Case Study

INvolving Health Posts in Quality Improvement of Prenatal Care in the Context of Zika

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**SUMMARY**

From June 2017 to June 2019, the hospital, maternity and health center of the municipality of Amatitlán, Guatemala, participated in a national improvement collaborative aimed at improving care for women of reproductive age - pregnant and non-pregnant - and children under 2 years, in the context of the Zika epidemic, promoted by the United States Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) Project. In January 2019, the health center quality improvement team decided to expand the collaborative improvement effort to the nine health posts in Amatitlán where Zika screening was not done, counseling in Zika was not given, nor were condoms delivered for prevention of sexual transmission of Zika to pregnant women.

With the support of ASSIST, the personnel of the health posts were trained in the components of prenatal care in the context of Zika. The health center’s quality improvement team also shared with them one of its best practices: the use of a stamp in the medical record to prompt and record screening, counseling, and condom delivery to pregnant women. In addition, they wanted to share with them other elements of quality improvement, such as teamwork, measurement of indicators, and collaborative learning. This case study describes the process that was carried out to form improvement teams in the health posts, engage them in adopting the best practice of the health center, measure indicators of compliance with standards, and together learn how to improve their performance.

**BACKGROUND**

Amatitlán, only 30 km from the capital city, is the southernmost municipality of the Department of Guatemala, in the health area of South Guatemala. The public health system of the Ministry of Health (MOH) in Amatitlán is organized with one administrative direction or Health Area, a national hospital and a maternity hospital considered third level of care, and a health center as second level of care, all located in the city of Amatitlán. For the provision of first level primary health care in the rural areas of Amatitlán, there are nine health posts (HP), four classified as “fixed” and five as “functional” HPs (see Figure 1). Fixed HPs generally have two auxiliary nurses. The functional posts, which cover the more remote villages, have an auxiliary nurse and a health center doctor who rotates through the five HPs. Each health post covers more than one village and a population of between 2,000 and 7,000 people, with functional posts covering less population than fixed posts.

From June 2017 to June 2019, the national hospital, maternity hospital, and health center of Amatitlán participated in the quality improvement collaboratives focused on family planning, prenatal care (PNC), newborn care, and children’s care in the context of the Zika epidemic implemented by the MOH with support from the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. The participating second and third level facilities in Amatitlán were successful in testing innovative ideas of change and improving
their quality of care indicators in the context of Zika. For example, they were the creators of "care and counseling pathways" at the national and maternity hospitals, so it is not surprising that they wanted to expand their good practices to health posts in the first level of care.

In five of six health areas where the project worked in Guatemala, some health centers spontaneously, and others in the official collaborative expansion stage, gradually covered the HPs of their jurisdiction until reaching 347 health posts. In the expansion, they found that the first level staff was very motivated to participate because "we have many years of not receiving training (especially the more distant HPs), although it is at this level that we first treat people's illnesses and where 80% of them should be resolved." However, in those health posts because there are only one or two staff members - usually an auxiliary nurse – there was no attempt to form specific HP quality improvement teams (QITs) nor involve them in the measurement of indicators. This case study presents the experience of the health area of South Guatemala and the Municipal Health District of Amatitlán in introducing these components of quality improvement in the work of their nine health posts.

**PROBLEM ANALYSIS**

The expansion of the collaborative improvement of prenatal care to health posts in Amatitlán began in January 2019 with a baseline through which the health center realized that Zika screening was not done, counseling on Zika was not being provided, and condoms were not issued to pregnant women for the prevention of sexual transmission of Zika. With the support of ASSIST, health post personnel were trained in these components of prenatal care. In addition, the health center's QIT shared one of its “best practices”: the use of a stamp in the medical record to prompt health workers to provide and record Zika screening, counseling, and delivery of condoms to pregnant women (see Figure 2).

Additionally, the director of the health center, Dr. Blanca Rosa Guevara, asked the QIT: “How are we going to share to the health posts not only the stamp but other elements of quality improvement such as: teamwork, measurement of indicators and learning from each other, when there is only one auxiliary nurse in each health post?” Since the health post nurses meet once a month at the health center the QIT decided to train them at the meeting in March 2019 in the measurement of indicators and ask them how they could organize themselves in teams for collaborative learning.

**DESIGN OF THE IMPROVEMENT STRATEGY**

With the participation of the auxiliary nurses of the HPs, the idea of organizing QI teams by type of health post (i.e., fixed or functional) arose. Thus, four auxiliary nurses formed the team of fixed HPs, representing the villages of Cerritos, Llano de Ánimas, San José Calderas, and Las Trojes, and five auxiliary nurses formed the team of functional HPs, representing the villages of Cerro Corado, Mesías Bajas y Altas, Pedregal, and Pepinal. Each team appointed a leader responsible for convening them and keeping the measurement tools (monitoring sheets and time series graphs).
The new QITs received hands-on training in the measurement of three indicators of prenatal care in the context of Zika: 1) percentage of pregnant women who are adequately evaluated in PNC by asking about signs and symptoms of Zika; 2) percentage of pregnant women receiving counseling about Zika in PNC; and 3) percentage of pregnant women who were given condoms in PNC to protect themselves from sexual transmission of Zika. As the indicators are measured by reviewing 20 records of pregnant women each month, the decision was that each HP in the team of fixed HPs provided 5 records of pregnant women chosen at random and that each HP of the team of functional HPs provided 4 records of pregnant women (see Figure 3). The indicator of condom delivery was also verified using the daily consultation format of the MOH’s Health Management Information System (SIGSA).

