

Point of care quality improvement approach increases immediate postpartum family planning uptake: A field report from Sululta district, Oromia, Ethiopia

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Abstract

Background: Globally, majority of postpartum women who want to avoid pregnancy within 2 years after delivery, do not use contraception. Supported by USAID's Transform Primary Health Care Activity, quality improvement teams of service providers and facility administrators, implemented a project to improve the very low immediate postpartum family planning (IPFP) uptake in four health centers of Sululta district, Oromia region. This paper presents the process, lessons, and effect of improving PFP service uptake using the nationally adopted quality improvement models.

Methods: The quality improvement intervention was preceded by identifying quality improvement teams and sub-teams, conducted facility baseline self-assessment, and provided orientation and training to service providers on quality improvement approaches and tools. Afterwards, each health center conducted root cause analyses to identify and prioritize problems using the fish bone diagram, developed change ideas, and implemented them, monitored progress using run charts and repeated the process following the "plan, do, study and act" cycle.

Result: Improving immediate postpartum family planning uptake was prioritized and the proposed solutions were categorized into four packages of intervention: improvement in quality of counseling; on-the-job peer to peer skill transfer using a mentoring approach; timely request and refill of contraceptive commodities; and community mobilization for PFP awareness and demand generation. The run chart showed positive trend in service uptake with the introduction of each stepwise intervention. Immediate PFP service uptake increased by 21% in Derba, 41% in Chancho, 44% in Gorfo and 69% in Duber health centers.

Conclusion: The quality improvement implementation process created the opportunity for all health centers staff to appreciate broader system issues, identify gaps, use data to monitor progress and find feasible solutions tailored to their context. Most importantly, this quality improvement intervention can be expanded to similar health facilities in Ethiopia and the best practices can also be adopted to fit into different local contexts. [*Ethiop. J. Health Dev.* 2021;35(SI-5):27-36]

Key words: Immediate postpartum family planning, quality, Integration, Service

Background

Postpartum family planning (PPFP) is the initiation and use of contraceptives during the first 12 months after delivery (1). The intention of PFP is to prevent unintended and closely spaced pregnancies soon after childbirth, when another pregnancy could be harmful to the health of the mother or breastfeeding baby (1). Pregnancies in the postpartum period pose health risks for women and their infants (2). Study showed that roughly 95% of women within 12 months postpartum want to avoid pregnancy in the next 24 months, but 70% of them are not using contraception (2). Family planning (FP) can prevent 30% of maternal mortality and 10% of child mortality if couples space their pregnancies more than 2 years apart. Closely spaced pregnancies within the first postpartum year increase the risk of preterm birth, low birth weight, and small-for-gestational-age babies (3). Providing PFP is therefore an integral part of postpartum care and crucial for ensuring the health, rights, and wellbeing of women and their babies (1).

Secondary analysis of the 2016 Ethiopia Demographic and Health Survey data shows a PFP rate of 23% nationally and 16% in Oromia regional state (4). However, since then, coordinated efforts at all levels of the health system, including use of multiple entry points to integrate FP with other services, involvement of government health officials, improvement of provider capacity, and increased

commodity availability alongside expanded contraceptive method choices, have improved FP service quality (5,6). The Ethiopian National Health Care Quality Strategy emphasizes the importance of internally motivated quality improvement efforts led by facility-based Quality Improvement Teams (QIT), which apply continuous quality improvement (QI) at the health facility level (7).

Since 2017, USAID's Transform: Primary Health Care activity, a five-year program and implemented by a consortium of partners including Pathfinder International, John Snow, Inc. (JSI), Ethiopian Midwife Association (EMWA), Malaria Consortium, EnCompass, and Abt Associates, has implemented interventions in more than 400 districts in six regions of Ethiopia¹. The project supports the Ethiopian Health Sector Transformation Agendas toward preventing child and maternal deaths, with a focus on primary health care facilities. In Oromia region alone, it supports 162 districts, including facility based QITs in 53 districts and 191 primary health care facilities.

¹ @Oromia; Amhara; Tigray, Southern Nations, Nationalities, and People's (SNNP); During the time preparing the report, Sidama and South-west region was part of SNNP, and in this paper, the term "SNNP" is used to refer three regions (Sidama, South-West, and SNNP)

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The USAID Transform Primary Health Care Activity supported four primary health centers from rural Sululta district to improve immediate PPF (IPPF) service uptake between August 2018 and December 2019. These primary health care facilities applied nationally adopted QI models for PPF improvement (8). This paper presents the process and lessons from the QI implementation and its effects on improving IPPFP service.

Methods

The quality improvement process followed multiple steps. It was preceded by a preparation period during which QITs, and sub-teams were identified, baseline self-assessment of each health center was conducted, and external experts (*Project staff*) provided orientation and training on QI approaches and tools to service providers. Then each health center followed a series of steps to identify and prioritize problems, complete a root cause analysis using a fishbone diagram, develop interventions using a change diagram, monitor progress using run charts, and repeat the process following the 'Plan, Do, Study, and Act' (PDSA) cycle.

