CONSULTANT REPORT

Application of Quality Improvement Approaches in Strengthening Health System Resilience for Zika Emergency Preparedness, Response, and Health Care: Honduras Case Study

MAY 2020

This consultant report was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Ezequiel Garcia-Elorrio of the Institute for Clinical Effectiveness and Health Policy, who served as a consultant to the World Health Organization under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. The work of the USAID ASSIST Project to improve Zika-related health services is made possible by the generous support of the American people through USAID.
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Ezequiel Garcia-Elorrio, Institute for Clinical Effectiveness and Health Policy

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For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write assist-info@urc-chs.com.

**Recommended citation**

# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acronyms</td>
<td>ii</td>
</tr>
<tr>
<td><strong>EXECUTIVE SUMMARY</strong></td>
<td>iii</td>
</tr>
<tr>
<td>I.  INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>A. Aims and Objectives of the Country Consultation</td>
<td>2</td>
</tr>
<tr>
<td>II. APPROACH</td>
<td>3</td>
</tr>
<tr>
<td>A. Conceptual Framework</td>
<td>3</td>
</tr>
<tr>
<td>B. Data Collection</td>
<td>4</td>
</tr>
<tr>
<td>C. Data Management and Analysis</td>
<td>5</td>
</tr>
<tr>
<td>D. Limitations</td>
<td>5</td>
</tr>
<tr>
<td>III. FINDINGS</td>
<td>6</td>
</tr>
<tr>
<td>A. Desk Review</td>
<td>6</td>
</tr>
<tr>
<td>B. Country Consultation: Interviews and Focus Group Discussions</td>
<td>9</td>
</tr>
<tr>
<td>IV. DISCUSSION</td>
<td>17</td>
</tr>
<tr>
<td>A. QI Approaches Applied to Zika and PHEP&amp;R</td>
<td>17</td>
</tr>
<tr>
<td>B. Support Systems and Available Tools</td>
<td>17</td>
</tr>
<tr>
<td>C. Facilitators and Barriers to Implementation of QI to PHEP&amp;R</td>
<td>18</td>
</tr>
<tr>
<td>D. Routine Health Services and Zika Case Management</td>
<td>18</td>
</tr>
<tr>
<td>E. Perspective for an Integrated Approach</td>
<td>18</td>
</tr>
<tr>
<td>F. Assets Identified in Honduras that Support Integration of QI in PHEP&amp;R</td>
<td>19</td>
</tr>
<tr>
<td>G. Key Challenges and Needs Identified in the Application of QI to Improve PHEP&amp;R</td>
<td>21</td>
</tr>
<tr>
<td>H. Can the Experience of Zika in Honduras Be Applied to Other Emergencies?</td>
<td>21</td>
</tr>
<tr>
<td>I.  Key Considerations to Support an Integrated Approach</td>
<td>21</td>
</tr>
<tr>
<td>V.  CONCLUSION</td>
<td>23</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>24</td>
</tr>
<tr>
<td>ANNEXES</td>
<td>26</td>
</tr>
<tr>
<td>Annex A: List of Stakeholders Interviewed</td>
<td>26</td>
</tr>
<tr>
<td>Annex B: Summarized Key Findings from the Interviews and Focus Group Discussions</td>
<td>27</td>
</tr>
</tbody>
</table>
Acronyms

ANC  Antenatal care
ASSIST  USAID Applying Science to Strengthen and Improve Systems Project
CF  Conceptual Framework
DTIR  Detect, Treat, Investigate and Research
ECOR  *Equipo Coordinador de Redes* (Network Coordination Team)
FGD  Focus group discussion
FP  Family planning
HC3  Health Communication Capacity Collaborative
HSOH  Honduran Secretariat of Health
HISS  Honduran Institute for Social Security
IHR  International Health Regulations
NGO  Non-governmental Organization
PAHO  Pan American Health Organization
PDSA  Plan-do-study-act
PHC  Primary Health Care
PHE  Public Health Emergencies
PHEP&R  Public Health Emergencies Preparedness and Response
QI  Quality Improvement
QIC  Quality Improvement Collaboratives
SDS  Service Delivery and Safety Department of WHO
SINAR  *Sistema Nacional de Referencia y Respuesta* (National System for Referral and Response)
TSA  Technical Sanitation Agents
UHC  Universal Health Coverage
URC  University Research Co., LLC
USAID  United States Agency for International Development
WHO  World Health Organization
WRA  Women of reproductive age
EXECUTIVE SUMMARY

Introduction

The purpose of this country case study was to gain an operational understanding of quality improvement (QI) interventions implemented in the context of the Zika outbreak and their role in improving preparedness and response capacities of health facilities, regional and national level authorities in Honduras.

The objectives of the case study included: a) Identity existing frontline application of QI in clinical care settings in the context of Zika or other infectious disease management; b) Capture examples and perspectives related to the application of QI approaches in the context of preparedness and response; c) Engage with policy and planning officials overseeing health care services, and emergency preparedness and response to understand policy and operational linkages and the application of QI approaches to improve preparedness and response; and d) Revise the conceptual framework for Quality Improvement for Public Health Emergency Preparedness & Response developed by WHO and the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project based on the case study findings.

Approach

The case study was based on collecting qualitative data using the following three methods: desk review, semi-structured interviews, and focus group discussions. Thirty-six people representing the three levels of the health system (facility, regional and central levels) were interviewed in Honduras in February 2019. The conceptual framework was revised based on responses from the semi-structured interviews and focus group discussions.

Findings

Data was collected from each level of the health system (facility, regional and central levels authorities) with respect to quality of care, leadership and governance, quality interventions, and public health emergency preparedness and response (PHEP&R).

At the health facility level, there was a high level of commitment and satisfaction with using QI to improve actions to mitigate the Zika outbreak. A number of initiatives (i.e., frontline engagement, learning collaboratives, plan-do-study-act [PDSA] cycles, performance data analysis, and community involvement, among others) led by the government with support from donors such as USAID, were deployed to improve performance levels during the epidemic. Concerns were raised about future sustainability. At the regional level, a deep understanding of the value of QI to improve Zika clinical management was present. However, there was not much integration between QI in PHEP&R at the operational level for the Zika outbreak. Various cross-learning activities (National System for Referral and Response [SINAR] meetings, intersectorial tables, and Network Coordination Team [ECOR]) between providers and civil society stakeholders were in place. At the central level, the Quality Unit within the Honduran Secretariat of Health (HSOH) made important efforts to provide guidelines and recommendations to frontline providers. These guidelines included important pieces on quality management (measurement and improvement), contextualized around the Zika outbreak. However, there was little coordination observed between the Quality Unit and the Unit for Epidemiological Surveillance within the HSOH.

Overall, QI efforts to improve PHEP&R were dependent on donor support to the government. Technical and development partners such as USAID have provided a clear framework for deploying quality improvement collaboratives in the most affected regions and have established close ties with the central government. There are efforts underway to replicate QI best practices in Zika management to the rest of the country to promote wider impact and sustainability. Some of the interventions identified during the consultation include promotion of appropriate use of evidence-based practices, their customization to the different settings, as well as a strong component of data collection for performance evaluation and interpretation.
The conceptual framework was revised to include key changes in the following domains: 1. Ensuring Quality in Zika Preparedness and Response Systems (addition of community engagement and participation in PHEP&R); 2. Outcomes (inclusion of reduced morbidity and mortality related to Zika, trust and satisfaction from the public aligned with implementation of strategies; appropriate use of resources which entails mutual cooperation and resource sharing; and learning systems to aid in planning, implementation and evaluation of health service interventions); 3. Support Systems (addition of routine systems to coordinate activities among frontline staff and health facilities and continuous training and capacity building of health facility workers on interpreting epidemiological surveillance data) and 4. Supporting Factors and Inputs (addition of culture of leadership, improvement and accountability, continued optimum policy and institutional framework including quality improvement, and centralized monitoring of process data on key interventions).