Figure 3. Monitoring sheet for the indicator of screening of pregnant women for Zika in four fixed health post in Amatitlán; an identical one was used for functional health posts.

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Change Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>The stamp had been printed only once and not for each prenatal visit.</td>
<td>Be sure to place the stamp on the back of the clinical record, one for each consultation.</td>
</tr>
<tr>
<td>Everyone fills the stamp according to their own understanding; sometimes Zika signs appear unmarked not because</td>
<td>Clearly define each item of the stamp and how it will be marked. For instance, if the provider asks about each one of the Zika symptoms, each one has to be marked.</td>
</tr>
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DEVELOPMENT OF CHANGE IDEAS

Since the health center had already trained them in Zika screening, counseling, and condom distribution and had shared the stamp for documenting these actions, at first the task of measuring indicators seemed very easy. It was only a matter of reviewing the record and writing down the findings on the monitoring sheets. However, when making the first measurement of the indicators in April 2019, the teams realized that there were weaknesses and came up with ideas of change to remedy them (see Table 1).

Table 1. Gaps in prenatal care in the context of Zika and solutions tried out by health posts
they did not ask about them but because the woman did not experience them. | Experiencing one such symptom is recorded elsewhere in the clinical record.

Forgot one or more of the steps of the process. | At the beginning of the consultation, place the stamp, the brochure for counseling, and the box of condoms on the desk as a reminder of all the elements to be covered.

RESULTS

Health posts plotted the results of the indicators on sheets as shown in Figure 4 for condom delivery. The three indicators followed the same pattern. At baseline, the teams had 0% compliance; after receiving the stamp and training in the first quarter of the year, all indicators rose to 75% in April 2019. After analyzing results and implementing their own ideas of change, the indicators reached 100% for two consecutive measurements. However, the indicators of the fixed HPs team fell back to 75% in the last measurement in July 2019 because the auxiliary nurse went on vacation and the assistant who stayed in her place did not fill out the stamp, although he apparently carried out the activities. The QI teams themselves concluded that they should apply the QI principle that “what was not written was not done.”

CONCLUSION

This brief case study demonstrates that it is possible for health posts to be organized in QITs according to their characteristics, even if there is only one or two staff by post. In this case, two teams were formed: one with four fixed HP and the other with five functional HPs. When organized in teams, an interesting competition was created that made the staff try harder to implement the changes and
improve performance; the fixed HPs team regretted having lowered their performance on the indicators in the last measurement, but was clear about the steps that should take to improve the process.

Another conclusion is that despite receiving from the health center its “best practices” as was the case of the stamp, the implementation in the services is not always automatic and, it is possible that the new teams will have to test new ideas of change to improve indicator performance. They also realized that the indicator dropped when one of the trained auxiliary nurses went on vacation, which is a factor that commonly affects the documentation of actions and the reason why more health providers should be trained.

Finally, it was shown that with “learning-by-doing” training, the two teams were able to understand the improvement methodology and measure and analyze their indicators.

WAY FORWARD

The health posts teams indicated that, in the future, they would like to measure the head circumference of children from 0 to 2 years old and use the methodology of continuous improvement to increase the percentage of children whose head circumference is measured each month in the first year and quarterly in the second year of life. The head circumference measurement would be noted in the MOH notebook where two other anthropometric measures (weight and length/height) are written down; they plan to use the methodology to improve compliance with all three anthropometric measures.

The health posts were also willing to test the measurement of the pregnant women’s knowledge of Zika, doing the interviews, not at the exit of the health post as health centers do, but in the homes of the pregnant women. In fact, all the HPs did two test interviews with pregnant women in their homes and, although they did not use a standardized interview form, they wrote down the answers in narrative form in a notebook. In the future, they are planning to use the standardized interview format that the health center uses, with modifications.

Participants in the health post QI activities: Dr. Blanca Rosa Guevara, Director, Amatitlán Health Center; Auxiliary nurses members of the fixed health post QI team: Esna Lizbeth Rodríguez (team leader), Irma Belinda Alvarado, Griselda Godoy, Casta Rubidia Castro, Marleny Albizúrez, Angélica Hernández, and Ana Beatriz Gutiérrez; Auxiliary nurses members of the functional health posts QI team: Sandra García (team leader), Rosa García, Luz Angélica López Cifuentes, Marta Rufina Hernández, Luis García, and Dr. Marcelo Apén, Health Center Supervisor.

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