Preparation for quality improvement

USAID Transform: Primary Health care staff and government quality and equity unit leaders from Zonal and District Health Offices purposively selected four primary health centers based on facility readiness to implement QI models. Facility readiness is the overall capacity of health facilities to provide general health services as well as availability of components required to provide services, such as basic amenities and equipment, standard precautions for infection prevention, diagnostic capacity, essential medicines, and commodities (9). Following health center selection, external experts provided a brief orientation to each health center's leadership team on national QI approaches. After the orientation, health center leadership agreed to implement QI approaches in their respective health centers. With technical support from the external team of QI advisors (national, regional, and zonal level project personnel), each health center established a QIT and sub-QIT in compliance with the national quality of care strategy. QITs included system leaders (facility managers), unit heads (heads of Maternal Newborn and Child Health [MNCH], FP, Outpatient Department [OPD], Pharmacy, Laboratory, Finance, and Health Management Information System [HMIS]), and additional representatives from each unit with specific expertise (7).

Facility self-assessments and clinical service quality audits: Each health centers conducted a baseline self-assessment and clinical service quality audit using the national Maternal and Newborn Health Quality of Care assessment tool (7). The assessment included client and

provider interviews, observations, and chart reviews (client charts, tally sheets, and reports). The health centers also collected and reviewed baseline data from the HMIS and facility registers (such as labor and delivery and FP registers). The assessments helped the QIT to review FP sub-unit structures and compare the service delivery process against national standards and FP service statistics, which proved instrumental in identifying potential gaps that compromise quality of service. Each health center QIT continued quarterly self-assessments and clinical audits, coupled with action plan development and implementation to address any gaps identified while also assessing progress on technical guidance (e.g.; how to conduct clinical audit, development of doable action plans and follow up; and assist in QI project design for the selected areas) from the external team of QI advisors (i.e. USAID Transform: PHC – National and Regional QA/QI advisors including Zonal Project staffs).

Capacity enhancement: In addition to the initial orientation of facility leaders, USAID Transform Primary Health Care supported a four-day basic QI training for QIT members from the selected health centers. A total of 28 participants (on average 6 per health center and 2 experts from the District Health Office) attended and successfully completed the training. The training addressed health care quality, the concept of QI and its modeling, problem identification and prioritization tools, development of interventions, measurements, and indicators, testing changes, learning networks, QI planning, and clinical audits. The external advisors provided technical support on designing a QI project and then developed an incremental QI plan.

Identification and prioritization of problems

The QITs used brainstorming sessions to identify their respective health center problems based on the self-assessments and baseline clinical audit of their respective. They identified and listed the problems and then ranked them using a prioritization matrix with the following criteria: magnitude of the problem, feasibility, and importance to solve (see Table 1). They used a rating scale of 0 (*minor problem and not urgent to solve*) to 5 (*serious problem and need to solve urgently*). The prioritization matrix revealed a common issue of low IPPFP service uptake—0% during the baseline assessment—and a lack of recorded service statistics specific to IPPFP. IPPFP in this case was defined as uptake of an FP method within 10 minutes to 48 hours of childbirth, which is the duration a postpartum mother stays in the health center prior to discharge. The QITs then developed a clear and concise statement describing the problem with the aim of improving performance to the desired level. Table 2 describes the health center baseline data on August 2018 for contraceptive coverage, PPF, and IPPFP service utilization.

Table 1. Problem identification and prioritization matrix of Derba, Chancho, Duber and Gorfo HCs (scale range 0-5) Oromia, Ethiopia -August 2018

S. N	Lists of problems identified	Prioritization criteria				Rank
		Magnitude	Feasibility	Importance	Total	
1	Low immediate PFP service uptake	5	4	5	14	1 st
2	Low utilization of ANC services (ANC4)	4	4	5	13	2 nd
3	Low partograph utilization for laboring month	4	3	5	12	3 rd
4	Low skilled delivery	4	3	4	11	4 th
5	Low perinatal service performance	4	4	2	10	5 th
6	Low maternal nutrition screening and counseling	3	3	3	9	6 th
7	Low uptake of long acting and reversible contraceptives (LARCs)	2	3	3	8	7 th

Table 2. Facility self-assessment baseline data at Sululta rural WoHO and its selected HCs, Oromia, Ethiopia – August 2018

Facility	Contraceptive Coverage	PPFP	IPFPF
Sululta rural district*	84%	23.7%	0%
Chancho health center	57%	7%	0%
Derba health center	79%	4%	0%
Durber health center	75%	5%	0%
Gorfo health center	61%	5%	0%

*Composite of all facilities in district

Root-cause analysis

Each health center QIT identified the root causes of low quality and uptake of IPFPF services and used a fishbone diagram to clearly map the causes of the problem. The team identified the following causes for absent or limited IPFPF services: clients not properly counseled on PFPF during antenatal care visits, low provider competency and commitment to PFPF, poor

data recording and documentation, poor back-up services, limited support from higher-level leader, and shortage of FP commodities and supplies. The fishbone diagram sorted these challenges into six major categories of root causes of low quality and uptake of IPFPF services: leadership; data management; health center service delivery; and provider, community, and family or individual client-related barriers (Fig 1).