Conclusion

The Honduras case study provided useful information on QI in health services and its role in PHEP&R in the context of the Zika epidemic. The choice of Honduras, considering the level of maturity of the interventions in place for a lower-middle income country, was key to understand the extent and scope of integration between QI and PHEP&R. Overall, QI proved to be a useful strategy during the Zika epidemic and its aftermath. Initial QI activities were led by the USAID ASSIST Project and were then increasingly complemented by actions from the Honduran Secretary of Health. While applying quality improvement collaboratives proved to be useful at the facility and regional levels, there is still more to be done to apply QI in PHEP&R. The primary care level is a critical piece of the preparedness and response system and was highly engaged in QI activities. This level is also empowered by the heavy involvement of frontline staff in redesigning the processes of care. Future challenges are related to the sustainability of the work done given the end of the USAID ASSIST Project and other donor programs. Recent efforts of the HSOH to extend QI approaches for Zika to the rest of the country suggest national ownership, which could contribute to sustainability.

Based on the findings of consultation, key observations were provided to the Government of Honduras, WHO/PAHO, and partners in country. For the Government of Honduras, critical actions to consider include sustaining and scaling up the gains made from the Zika epidemic management, building upon existing mechanisms to consider and enhance QI in PHEP&R integration (i.e., clinical practice guidelines development, reporting systems, providers, and community involvement), and maintaining a focus on measurement/data. For WHO/PAHO, enhanced coordination with the health emergencies program and the quality division can serve to demonstrate to countries that such integration exists at the global level. To ensure better integration and sustainability, partners should promote stronger engagement of the HSOH central level in the design and implementation of QI programs. The revised conceptual framework should be disseminated to a wider audience for further feedback and undergo testing to support the application of QI in the identified domains of PHEP&R.
I. INTRODUCTION

There has been an increase in the frequency of disruptive public health emergencies (PHE) causing significant public health, political and socio-economic impacts (1). Experiences indicate that, despite substantial progress and donor support, national efforts to tackle public health threats highlight gaps in prevention, preparedness and response to PHEs in an effective manner (2). Unprepared health systems failed to mount an effective response to emergencies, which also compromised provision of quality health services. This has led to a growing recognition of the need for more operational strategies to focus not only on preparing for and responding to specific diseases or PHEs but on redesigning health systems with an integrated approach to quality health services and emergency preparedness and response (3).

In the public health field, QI is an increasingly recognized approach to maximizing the effectiveness of services while minimizing costs (4)/(5). It can be defined as the action of every person working to implement iterative, measurable changes, to make health services more effective, safe, and people-centred (6). Performance management, using data to improve programs with respect to established targets and goals (known as performance standards), is increasingly seen by public health leaders as a useful practice. QI is one specific component of performance management and applies interventions to improve the efficiency or effectiveness of a program, process or organization, including by eliminating “inefficiency, error and redundancy” (7). Beyond the effects on people’s lives, poor quality care wastes time and money.

QI methods have the potential for improving health service delivery in the context of PHE (8). However, the scarcity in empirical data related to improvement in emerging health crisis settings is a critical gap in the health system strengthening literature as is described below.

Quality of care is a strong indicator of a health system’s performance and could be used as a proxy to evaluate public health emergency preparedness and response, often defined as the capability of the public health and health care systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those whose scale, timing, or unpredictability threatens to overwhelm routine capabilities (9). Preparedness should involve a coordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action. As much as possible, PHEP&R should be integrated and expanded upon with day-to-day public health practices and build upon existing systems, not developed de novo (10). PHEP&R should also involve scalable responses, with core building-block capabilities and functions that can be used during small, routine events and scaled up for larger events. Overall, it is critical to incorporate PHEP&R into regular health services and monitor regularly the level of readiness, along with having clear understanding of the key performance measures to be continuously assessed and improved.

A literature review developed by URC (11) highlighted the scarcity of data on quality improvement methods implemented at the health facility level in preparation for and following an epidemic. The review stated from other sources that “much of the existing body of knowledge concerning health effects following disasters has been generated by epidemiologists” further recognizing the gap in evidence-focused quality improvement following an epidemic (12). Inherently, health emergencies are fluid, with dynamic scenarios adding further challenges to an already complex situation. The overall intention of improving quality in health services during an epidemic or pandemic is highly recognized within the literature (10). However, this is competing with other ‘priority’ actions generally focused on acute response to minimize morbidity and mortality. An intervention that was noted was the use of Plan-Do-Study-Act cycles also known as the testing of iterative ideas/actions. Because public health emergencies are rare and generally not repeated in the same manner, and because the response depends on the capabilities and context of the location where they occur, there are few opportunities to measure process and outcomes in the rapid PDSA cycles typically used in health care and QI activities (13)
A. Aims and Objectives of the Country Consultation

Zika constituted a grave outbreak in Honduras and the Latin American region in 2015. The outbreak was eventually brought under control with combined efforts from governments, partners, and donors using in some cases QI, which provided a unique opportunity to understand the linkages between QI and PHEP&R. The purpose of this case study was to gain an operational understanding of quality interventions used in the context of the Zika outbreak and how they could have a role in improving health systems' preparedness and response capacities at the health facility, regional, and national levels in Honduras.

Specific objectives included:

1. Identity existing frontline application of QI in clinical care settings in the context of Zika or other infectious disease management
2. Capture examples and perspectives related to the application of QI approaches in the context of preparedness and response
3. Engage with policy and planning officials overseeing health care services and emergency preparedness and response to understand the application of QI approaches to improve preparedness and response
4. Revise the conceptual framework for Quality Improvement for Public Health Emergency Preparedness & Response developed by WHO and the USAID ASSIST Project based on findings.
II. APPROACH

- A conceptual framework was proposed to further understand the interlinkages between QI and their role in PHEP&R.
- A country consultation was planned combining desk review, semi-structured interviews, and focus groups to collect information.
- Based on the conceptual framework and country case study objectives, an interview guide and probes were developed to guide data collection.
- Jointly with the URC country office, key stakeholders were selected from all levels of the health system (national, regional, and health facility).
- Key findings and messages were analyzed and summarized.
- Limitations relating to the approach and analysis are presented.

A. Conceptual Framework

The impact of improvement approaches on routine health services has been well documented in different settings. However, more can be done about extending the application of QI in public health emergencies preparedness and response. In view of this, WHO and the USAID ASSIST Project have developed a conceptual framework which identifies essential domains of care during PHEP&R as well as systems, tools and desired outcomes (Figure 1).

Figure 1: Conceptual Framework for Zika Emergency Preparedness and Response
The conceptual framework (CF) for “Quality Improvement for Public Health Emergency Preparedness & Response” was developed prior to in-country data collection to provide a framework of how QI approaches relate to select domains of preparedness and response. The CF was informed by the Zika outbreak. The CF shows QI approaches as a common requirement and entry point for advancing overall health system capacity to deliver routine services. The CF is comprised of four main components: 1. domains; 2. support systems and enablers; 3. improvement approaches; and 4. outcomes.

This conceptual framework model was conceptualized under the following questions:

- How can available QI knowledge support public health preparedness and response to Zika?
- What are key “health service delivery” and “public health” domains and activities in which we can embed QI?
- How can the role of QI be defined alongside existing evaluation and performance activities already in place?
- What are the key practicalities to operationalize QI in Public Health?

B. Data Collection

Given the exploratory nature of this inquiry and the need to address its objectives in-depth and within a real-life context, a case study was conducted (14). Honduras was selected as the case country given its recent experiences managing a Zika outbreak and USAID’s 20-year history supporting quality improvement (QI) work in the health sector, including activities conducted by ASSIST in the eight departments most affected by Zika in the northern and south regions of the country since 2016. The consultant collected data using desk review, focus group discussions (FGDs), semi-structured interviews, and facility visits.

