

SUPPLEMENTAL FILE 1: Weakly Distinguishing CFIR Construct Ratings

Weakly Distinguishing

Intervention source

Two high performing sites viewed the SAIA as internally generated as the health care teams managed the tools and directed innovations.

We looked at our system as a whole and then we changed it. We discussed together what the best changes were to make. (MZ-high)

Generally, lower performing sites reported less ownership over their interventions.

[Study staff] had to propose more ideas in those sites, which is why many of them have similar interventions. (CI-low)

Yes, yes, we participated in developing modifications. (K-low)

Relative advantage

Health workers considered the SAIA advantageous compared to the status quo in most high- and some low-performing sites. One high-performing site did not mention this, but the other two reported that, at the end of the study, SAIA improved PMTCT service delivery.

The work environment was good but it is better now. This type of (quality improvement/ operations research) encourages communication across the sites of PMTCT delivery (ANC, Maternity, at-risk child consult). (MZ-high)

Previously, they would start ANCs at about 8 and go till about 3pm. Now they finish at noon or 1pm at the latest. (CI-high)

In the lower-performing sites, staff in Mozambique also reported a strong perception of the advantage of the SAIA. However, staff in Kenya expressed that they thought SAIA would only increase their workloads at the beginning of the study. Reflecting on implementation, one respondent said that workload had indeed increased, though this was actually due to the SAIA intervention's success in improving service quality.

I would view from the point of workload increasing due to improved quality of care thus attracting more clients to the facility than before. (K-low)

Complexity

Across performance categories, the SAIA was initially perceived as too complex. However over the study period, with regular study team visits and hands-on experience, this perception changed. At study end, the SAIA tools were viewed as relatively easy to use and helpful. Generally, high-performing sites reported less difficulty with the SAIA tools than their lower-performing counterparts. The stumbling block with the PCAT was its reliance on computer literacy and access, and two sites recommended developing a mobile application of the tool to allow for health workers to use it independently.

Was it too complex? Yes, at the beginning. But they helped each other and shared experiences and it became easier. (CI-low)

The midwife said the PCAT helped to analyze the monthly data, helped to identify women who needed to be followed up with, and helped when staff had to step in to do

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ANC/PMTCT which they otherwise don't do. The PCAT was reported to help them track PCR's (infant diagnostic test). (CI-high)

The flow map was easier—it helped us see where we are...(Moz-low)

We think it would be better if we could manage as a tablet or phone app--we would own it as our own tool. (Moz-high)

Inner Setting Domain

Implementation climate

Tension for change

The degree to which the facility-level staff perceived their initial situation as untenable was a weakly distinguishing construct between higher and lower performing facilities. The majority of sites, both high and low performing felt they were providing adequate services but were open to improvement efforts. However, in one high performing site health workers acknowledged that PMTCT service delivery needed considerable improvement.

They also saw the need to improve processes – ANC day was too long for staff and women alike – so that motivated them to participate as well. (CI-high)

Likewise the low performing site in Kenya was initially unconvinced that the sort of quality improvements offered by the SAIA would prove helpful.

We believed we were doing well and did not want to change.(K-low)

The internal implementation climates and readiness for change at facilities were also impacted by external policies, such as the elimination of antenatal fees in Kenya and the rapid introduction of Option B+ in Mozambique, both of which occurred during the study period and led to large increases in service utilization, however the impact was generally similar across the lower and higher performing sites.

Work has increased though as PMTCT is now OB+ and it requires us all to work hard to make it work. (MZ-high)

We all thought we were doing fine in our routine, but we later realized it was better as it saved time for our clients and us too. (K-low)

Relative priority

Across the high and low performing sites health workers expressed somewhat differing perceptions of the relative importance of SAIA implementation. At low performing sites staff support for the SAIA was not unanimous; staff absences and turnover were also obstacles to support of the intervention.

Yes, there were staff absences due to seminars, leaves, sick offs. (K-low)

Also the complexity of the PCAT, dampened the frontline nurse enthusiasm for the SAIA at the Mozambique low performing site, where it was seen as a better fit for higher level providers.

The cascade was probably better for nurse managers and doctors. (M-low)

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At the high performing site in Mozambique on the other hand the team reported a strong shared perception of SAIA's importance.

We see how many mothers we are losing—just taking a few minutes to make sure mom gets from one place to the next place, otherwise we lose them. (M-high)

This dedication to SAIA implementation increased over the implementation period once positive results were achieved.

If we are together when we do this, problems can be solved. Like we had the problem with not enough tubes to draw blood in ANC and maternity. But because the Chefa was there she saw we had this shortage and she spoke with the district and got more tubes so we can draw blood where it is best for the women. (M-high)

Goals and feedback

The degree to which goals were clearly communication, acted upon and feedback to staff was a weakly distinguishing construct between high and low performing sites. At two higher performing sites health workers reported that the systems tools provided a better understanding of their service organization and the impact of their iterative changes. Likewise feedback provided by the study team was deemed appropriate and was well received by the health care team.

We could see our own numbers and percentages. It made us open our registers to see where the problems were. We saw we weren't registering our data. We needed to see where the mistakes were.(M-high)

They also liked the monthly interviews (with the study team) as it helped them process the needs and progress of the site. (CI-high)

At lower performing sites health teams also reported that the iterative design of the SAIA played a role in keeping health workers engaged in the study. However they also reported that more feedback would have been helpful.

We picked one and moved together to solve it. At our morning meeting we would touch base on our processes and move to the next level. (M-low)

When pressed to think more about the study, they mentioned that it would have been nice to have had a follow up call one week after the start of a new intervention to troubleshoot. (CI-low)

Adaptability

This was not a distinguishing construct as adaptations to the SAIA were made at both high and low performing sites. Adaptations included 1) ongoing, on-the-job training to ensure new staff are proficient in the SAIA tools and methods; 2) initial targeting of data quality improvement innovations to ensure proper functioning of the PCAT; 3) use of PCAT print outs (brought by the study nurses) as no sites reported computer access; 4) adaptations in the periodicity and order of use of the main SAIA components (flow mapping, PCAT, CQI); and 5) having study nurses come either later in the day once the majority of work was

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completed or come early to assist in attending patients to both gain a better understanding of current delivery systems and ensure facility nurses have time to meet.

Trialability

This was not a distinguishing construct as multiple SAIA quality innovations were developed, implemented and assessed at all study facilities. At one high performing site it was reported that the ability to test an innovation and be able to reverse course was positive, and increased the site's acceptance of the SAIA.

They were reassured that if something didn't work, they could always go back to doing things as they did them previously. (CI-low)

Culture

The culture of the health facilities was not a distinguishing construct between the high and low performing sites in this sample. Both lower and higher performing facilities reported relatively supportive work cultures which were open to implementing the SAIA.

We have capable team which can try to identify and solve problems.(MZ-low)

SAIA intervention was easy in the facility due to team spirit among the staff. (K-high)

Leadership engagement

In this smaller sample of facilities, leadership engagement was not distinguishable between high and low performing facilities. However in the larger SAIA sample there was one instance where leadership prevented a facility's participation in SAIA activities altogether. Multiple visits and discussions proved unsuccessful, further reinforcing the primacy of leadership engagement, particularly in resource limited, high context culture settings.

Access to knowledge and information

The ease of access to knowledge and information and how to incorporate the SAIA into work tasks was not a distinguishing construct between high and low performing sites because it was identical in each country. The Mozambique sites reported the greatest ease of access while Cote d'Ivoire reported the least ease of access to knowledge and information. The Mozambique sites reported that the tools of the SAIA provided them with a better understanding of their site and where and how to best target improvement efforts.

It let us try out ways to fix things and then see on the cascade if it made everything work better. (MZ-high)

In Cote d'Ivoire access to SAIA information and application was also available but staffing turnover contributed to challenges for sustainability.

This [fact that none of the interventions has been continued] was explained by the high turnover of staff (4 new midwives since the beginning of the study) and not all of them have been trained in PMTCT. (CI-low)

Individuals Domain

Knowledge and beliefs about the innovation

Health workers knowledge and beliefs about the SAIA was not a distinguishing construct between high and low performing sites. In all settings knowledge and beliefs improved over the course of the study as health workers became more familiar with the use of the tools and saw their relative benefit.

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Things got less complex and difficult as sites saw the benefit of the interventions.(CI-high)

The modifications helped us reduce workload at the (HIV clinic) and improve quality of care at the ANC as clients queue once at the ANC and receive all PMTCT services there. (K-low)

Self-efficacy

The health workers belief in their own capabilities to use the SAIA was not a distinguishing construct between high and low performing sites. Health workers at all sites, except one which did not report information on this construct, mentioned they felt relatively capable of individually implementing the SAIA in their setting. In addition to self-efficacy, another nurse manager relayed how she felt this approach might increase health workers' efficiency and output by giving them a framework in which to improve the quality of services.