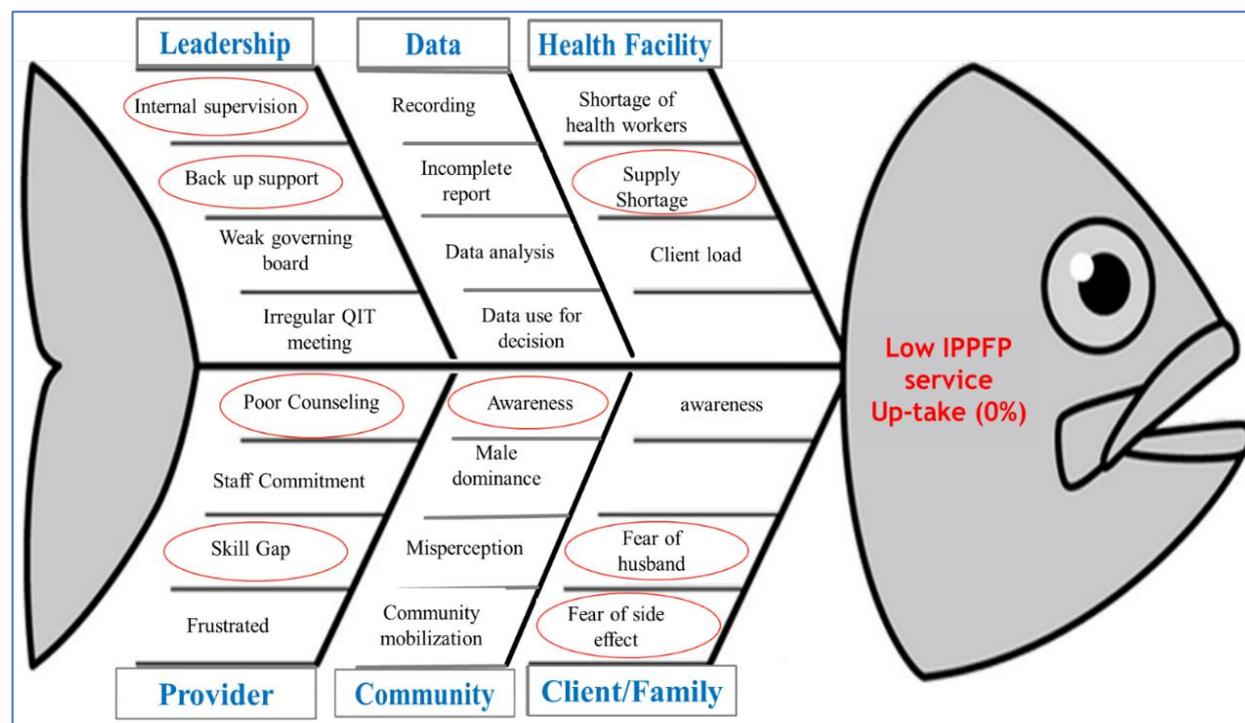


Fig 1. Root cause analysis (fishbone diagram) for no or low IPFPF service uptake in Derba, Duber, Chancho and Gorfo HCs of Sululta rural district, Oromia, Ethiopia -August 2018

Developing interventions (change ideas)

The maternal and child health (MCH) sub-QITs of the respective health centers used a driver's diagram to develop and display solutions for the root causes identified for absent or low IPFPF service uptake. First,

the team set an aim to improve IPFPF uptake by 30% by improving service delivery processes in the identified health centers. Secondly, the team listed primary and secondary drivers that could lead to achieving this aim (with the primary drivers being the

six categories of root causes analysis noted in Fig1.). They linked interventions that could lead to quality and service uptake improvement with each secondary driver (Fig2). Thirdly, they developed a set of indicators to measure and monitor the progress of these

interventions. Finally, they tested the intervention repeatedly, following a PDSA cycle to ascertain fidelity of the QI approach. The PDSA cycle included monthly data collection and performance monitoring over time using run charts.

