted timelier and evidence-informed management. The structured documentation also facilitated continuity of care during shift handovers and created an audible record that support supervision, clinical review, and continuous quality improvement.

These findings are consistent with previous literature on labour documentation. Bedwell, Levin (14) reported that documentation practices influence labour management behaviours, including the retrospective completion of partographs, often driven by workload pressures and fear of litigation. Such practices undermine the primary purpose of labour monitoring by reducing the accuracy and timeliness of clinical documentation. In contrast, the findings of the present study suggest that the structured design of the WHO LCG promoted more contemporaneous documentation and greater accountability for clinical actions. Similarly, the World Health Organization (8) emphasised that standardised labour documentation improves communication among HCPs, facilitates continuity of care, and contributes to higher-quality intrapartum care. Furthermore, Vogel, Comrie-Thomson (25) described the LCG as a clinical decision-support tool rather than merely a recording chart, specifically designed to support evidence-based intrapartum care by promoting systematic monitoring of maternal and foetal wellbeing, encouraging supportive care throughout labour, guiding timely documentation and clinical decision-making, facilitating early identification of labour abnormalities, reducing unnecessary interventions, and strengthening clinical audit and quality improvement.

Implementation fidelity

With respect to implementation fidelity, HCPs, particularly those working in high-volume facilities with inadequate staffing, reported challenges in adhering to the prescribed monitoring and documentation intervals of the WHO LCG during busy shifts. Delayed documentation and incomplete completion of the LCG were commonly reported, especially in the absence of trained staff. These findings suggest that, although the LCG was highly acceptable to HCPs, maintaining high implementation fidelity was constrained by workforce shortages, heavy workloads, and insufficient supportive supervision. This underscores the importance of sustained staffing, mentorship, and ongoing implementation support to ensure consistent and faithful application of the LCG in routine maternity. Similar implementation challenges have been recorded citing that high workload impacted effective use of the LCG, staff shortages, and lack of mentorship or supervision, while some felt that the LCG added to their workload (26). These findings indicate that high acceptability alone is not sufficient to ensure implementation fidelity, reinforcing implementation science evidence that effectively integrates complex healthcare

interventions require adequate organisational support, mentorship, and supportive supervision in addition to user acceptance (27).

Health system readiness

Although the LCG was highly acceptable to both HCPs and mothers appeared to foster and strengthen provider-patient relationships, its implementation remained constrained by several health systems challenges. HCPs reported that shortages of essential equipment, particularly cardiotocography (CTG) machines, limited their ability to complete certain components of the LCG and contributed to perceptions that the tool is more readily applicable in well-resourced settings. Inadequate or inappropriate infrastructural design, limited space, and lack of privacy within labour wards, also restricted the effective implementation of birth companionship, despite its recognition as a key component of respectful maternity care. In addition, intermittent shortages of stationery and LCG forms disrupted routine documentation and further challenged implementation. These findings are consistent with those of Malel, Wapary (26), who reported that successful implementation of the LCG depends not only on provider acceptance but also on the availability of essential equipment, adequate infrastructure, sufficient supplies, and broader organizational readiness. Collectively, these findings underscore that while acceptability is a critical prerequisite for implementation, sustained adoption and high implementation fidelity require concurrent investments in health systems strengthening and supportive implementation environments.

Sustainability and scale-up

Another important finding was the need for greater health system integration to support sustainable implementation of the LCG. HCPs reported challenges when receiving referrals from facilities that continued to use the traditional partograph, resulting in inconsistencies in labour documentation and continuity of care. These experiences highlight the importance of harmonizing labour monitoring practices across all levels of the health system to facilitate seamless referrals and standardized intrapartum care. Similar observations have been reported in implementation studies, which emphasis that successful integration of the LCG requires coordinated health system adoption rather than isolated facility-level implementation (26, 28).

HCPs further recommended integrating the LCG into pre-service medical, midwifery, and nursing curricula, alongside ongoing mentorship and supportive supervision, to build provider competence and reduce reliance on individual champions for successful implementation. These recommendations reflect the recognition that long-term sustainability depends on institutionalisation of the LCG within health professional education and routine clinical practice, thereby reducing reliance on individual champions and ensuring consistent implementation across healthcare settings. Similar recommendations have been advanced by World Health Organization (6) and Laisser, Danna (29), who identified education, mentorship, and organisation readiness as essential determinants of successful implementation.