The (midwife) said she knew this would “make people do their work” so while the workload increased, that was just because they were now doing everything they were supposed to be doing all along.(CI-low)

Process Domain

Planning

Planning for the SAIA was not a distinguishing construct between high and low performing sites as the intervention was planned centrally prior to implementation. Each country organized specific tasks and timelines for all sites, and attention was given to ensure fidelity to SAIA introduction procedures.

Case Memo

Country: Cote d'Ivoire
 Facility: -----
 Performance Classification: High

1. Innovation

a. Innovation Source (+1)

Summary Statement: Although the SAIA was introduced by external change agents, the actual innovations made by the health workers were internally driven. Health workers showed increasing support and ownership of the intervention over time.

The SF said that in the beginning they were reluctant to use the tools because they didn't think they would work, but after a little time they felt better about it.

The biggest feedback from this part of the FGD (and this was overwhelmingly unanimous) was that the interventions improved efficiency at the site.

In Kombo, it was driven by the health care workers. It was an exchange to decide which intervention to do next. It was not imposed by HAI, which they tried hard to follow.

b. Evidence Strength and Quality (+1)

Summary Statement: For this construct we assessed for evidence strength and quality of SAIA as perceived by health staff both prior to initiating the study as well as relative change in this over time. Health workers at this site were very skeptical of the intervention's design; this may have been due to a perceived lack of training or information given at the beginning of the study. However, once they saw results of the interventions they became much more convinced of its merits.

The SF said that in the beginning they were reluctant to use the tools because they didn't think they would work, but after a little time they felt better about it.

They felt the only thing they could suggest would be a better explanation of the study at the beginning so they would have felt more reassured about the process.

The biggest feedback from this part of the FGD (and this was overwhelmingly unanimous) was that the interventions improved efficiency at the site.

c. Relative Advantage (+2)

Summary Statement: Site staff recognized some weaknesses in previous patient flow and PMTCT services, mostly in the time it took for women to be seen and health workers to finish seeing all of the day's patients. By the end of the study, efficiency was improved. Health workers also reported a better analysis of site data by the end of the study and are overall supportive of the study's approach.

They also saw the need to improve processes – ANC day was too long for staff and women alike – so that motivated them to participate as well.

Previously, they would start ANC's at about 8 and go till about 3pm. Now they finish at noon or 1pm at the latest.

Before the study, they thought the study would make their workload increase. Now they see that their workload has decreased significantly

The SF said the PCAT helped to analyze the monthly data, helped to identify women who needed to be followed up with, and helped when staff had to step in to do ANC/PMTCT when they otherwise don't do. The CC said they look at it monthly because it helps to identify women and kids that need to be followed up with.

Things got less complex and difficult as sites saw the benefit of the interventions.

d. Adaptability (M)

e. Trialability (+2)

Summary Statement: The fact that the site could reverse course if needed was cited as one of the main factors for initial buy-in of participation in the study. This was facilitated by the site's familiarity with the SAIA study team staff (HAI).

They said they were reassured by HAI that if something didn't work, they could always go back to doing things as they did them previously, so they decided to take the attitude of why not.

They could have the staff at the health sites easily accept new ideas and be willing to try them.

This helped to break habits and propose new ideas.

f. Complexity (+1)

Summary Statement: This construct was reverse rated. As mentioned above, health workers were unconvinced of the study design and they also believed the study tools were hard to understand. Through the course of the intervention, with the help of SAIA study staff and as they became more familiar with the tools, they felt more at ease implementing them.

Before they started using the tools on their own, everyone in the room thought that the tools were too complex.

The SF said the PCAT helped to analyze the monthly data, helped to identify women who needed to be followed up with, and helped when staff had to step in to do ANC/PMTCT when they otherwise don't do. The PCAT was reported to help them track PCRs.

g. Design Quality and Packaging (X)

The PCAT at the beginning it was difficult for sites to understand. They really had to explain what the gaps were and how to interpret them. When there weren't any positives it was especially difficult. But after a while the tool was useful in highlighting the gaps.

h. Cost (+1)

Summary Statement: Health workers appreciated that this intervention did not require any additional tools or equipment.

They said they felt ready to begin the first intervention because it was just a reorganization of the patient flow – they didn't need any equipment or supplies or extra rooms to do it. All it required was a little more work from site staff

2. Inner Setting

- a. Structural Characteristics (M)
- b. Networks and Communications (+1)

Summary Statement: Health workers reported that they had the time and space to brainstorm interventions, even if they didn't always agree on the next step. Collaboration was seen as a positive aspect of the study.

They thought the collaborative approach of brainstorming interventions was positive.

There were times when they disagreed on which intervention to adopt, especially the pharmacy intervention (this involved staffing someone at the pharmacy to explain the drugs and was the intervention they ended up dropping after a while because the staffing structure didn't work out for them).

Also it was difficult to keep everyone on the same page. They might have decided on something together but then they changed it later on without telling [SAIA staff]. This got better over time.

- c. Culture (+1)

Summary Statement: Site staff reported a sense of teamwork and an overall willingness to try new things. .

They decided to take the attitude of why not. They also saw the need to improve processes.

- d. Implementation Climate
 - i. Tension for Change (+2)

Summary Statement: This site is a private, religious organization that attracts patients and clients from up to 100 miles away. As such their ANC days are always busy and can result in long days for women and site staff alike. Prior to the study, health workers saw this as a major problem they'd like to address.

They also saw the need to improve processes – ANC day was too long for staff and women alike – so that motivated them to participate as well.

This study also helped the SFs there solve a problem they already knew they had – difficulty with CD4s.

- ii. Compatibility (M)
- iii. Relative Priority (X)

Summary Statement: Attitudes about the relative priority of this intervention changed dramatically throughout the study. There was overall skepticism about the SAIA study at the beginning, but by the end health workers saw the interventions as an important part of their site's new efficiency.

The SF said that in the beginning they were reluctant to use the tools because they didn't think they would work, but after a little time they felt better about it.

Before they started using the tools on their own, everyone in the room thought that the tools were too complex, were a bad idea, and that they didn't work. .

Before the study, they thought the study would make their workload increase.

The biggest feedback from this part of the FGD (and this was overwhelmingly unanimous) was that the interventions improved efficiency at the site.

- iv. Organizational Rewards (M)
- v. Goals and Feedback (+1)

Summary Statement: Health workers reported that they appreciated regular meetings and feedback from SAIA study staff.

They also liked the monthly interviews as it helped them process the needs and progress of the site.

- vi. Learning Climate (+1)

Summary Statement: The intervention seemed to create a culture of a learning environment as it went on, encouraging communication and analysis of data among health workers.

It also helped hold site staff accountable – they created the circuit together and if in a later visit they weren't following it they could point to the flow map to say, this is what we agreed on. Today they are happy with the flow.

- e. Readiness for Implementation
 - i. Leadership Engagement (+2)

Summary Statement: Health workers reported that management was supportive of their involvement in the SAIA study.

Managers were supportive of the study.

At Kombo, it was easy because the [midwife] was supportive.

- ii. Available Resources (-1)

Summary Statement: Health workers felt that they had enough material resources to implement the study, though challenges regarding the number and qualifications of staff as well as space issues were mentioned.

They said they felt ready to begin the first intervention because it was just a reorganization of the patient flow - they didn't need any equipment or supplies or extra rooms to do it. All it required was a little more work from site staff.

They feel that they could use more and more qualified staff at the site. Also, they have identified another bottleneck in their patient flow - they do not have a confidential place in which to take intake info (the registration step at the very beginning of the patient flow).

They feel that they could use more and more qualified staff at the site.

iii. Access to Knowledge and Information (X)

Summary Statement: Familiarity with study tools increased as health workers used them in the course of study implementation. It was suggested that initial confusion about the study approach and tools could have been ameliorated by better pre-study training by SAIA staff.

Before they started using the tools on their own, everyone in the room thought that the tools were too complex.

They felt the only thing they could suggest would be a better explanation of the study at the beginning so they would have felt more reassured about the process. But the [midwife] added that it is difficult to find more time to have a longer pre-study training

The PCAT at the beginning it was difficult for sites to understand. [The SAIA staff] really had to explain what the gaps were and how to interpret them.

3. Individuals

a. Knowledge and Beliefs about the Innovation (+1)

Summary Statement: Knowledge and beliefs about the SAIA approach and tools changed throughout the course of the study. In the beginning, health workers didn't believe that the tools were useful but were willing to try them after further discussion with SAIA staff. By the end of the study, they had embraced and appreciated the tools and approach.

The [midwife] said that in the beginning they were reluctant to use the tools because they didn't think they would work, but after a little time they felt better about it.

Before they started using the tools on their own, everyone in the room thought that the tools were too complex, were a bad idea, and that they didn't work.

Today, they all think the study and the approach are excellent.