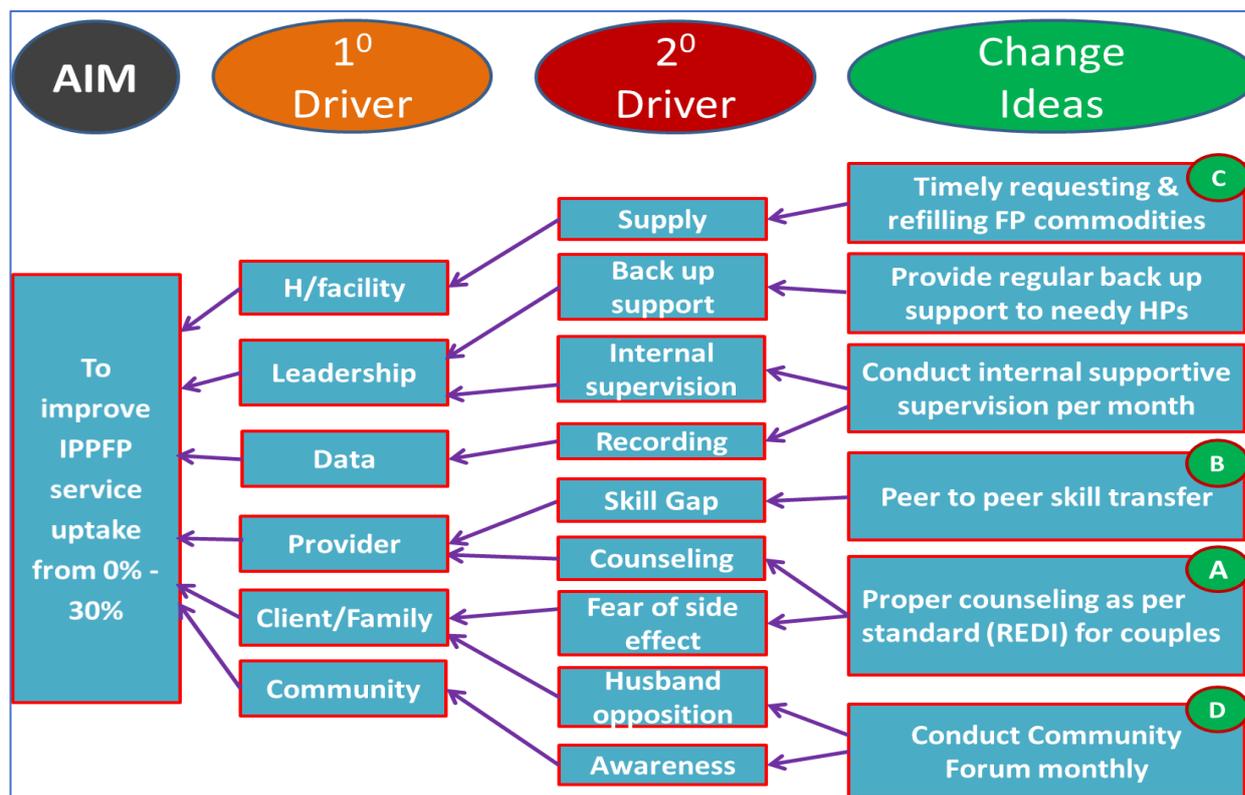


Fig 2. Primary and Secondary drivers for no or low IPPFP service uptake in Derba, Duber, Chancho and Gorfo HCs of Sululta rural district, Oromia, Ethiopia -August 2018.

Proper counseling using REDI FP counseling steps:

The rapport building, exploration, decision making, and implementing decision (REDI) framework [10] for FP counseling was reinforced to improve IPPFP counseling. Clinical service providers and midwives providing antenatal care (ANC) service to pregnant women consistently provided IPPFP counseling to women visiting ANC clinics and completed follow-up cards for pregnant women who agreed to receive PFPF services immediately after giving birth. The card served as a reminder or reference that the client agreed to receive the service immediately after childbirth. After completing delivery, a midwife who assisted the delivery refers to the card, reinforces counseling, and provides the IPPFP method of choice to the client based on the eligibility criteria and condition of the client's current approval to receive a method. Implementation of this process was monitored by observing clients during service delivery and reviewing sample cards.

On-the-job training through peer-to-peer skill transfer:

Senior midwives or health care providers who were trained by project support on PFPF service provision trained other midwives on the job to transfer skills. They also shared PFPF training manual with untrained providers and transferred practical skills to

their mentees during insertion and removal of long-acting reversible contraceptives.

Timely request for and refilling of FP commodities and consumables:

To reinforce timely requesting and refilling of FP commodities and consumables, the regional QI officer and FP/RH officer oriented the service providers on how to request and refill commodities when 25% of stock remained on hand. The orientation was later reinforced by establishing a woreda FP planning package, which provided training-of-trainers and rollout training on FP services.

Community mobilization through monthly community forum:

This forum provided health education on FP methods and benefits for key community informants (religious leaders, community leaders and others). The forums were organized and conducted in collaboration with kebele structures (e.g., Women Development Army [WDA] and kebele managers) by integrating with monthly kebele level meetings and conferences that were facilitated by kebele health extension workers.

Progress monitoring indicators

The QI team set and tracked outcome and process indicators monthly to measure whether the QI approach brought about improvement. The outcome indicator

was percentage of women who received IPPFP service within the 48-hour postnatal period. Four indicators were used for process measurement: 1) percentage of women who received counseling as per standard with sample card review and observation, 2) number of providers who received on-the-job training through peer-to-peer skills transfer, 3) number of days IPPFP commodities were available per month, and 4) number of community forums conducted per quarter. The four health centers started tracking QI activity and monitoring data at different times, and all monitored their IPPFP uptake data from 19 to 23 months.

The health center HMIS focal person, a member of the QIT, collects data from facility registers (labor and delivery registration) and client cards every month and aggregates the outcome indicators. For the process indicator, client cards, on-the-job training registration, stock monitoring charts (e.g., BIN card), and completed community forum registration sheets were used. Facility-level QITs monitored progress of regular data collection, analysis, and aggregation and manually plotted the trend over time. The QI advisors from USAID Transform Primary Health Care supported the

team to construct run charts using Microsoft Excel. Data was collected monthly and then analyzed and plotted on these charts by the HMIS focal person and the MCH head. They shared the results with the QITs during monthly QIT meetings and reviewed the run charts based on run chart rule 1 (shift), rule 2 (trend), rule 3 (rule of run), and rule 4 (astronomical point) [11]. They then followed the PDSA cycle and made decisions on the next step. The health centers tested each intervention every quarter using the PDSA cycle. The team used repeated PDSA cycles for testing the interventions since they tested one intervention at a time (Fig3). Each process (e.g., strength or weakness of the interventions under testing for the desired outcome and challenges encountered during testing period, if any) was documented in a data-collection tool for routine QIT meetings where corrective actions were taken accordingly. The team developed action plans to sustain the strengths of each intervention and to address weaknesses or challenges to enhance the achievement of the desired goal. The QI advisors supported the facility QITs with quarterly coaching and by conducting biannual learning sessions to foster peer-to-peer learning across health centers.