Despite the overall positive childbirth experiences reported by mothers, the findings also suggest opportunities to strengthen the continuum of maternity care. While women expressed satisfaction with the care received during labour, narratives indicated that postpartum counselling and post-operative support, particularly following caesarean birth, were not consistently provided. This underscores the need to ensure that the principles of woman-centred care embodied in the LCG extend beyond intrapartum care to encompass comprehensive postpartum support and counselling. These findings are consistent with the WHO recommendations for a positive childbirth experience, which advocate continuity of respectful, responsive, and supportive care throughout childbirth and immediate postnatal period (8).

Implications for Implementation and Scale-up

Collectively, these findings indicate that successful implementation of the LCG extends beyond introducing a new labour monitoring tool. Rather, implementation is shaped by interactions between the characteristics of the intervention, HCPs, organisational readiness, implementation processes, and the broader health system. To synthesise these interrelated determinants, we developed a CFIR-informed implementation framework based on the findings of this study (Fig. 2). The framework illustrated the pathways through which implementation facilitators and barriers influence provider behaviour, implementation outcomes, and the quality of intrapartum care.

Conclusion

This study demonstrated that both mothers and HCPs generally had positive experiences with the implementation of the WHO LCG in the selected hospitals in Zambia. The LCG was perceived to promote respectful, woman-centred care by enhancing communication, supporting women's involvement in decision-making, improving accountability through greater transparency in clinical decision-making, improving accountability through greater transparency in clinical decision-making, and companionship was widely valued, its implementation was constrained by limitations in space and privacy. HCPs also identified operational challenges, including increased workload, time pressure, and documentation demands, particularly during busy shifts. Overall, the findings suggest that the WHO LCG is feasible and acceptable tool for improving the quality of intrapartum care; however, successful scale-up will require addressing health system constraints through adequate staffing, supportive supervision, and continuous capacity building to ensure sustainable implementation.

Strengths and Limitations

This study had several strengths. First, it was guided by a clearly defined objective, an appropriate qualitative study design, and a well-described methodology. The use of standardised data approach enhanced methodological rigour and allowed for an in-depth exploration of mothers' and HCPs' views and experiences. Thematic analysis enabled the study to capture nuanced perspectives on the

implementation process, including perceived benefits, practical challenges, and health system barriers and facilitators. The clarity of reporting further strengthened the interpretation of the findings. Importantly, the study demonstrated both clinical and public health relevance by showing that participants perceived the WHO LCG as a more comprehensive and supportive labour monitoring tool than the traditional partograph.

This study had some limitations. First, the findings were based on selected hospitals in Zambia and may not be fully representative and generalisable to all health facilities, particularly lower-level or rural facilities with different settings such as staffing levels and patient volumes. Second, as a qualitative study, the findings reflect participants' perceptions and experiences, which may be influenced by recall bias, social desirability bias, or the desire to present the implementation process positively. Third, the study focused on mothers and HCPs who had direct experience with the LCG, and may not have captured the views of other key stakeholders such as facility managers, policymakers, or programmed implementers. Fourth, implementation was assessed during an early phase, meaning that some barriers and facilitator may evolve as users become more familiar with the tool. Finally, although the study provides rich insights into acceptability, feasibility, and perceived usefulness, it was not designed to quantitatively measure the effect of the LCG on maternal and perinatal outcomes.

Recommendations

Based on the study findings, the following recommendations are proposed:

1. **Support the national scale-up of the WHO LCG**. The positive experiences reported by both mothers and HCPs support broader adoption of the LCG across Zambia. The Ministry of Health should use the findings to inform the development and implementation of a national scale-up strategy and policy framework for integrating the LCG into routine intrapartum care.
2. **Strengthening health system readiness for LCG implementation.** Successful implementation requires addressing operational challenges identified in this study, including workload, time constraints, and documentation demands. Adequate staffing, supportive supervision, continuous mentorship, and periodic quality improvement audits should be incorporated into implementation plans to enhance adherence and sustainability.
3. **Promote realistic implementation of labour companionship.** Given the recognised benefits of companionship into national maternity care policies while addressing contextual barriers. Future maternity infrastructure should include labour ward designs that accommodate birth companions while maintaining privacy, and dignity. Where feasible, existing labour wards should be modified to better support companionship.