Things got less complex and difficult as sites saw the benefit of the interventions.

b. Self-efficacy (+1)

Summary Statement: Health workers reported appreciation that the study did not require additional inputs to the health facility.

They didn't need any equipment or supplies or extra rooms to do it. All it required was a little more work from site staff.

c. Individual Stage of Change (M)

d. Individual Identification with Organization (M)

e. Other Personal Attributes (M)

Summary Statement:

4. Process

a. Planning (M)

Summary Statement:

- b. Engaging
 - i. Opinion Leaders (M)

Summary Statement: A sense of teamwork that started from site managers was important to the adoption of the intervention, as well as to PMTCT services as a whole.

When the managers were involved, it helped a lot. When PMTCT wasn't just an affair for SF that helped.

- ii. Formally Appointed Internal Implementation Leaders (+1)

Summary Statement: Health workers reported that they did not have any resistance from site managers as to the adoption or ongoing implementation of the SAIA interventions.

Managers were supportive of the study

- iii. Champions (M)

Summary Statement:

- iv. External Change Agents (+2)

Summary Statement: External change agents, in this case primarily the SAIA study staff, played a positive role in the initial adoption of the intervention and in its ongoing implementation. A previous relationship between health workers and the SAIA helped in both those aspects.

They said they were reassured by HAI that if something didn't work, they could always go back to doing things as they did them previously, so they decided to take the attitude of why not.

HAI staff tended to come when it wasn't too busy (in the afternoons) and meetings took about 1 hour. They liked the frequency of the visits (monthly) and site staff were generally available for the meetings.

- v. Key Stakeholders (+2)

Summary Statement: Health workers reported that conditions for both themselves and for their clients improved by the end of the study. This was a result of patient flow reorganization, material upgrades, and greater efficiency overall.

Previously, they would start ANC's at about 8 and go till about 3pm. Now they finish at noon or 1pm at the latest. This made all of the staff very, very happy and the women are happy too.

They appreciated the final intervention - the purchase of an AC - because after the reorganization of the patient flow, they moved ANC exams into a room that ended up being hot and stuffy. So the AC helped make staff and women more comfortable

- vi. Innovation participants (+2)

Summary Statement: Health workers discussed site improvements as a result of the study, whether this meant reorganizations of patient flow or material items (such as an air conditioner) that improved the conditions of work for health workers and the comfort of women clients.

Another reorganization that is greatly appreciated is that they moved the ANC room further away from the delivery room, which eased the anxiety of newly expectant women because now they don't hear the cries of pain when women are delivering.

They appreciated the final intervention - the purchase of an AC - because after the reorganization of the patient flow, they moved ANC exams into a room that ended up being hot and stuffy. So the AC helped make staff and women more comfortable

c. Executing

(+2)

Summary Statement: The site seemed to have no difficulties carrying out and sustaining the implementation according to plan; this was reported to have been helped by a consistent presence of site staff throughout the study period.

They adopted 4 out of the 5 interventions they implemented.

There were no significant absences during the study, just normal vacations and sick leaves.

d. Reflecting and Evaluating

(+1)

Summary Statement: Health workers appreciated both the collaborative brainstorming sessions as well as the regular site visits.

They thought the collaborative approach of brainstorming interventions was positive. They also liked the monthly interviews as it helped them process the needs and progress of the site.

Case Memo

Country: Cote d'Ivoire
 Facility: -----
 Performance Classification: Low

1. Innovation

- a. Innovation Source (-1)

Summary Statement: Health workers were unsure as to the strength of the study approach and tools, which were externally developed. Many interventions were suggested by SAIA staff.

[SAIA staff] had to propose more ideas in those sites, which is why many of them have similar interventions.

- b. Evidence Strength and Quality (M)
 c. Relative Advantage (+1)

Summary Statement: Once the SAIA approach was understood, the intervention was appreciated and its relative advantage was felt. However, this took some time to take effect and the initial months of the study were challenging.

The SF thought that this would be a good way to make site staff do what they should be doing, but often don't. For example, everyone at the site should be trained on PMTCT but the way it actually works out is that there are one or two focal points, and then the rest of the staff don't do it. So when a woman tests HIV+ she is sent to the 1-2 SFs that are trained in the activity. The study gave them the excuse to ensure everyone was trained and implicated in PMTCT activities.

Site staff reported that the tools helped to identify problems at the site. The PCAT helped to identify which changes would have an impact and allowed them to see the data. An example of this is when they used the PCAT to look at prophylaxis data and see how many women they needed to follow up with

It was really hard until they started to see how the study was helping them.

- d. Adaptability (M)
 e. Trialability (M)
 f. Complexity (-1)

Summary Statement: This construct was reverse rated. The initial months of the study were confusing for some of the health workers, but this improved with familiarity with the tools and approach. What may have been the most difficult to determine was how to implement the intervention given staff absences.

Was it too complex? Yes, at the beginning. But they helped each other and shared experiences and it became easier.

The midwife reported that one of the PCAT's strengths is that it uses the same data as is found on the monthly reports so is easy to understand and use

The patient flow maps that were created at the beginning of the study were posted on the walls. The iterative approaches of the QI methodology helped them to ensure progress was being made over the course of the study.

There were times when it was difficult to decide on an intervention because of site staff scheduling conflicts (maternity leaves) and the number of SFs that would be available at any given time to devote to an intervention.

- g. Design Quality and Packaging (M)
- h. Cost (M)

2. Inner Setting

- a. Structural Characteristics (-2)

Summary Statement: The biggest challenge related to this construct was the availability of staff, due to frequent absences (maternity leaves, etc) and high turnover. Keeping new staff trained and up to date on PMTCT and the study was difficult.

This was explained by the high turnover of staff (4 new midwives since the beginning of the study (Feb 2014) and not all of them have been trained in PMTCT

What was hard is when there was staff turnover and they had to catch the new staff up on everything.

- b. Networks and Communications (-1)

Summary Statement: Regular progress reports regarding the progress of the study were held on a regular basis; however this activity seemed to be dependent on SAIA staff involvement and was not sustainable over time.

They discussed HIV activities and the study activities during their monthly site staff meeting. There was at least one meeting where the doctor, SF and CC sat down together to look at patient charts and make sure they were up to date. However, as time went on, these meetings were held with less regularity outside of the HAI study team site visit

- c. Culture (M)
- d. Implementation Climate
 - i. Tension for Change (+1)

Summary Statement: Health managers reported that the study helped encourage other health workers to do their day-to-day duties that they might otherwise have not done. However, they did not report that there was an underlying feeling of a need to improve services.

However, the SF thought that this would be a good way to make site staff do what they should be doing, but often don't. For example, everyone at the site should be trained on PMTCT but the way it actually works out is that there are one or two focal points, and then the rest of the staff don't do it. So when a woman tests HIV+ she is sent to the 1-2 SFs that are trained in the activity. The study gave them the excuse to ensure everyone was trained and implicated in PMTCT activities.

- ii. Compatibility (M)

iii. Relative Priority (+1)

Summary Statement: Health workers were unsure of the study's overall potential for positive change, but they agreed to try it anyway. This may have been influenced by health managers' exposure to and involvement in previous research studies conducted at this site. Health workers placed more importance on the study as they saw results of the interventions.

At the beginning, they were not sure of the study's efficacy but thought, Why not try it?

They are used to studies and learned from this one too.

They looked at and were motivated by the results.

iv. Organizational Rewards (M)

v. Goals and Feedback (X)

Summary Statement: Ultimately the feedback from the results played a role in keeping health workers engaged in the study. Health workers reported that more feedback would have been helpful.

It was really hard until they started to see how the study was helping them.

When pressed to think more about the study, they mentioned that it would have been nice to have had a follow up call one week after the start of a new intervention to troubleshoot

vi. Learning Climate (M)

e. Readiness for Implementation

i. Leadership Engagement (+1)

Summary Statement: Health workers reported that management was supportive of their involvement in the SAIA study.

The doctor was supportive of the study and implicated in it. One doctor was identified as the main focal point of this study and of HIV activities in general, though there is a backup doctor if the primary one is not available.

ii. Available Resources (-2)

Summary Statement: The site's infrastructure, including space and ventilation, were reported as insufficient. However, it is unclear to what extent this affected study implementation. Frequent staff absences, including authorized physician absences to work at private clinics, were reported to have had a negative impact on the interventions.

Here they talked about some of the insufficiencies at the site, including available infrastructure and supplies.

If there were more improvements offered as a result of the study that would help. They said the waiting room is too small and sometimes women have to wait outside. The clinic rooms are often hot and it's hard to do a long day of work.

There were times when it was difficult to decide on an intervention because of site staff scheduling conflicts (maternity leaves) and the number of SFs that would be available at any given time to devote to an intervention (this was brought up in the context of the vaccination clinic intervention).