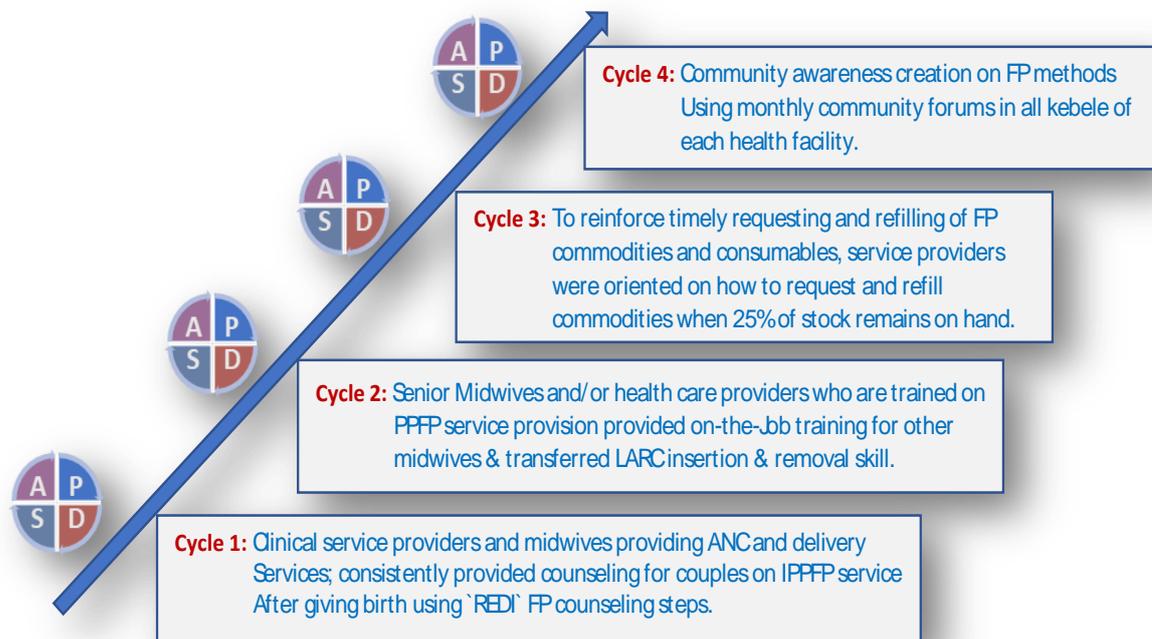


Fig 3. Ramp of PDSA Cycle improving immediate PFP service uptake in Derba, Duber, Chancho and Gorfo HCs -Sululta rural district, Oromia, Ethiopia, from March 2018 to January 2020.

Results

Progress monitoring

Following the stepwise implementation of these interventions, the percentage of women who received IPPFP services within 10 minutes to 48-hours of postnatal period increased in all four health centers over an average period of 19 to 23 months. In all health centers, the baseline data for the six months prior to the introduction of the first intervention showed no recorded data for uptake of IPPFP. In 23 months, the percentage of women who received IPPFP in Derba reached 25%, with a median of 15% after the baseline, while Duber reached 69% with a median of 64% in the

same period. Over a 20-month period, Chancho reached IPPFP uptake of 35%, with a median of 32%, while Gorfo reached 57% with a median of 47% in the same period (Fig 4-7).

The run chart shows patterns aligned with run chart rules [11]: rule 1 (shift) in Derba; rule 2 (trend) in Gorfo and Derba; and rule 4 (astronomical point) in Chancho. The data points in Duber's run chart were close to rule 3 (runs), with multiple points crossing the median, but the data points were not outside of the lower and higher limits for the number of runs to indicate significantly 'too few' or 'too many' runs. The

run charts exhibited that the interventions tested by the project signaled positive improvement (Fig 4-7), particularly in Gorfo and Derba. Moreover, an astronomical point in Chancho was identified that correlated with the introduction of clinical training in IPPFP. Derba was not able to meet the target in the 23-month period, although it showed a positive shift and trend. Duber and Gorfo surpassed the

target significantly at the early stages of the intervention, while the progress in Chancho was very close to the target.