1. Desk Review

A rapid desk review was conducted to assess the current country situation as well as to inform the finalization of the questionnaires for the interviews and FGDs, final selection of sites, and persons to include in the interviews and FGDs. Relevant documents such as national and local health policies, strategy, plans, guidelines and protocols, donor project strategy, and reports were collected and analyzed.

Sources used for the review included:

- Online literature search on Medline, Google Scholar, and Google.
- Telephone interviews with the USAID ASSIST country office and WHO country office.
- Review of projects conducted in Honduras and publications related to Zika from the Institute of Clinical Effectiveness and Health Policy.

2. Focus Group Discussions

FGDs were conducted with respondents at the regional and district health authority levels and at the health facility level, with the possibility of bringing different institutions together. Two focus groups with a total of nine participants and 27 interviews were conducted. The exploratory questions and probes for FGDs and interviews were developed by WHO and refined during the country case study data collection, based on discussions with the URC country office.

3. Semi-structured Interviews

Individual discussion/interviews were held with key informants from all levels of the system: central HSOH, regional (including district level health authorities), and health facilities. These semi-structured interviews
were facilitated by interview guides developed and adapted to the different types of stakeholders. The interviews addressed issues brought up during the FGDs.

Thirty-six people from the Honduran Secretary of Health, Honduran Institute for Social Security (HISS) and partners were interviewed, representing the three levels of the health system in the regions of Tegucigalpa, San Pedro Sula, Puerto Cortes, and El Progreso that were among the most affected by the epidemic.

The list of authorities, providers interviewed, and facilities visited was prepared by USAID ASSIST team in Honduras before the consultation. Selection was based on the role and experience during the Zika epidemic and represented a wide spectrum of providers, supervisors, and regulators. Additional interviews were arranged while in country to complement and contrast the information received. Annex A lists the stakeholders interviewed either in focus groups or in-depth interviews.

4. Facility Visits

Facility visits were conducted in eight facilities (two hospitals and six primary care centers) in order to validate findings from the desk review, conduct interviews and FGDs, and obtain better contextual understanding. Observations of the infrastructure, essential supply availability, and staff availability were also reviewed to support emerging findings.

C. Data Management and Analysis

Interviews and focus groups discussions were conducted in Spanish and audio-recorded, and written notes were taken. Recordings were then transcribed as needed and translated into English.

Summarized results based on saturation points and key messages selected from the data were tabulated to describe findings and to generate conclusions and recommendations (see Annex B for tabulated results by level and for the domains of quality, policy, and emergency).

Preliminary findings were presented to in-country experts and government officials for feedback on findings and interpretation to improve the accuracy of the report.

D. Limitations

The case study aimed to understand the extent of integration between QI and PHEP&R and to discuss the feasibility of the conceptual framework for integration. However, limitations included lack of focused data to thoroughly inform the framework and the lack of opportunity to validate findings after data collection with a larger international representative group of respondents.

The literature on quality improvement methods in the Zika outbreak focuses on vector control and clinical knowledge, with health systems strengthening being a secondary objective. While interviews gathered useful information to guide future integration of QI in PHEO&R, gaps in the literature limited the scope of discussions regarding the conceptual framework and the feasibility of QI in wider public health emergency functions with stakeholders.

It should be noted that the consultant was embedded within the URC Honduras office and worked closely with USAID ASSIST staff in Honduras. The oversight role and proximity with USAID ASSIST colleagues could have influenced some perspectives of the consultant.
III. FINDINGS

A. Desk Review

1. Overview of the Honduran Health System

Honduras is in a transition scenario characterized by three different epidemiological features: 1) the persistence of infectious and contagious diseases transmitted by vectors, 2) the increase of noncommunicable diseases, and 3) citizen insecurity expressed in the high rates of morbidity and mortality due to high road traffic accidents and homicides concentrated in the male population between 10 to 34 years old (15).

In 2013, Honduras approved the National Health Model based on primary health care. One of the strategies is the introduction in two years of 500 family health teams to provide primary care in rural and remote areas of the country. The teams are composed of a doctor, a nurse, and a health promoter. In mid-2015, there were 367 family health teams in operation, and 250,000 poor and highly vulnerable families had been treated comprehensively, incorporating the process in the family file and the electronic family file system. In alignment with this, the units for first level care (unit of PHC, Integrated Health Center, and Polyclinic) and four types of facilities at the second level of care (basic hospital, general hospital, specialty hospital, and institute) have been established as part of the health model. In addition, the Secretariat of Health worked on the delineation and configuration of 69 integrated networks of health services in the country. An important component of this network is decentralized management. By 2015, decentralized management of health services reached 82 municipalities in 15 departments of the country, covering a population of 1,337,874 inhabitants. Currently, with the approval in 2015 of the Framework Law of the Social Protection System, there is a mandate to develop and integrate the National Health System and Social Security. This new health system may integrate the services provided by the government directly through the Secretariat of Health to the ones provided by the Social Security System.

An important player in the health care system is the Honduran Institute of Social Security, which is highly related to the formal workforce established mainly around San Pedro Sula in the north of the country where most of the industrial and agricultural facilities are based. The Honduran Institute of Social Security covers about 15% of the population through funds deducted from wages and is heavily regulated by the government.

2. Quality Landscape in Honduras

In the last 20 years, quality of care has been introduced as a concept to support health service delivery in Honduras (16). The best examples are the USAID Health Care Improvement Project and Salud Mesoamerica 2015 (funded by the Gates Foundation and the Health Institute of the Carlos Slim Foundation). In addition, the HSOH has deployed several activities to mitigate the effects of the Zika epidemic following a similar pattern. These have included QI strategies such as rapid improvement cycles (short repetitive PDSA cycles to improve care at the frontlines) and quality improvement collaboratives. In 2001, Honduras created a national quality system, and currently, the HSOH has a Quality Unit with national oversight. Aligned with this, the HSOH has established guidelines to promote patient-centered care and institutional patient safety. There is also an initiative to evaluate patient experience of care and satisfaction (17). A useful starting point for the work on integrating QI and PHEP&R, is the work on performance measurement. Currently, the Honduras Zika care guidelines include an important component of performance measurement as well improvement methods (18) (19). In June 2018, the HSOH issued a monitoring and evaluation plan to standardize measurement of key processes related to Zika management. This was praised by respondents during the consultation (especially at the regional/district level).

The Quality Unit in the HSOH was created in 2001 and reorganized in 2011. The Unit is now responsible for providing guidance on quality improvement for selected conditions, following up on certain key
procedures and metrics, highlighting the importance of adverse events prevention through the promotion of patient safety, and more recently, conducting training on improvement methods (20). Another unit, the Normalization Unit (or General Directory of Normalization) sits under the Vice Minister in charge of Health Regulation. Similar to the Quality Unit, it provides the different areas of the government with guidelines and recommendations to address a number of health issues, from communicable diseases to gender policies. Guidelines for Zika management and related QI strategies constituted the frontline of the outbreak mitigation activities guided by the Normalization and Quality Units within the HSOH. Besides the guidelines or procedures developed under technical programs, there is no other formal institutional regulation or mechanism that oversees the integration or application of QI in PHEP&R.

The work of external partners and donors provide a sound basis for integrating quality of care activities into PHEP&R, as evidenced by the experience of the USAID ASSIST Project.