When asked if they are authorized to work outside of the clinic, they said no. Then later it came up that doctors were allowed to work in private clinics in the afternoon to supplement their salaries. It was estimated that about 70% of doctors in the region do this. Midwives and other staff are not authorized to work outside the public clinic. This policy did not change during the study period

iii. Access to Knowledge and Information (X)

Summary Statement: Staff felt trained and ready to start the study, and they appreciated some of the tools that facilitated information regarding their progress. However, high turnover meant that this information had to be repeated and taught to new staff members.

They felt fairly ready to start the study, at least after the initial training held onsite and facilitated by HAI.

The patient flow maps that were created at the beginning of the study were posted on the walls. The iterative approaches of the QI methodology helped them to ensure progress was being made over the course of the study.

This [fact that none of the interventions has been continued] was explained by the high turnover of staff (4 new midwives since the beginning of the study (Feb 2014) and not all of them have been trained in PMTCT).

3. Individuals

a. Knowledge and Beliefs about the Innovation (+1)

Summary Statement: Knowledge and beliefs about the SAIA approach and tools changed throughout the course of the study. In the beginning, health workers didn't believe that the tools were useful but were willing to try them. After increase use of the tools, health workers reported appreciating the PCAT and QI methodology especially.

At the beginning, they were not sure of the study's efficacy but thought, Why not try it?

The midwife reported that one of the PCAT's strengths is that it uses the same data as is found on the monthly reports so is easy to understand and use. The iterative approaches of the QI methodology helped them to ensure progress was being made over the course of the study.

b. Self-efficacy (+1)

Summary Statement: Health managers believed that this approach would increase individuals' efficiency and output by giving them a framework in which to improve the quality of services.

The SF said she knew this would "make people do their work" so while the workload increased, that was just because they were now doing everything they were supposed to be doing all along.

c. Individual Stage of Change (M)

d. Individual Identification with Organization (-1)

Summary Statement: While health workers seemed to feel a sense of affiliation and teamwork within the organization, absences by the site's doctors and due to maternity leaves in the study period affected the implementation of decided upon interventions.

Then later it came up that doctors were allowed to work in private clinics in the afternoon to supplement their salaries. It was estimated that about 70% of doctors in the region do this.

There were times when it was difficult to decide on an intervention because of site staff scheduling conflicts (maternity leaves) and the number of SFs that would be available at any given time to devote to an intervention (this was brought up in the context of the vaccination clinic intervention).

e. Other Personal Attributes (-1)

Summary Statement: Health workers reported wishing they had received more incentives to participate in the study, and this may have affected motivation.

Sometimes the staff felt demotivated or not motivated enough to participate in the study. If there were more improvements offered as a result of the study that would help.

4. Process

a. Planning (-1)

Summary Statement: some of the interventions explicitly involved preparing for the next day's appointments, which health workers reported as being positive. However, they also wished there had been a better level of planning by SAIA staff for study visits. Finally, frequent staff absences affected the planning of ongoing study meetings.

A suggestion was made that these visits should be preceded by a day-of phone call to check on how busy the site was at that time.

The CC reported that the interventions helped to reduce the workload by helping them to prepare prior to ANC day to know which women were due for an appointment.

However, as time went on, these meetings were held with less regularity outside of the HAI study team site visit. 2 SFs and 1 CC had maternity leave during this time. Doctors regularly have short absences (2 weeks or so) for trainings and vacations. When staff were absent, duties related to the study or interventions were delegated to other staff.

b. Engaging

i. Opinion Leaders (+1)

Summary Statement: Health workers reported that they did not have any resistance from site managers as to the adoption or ongoing implementation of the SAIA interventions.

The doctor was supportive of the study and implicated in it. One doctor was identified as the main focal point of this study and of HIV activities in general, though there is a backup doctor if the primary one is not available.

ii. Formally Appointed Internal Implementation Leaders (M)

iii. Champions (M)

iv. External Change Agents (+1)

Summary Statement: External change agents, in this case primarily the SAIA study staff, played a mostly positive role in the implementation of the interventions. Inconveniences arose when there was a high patient load at the site during the time of the study meetings.

Follow up visits by HAI staff were reported to take about 2 hours, but “at least 2 times it was longer than that.” It was occasionally difficult to balance site visits and normal patient workload. Meeting times decreased as the study went on. Sometimes the site staff were not available for HAI staff due to health emergencies or a high patient load at the time of the visit.

They liked the frequency of the site visits (monthly) because they also have monthly staff meetings and they could discuss the study during the staff meeting. Site visits were only problematic when there were a lot of patients.

v. Key Stakeholders (M)

vi. Innovation participants (M)

c. Executing (-1)

Summary Statement: Challenges arose in executing the intervention when there were staff absences. In terms of sustainable execution of the implementation, none of the interventions continued after the conclusion of the study.

When staff were absent, duties related to the study or interventions were delegated to other staff.

Today, none of the interventions are continued, though they reported several of them were successes

d. Reflecting and evaluating (X)

Summary Statement: Health workers reported liking the amount of feedback about progress and the quality of the implementation from the SAIA study staff. SAIA staff, however, had the sense that the initial frequency of the meetings was too much and were relieved to switch to a monthly schedule.

They liked the frequency of the site visits (monthly) because they also have monthly staff meetings and they could discuss the study during the staff meeting. Site visits were only problematic when there were a lot of patients. A suggestion was made that these visits should be preceded by a day-of phone call to check on how busy the site was at that time.

[SAIA staff reported that] the health workers didn’t like the weekly visits but monthly was ok. [SAIA] staff didn’t like the weekly visit because they felt they were annoying the health workers.

Case Memo

Country: Kenya

Facility: -----

Performance Classification: High

1. Innovation Characteristics

- a. Innovation Source (+2)

Summary Statement: Staff felt that the specific workflow modifications were internally sourced. They did not mention of the source of the overall study intervention itself.

The staff felt they participated in choosing, developing and/or improving the workflow modifications.

- b. Evidence Strength and Quality (M)
- c. Relative Advantage (M)
- d. Adaptability (+1)

Summary Statement: Staff adapted the intervention to accommodate the flow of patients, by moving follow-up visits to the afternoon.

Staffs from MCH were not able to attend the meetings during morning session because that is when there is an overflow of clients at the facility. However, they were able to attend the afternoon session when there is reduced work load in the facility.

- e. Trialability (M)
- f. Complexity (+2)

Summary Statement: Staff thought that the PCAT was easy to use as it drew from readily available data and it was easy to understand. However, the flow maps were initially challenging, because staff had a difficult time coming up with the baseline flow of patients.

The language and format used on PCAT was easy to understand.

The flow maps were difficult to use at some point...Initially, identifying the baseline was a challenge.

- g. Design Quality & Packaging (M)
- h. Cost (M)
- 2. Outer Setting: discussed elsewhere
- 3. Inner Setting
 - a. Structural Characteristics (M)
 - b. Networks and Communication (+2)

Summary Statement: Staff talked about the general collaboration and communication between departments, which was in part facilitated by leadership's clear communication of roles and responsibilities.

There was collaboration between departments, which enhanced efficiency.

The Administration was very keen in making follow up in the assignments given. A duty roster was made especially in relation to working during the weekends as well as to remind all staff of the upcoming meetings.

- c. Culture (+2)

Summary Statement: Facility staff showed a strong team spirit.

SAIA intervention was easy in the facility due to team spirit among the staff.

d. Implementation Climate:

- i. Tension for Change (0)

Summary Statement: When asked what they would do differently if the SAIA were done again, one respondent mentioned that staff members in the Records department were initially resistant to change. This was the only mention of lack of tension for change. However, since this was in 1 department that was not delivering PMTCT services directly, we graded this as 0.

[If we were to do the SAIA study again, we would] Encourage staff sensitization [in the Records department] to reduce resistance to change.

- ii. Compatibility (+1)

Summary Statement: Respondents mentioned that the PCAT asked for information that was readily available and that the time to test workflow modifications was long enough. However, data from other health facilities was difficult to obtain.

It was difficult to get accurate data especially from clients who came in from other health facilities.

Th[e PCAT] was easy to use because...it involved use of data which was readily available.

- iii. Relative Priority (M)
iv. Organizational Incentives and Rewards (M)
v. Goals and Feedback (M)
vi. Learning Climate (+1)

Summary Statement: There was time to reflect on the intervention, and staff a sense of accomplishment for their essential role in the intervention's success.

The outcome of the intervention spoke for itself and all staff wanted to own it.

e. Readiness for Implementation

- i. Leadership Engagement (+2)

Summary Statement: Staff were unanimous that leadership were highly supportive of the intervention and went out of their way to ensure its success.

All staff agreed that the leaders in the facility accepted SAIA intervention and they were very supportive. This is evidenced in the following: The Administration was very keen in making follow up in the assignments given. A duty roster was made especially in relation to working during the weekends as well as to remind all staff of the upcoming meetings. The Administration helped in getting a counseling room for privacy purposes.