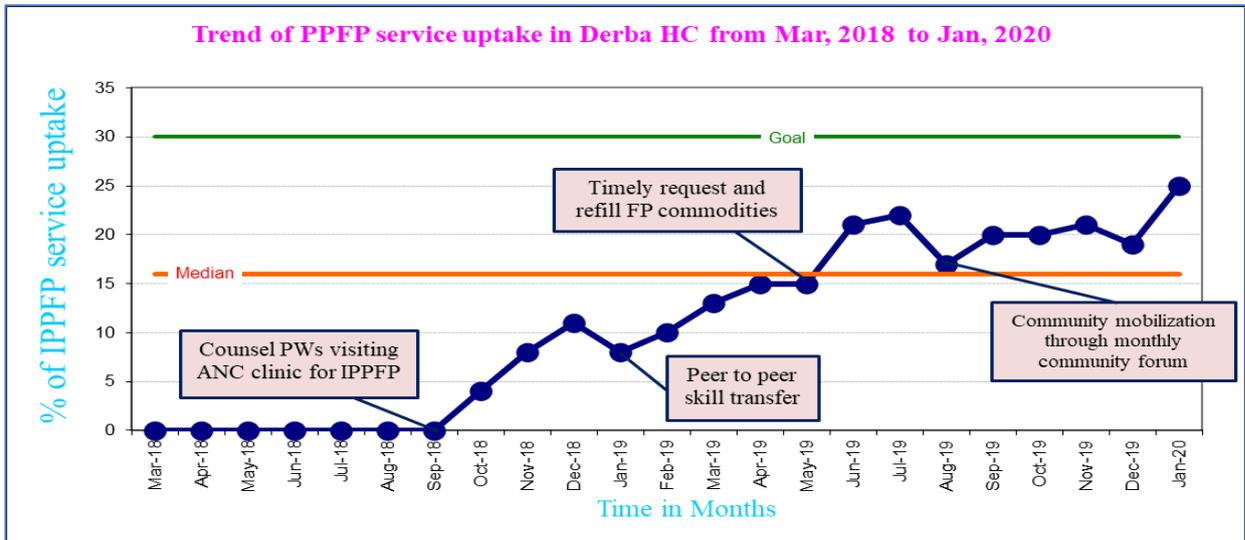


Fig 4. Trend of IPPFP service uptake at Derba health center in Sululta rural district, Finfinne Special Zone – Oromia, Ethiopia

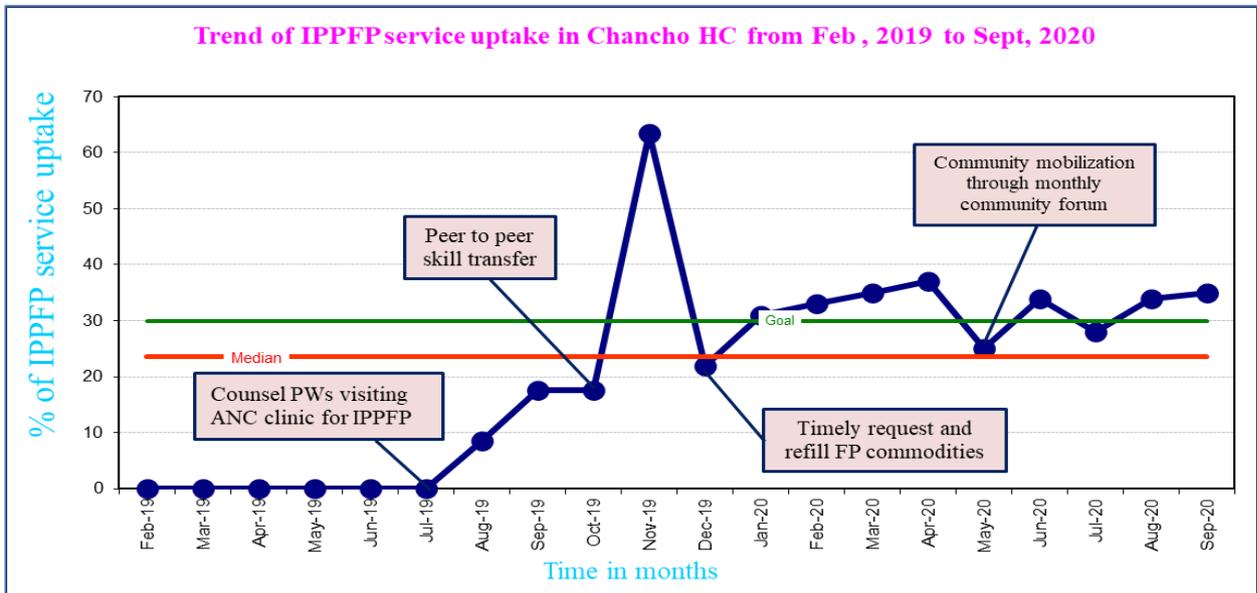


Fig 5. Trend of IPPFP service uptake at Chancho health center in Sululta rural district, Finfinne Special Zone – Oromia, Ethiopia