3. Zika: An Overview

Zika is a communicable disease transmitted by the Aedes aegypti species of mosquito, which is native to Latin American countries and transmits the dengue and chikungunya viruses too. While the Zika virus is not a new virus, the 2015 outbreak was the largest ever reported and spread rapidly throughout the Americas. In addition to the challenges common to other disease outbreaks, the Zika epidemic posed specific challenges to health systems that demanded the adoption and implementation of innovative approaches to adequately respond to it. Some of the identified challenges included difficulty in detecting and diagnosing the Zika virus infection given that only 20% of those infected developed symptoms, the vertical transmission of Zika virus from pregnant mothers to their babies (21) (22), and sexual transmission of Zika virus.

To understand the landscape of the Zika outbreak in the Americas, it is important to understand it in the context of the current and historical public health response to dengue and chikungunya. These three diseases are transmitted by the same vector and are also seen as public health crises which cause significant morbidity and loss of productivity and resources in the region. In the same respect, the global public health interest and response to the current Zika outbreak is seen as not only a necessity but as an opportunity to make strides in fighting all Aedes-borne diseases. No cure or vaccine for Zika currently exists, therefore preventive measures focus on vector control and awareness of risk and risk reduction for at-risk populations.

4. Emergency Preparedness and Response in Honduras during the Zika Epidemic

Honduras is a country with experience dealing with outbreaks and other public health emergencies. The Department of Epidemiological Surveillance works under HSOH in monitoring the frequency of select communicable conditions with the support from other departments and programs at the governmental level. The country recently experienced health emergencies related to communicable diseases including dengue, Zika, chikungunya, HIV, malaria, and tuberculosis as well those related to natural disasters or armed conflicts (23). Because of this, there is a well-established chain of communication and surveillance for reportable conditions based on primary care or hospital settings. Nevertheless, the system observed is based on reporting “going up the ladder” for epidemiological surveillance and could lead to delayed responses. This is also compounded by the lack of regular feedback to support learning at the front-line level.

To provide an urgent and coordinated response during the Zika outbreak, the national government created a joint committee of health professionals called the “Zika Strategic Command” under this department. The Command operated in conjunction with their counterparts from the sub-national level and the health facility level. The Command also worked jointly with municipal and regional authorities to implement adequate measures to control vectors of disease (i.e., mosquitos) at the community level, to coordinate the
development of guidelines, training implementation, and communication campaigns. The Command is no longer in place since the epidemic was controlled in late January 2017.

The Unit for Epidemiological Surveillance, established by legislative decree, monitors the presence of communicable diseases that could become an epidemic. This unit operates in a very traditional way, depending on reporting from frontline health facilities and the weekly consolidation of this information at the regional level. From this data, the unit produces an epidemiological bulletin that helps decision-makers with response initiatives at the community and facility levels. For different conditions such as Zika and dengue, prevention and management guidelines and recommendations are available.

Government structures, civil society, and partners identified to have played a role in relation to the Zika outbreak include:

- HSOH Vector Control Program
- HSOH Social Mobilization Program
- Zika Strategic Command
- UN Agencies: UNICEF, PAHO, and UNFPA
- PAHO, USAID ASSIST, and other programs such as the Red Cross, the Health Communication Capacity Collaborative (HC3), etc.
- Consejo Hondureño de la Empresa Privada
- National Autonomous University of Honduras research activities
- Japan International Cooperation Agency

During the Zika outbreak, there considerable emphasis in applying QI methods with support of ASSIST in eight prioritized regions in Honduras. Results were of great importance since a high level of performance was reached in critical processes related to transmission prevention and mitigation of the infection’s effects in newborns (24). As of 2017, the Secretariat of Health, with support from ASSIST and other governmental agencies, started a process for organizing quality improvement teams in 42 initial health facilities for the implementation of three collaborative improvement programs in family planning services, prenatal care and postpartum care, and care of the newborn.

The teams started analyzing their care processes, measuring indicators, and implementing changes to achieve their proposed objectives. Learning sessions were carried out between the different teams of the eight health regions assisted by ASSIST, which allowed dynamic learning and the rapid adoption of effective changes for the achievement of performance objectives. In 2018 ASSIST started a new technical assistance task for improving care and follow-up of children affected by Congenital Syndrome associated with Zika using strategies to identify children, locate them, link them to health services, and offer the clinical care required according to the guidelines for the comprehensive management of Zika. As of May 2019, 204 children have been located in eight health regions, of which 86% have received clinical attention in accordance with the defined follow-up plan (24).

Following the decline of Zika cases, the HSOH dissolved active measures in place such as the Zika Strategic Command since it was no longer needed, and their functions were adopted by a number of programs and agencies in the HSOH. Before that, traditional vertical programs such as non-communicable diseases, dengue, TB, HIV/AIDS among others, inside the HSOH had been dissolved and their functions transferred to different divisions, areas, programs and agencies in the HSOH in order to have more integration in their daily activities.

Honduras has a long history of combating the Aedes mosquito and has had numerous dengue and chikungunya outbreaks, including a devastating dengue hemorrhagic outbreak that hit the municipality of San Pedro Sula in 2013 and a severe chikungunya outbreak in 2014-2015. In Honduras, the first case of Zika related to the current outbreak was reported in December 2015. Zika cases increased drastically in January 2016. On February 2, 2016, President Hernandez declared a national health emergency. More than half of the Zika cases were reportedly coming from two municipalities - San Pedro Sula and relatively
few from Tegucigalpa. Due to the associated link between Zika, microcephaly, and Guillain Barré Syndrome, there has been considerable global concern regarding family planning use and access during this outbreak. Family planning use in Honduras is high, with a contraceptive prevalence rate of modern methods at approximately 64% (25). However, there are access challenges for specific populations, including youth and women in areas of high violence. Family planning is provided free in government clinics and is also available through NGOs, pharmacies, and the private sector. In Honduras, abortion and emergency contraception are not legal.

The country deployed high intensity activities to control the spread of the Zika disease, strengthening its PHEP&R activities, mostly through enhanced coordination and communication to speed up clinical response and supplies for contraception and for vector control. Multiple initiatives sought to sustain performance in counselling, early detection, and rehabilitation. Different organizations (ASSIST, UNICEF, PASMO, Save the Children, Global Communities, Breakthrough ACTION, among others) played a role at the implementation level. Most of these activities were supported by donors and were increasingly adopted and expanded by the HSOH to all departments/municipalities in the country. The QI approaches applied by USAID ASSIST and others are being transferred to the Quality Unit of HSOH as mentioned. WHO’s plan for the Zika response (21) looked at some of the underlying principles for quality improvement such as community engagement and establishing an incident management teams at the global, regional, and country level, yet how these activities were operationalized remains unclear and needs further investigation in Honduras.

With regards to policy linkages between QI and the public health emergency response in Honduras, the main pieces of regulation for the integration of QI tools and PHEP&R are the guidelines and recommendations for Zika management (18). Whenever the work of the Quality Unit of the HSOH was described, parallelism was recorded with the Epidemiological Surveillance Unit.

B. Country Consultation: Interviews and Focus Group Discussions

- At the health facility level, a high level of commitment and satisfaction with the experience of being engaged in QI approaches to improve actions to mitigate the Zika outbreak was recorded. A number of initiatives, either suggested by guidelines or implemented by providers were deployed to improve performance levels during the epidemic. Concerns were raised about sustainability due to cessation of funding support.
- At the regional level, a deep understanding of Zika management was present. However, critical factors involving operational integration with representatives from the Epidemiological Surveillance Unit and Quality Unit was noticeably missing. Different cross learning activities between providers and civil society stakeholders were in place.
- At the central level, there were important efforts from the Quality Unit to provide guidelines and recommendations to frontline providers. These documents include important pieces on quality management that complements previously published work. There was not much integration between this Unit and the Epidemiological Surveillance Unit.

The main findings for each level of the health system are described below. Detailed information from interviews and focus groups is summarized in Annex B.