- ii. Available Resources (-1)

Summary Statement: Lack of lab supplies, storage space, testing kits, and confidential spaces were all cited as barriers to implementation. A private space for VCT was eventually set aside due to support from the leadership, but lack of other resources remained a challenge during the entire study.

The challenges encountered with the use of this tool [CQI] include: The staff were stuck in the implementation process due to stock outs. For example, there was lack of reagents in the laboratory. There was lack of privacy with regard to reactive mothers but currently, there is privacy.

iii. Access to Knowledge and Information (+1)

Summary Statement: In general, knowledge about the intervention was widespread throughout staff, with the exception of 1 department (VCT).

On average, there were no staff absences during the intervention period and the following was noted: There was continuity in MCH due to knowledge dissemination among staff. All staff owned the program in the maternity department. In the VCT, when 2 staffs were on leave simultaneously, testing of clients during the weekends was not done. All staffs in the laboratory were not affected by staff absences.

4. Characteristics of Individuals

a. Knowledge and Beliefs about the Innovation (+2)

Summary Statement: The staff felt that the intervention was very beneficial. They noted that workload increased and then decreased in most departments, though in some it remained high due to attracting more patients seeking out the high quality of services offered.

Generally after the study, the work load has increased but the quality of services being offered is high thus, attracting clients from other health facilities.

b. Self-Efficacy (+2)

Summary Statement: In addition to speaking of how easy staff thought the tools were to use, staff also talked about strong motivation and ownership of the intervention.

The outcome of the intervention spoke for itself and all staff wanted to own it.

Motivation was well spread out in all departments.

c. Individual Stage of Change (M)

d. Individual Identification with the Organization (M)

e. Other Personal Attributes (+1)

Summary Statement: Inquisitiveness helped motivate staff and also may have helped them utilize & apply the knowledge gained from the PCAT, flow maps, and CQI cycles.

Staff at facility had an inquisitive mind which helped them gain more knowledge and work better...staff were motivated and worked positively.

5. Process

a. Planning (+2)

Summary Statement: SAIA staff communicated well with health facility staff to plan meetings.

There was early communication of intended meetings and respective assignments hence helpful in planning purposes.

Generally all health staff noted that there was proper communication prior to SAIA meetings for proper planning so that staff from all depts could attend.

b. Engaging

- i. Opinion Leaders (M)
- ii. Formally Appointed Internal Implementation Leaders (+2)

Summary Statement: As stated above under Leadership Engagement, the administration took it upon themselves to ensure the success of the SAIA study in many ways.

All staff agreed that the leaders in the facility accepted SAIA intervention and they were very supportive.

- iii. Champions (+1)

Summary Statement: Two staff members championed the integration of PMTCT into ANC and that contributed to its success.

Integration of PMTCT care in the ANC made it a one stop shop for the HIV positive pregnant clients. The social worker and the nutritionist also helped a lot in the success of this.

- iv. External Change Agents (+2)

Summary Statement: Respondents expressed appreciation and gratitude for the hard work that the SAIA study staff (who were also employees of NARESA, a local NGO).

Generally, all health staff...appreciated the study staff for work well done.

- v. Key Stakeholders (M)
- vi. Innovation Participants (M)
- c. Executing (M)
- d. Reflecting & Evaluating (+1)

Summary Statement: Staff liked the SAIA study staff's feedback.

Feedback [from study staff] was given hence communication was two-way.

Case Memo

Country: Kenya
 Facility: -----
 Performance Classification: Low

1. Innovation Characteristics

a. Innovation Source (+1)

Summary Statement: Staff felt that the specific workflow modifications were internally sourced. They did not mention of the source of the overall study intervention itself.

Yes, yes we participated in developing the modifications.

b. Evidence Strength and Quality (M)

c. Relative Advantage (-1)

Summary Statement: Before the intervention, several staff members said they thought SAIA would increase workload, compared to the status quo. Reflecting on implementation, one respondent said that workload had indeed increased, though this was due to the success of the SAIA intervention improving the quality of services.

I would view from the point of workload increasing due to improved quality of care thus attracting more clients to the facility than before.

d. Adaptability (+1)

Summary Statement: Buy-in was weak initially, but when trainings were expanded to include a larger proportion of staff, implementation went more smoothly.

Initially it affected the implementation as not everyone in the facility was in the study team and staff were not always available. With time we did on the job training to sensitize all staff members on the study. This changed implementation activities as any staff could work with the study team when the key staff is not present.

e. Trialability (+1)

Summary Statement: One respondent said that modifications were trial-able, and also described a sense of ownership of the intervention.

Did you think that you could test out small workflow modifications and reverse them if necessary?

Respondent: "Yes. It is not difficult as we can now do it on our own and observe the outcome."

f. Complexity (+1)

Summary Statement: Most respondents thought the tools were too complex initially, but thought they were easy to use as the study progressed. The PCAT remained difficult to use, however, as it required a computer.

Yes, [before the study] we thought the tools were complex as we were used to a routine.

The staff found [the flow maps] challenging in the initial intervention period as they were used to a set routine but they later found them easy to use and acceptable.

- g. Design Quality & Packaging (M)
- h. Cost (M)
- 2. Outer Setting: discussed elsewhere
- 3. Inner Setting
 - a. Structural Characteristics (M)
 - b. Networks and Communication (+1)

Summary Statement: Facility leaders used monthly staff meetings to ensure all staff were aware of upcoming modifications.

The management discussed the modifications in the general monthly staff meetings, making it known to all staff, thus ensuring their cooperation.

- c. Culture (+1)

Summary Statement: Facility staff showed team spirit.

Teamwork among the facility staff made work easier.

- d. Implementation Climate:
 - i. Tension for Change (-2)

Summary Statement: Staff did not see a need to change the status quo. Two respondents said that this changed as the impact of the intervention was clear, but this sentiment was not widespread.

We believed we were doing well and did not want to change.

We all thought we were doing fine in our routine, but we later realized it was better as it saved time for our clients and us too.

- ii. Compatibility (M)
- iii. Relative Priority (-1)

Summary Statement: Staff support for the study was not unanimous; staff absences and turnover were also obstacles to support of the intervention.

We held meetings and the majority were willing to participate and chip in on the management of challenges in various departments.

Yes, there were staff absences due to seminars, leaves, sick offs but...that was done the available staff would pick up the responsibilities and proceed.

- iv. Organizational Incentives and Rewards (M)
- v. Goals and Feedback (M)
- vi. Learning Climate (M)
- e. Readiness for Implementation
 - i. Leadership Engagement (+2)

Summary Statement: Respondents cited management support as key to study success.

The management was very supportive. If the management was negative towards it, it would have failed but their support made it easier.

- ii. Available Resources (-2)

Summary Statement: Staff shortages and turnover were repeatedly mentioned as barriers to success, both in the context of what staff thought at the beginning of the study, and what actually happened during the study.

We thought it would be expensive not in terms of finances but in terms of workload, especially due to staff shortages.

iii. Access to Knowledge and Information (+1)

Summary Statement: Again, staff turnover was a barrier to the intervention, but this was partially overcome. Training staff during the study was crucial to continue implementation.

Yes there were staff absences. Initially they affected implementation, but after all staff were sensitized on the study activities, it was possible to implement even with the absences.

4. Characteristics of Individuals

a. Knowledge and Beliefs about the Innovation (+2)

Summary Statement: The staff were enthusiastic about the results of the SAIA intervention.

The modifications helped us reduce workload at the CCC and improve quality of care at the ANC as clients queue once at the ANC and receive all PMTCT services there.

b. Self-Efficacy (M)

c. Individual Stage of Change (M)

d. Individual Identification with the Organization (M)

e. Other Personal Attributes (M)

5. Process

a. Planning (+1)

Summary Statement: The staff appreciated that follow-up visits were planned to be after clients were gone from the facility.

The timing of the follow-ups were done mostly in the afternoon when the clients were already gone and so the nurses gave in full attention.

b. Engaging

i. Opinion Leaders (M)

ii. Formally Appointed Internal Implementation Leaders (M)

iii. Champions (+1)

Summary Statement: Two staff members championed the integration of PMTCT into ANC and that contributed to its success.

Integration of PMTCT care in the ANC made it a one stop shop for the HIV positive pregnant clients. The social worker and the nutritionist also helped a lot in the success of this.

iv. External Change Agents (M)

v. Key Stakeholders (+1)

vi. Innovation Participants (M)

Summary Statement: Some staff were supportive of the study, but when those people were absent, study progress would halt/slow.

Yes most of the people were always available but a few changes would occur when the key person was absent.

- c. Executing (M)
- d. Reflecting & Evaluating (+1)

Summary Statement: Staff credited some of the success of the study to SAIA study staff's feedback.

Follow up of the interventions by the study staff, their friendliness and the fact that they did not harass them led to success.