4. **Strengthen pre-service and in-service education.** To ensure sustainable implementation, the WHO LCG should be integrated into pre-service curricula for midwives, nurses, and medical students, while continuing professional development programmes should provide regular in-service training, mentorship, and competency-based refresher courses for practicing HCPs.
5. **Foster multisectoral stakeholder engagement.** Continued collaboration between the Ministry of Health, professional associations, academic institutions, regulatory bodies, and development partners is essential to support policy implementation, curriculum integration, capacity building, and long-term sustainability of the WHO LCG.

Declarations

Ethical Consideration Confidentiality and quote identifiers (coding system)

Ethical approval for this study was obtained from the University of Zambia Biomedical Research Ethics Committee (UNZABREC) (Ref.No. 7029-2025). Regulatory clearance was granted by the National Health Research Authority (NHRA) (Ref. No. NHRA-2672/08.09.2025). Administrative permission to conduct the study was obtained from the relevant Provincial and District Health Offices, as well as the participating health facilities.

Written informed consent was obtained from all participants prior to data collection. Participation was voluntary, and participants were informed of the study objectives, their right to decline participation or withdraw at any stage without penalty, and measures in place to protect their privacy and confidentiality.

To safe guard participant confidentiality while maintaining analytical traceability, all interview transcripts were anonymized and assigned unique study identifiers. Mothers were identified as M01-M11, while healthcare providers were identified as HCP01-HCP22. These identifiers reflected the order in which transcripts were processed during analysis and did not represent participant rank, performance, or importance. Where relevant to the interpretation of findings, the participants' professional cadre or role was reported in parentheses (e.g., HCP12, Medical Doctor) without including names or any personal identifying information. All transcripts and study data were securely stored with access restricted to the research team.

Consent for publication

All authors reviewed and approved the final version of the manuscript.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available because they contain qualitative interview data that could compromised participant confidentiality. However, de-identified data and supporting study materials are available from the corresponding author (Principal

Investigator) upon reasonable request and are subject to approval by UNZABREC, NHRA, and the Copperbelt and Lusaka Provincial Health Offices of the Ministry of Health, Republic of Zambia, in accordance with national research governance and data-sharing requirements.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

MM1 contributed to the inception of the project, development of the study concept, overall framing of the research, and drafting of the manuscript. MB and KL supported the study through data collection and transcription, ensuring that the primary data were accurately captured and prepared for analysis. MM2 contributed to the conceptualisation of the methodology, drafting of the methodological approach, and development of the analytical framework that guided the interpretation and presentation of the findings. All authors reviewed and approved the final version of the manuscript.