Results show that activities to apply QI interventions in PHEP&R varied across levels of the health system. At the health facility level, there is an increased level of activity in developing improvements and monitoring activity in preparedness and response, based on previous outbreak experiences, government guidance, and current donor support. At the regional level, there are ongoing efforts to monitor and align district QI activities with national Zika management goals and promote best practice sharing among health facilities. Finally, at the national level, there are ongoing efforts to provide guidance in Zika management and
adequate use of QI tools (prioritization, use of PDSA cycles, benchmarking, use of run charts to monitor performance, and frontline worker engagement, among others) but there is little performance monitoring or cross learning between districts. Three meetings have been organized nationally to promote exchanges between districts and at the regional level.

1. Health Facility Findings

Quality of Care

The Quality Unit from the central HSOH developed guidelines in 2016 for the management of the Zika epidemic that included an important component in quality of care management preparedness and outbreak management. This document served as a guide to health facilities and included clinical guidelines, protocols, and algorithms to assist health care providers in the adoption and implementation of strategies to promote the prevention of Zika transmission during pregnancy, screening of Zika signs and symptoms, and screening of microcephaly among newborns. In parallel, ASSIST developed a comprehensive curriculum on Zika-related topics and QI methods to serve as a tool for face-to-face and virtual training of health care providers and administrative staff in participating countries.

The influence of continuous improvement initiatives as a method to ensure quality health service delivery related to the control of the Zika epidemic is strong at the facility level in Honduras. The quality improvement initiatives implemented in Honduras are related mostly to the USAID ASSIST Project, with some directly related and derived from the Zika HSOH guidelines as well as improvement teams at the facility level. In Honduras, there is strong involvement of providers in implementing and monitoring improvement activities following performance goals from the Zika guidelines.

Interviews with health providers revealed that QI interventions were co-designed with frontline staff in order to promote ownership. Providers highlighted that they valued the QI approach because it allowed for participation in various phases of the service delivery process including the implementation of QI interventions. The co-design of QI interventions increased the feasibility of adequate deployment and sustainability. However, providers also highlighted several factors that affect feasibility, including insufficient human resources and time limitations, lack of supplies needed to carry out Zika-related activities, and the need for constant training to use QI methods. In addition, providers identified positive attitude of the staff, sense of ownership, and visibility of short-term results as the most important facilitators to the adoption of quality improvement initiatives.

Based on the components of the measurement framework captured in the Zika guidelines presented on page 19 (18), best practices implemented included counselling sessions with men-only groups on pre-conception and post-conceptional measures to prevent virus transmission. This idea was conceived by frontline staff during brainstorming and discussion of potential interventions. This has then been replicated in other health facilities, and counselling hours were extended beyond office visits. Patient flow redesign for affected newborns was also developed following agreed modifications, mostly at the hospital level where bottlenecks are usually present for diagnostic and rehabilitation services.

Stakeholders also stated that it will be a challenge to sustain these efforts without guided support from regional-level coordinators, who managed district-level activities that were supported by international donors. Interviewees reported that capacity was generated mostly for improving Zika management but not for the application of QI approaches. Another area cited for improvement was the lack of data feedback from the Epidemiological Surveillance Unit at the central level to other levels of the health system.
Leadership and Governance

Based on interviews and FGDs, providers appear to follow the regional hierarchy when reporting cases and to follow guidelines with local adaptations for the delivery of services, aiming to adhere to the national level Zika management plans. Adaptations include counseling timing modification and patient care flow alteration to reduce waiting times. Nevertheless, there is strong supervision from regional governments at the facility level.

2. Regional

The following findings are presented with emphasis on the district level which is a lower-level of the regional level.

Quality of Care

The approach used through the quality improvement collaboratives created a community of practice that generated a great deal of cross-learning among participating districts and the sub-regional and regional coordinators who provided support. The collaboratives were under the supervision of national leaders who were also involved in regular meetings.

The following activities were implemented at the district level to strengthen PHEP&R using a quality improvement approach:

- Validation of the theory of change for Zika management developed centrally;
- Customization of the change package and measurement strategy;
- Oversight of learning sessions (in person or virtually);
- Implementation of site visits and coaching in districts and facilities. Follow-up with calls to provide feedback based on data when available;
- Contribution to the dissemination strategy at the regional and national level.
Linkages between QI and Zika management

At the regional level, support has centered on PHC and hospitals to provide adequate services to the community and patients. Strategies such as coaching teams on the frontline, customizing interventions, and collecting and interpreting data on improvement efforts have been part of the regular effort as well as interpreting surveillance data.

A promising practice reported in interviews is the use of feedback and benchmarking at the regional level through SINAR meetings (gatherings of health providers belonging to the same health district to operate the National Referral and Response System). These meetings are coordinated by local authorities and contribute to cross learning and created a shared model on how to deploy effective strategies to contain the Zika outbreak from 2015. The main challenge from the regional perspective is how to continue data collection activities consistently as part of SINAR, provide comparative data feedback to health facilities, and make benchmarking a reality.

SINAR meetings

The regional level of the Honduran Secretariat of Health has been promoting regular (usually monthly) regional meetings between health providers belonging to the same health district to operate the SINAR and improve patient referral. These meetings allow for various health workers and providers working in various specializations and at different levels of care to discuss priorities and mechanisms to assure performance for improved individual and population health. During the Zika outbreak, this approach provided the opportunity to disseminate Zika management guidelines, share results from improvement interventions, and benchmark performance in critical processes.

Leadership and Governance

There is a good level of influence and coordination with local providers and other stakeholders, for example, external partners and donors. Good coordination with the Honduran Institute for Social Security was also observed. The focus at this level is on regulatory and monitoring mechanisms supporting the use of Zika management guidelines that provide a reference for providing high quality care. Another mechanism, the ECOR (sub-regional coordination unit from the departmental HSOH office), supports regular monitoring of action plans and performance indicators and acts as an implementor of national regulations. Aligned with this, the SINAR provides continuity of information, coordination, interaction, and benchmarking among providers from the same department. Benchmarking constitutes a good practice that improves preparedness for health emergencies as well as coordinates response.
Public Health Emergency Preparedness and Response

The impact of the Zika epidemic was mitigated by efforts of the HSOH through action promoted by the Epidemiological Surveillance, Quality, and Information Systems units. Nevertheless, no formal linkage was reported to exist between PHEP&R and QI, However, respondents hoped that that the structure and behaviors strengthened by ASSIST will help promote more integrated service delivery and QI in PHEP&R through advocacy and partnerships after the end of the project.

3. Central Level

Leadership and Governance

Several partners, including ASSIST, have supported the HSOH in terms of workforce training, capacity building of monitoring teams, and the development of guidelines and other tools (intervention codesign, measurement systems, performance evaluation) for Zika. The Quality Unit from the HSOH focuses on the regulatory mechanism, leaving monitoring and implementation to the regional level and providers. The positive influence of continuous quality improvement initiatives for the delivery of services related to the control of the Zika epidemic was cited by interviewees as critical.

Policy and Planning

There is still a considerable delineation between PHEP&R and QI, with no clear linkages between the two articulated in policies, strategies, or plans. A fragmented approach is applied where preparedness, response (Detect, Treat, Investigate, and Research), and improvement are considered as three different entities. Further, stakeholders reported that the decision of the HSOH to eliminate the vertical programs for specific conditions created a breach in communications between the representatives of different public health functions. Respondents suggested meetings among officials from different units to reach operational agreement on specific topics in high-profile conditions such as prevalent or high-impact communicable diseases.
4. Significance of Zika Preparedness to Promote Health Systems Strengthening

The Zika outbreak created a sense of urgency in the Honduran health care system. The decision to request technical assistance and engage programs aimed at mitigating the epidemic as well as create a learning structure to improve performance was commended. During the outbreak, there was a clear sense of coordination between the different stakeholders which generated a new way of thinking based on providers’ involvement, systems thinking, improvement, performance data interpretation, as well as new ways of reaching the community. Below is an example of a measurement framework for Zika.