Case Memo

Country: Mozambique
 Facility: ----
 Performance Classification: High

1. Innovation

a. Innovation Source (+2)

Summary Statement: Although the SAIA was introduced by external change agents, the actual innovations made by the health workers were internally driven. Nurses and nurse managers highlighted how the tools, specifically the flow mapping and the PCAT allowed them to review their data and their system so they can make informed decisions for process improvement.

We looked at our system as a whole and then we changed it. We discussed together what the best changes to make were.

Flow mapping and PCAT were used to identify how we are providing care and also how to look for problems that need to be solved. The cascade specifically lets us see the percentages so we can see the problems and shows us where to intervene

b. Evidence Strength and Quality (+2)

Summary Statement: For this construct we assessed for evidence strength and quality of SAIA as perceived by health staff both prior to initiating the study as well as relative change in this over time. Health worker confidence in the SAIA improved over time due to the iterative design of the intervention which continually allowed health care teams to assess their performance, make changes and then gauge effectiveness of the modifications.

We saw the challenges in numbers. And when our solution worked we could see the number improve.

We could see our own numbers and percentages. It made us open our registers to see where the problems were. We saw we weren't registering our data. We needed to see where the mistakes were.

c. Relative Advantage (+2)

Summary Statement: Multiple health workers reported that the introduction of SAIA led to tangible improvements in current pMTCT service delivery and health facility organization. These improvements were due to better systems analysis skills and availability of level-appropriate tools for health workers.

Work environment has been made better by this intervention (SAIA). In pMTCT it is a series of linked services but before we didn't realize that we needed to make strong links between steps to make the service better. To do better pMTCT we must work together. People were sitting together to identify the problems and solutions so we had to ask each other for help. We are linking now so we don't lose women-like we see in the cascade.

The work environment was good but it is better now. This type of "quality improvement/ operations research" (PO PTV) encourages communication across the sites of pMTCT delivery (ANC, Maternity, CCR).

It is smoother now. We see how many mothers we are losing--just taking a few minutes to make sure a mom gets from one place to the next place, otherwise we lose them.

...it helped us put our problems on paper. We could see what about our system was making the challenge. It let us see the right path to solve our problems.

At the beginning we thought it was just going to be more work but over time we saw that the result was that the impact was the services improved. Our mentality changes as we saw the impact of our work.

d. Adaptability

(+2)

Summary Statement: In Mafambisse adaptations were made to the SAIA. Due to limited computer literacy and access the study nurses brought print outs of PCAT on supervision visits to facilities to review progress in cascade flow relative to quality improvement efforts. Also, the PCAT began as a data quality improvement tool, as incorrect data initially gave nurses obviously faulty answers (negative numbers, etc), so they needed to review and correct registries to make the PCAT useful. After the initial study introduction, the nurses included different elements of the SAIA depending on needs. For example, CQI was always done but flow mapping or PCAT were used periodically. SAIA was also adapted at to the reality of Mafambisse service delivery. Early in the process, the study manager realized that in order to have time for implementation, it was necessary to go early and support nurses at the site by attending patients. It had the added benefit of giving the study nurses better insight into the reality of the service delivery there, and demonstrated the values of the study team to the Mafambisse staff (valuing patient care and outcomes)

PCAT, we (study nurses) did it and printed it here because we have computers. When we showed it to them we asked them to identify the percent and the drop off and then showed them the optimization

...in the beginning the PCAT didn't make sense because their data was poor. We had to explain that and work with them to make the data better.

Sometime they would just use one or the other --sometimes PCAT worked and they waited for the next time to use the flow mapping...but CQI was always part of it though....thinking through solutions, testing and applying the lessons learned.

(study nurses) came early and worked with the facility level nurses--saw and lived their work load and service organization. Contributing at the facility level was critical to get a sense of what worked well and not well at the health facility level. Also gave the facility personnel a clear sense of the study team values (teamwork, flat management structure, value given to patient--putting patient first).

e. Trialability

(+1)

Summary Statement: The SAIA requires health care teams to continually introduce and measure improvements in their pMTCT service delivery. It was an aspect that was well received by health care workers at Mafambisse, as they were able to continually try out the tools.

It let us try out ways to fix things and then see on the cascade if it made everything work better.

Epecially in (at risk child care services), we saw the challenges in numbers. And when our solution worked we could see the numbers improve.

It let us try out ways to fix things and then see on the cascade if it made everything work better.

f. Complexity (-1)

Summary Statement: This construct was reverse rated. There wasn't consensus across informants at Mafambisse on the complexity of the SAIA tools and intervention. It was clear that the PCAT was the hardest to grasp, which was hard to use and to understand how to apply independently. This was made more difficult as it was computer-based and healthcare teams did not have good computer literacy or access. Staff recommended changing the format of the PCAT to a mobile platform such as tablet or smartphone. Staff did report that the perceived complexity diminished over time, but ultimately sustainable use of the SAIA was deemed unlikely.

The cascade was the hardest--it showed problems but sometimes it was hard to see how to improve.

We think it would be better if we could manage as a tablet or phone app--we would own it as our own tool.

Yes, even the PCAT they understood. If they had it in an app they would have been able to use it independently. (study nurses)

At the beginning we thought it was just going to be more work but over time we saw that the result was that the impact was the services improved.

It will be VERY difficult (to continue). We don't have computer. We can't see where we are missing. We need our quantitative tool to see whether we are improving. We want it for ourselves. We need someone who knows how to do this.

g. Design Quality and Packaging (+1)

Summary Statement: The respondents reported appreciated the elements of the SAIA and how they provided clear feedback to the facility team on what was working and not working at their facility. Specifically, they appreciated how the SAIA included quantitative tools which gave them a clear indication if their innovation was working.

It helped us put our problems on paper. We could see what about our system was making the challenge. It let us see the right path to solve our problems.

With the PCAT we could see our own numbers and percentages. It made us open our registers to see where the problems were. We saw we weren't registering our data. We needed to see where the mistakes were.

We liked the intervention, it helped us with the data, the forms, and the flow of services.

h. Cost (M)

2. Inner Setting

a. Structural Characteristics (M)

b. Networks and Communications (+1)

Summary Statement: The quality of social networks and communication amongst the pMTCT health care team at Mafambisse was strong which, according to respondents, facilitated the introduction of the SAIA. Communication was healthy both across specific service areas and within the pMTCT team between managers and staff. The SAIA intervention created time and space for the health care team to work on improvement efforts which improved the quality of these social networks.

To do better pMTCT we must work together. People were sitting together to identify the problems and solutions so we had to ask each other for help.

What made it work was that our nurses wanted to make it work. We collaborate.

When we are together then we can make decisions. That is how we solved the problem of tubes. The boss heard at the meeting and then called the folks in Dondo to get the tubes.

c. Culture (+2)

Summary Statement: Respondents stated that teamwork and collaboration were central the norms and values of Mafambisse health center. However this culture was strengthened by the SAIA which requires health care teams to work together to use the tools to identify, develop and evaluate quality improvements.

We have capable team which can try to identify and solve problems. Our team was our strength.

What made it work was that our nurses wanted to make it work. We collaborate.

d. Implementation Climate
i. Tension for Change (+1)

Summary Statement: Initially the team did not realize there were inefficiencies in their system, however as the SAIA study was implemented the team recognized inefficiencies in their service delivery model, specifically suboptimal linkages between services. The advent of Option B+ also brought challenges around improving retention in care which push the health care team to consider new models of improvement.

Work has increased though as pMTCT is now OB+ and it requires us all to work hard to make it work.

The work environment was good but it is better now.

Work environment has been made better by this intervention (SAIA). In pMTCT it is a series of linked services but before we didn't realize that we needed to make strong links between the steps to make the service better.

ii. Compatibility (+2)

Summary Statement: There was good compatibility between the SAIA intervention and norms and values at Mafambisse. Specifically the team valued joint decision-making which was strongly encouraged by the SAIA. However there was no feedback on how the SAIA meshed with the existing workflows and systems.

All the nurses and the leaders participate—all the heads of programs were there. When we are together then we can make decisions.

To do better pMTCT we must work together. People were sitting together to identify the problems and solutions so we had to ask each other for help.

iii. Relative Priority (+2)

Summary Statement: Health workers expressed a common perception of the importance of implementing the SAIA at Mafambisse. This was due to the introduction of Option B+ as well as the tools of the SAIA which demonstrated substantial lost to follow up. Combined these aspects made health workers see the importance of using systems tools to improve their services.

We see how many mothers we are losing—just taking a few minutes to make sure mom gets from one place to the next place, otherwise we lose them.

It [the workload] got a little more but that is because we have PMTCT which is growing.

Work has increased though as pMTCT is now OB+ and it requires us all to work hard to make it work.