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Figures

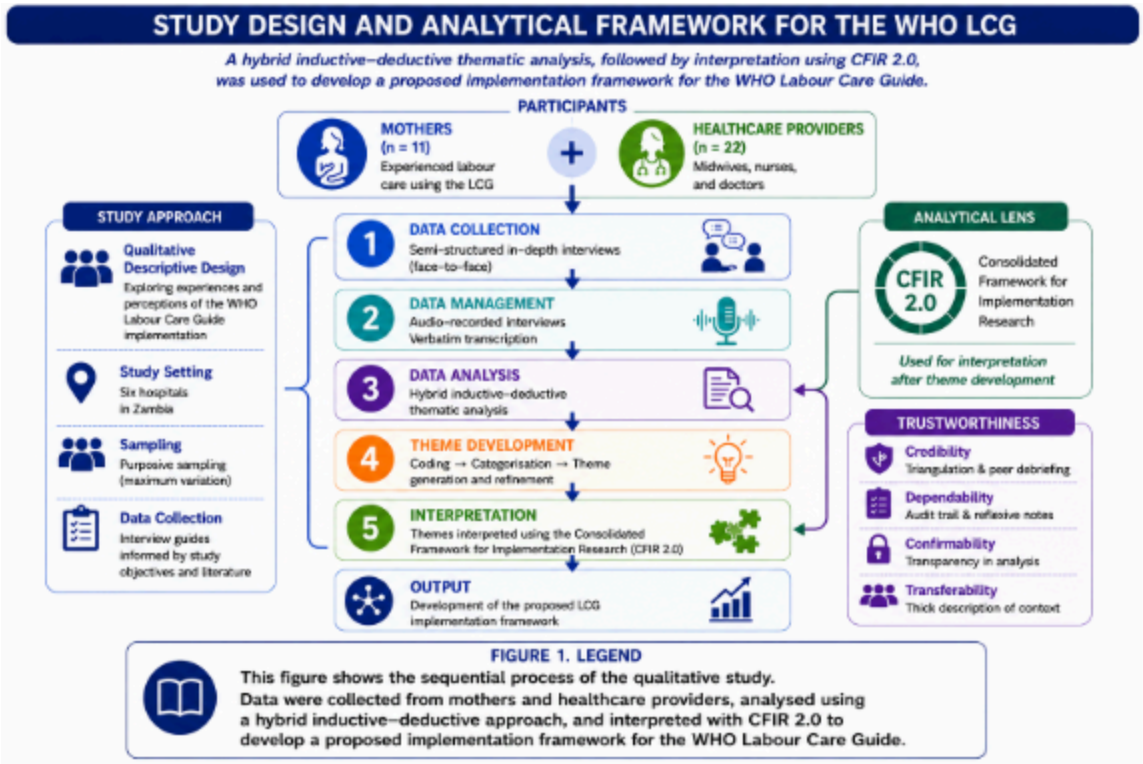


Figure 1

Study Design and Analytical Framework for the WHO LCG

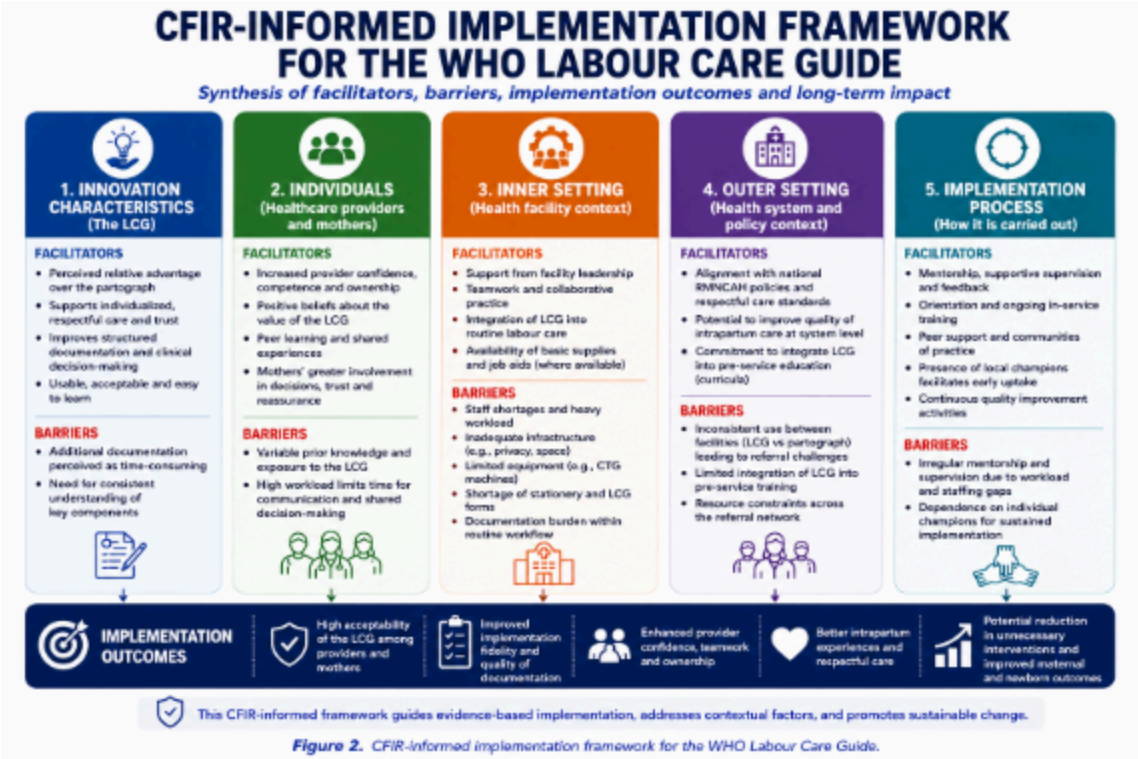


Figure 2

Proposed CFIR-informed implementation framework for the WHO LCG. The framework presents a conceptual synthesis of the study findings, illustrating how key implementation determinants interact to influence provider behaviour, implementation outcomes, and the quality of intrapartum care. It is intended to support future implementation, evaluation, and scale-up of the LCG in Zambia and similar low-resource settings.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- AppendixA.docx