### Zika management guidelines: Components and performance indicators

The Zika management guidelines and monitoring and evaluation plan combines both evidence-based practices with key process measurements. Key performance indicators followed by health facilities under the Zika management guidelines and monitoring and evaluation plan include:

- Percentage of pregnant women who are given condoms during antenatal care (ANC) sessions.
- Percentage of women of reproductive age (WRA) who can identify both the risk of Zika sexual transmission and the use of condoms as a protective measure (exit interview).
- Percentage of WRA who report having received counseling on Zika transmission and prevention mechanisms during ANC/FP sessions.
- Percentage of ANC/family planning (FP) sessions where counseling complied with selected key steps indicated in the Counseling Guide (observed)
- Percentage of WRA who are screened properly for Zika signs and symptoms during ANC sessions
- Percentage of newborns who are properly evaluated for microcephaly

Proven practices in Zika management are being extended to the rest of the country. This affords an opportunity to apply the improvement approach to other public health conditions.

5. Conceptual and Practical Interlinkages between Quality and PHEP&R

Based on stakeholders’ interviews, the efforts deployed by the HSOH to mitigate the Zika outbreak based on supported QI activities such as the quality collaboratives and the use of iterative PDSA cycles, have contributed to a decrease in the propagation of the virus, engaging frontline personnel, and reaching a level of preparedness. The understanding from frontline providers of the key processes for Zika containment and the learning system created to identify gaps in performance and prioritize interventions have provided a new perspective on how to control outbreaks and could be replicated in other situations, as was happening for dengue during the country case data collection.

Sustainability in the face of changing political regimes and funding constraints as well a planned reform is considered as a key challenge for scale-up of efforts. Concerns were raised by informants about sustainability and the need to maintain critical gains once external partners have left.

6. Revised Conceptual Framework

The Honduras case study was intended to inform the technical merit and feasibility to apply draft conceptual framework. However, the time gap between the country consultation and the Zika response...
and changes in the national organizational structure significantly limited the consultations’ ability to draw adequate feedback regarding the conceptual framework.

Nevertheless, stakeholders interviewed for the case study were asked to reflect on the domains captured by the conceptual framework. Stakeholder responses included:

- **Ensuring Quality in Zika Preparedness and Response Systems:**
  - Include community engagement and their participation in PHEP&R

- **Outcomes:** Add:
  - Reduced morbidity and mortality related to Zika – to make the CF specific for Zika
  - Trust and satisfaction from the public, aligned with implementation of strategies
  - Appropriate use of resources – this entails mutual cooperation and resource sharing
  - Learning systems to aid in planning, implementation, and evaluation of health service interventions

- **Support Systems and Available Tools:** Add:
  - Routine systems to coordinate activities among frontline staff and health facilities
  - Continuous training and capacity building of health facility workers on interpreting epidemiological surveillance data

- **Supporting Factors and Inputs:** Add
  - Culture of leadership, improvement, and accountability
  - Continued optimum policy and institutional framework including quality improvement
  - Centralized monitoring of process data on key interventions

Interviewees stated that the following elements were critical facilitators in integrating QI into public health emergency preparedness and response: collaborating and learning from each other, flexibility to generate and test change ideas, seeing rapid results, and support received from QI coaches.

Based on feedback received, the draft framework was updated (Figure 2) and key changes included in the domains of Outcomes, Support Systems and Available Tools, and Supporting Factors and Inputs. No feedback was obtained related to domains identified under Routine Health Services and Case Management.

This revised conceptual framework should be shared with a wider international audience for further feedback and testing to support the application of QI in the identified domains of PHEP&R.
Figure 2: Revised Conceptual Framework for Zika Emergency Preparedness and Response
IV. DISCUSSION

A. QI Approaches Applied to Zika and PHEP&R

The deployment of quality improvement approaches, largely described throughout this report (frontline provider engagement, testing of change initiatives, performance data analysis, and community involvement) has produced a positive impact on the Zika outbreak process of care. A key challenge that was identified and should be considered is that selected quality improvement processes may need to be adapted to the educational level of the participants (26). Trust and empowerment have been fundamental in extending influence among the provider networks on quality improvement.

| Table 1: QI Approaches Applied to Zika and PHEP&R

| Frontline providers and regional coordinators were part of the quality improvement collaboratives at the regional level. The collaboratives deployed a number of interventions including delivering evidence-based practices in a more effective way, as well as providing health care workers the opportunity to customize activities identified as improvements, reacting to the performance data collected, and unpacking its interpretation. |

From the desk review and interviews, it is clear that the Honduras health system has made an effective effort in controlling the Zika outbreak in which QI interventions played an important part.

Nevertheless, it is important to note that besides previous efforts in service delivery based on quality of care strategies, most of the current work applied to the Zika epidemic and its consequences is led by donors in the most affected regions of the country. To date, most of the workflow of interventions (counseling, pre-conceptional and gestational as well treatment of affected children) is monitored jointly by ASSIST and different levels of the HSOH. Efforts are underway by the government to extend these activities to the rest of the country.

Though QI methods were typically considered to be easy-to-use and intuitive at the facility level, there is a need for constant training and supplemental tools and resources to refresh skills and ensure continuous improvement. All these factors are also important in the context of a public health emergency where there is typically a need to train and deploy resources in a rapid manner and at a large scale. Moreover, there is an important critical role for quality managers in facilities who report on processes mandated by the Quality Unit of HSOH.

B. Support Systems and Available Tools

Building QI capabilities and organizational development is foundational to any sustainable endeavor. Implementing QI requires both theoretical knowledge and practical skills at all levels of the organization. Although much emphasis has been placed on the need to improve, less attention has been given to creating the capacity to improve. The discipline of QI and the skills and techniques needed to pursue QI must be broadly disseminated throughout public health. Additionally, PHEP requires planning and the ability of public health agencies to develop a response capacity across well-established silos while also transforming the traditional workforce into integrated care systems in the face of an emergency. The case study revealed that most of the support for QI was given by the USAID ASSIST Project and increasingly over time by the Quality Unit of the HOSH in Honduras. A combination of data collection systems, frameworks, matrices, procedures, and guidelines were used to build capacity for QI. In addition, based on the country consultation, the following elements were added to the revised CF: routine systems to coordinate activities among frontline staff and health facilities and continuous training and capacity building of health facility workers on interpreting epidemiological surveillance data.
C. Facilitators and Barriers to Implementation of QI to PHEP&R

Quality improvement occurs within clinical units, regional levels, and broader organizations, themselves embedded in a broader social and policy context. Successful implementation of QI initiatives will therefore depend on certain organizational and contextual factors (27). Respondents highlighted among others, a common sense of purpose, leadership and commitment at all levels, teamwork, use of data to guide decision-making, shared learning, collaboration, and the flexibility of QI methods to be adapted to the needs and resources of the local context, as critical factors for success.

Participants reported also that the use of a QI approach in the context of the response to Zika had provided them not only with an opportunity to improve Zika-related health service delivery but also to impact other care processes in the participating facilities. Additionally, it was expressed that the quality improvement collaborative approach had promoted a “cultural” shift in the participating facilities, which was characterized by using QI methods to improve other processes beyond Zika-related ones. Embracing QI methods as part of routine operations, willingness to share with and learn from others, and using data to guide decision-making was also expressed as traits of quality improvement that have been beneficial to the Zika response.

Barriers to integrating quality improvement into PHEP&R

Barriers to integrating QI into PHEP&R included lack of human resources, lack of supplies or frequent supply stockouts, insufficient time to complete QI activities, low levels of commitment, and resistance to change from clinical providers.