All managers were supportive and so were the team members. There wasn't anyone who didn't want to participate. If we are together when we do this, problems can be solved. Like we had the problem with not enough tubes to draw blood in ANC and maternity. But because the Chefa was there she saw we had this shortage and she spoke with the district and got more tubes so we can draw blood where it is best for the women.

iv. Organizational Rewards (M)
v. Goals and Feedback (+2)

Summary Statement: The design of the SAIA required health staff to systematically review feedback and alignment with goals relative to the provision of pMTCT. Health workers reported that the systems tools each provided a different window into better understanding service organization and the impact of iterative changes made by the health care team. Likewise the feedback that was provided by the study team was appropriate and well received by the health care team.

The cascade let us quantify the situation. Here I had so many women but then I only had that many women.

PCAT—we could see our own numbers and %s. It made us open our registers to see where the problems were. We saw we weren't registering our data. We needed to see where the mistakes were.

The way we interacted was healthy and respectful—we could look at our challenges and together we came up with solutions.

vi. Learning Climate (+2)

Summary Statement: The healthcare team reported that the SAIA enhanced the learning climate over the course the study. Specifically the SAIA gave time to try new methods and space to reflect on the results.

... liked the meetings the best. Because we were able to highlight our problems and then come up with solutions. It provided us with the space.

There wasn't anyone who didn't want to participate. If we are together when we do this problems can be solved.

e. Readiness for Implementation

i. Leadership Engagement (+1)

Summary Statement: The nursing leadership of Mafambisse was actively engaged and supportive, acting as agents of change to improve identified inefficiencies in the system. The medical director, while not engaged, did not block it. However the doctors lack of engagement did prevent the discussion of the work at the daily rounds meeting.

Leaders helped because they let us meet with the study team once our work was done. Also they helped solve our problem with the receipt of PCR.

All managers were supportive...because the chefa (head nurse) was there she saw we had a shortage...spoke with the district...got more tubes so we can draw blood where it is best for the women.

The doctor is not involved in the SAIA work. So using it at ocurrencias (morning rounds) is unlikely.

ii. Available Resources (+1)

Summary Statement: Adequate physical space and time was available so that nurses could participate in the SAIA activities. In addition, when the team identified shortages in clinical supplies they were able to communicate with the district level to remedied the stock out. The lack of computer access was reported as a main resource limitation, as independent use of the PCAT was not feasible.

They liked the meetings the best. Because we were able to highlight our problems and then come up with solutions. It provided us with the space.

Like we had the problem with not enough tubes to draw blood in ANC and maternity. because the chefa (head nurse) was there she saw we had a shortage...spoke with the district...got more tubes so we can draw blood where it is best for the women.

Will we continue? It will be VERY difficult. We don't have computer we can't see where we are missing.

iii. Access to Knowledge and Information (+2)

Summary Statement: Overtime the health care team developed greater ease with the various tools of the SAIA as they promoted communication across the pMTCT cascade, and helped the team identify and solve problems. This was a result of the design of the tools and the support of the study team.

There were no barriers to using the flow mapping.

It let us try out ways to fix things and then see on the cascade if it made everything work better.

This type of (pMTCT operations research), encourages communication across the sites of PMTCT delivery (ANC and Maternity and CCR).

3. INDIVIDUALS

a. Knowledge and Beliefs about the Innovation (+1)

Summary Statement: The healthcare team was introduced to the elements and intent of the SAIA at the introductory meeting so the team's attitude and value placed on the SAIA developed over the study period. The positive take on the intervention was bolstered by the study nurses.

(the study nurses reported that the) PCAT made them want to get better--they want to improve their performance--sense of competition with themselves to improve. They liked that it was quantitative.

(PCAT) We could see our own numbers and percentages. It made us open our registers to see where the problems were. We saw we weren't registering our data. We needed to see where the mistakes were.

They (the study team) helped us with the data, the forms, and the flow of services. We don't have a lot of people to ask for help.

- b. Self-efficacy (+2)

Summary Statement: As use of the tools and approach improved individual efficacy in implementation improved at Mafambisse health center. The team felt relatively capable of individually implementing the SAIA in their setting. There were some challenges in understanding the optimization function of the PCAT however.

...the cascade let us quantify the situation. Here I had so many women but then I only had that many women.

We felt able to carry out our proposed solutions—we identified the problems so we had to solve them. In that way we can help our patients

She expressed a lot of support for the PCAT—she liked how it quantified their delivery across the cascade. But it was also clear that the optimization function was not fully understood (according to the study nurse manager)

- c. Individual Stage of Change (X)

Summary Statement: Conflicting comments were provided for this construct. While some respondents reported a change in approach to service delivery, others reported fundamental challenges due to the complexity of the tools (specifically the PCAT and it being computer-based)

Our mentality changed as we saw the impact of our work.

We can't make the PCAT work without the study team.

- d. Individual Identification with organization (M)
e. Other Personal Attributes (M)

4. PROCESS

- a. Planning (+1)

Summary Statement: The SAIA includes a planning phase before any innovation is introduced. As such process was built into the actions of the facility team. In particular, the flow map was cited as an effective planning tool as it got team members to agree on current service delivery—which is essential to planning for improvement.

Flow mapping helped us put the problems on paper. We could see what about our system was making the challenge. It let us see the right path to solve our problems.

We looked at our system as a whole and then we changed it. We discussed together what were the best changes to make.

- b. Engaging
 - i. Opinion Leaders (M)
 - ii. Formally Appointed Internal Implementation Leaders (+2)

Summary Statement: The head nurse supporting pMTCT work was very engaged and supportive throughout the study. In addition, the entire team engaged in the SAIA was supported and involved.

All managers were supportive...There wasn't anyone who didn't want to participate.

We have capable team which can try to identify and solve problems. Our team was our strength.

- iii. Champions (M)
- iv. External Change Agents (+2)

Summary Statement: Multiple informants commented on the quality of the support provided by the study nurses throughout the SAIA intervention. Their engagement inspired the Mafambisse team. When services were overloaded the external change agents (the study nurses) stepped into clinical roles and helped the facility team attend patients, which alleviated nurse work load and provided them with insight into how services are provided.

What made this work was that Joana and Melita (study nurses) came and sat with us, they reviewed our books with us and together we went through the problem solving... "sitting together" made PDSA work.

..the study nurses supported the site in data collection and in provision of care. –they understood our reality

Working with the study nurses was good. They help out in the provision of care. I have only thanks to give. They are respectful, knowledgeable. They help out and then we get to work.

We wanted to work with Joana (Study Nurse) as well. Because the nurses engaged –the study nurses were respectful and inspirational. The way we interacted was healthy and respectful—we could look at our challenges and together we came up with solutions.

- v. Key Stakeholders (M)
- vi. Innovation participants (M)
- c. Executing (+2)

Summary Statement: Participating nurses would rotate as needed if one was not available, but generally one from each sector attended. The meetings were held routinely and generally lasted the same amount of time. Participation of facility staff improved over time.

When one person can't come from a sector, a substitute would come. Most of the visits lasted about an hour. Coming once a month is good. It is the multiple interactions that make it work.

In the beginning there were fewer people involved but then it got more adherents.

d. Reflecting & Evaluating (+2)

Summary Statement: Staff reported improvements in the work environment and to specific areas of pMTCT care delivery.

Work environment has been made better by this intervention (SAIA).

What really improved was in CCR (at risk child consults). Also in maternity the links between maternity and CCR got better.

Case Memo

Country: Mozambique
 Facility: ----
 Performance Classification: Low

1. Innovation

a. Innovation Source (+1)

Summary Statement: The leadership at Tica reported strong leadership over the SAIA process. The staff did not mention ownership or whether they felt the innovation was internally or externally developed.

Did you feel ownership over the process? We made the choices –we prioritized what made most sense. We picked one and moved together to solve it. At our morning meeting we would touch base on our processes and move to the next level.

b. Evidence Strength and Quality (+1)

Summary Statement: Some respondents reported that they had strong initial belief in the efficaciousness of the SAIA while others reported belief in the SAIA's evidence strength and quality after implementation began.

From the beginning we felt certain that this would succeed.

People took the efforts seriously and as a result it moved forward.

At the daily rounds we talk about the outcomes of our interventions. Daily we discussed the continuous quality improvement cycle with the flow map of our services as the base of reference.

c. Relative Advantage (+2)

Summary Statement: The Tica team spoke highly of the relative advantage of the SAIA vis-a-vis their previous approach to improving service delivery for pMTCT. Initially it was seen as challenging but with time they came to appreciate the benefits of the tools and approach.

The work was initially a little more but then it made the work easier as it was more efficient.

But with this study we really got beyond just indicators and highlighted actually inefficiency... where we are lacking—we got to the link between data and our actions.

d. Adaptability (+2)

Summary Statement: The team selected and implemented their changes as part of the SAIA strategy. They also used their existing daily meetings (ocurrencias) to discuss how quality improvement efforts were being implemented.

Ultimately we designed the interventions so they were appropriate to our setting—they were tailored to our setting.