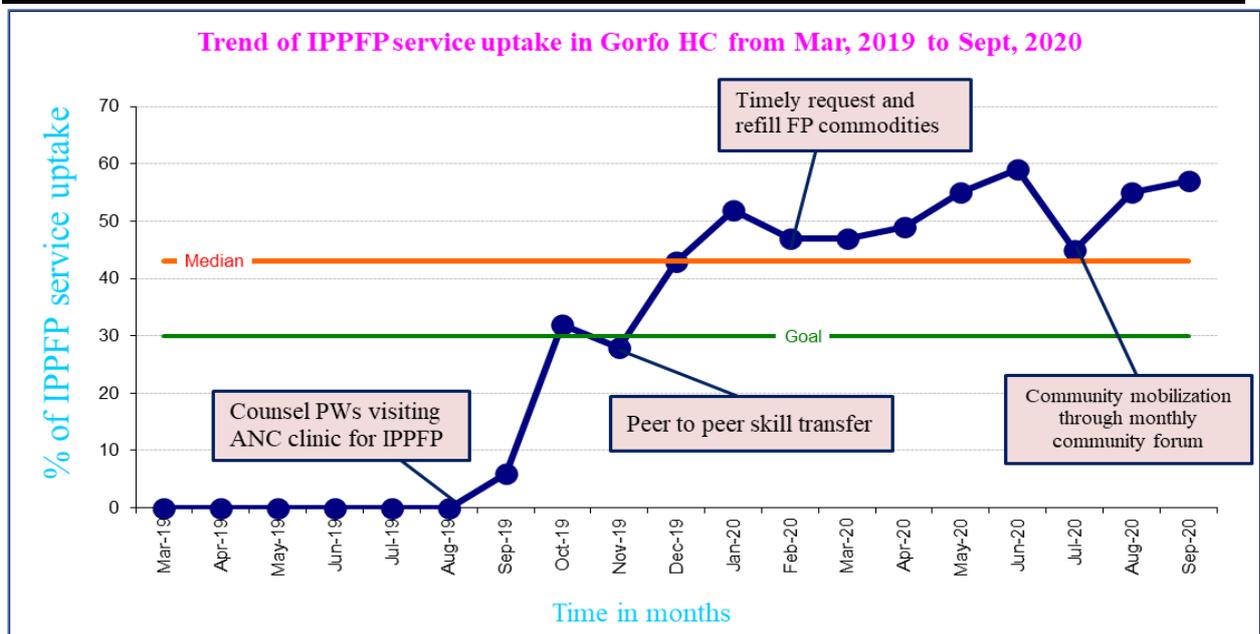


Fig 6. Trend of IPPFP service uptake at Gorfo health center in Sululta rural district, Finfinne Special Zone – Oromia, Ethiopia

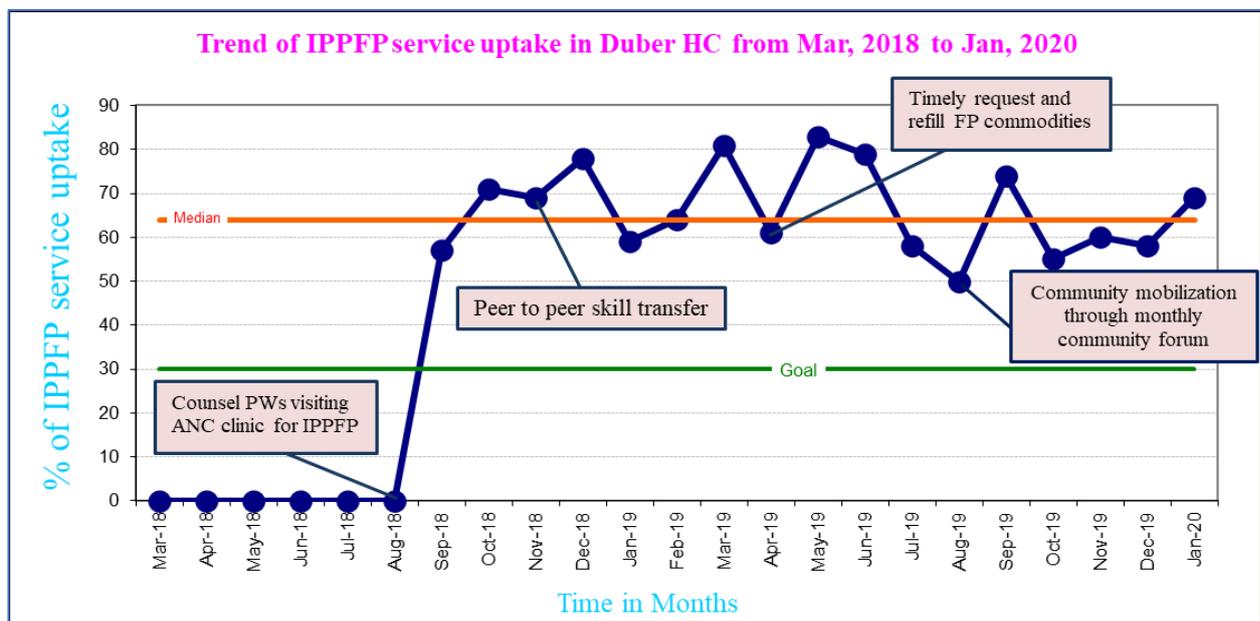


Fig 7. Trend of IPPFP service uptake at Duber health center in Sululta rural district, Finfinne Special Zone - Oromia, Ethiopia

Qualitative Results

Each health center medical director and service provider was interviewed regarding the process of the QI approach. Respondents reported that leadership involvement was a critical part of the process and that the tested interventions for the IPPFP QI project were successful and contributed to the following results:

- Improved provider team spirit and work environment which created sense of ownership among individuals (*Facility Head*).
- Use of the checklist to hand over activities between shifts has improved providers’ information sharing on client’s condition (*Service Provider*)
- Improved knowledge and skills of individual providers through peer-to-peer skills transfer, which should become routine for improving

skill gaps using continuous on-the-job training (*Facility Head*)

- Workload on [midwives] was a challenge early in process, and it has been improved by on-the-job training for two [midwives] by a trained senior midwife (*Facility Head*)
- Integrated QI approach has been scaled-up to respective health posts in the catchment area and all shared successes within their health centers and with other health centers in the district (*Facility Head*).