D. Routine Health Services and Zika Case Management

Routine health services and Zika case management include surveillance and contact tracing, diagnostics, and research. The Honduran health system has extensive experience in handling communicable disease outbreaks and other public health emergencies. Under the Zika outbreak program, there was a very conscious effort to monitor index cases and their contacts. Detect, treat, investigate, and research measures, similar to PDSA cycles, can support a systemic approach to improvement and improve processes by closing the gap between ineffective action and effective actions that get to zero cases.

E. Perspective for an Integrated Approach

Seid and colleagues stated that “The application of QI into PHEP&R becomes more understandable if one thinks of PHEP&R in terms of a ‘preparedness production system’ in which a variety of interrelated processes or activities prepare a public health department for optimal response, thus minimizing harmful outcomes” (28). Before an emergency event, a health department improves preparedness by building capabilities (developing and exercising policies and plans, assuring a competent workforce through education and training) and performing ongoing surveillance and detection (monitoring the health of the community, diagnosing and investigating outbreaks). These activities enable a robust response during an emergency event (informing, educating, and empowering people; mobilizing community partnerships;
linking to providers and assuring care; and enforcing public health laws). Further, this robust response will minimize morbidity, mortality, and social disruption resulting from the emergency event.

Leatherman and colleagues stated that “The principles of QI can be taught and demonstrated, but typically the work of QI, if pursued at all, is simply layered onto the work of service delivery. For local health systems to be strengthened by QI, it must ultimately be built into existing policies and infrastructure; it must become part of the fabric of care itself, not separated as a ‘program’” (23). In particular, public health should build its capacity in QI, enhance implementation, and align incentives to facilitate use of QI. Health department staff will likely benefit from a more systematic approach to using QI practices (28).

Based on the Honduran experience there is fertile ground to integrate QI activities to PHEP&R. Nevertheless, key factors should be in place to reach adequate levels of performance and sustainability. These factors include:

- Availability of inputs
- Routine health services at point of care entails primary health care level and community health services
- Enabling environment to assure improved services
- Commitment from national and sub-national leadership
- Principles of improvement are applied
- Culture for quality exists
- Continuous support from leadership to coordinate improvement activities and free flow of information on metrics

F. Assets Identified in Honduras that Support Integration of QI in PHEP&R

The influence of continuous quality improvement initiatives for the delivery of services related to the control of the Zika epidemic added to a more detailed monitoring effort and the spirit of improvement. The outbreak made evident several weaknesses, but they were mitigated by several strategies deployed by the government, donors, and supported projects in selected areas of the country. As mentioned, effective strategies used in the outbreak are being escalated to different settings for Zika as well different conditions (dengue, TB). Along the consultation process, several assets were identified in the different levels of the health system that can contribute to the integration of QI and PHEP&R.

1. Health Facility Level

Network of centers and involved staff: The work jointly conducted by the Secretary of Health with support from partners, has clearly provided a base for future activities to improve the way health emergencies are handled.

Honduran Institute for Social Security: The current and future planned integration of the Honduran Institute for Social Security, a labor-funded insurance scheme and provider network, with the Secretariat of Health is an example of integration among systems and provides a system-wide range of actions against different potential threats to the primary care level.

Primary Care network: The primary care level provides a critical lever to mitigate the effects of health emergencies and support health systems strengthening efforts in Honduras.

2. Regional Level

Partner coordination: The coordinating and leadership exemplified along the Zika epidemic is an example of best practice for future deployment of similar actions.
Role of ECOR: A coordinating figure among facilities (PHC and hospitals), ECOR is a critical mechanism to combine efforts between health emergency preparedness and response as well as quality improvement activities.

SINAR meetings: Constitute an important piece in coordinating efforts among different sectors of the health system.

Intersectorial tables that represent community members: The tables have proven to be pivotal in community preparedness and response alongside sharing successes emerging from the improvement activity.

3. Central Level

Quality Unit in the HSOH: Work done on integrating QI with PHEP&R is reflected in the Zika Guideline issued by the government and the scale-up work being done in several regions besides the original ones where the initial work started.

Care networks from the HSOH: The coordinating work of this unit within the area of epidemiological surveillance and quality of care proved to be fundamental, following the dissolution of the Zika Strategic Command.

4. Other Drivers

Besides the assets identified, certain levers or drivers are highlighted below and could be of use to improve the process of integration:

- **Trust and empowerment to generate changes:** Involvement and empowerment of first-line providers has been shown to be a critical piece in identifying and producing modifications to processes of care and should be encouraged and continued.

- **Understanding improvement methods:** The use of improvement plan templates and graphs (run charts) has facilitated the understanding amongst frontline workers of improvement approaches.

- **Use of data:** Measurement and feedback also produced significant impact in the way improvement was conceived and provided a platform to understand what works in the field as well as to prioritize future interventions. This also empowers providers to become the owners of data and manage process improvement.

- **Monitoring success of interventions:** A close interaction with process monitoring at regional levels (ECOR) creates learning opportunities.

- **Municipal support through Intersectorial tables with participation of industrial sectors (maquilas):** This provides an integrative platform to understand the community behavior and priorities as well expand the dissemination of interventions at full scale.

- **Creation of guidelines with a quality component:** In addition to the support received by PAHO and WHO and from other international agencies concerning evidence-based interventions or strategic frameworks, adapting and creating national guidelines with a strong QI component has proven to be useful tool.

- **Government ownership and scale-up:** Recently, the Secretary of Health has scaled up QI activities for Zika in different regions independently (i.e., without external assistance). This independent endeavor creates a great opportunity to promote the autonomous deployment of QI in handling public health emergencies, including dengue.

- **Creation of standard operating procedures with a quality improvement focus:** The Secretary of Health is now working on completing Standard Operating Procedures for Hospitals that may be the base for a Quality Management System. A functioning program based on standardization will generate improvement opportunities to systematically incorporate quality improvement activities into the regular functioning of providers.
G. Key Challenges and Needs Identified in the Application of QI to Improve PHEP&R

Challenges and needs identified are presented below by level of the health system.

1. Health Facility Level and Regional/District Level

   Community Involvement: The appropriate handling of health emergencies relies on how intensely the community is involved. Contributions to preparedness, response, and quality improvement activities are needed from communities.

   Support from leadership: Domestic funding needs to be improved to continue the fight against Zika and identify potential areas for continuous integration of improvement activities to support PHEP&R.

   Receiving feedback on performance from the central government: Regular provision of data has been requested at the facility level from the central level to evaluate compliance with goals, guide improvement initiatives, as well to learn from best practices.

2. Central Level

   Fragmentation: Although there is a huge ongoing effort for health service delivery continuity, there is currently a lack of integration and broken referral pathways between hospitals and primary health centers, particularly in large cities. This has implications for the referral system.

   Sustainability based on commitment and success: Results are critical to maintaining commitment and support. Here, the point of continuing measurement is vital to sustain monitoring and improvement.

   Resources: Low- and middle-income countries with modest resources may choose to prioritize immediate priorities rather than long-term health systems strengthening efforts. Thus, preparedness and QI activities may not be maintained unless there is continued support.

   Deployment of QI interventions into the wider health system reform in Honduras: The future transformation of the Honduran health system may eventually decentralize health to regions and counties. This adds a level of uncertainty on how to continue effective action on PHEP&R and QI.

H. Can the Experience of Zika in Honduras Be Applied to Other Emergencies?

The experience from this country consultation points to certain key traits that need to hold true to embed QI as a core foundation for PHEP&R. These include:

- Identify key processes to mitigate a potential outbreak.
- Think through processes and develop a theory of change/driver diagram to identify key factors to reach committed aims.
- Develop a measurement strategy to identify gaps in care.
- Engage frontline staff and communities in identifying improvement opportunities, monitor performance, and address gaps to redesign care.
- Consider running a quality collaborative to address large-scale problems with common goals and methods to mitigate the impact of the emergency.