We made the choices –we prioritized what made most sense. We picked one and moved together to solve it. At our morning meeting we would touch base on our processes and move to the next level.

e. Trialability (+1)

Summary Statement: Through the SAIA, space for teams to try out improvements was provided which was helpful. The activities inspired and engaged the Tica health care team.

Through PCAT we were able to identify the shortcomings of our pMTCT services because the number would rise or fall based on the interventions we proposed.

...they (our nurses) just want to improve. And this study challenges us to be better nurses and our team was up to the challenge.

f. Complexity (+1)

Summary Statement: Flow mapping was seen as easy to do and replicate. Use of the PCAT though was seen as better for managers and not necessarily easy for frontline health workers.

The flow map was easier—it helped us see where we are...

Flow mapping made the path of the woman through PMTCT clear

The cascade was probably better for nurse managers and doctors it works. but we liked the flow map best because it was at our level

g. Design Quality and Packaging (M)

h. Cost (M)

2. Inner Setting

a. Structural Characteristics (+2)

Summary Statement: The Tica health center reported that its small size, rural location and substantial patient flow contributed to its flat management structure.

We are very team based because we are small so those inefficiencies were addressed together to improve.

We work in a very team based approach. We are a small urban site with a huge flow of patients. This makes us embrace this initiative –which improves inefficiency.

b. Networks and Communications (+1)

Summary Statement: The quality of the social and communication networks at Tica were good because the team met each morning for daily rounds (ocurrencias). Updates of SAIA activities were eventually incorporated into this activity.

At our morning meeting we would touch base on our processes and move to the next level.

Daily we discuss the continuous quality improvement cycle with the flow map of our services as the base of reference.

c. Culture (+2)

Summary Statement: Tica work culture is democratic and teamwork is prioritized. They reported that they are a high functioning team who is open to improvement.

We work in a very team based approach.... It is a flatter management... even for cleaning we all do it. ...there was good collaboration, they were open and without complaints.

- d. Implementation Climate
 - i. Tension for Change (0)

Summary Statement: Informants did not provide consistent information on the degree to which they felt the current situation was needing change.

- ii. Compatibility (+1)

Summary Statement: The staff felt SAIA was a good fit for their facility because they could use an existing meeting (ocurrencias) to discuss implementation updates. They were also able to design improvement innovations that meshed with their reality.

Ultimately we designed the interventions so they were appropriate to our setting—they were tailored to our setting.

We always meet for ocurrencias (daily rounds)--it makes it so much more efficient.

- iii. Relative Priority (-1)

Summary Statement: The facility had been trying to improve the efficiency of services for pregnant HIV-infected women, so they could “one stop shop” and receive testing, counseling and treatment on the same day. Because the SAIA strategy provided a systems level view for health workers it was seen as valuable to achieve this end. At the same time the PCAT was seen as not at the right level for front line nurses because of it being computer-based and some staff reported that even after using the SAIA tools it was still difficult to discern where to actually intervene.

The flow mapping facilitated the one-stop shopping model the health care team wants, as it made the path of the woman through PMTCT was made clear.

The cascade was probably better for nurse managers and doctors it works. but we liked the flow map best because it was at our level.

It wasn't always obvious where we should intervene.

- iv. Organizational Rewards (M)
 - v. Goals and Feedback (+1)

Summary Statement: Goals were clearly stated and acted upon throughout the SAIA implementation period. The use of the morning meeting was helpful to create the space where the team could discuss progress towards goals and create new goals, however at times the team reported having trouble identifying where innovations were needed.

We made the choices—we prioritized what made most sense. We picked one and moved together to solve it. At our morning meeting we would touch base on our processes and move to the next level.

It wasn't always obvious where we should intervene.

vi. Learning Climate (+2)

Summary Statement: Across the board the team reported an open, collaborative and supportive learning environment which was eager to apply the tools of the SAIA to improve pMTCT service delivery.

We are very team based because we are small so those inefficiencies were addressed together to improve.

We tried to come up with interventions where the implementation was shared, usually more people involved bigger impact.

We work in a team based approach. The MD can be criticized, and even for cleaning we share the tasks.

e. Readiness for Implementation

i. Leadership Engagement (+1)

Summary Statement: Managers were open and accepted the intervention. There was a shift in leadership over the life of the study so the medical doctor who was interviewed was still relatively new but enthusiastic.

There was good collaboration, they were open and without complaints.

ii. Available Resources (-2)

Summary Statement: Tica was severely restricted in their ability to improve their flow of services due to crumbling infrastructure and limited staff. Despite some improvements in service efficiency issues around space for health care delivery were not possible to overcome.

The infrastructure is terrible. The ANC is provided in a converted kitchen—there are not windows and there is no privacy. If we had better infrastructure and more staff we could do so much better.

Sometimes the interventions that were proposed were not possible to implement because it was outside of our control. Like not enough space...we can't control that. Same with increasing personnel....

iii. Access to Knowledge and Information (+2)

Summary Statement: Information about the tools of the SAIA were provided at the start of the study and were reinforced throughout the life of the project. Ease of use of tools improved over time and staff reported that problem identification also developed however there was continual need for clarity on the PCAT.

Through the PCAT we were able to identify the shortcomings of our PMTCT services because the number would rise or fall based on the interventions we proposed.

And for PCAT? Can the people explain? The study nurses explained it to us.

The flow map is a graphic representation which helps tell us how to serve our clients. It also helps the services flow more efficiently and effectively.

3. INDIVIDUALS

a. Knowledge and Beliefs about the Innovation (+1)

Summary Statement: There was strong support from the beginning for the SAIA trial at Tica. The team felt it would work well in their setting. It was reported that the entire health care team was highly engaged as it was believed that it would benefit their work. All staff could explain the flow map but there was less understanding of the PCAT.

From the beginning we felt certain that this would succeed.

People took the efforts seriously and as a result it moved forward.

We think everyone on the team can explain what a flow map is and how it is done. And for the PCAT? Can people explain? The study nurses explained it to us.

b. Self-efficacy (+2)

Summary Statement: Generally, the team was confident in their own capabilities to carry out the SAIA activities. They did their best to identify improvements that were within their control and the front line nurses were universally engaged in providing high quality health care.

We made the choices--we prioritized what made the most sense. We picked one and moved to solve it.

We didn't have difficulties because we were identifying challenges in a system that we manage.

Our nurses are good, they have heart, they do good work. Since coming here they just want to improve.

c. Individual Stage of Change (+1)

Summary Statement: Health workers in Tica reported feeling very committed to their mission to improve health of the community, which was sustained throughout the study period.

The nurses and doctors love working in Tica because the health workers really care.

This study challenges us to be better nurses and our team was up to the challenge.

d. Individual Identification with organization (+2)

Summary Statement: Tica staff reported a strong sense of commitment and supportive collaboration at their site because of their rural location and large patient flow which necessitated teamwork to meet the community's needs.

We are very team based because we are small so those inefficiencies were addressed together to improve.

We work in a very team based approach. We are a small urban site with a huge flow of patients, you see?

e. Other Personal Attributes (M)

4. PROCESS

a. Planning (+1)

Summary Statement: Planning was an essential element of the SAIA toolkit, as it is fundamental to continuous quality improvement. Before each innovation the team would meet review their system tool results, with support from the study team and make informed decisions of how to improve.

We made the choices –we prioritized what made most sense. We picked one and moved together to solve it. At our morning meeting we would touch base on our processes and move to the next level.

- b. Engaging
 - i. Opinion Leaders (M)
 - ii. Formally Appointed Internal Implementation Leaders (+1)

Summary Statement: The small team at Tica ensured that all staff had a role in making the SAIA intervention function.

Staff and leaders were supportive of SAIA.

We are very team based because we are small so those inefficiencies were addressed together to improve.

- iii. Champions (M)
- iv. External Change Agents (+2)

Summary Statement: The study nurses were recognized as excellent by the facility team. They appreciated their support for patients as well as their patience working with the staff to understand the tools and processes of the SAIA.

Sometimes they came when we had patients to see—they always helped in care provision. They get to understand our services and they show us that they care by helping us.

They inspired us...we wanted to be better and care more.

- v. Key Stakeholders (M)
- vi. Innovation Participants (M)
- c. Executing (-2)

Summary Statement: The PCAT wasn't implemented as planned as the frontline nurses found it challenging. Staffing absences and changes affected implementation, including facility leadership.

The cascade was probably better for nurse managers and doctors. It works, but we liked the flow map best because it was at our level.

One of the nurses was on maternity leave so she was later to get involved. Also the doctor is new but picked up after being oriented by the previous doctor.

- d. Reflecting and Evaluating (-2)

Summary Statement: Staffing limitations and poor infrastructure made it difficult for innovations to be successful. The team was supportive but it was challenging to make improvements.

If we had better infrastructure and more staff we could do so much better.

Staff and leaders were supportive of the SAIA...it wasn't always obvious where we should intervene.