Discussion

QI needs to be tailored to context, requires coordinated effort by multiple actors in the health system, and is a continuous process that entails multiple steps and tools. The success of QI depends on interaction among

contextual factors, including the setting where QI efforts introduced, the team responsible for different elements of QI implementation, and the environment that governs the QI process (12-14). This case report showed how QI was tailored to context, how we used multiple cyclic phases of QI processes, which tools were adopted to facilitate QIT work, how QI can be made a part of organizational culture owned by everyone in their respective routine roles of providing health services, and how health care QI efforts led by providers of health services will result in changes in health outcomes.

Establishing a QI team and sub-teams within the health centers where the QI implementation was focused was a critical first step to ensure that service providers owned and led the initiative in their respective health centers. Moreover, involvement of health center leadership, sub-unit heads, and other staff, such as the HMIS managers, helped the HCs to realize their own potential to make meaningful and sustainable change and create multidisciplinary collaboration and an organizational culture for continuous QI, as documented in different health care QI efforts (12-15). Furthermore, baseline self-assessments that adopted the national quality of care assessment tool for health centers enabled each health center to appreciate their status. This, along with capacity building for QI teams, was a necessary step to shape the QI process. Since all health centers in this study were in the same district, they shared a similar context and service delivery challenges and therefore identified IPPFP service uptake as a common priority for QI. Addressing this gap in IPPFP is both a global priority and a national priority of Ethiopia (16-18).

The practical use of various tools adopted for this QI implementation (such as the fishbone diagram for root cause analysis, change diagram for mapping change drivers, and run chart for monitoring progress of outcomes with the introduction of QI interventions) indicated how internally motivated teams can lead and own new approaches to solving old problems. Most importantly, this demonstrated how challenging tasks such as QI for IPPFP can benefit from adopting various tools and approaches (15). The fishbone diagram, commonly used for identifying the root causes of quality problems, was useful for the QI teams to brainstorm on all potential factors and multiple causes under each factor, and then to identify the important causes that can adversely affect IPPFP uptake (19). This exercise was also useful for a transparent and blame-free discussion focused on problem solving by diverse members of the QI team who share responsibility and accountability for services in their respective health centers. Similarly, the change diagram facilitated identification of primary and secondary drivers of change, which were later packed into interventions that were manageable with the available resources of the health centers. The run charts provided timely feedback on how each QI intervention affected IPPFP uptake. The stepwise introduction of interventions was helpful for noting which interventions resulted in a nonrandom signal in the run chart. The huge leap in run chart data points

immediately after introduction of an intervention shows how effective the QI team was in identifying the priority issues and solutions. Moreover, the positive trend with the introduction of additional interventions across all health centers shows the synergistic effect of the interventions.

Following multiple rounds of planning, implementing, assessing progress, and taking actions (PDSA cycle), all health centers except Derba achieved their goal for IPPFP uptake. In Derba health center, there was frequent turnover of PHCU director and other providers trained on quality Improvement. The improvement in IPPFP in these health centers have a significant impact on addressing unmet need in PFP and its associated effects (1,20). The varying trend in IPPFP uptake data shows that external factors, such as contraceptive supplies and community engagement, can influence a QI process with varying magnitudes. That is why it is critical to have continued involvement and support of facility and sub-unit leaders and regional authorities.

This is a case report of QI implementation experience, and it therefore comes with some limitations. However, this implementation experience was pragmatic, and we were able to document the success of an internally motivated team effort to improve service quality in health centers.

Conclusions

The QI implementation process created an opportunity for all health centers staff to appreciate broader systems issues, identify gaps, use data to monitor progress, and find feasible solutions tailored to their context. Through this implementation process, health center staff learned that each member of the health center has a role to play in QI, and most of their service quality gaps can be improved with internal resources. Furthermore, the process boosted service providers' confidence in problem solving and contributing to a common goal. Regular mentoring and coaching support to QITs plays a great role in maintaining team spirit and motivating teams to test different interventions to achieve their desired results. Most importantly, this QI implementation process can be expanded to other similar health centers in Ethiopia, and the best practices can also be easily adopted to fit into different contexts.

IPPFP service uptake increased significantly by applying the model for improvement, which can result in reducing unintended pregnancies, unsafe abortions, and related complications. This shows a need to continue involving leadership, improving staff knowledge and skills with peer-to-peer skill transfer, providing mentoring/coaching support, completing timely request and refill of contraceptive commodities and supplies, encouraging community engagement, providing appropriate counseling, and creating reliable data systems. The project showed that health workers can apply this model for improvement and use data for decision making to improve delivery of quality health care services. QI activities need to expand to other health centers through collaborative learning sessions across health centers to share their experiences and best

practices in improving the quality of health care services.

Declaration

Competing interests:

The authors declare they have no competing interests.

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