I. Key Considerations to Support an Integrated Approach

Below are key considerations for action addressed to the Government of Honduras, WHO/PAHO, and donor-funded projects such as USAID ASSIST.
Government of Honduras

- Key considerations include:
  o In addition to achievements in containing the Zika epidemic, there is a large body of learning that should not be lost. These lessons should be harvested through concerted action and be applied to future public health emergencies and emerging policy/strategic plans.
  o It is critical that the powerful structure in place for management of the Zika outbreak be scaled up beyond the original sites and across the country. There is a need in considering how to evaluate and how to implement what was learnt.
  o The Quality Unit constitutes a critical piece of the Secretary of Health. The Quality Unit, in addition to developing and disseminating guidelines, should focus on supporting the continuum of quality planning, quality control/assurance, and improvement processes.
  o The Quality Unit should also coordinate and collaborate with the Epidemiological Surveillance Unit.

- Key considerations on existing mechanisms that can enhance QI and PHEP&R integration efforts:
  o It is well known that countries with stronger primary health care have better health overall. Primary health care is critical to reach adequate levels of preparedness and response for health emergencies. Stakeholders at the primary health care level reported to feel empowered by quality improvement efforts such as PDSA cycles to improve performance and reporting common data on adapted interventions. Looking ahead, continued engagement at the PHC level is vital for continuity of the good results obtained so far.
  o Continuous support to community health workers is instrumental in approaching the population and consolidating home-based actions that are critical for most communicable disease prevention such as for Zika and other arboviruses.
  o Sustain and promote participative strategies such as SINAR: Regional meetings of providers to operate the patient referral system and intersectorial coordination are critical pieces of communication among stakeholders that should be sustained and promoted. It is recommended that at the central level, such coordination mechanisms include representation from the Quality Unit as well as other technical departments involved in emergency preparedness and response as well as public health authorities.
  o For future projects, supported by donors and led by the HSOH, having an integrative holistic approach is desired, that includes program design from both individual and population-based public health services and also considers how quality improvement approaches can support the delivery of people-centred health services, including in PHEP&R.
  o Engagement of local stakeholders can enhance the efficiency of programs and prevent fragmentation at the central level; this can ultimately impact efforts at the regional and facility level.

- Key considerations on what is necessary to bridge efforts on QI and PHEP&R as well as to identify the scope of application of QI in PHEP&R include:
  o Aggregated data on surveillance and performance should be shared across all levels – from frontline staff, regional level, and the central level on a continuous basis. This ensures
a coordinated attempt at improvements in frontline care and related policies/operational strategies.

- The Unit for Information Management has a Zika module. This presents a useful opportunity to work with other departments in the Ministry to embed quality management principles.

**WHO/PAHO**

At the time of the country consultation, limited dialogue existed between WHO/PAHO and with national authorities working on emergencies and quality health services. Therefore, it is recommended that since HSOH relies on WHO/PAHO for technical guidance, close collaboration between these two areas (QI and PHEP&R) at the PAHO level is encouraged to allow for country offices to see the benefits of the close collaboration.

**Partners**

A great deal of work has been successfully conducted at the facility and regional levels by partners. However, the promising results have not been taken up by the central level. Hence, a key recommendation is to ensure the engagement of the central level in the design and implementation of such programs. Involvement across different units beyond the Quality Unit such as Epidemiological Surveillance, Public Health Units, and Emergency Response Units (when they exist) can benefit future projects and enhance national capacity.

**V. CONCLUSION**

The country consultation proved to be a useful methodology to gather valid information on the way Honduras combined efforts on PHEP&R and QI to tackle the Zika epidemic. The choice of country, considering the level of maturity of the interventions in place for a lower-middle income country, such as Honduras, was key to further understanding how QI intersects with PHEP&R. Overall, QI has been applied to PHEP&R during the Zika epidemic and its aftermath, in a limited capacity. This was strongly supported by project efforts and increasingly complemented by actions from the Honduran Secretary of Health, although integration with QI is still a work in progress. The Honduras case study revealed that although applying quality improvement collaboratives proved to be useful at the facility and regional levels, there is not much appetite from the health emergency community and QI community to apply QI to PHEP&R. A contributing factor is lack of trust and the reaction time in responding to containment and response efforts during an emergency. The primary care level is a critical piece of the preparedness and response system and was highly engaged in QI activities. This level is also empowered by a great level of participation of frontline staff in redesigning the processes of care. Future challenges are related to the sustainability of the work done after the USAID ASSIST Project ends. Recent efforts of the HSOH to extend the Zika model to the rest of the country and other conditions suggest that it could be incorporated into the health system in a permanent way. The revised conceptual framework for Quality Improvement for Public Health Emergency Preparedness & Response should disseminated to a wider international audience for further feedback and testing to support the application of QI in the identified domains of PHEP&R.
REFERENCES


6. WHO. QI Definition [Internet]. Available from: https://apps.who.int/iris/bitstream/handle/10665/310944/9789241515085-eng.pdf?ua=1


## ANNEXES

### Annex A: List of Stakeholders Interviewed

<table>
<thead>
<tr>
<th>PERSON INTERVIEWED</th>
<th>POSITION</th>
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<tbody>
<tr>
<td>Norma Aly MD</td>
<td>ASSIST Country Director</td>
</tr>
<tr>
<td>María Baneagás RN</td>
<td>ASSIST Technical Advisor</td>
</tr>
<tr>
<td>Orlindor Nicolas MD</td>
<td>Former coordinator, Zika Strategic Command</td>
</tr>
<tr>
<td>Karen Córdova MD</td>
<td>ASSIST Technical Advisor</td>
</tr>
<tr>
<td>Leoida Cerrato MD</td>
<td>Director, Quality Unit, HSOH</td>
</tr>
<tr>
<td>Dora Méndez MD</td>
<td>Health Network, HSOH; former member of Zika Strategic Command</td>
</tr>
<tr>
<td>Jonatan Ochoa MD</td>
<td>PHC director, HSOH</td>
</tr>
<tr>
<td>Alcides</td>
<td>Undersecretary, HSOH</td>
</tr>
<tr>
<td>Norma Martinez MD</td>
<td>Sanitary Region of Cortes</td>
</tr>
<tr>
<td>Iveth Barahona RN</td>
<td></td>
</tr>
<tr>
<td>Miriam Mariona</td>
<td>Quality Unit, San Pedro Sula</td>
</tr>
<tr>
<td>Farida Martínez MD</td>
<td>Sanitary Region</td>
</tr>
<tr>
<td>Mirna Falena</td>
<td></td>
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<tr>
<td>Olga Colindres MD</td>
<td>San Pedro Sula Metropolitan Unit</td>
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<tr>
<td>Elizabeth Benítez RB</td>
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<tr>
<td>Sara Sierra RN</td>
<td></td>
</tr>
<tr>
<td>Ana Julissa Gálvez</td>
<td>FESITRAN Health Center San Pedro Sula</td>
</tr>
<tr>
<td>Lic. Jacqueline Echeverria</td>
<td>Coordinator, Quality Unit, San Pedro Sula Metropolitan Unit</td>
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<tr>
<td>Nurse Director</td>
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<tr>
<td>Medina Jose MD</td>
<td>Director, Hospital Leonardo Martínez</td>
</tr>
<tr>
<td>Brigitte Gómez RN</td>
<td>Coordinator, Quality Unit, Hospital Leonardo Martínez</td>
</tr>
<tr>
<td>D Urbina MD</td>
<td>Coordinators of QI teams, El Progreso</td>
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<tr>
<td>E Orestila</td>
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<tr>
<td>D Sevilla RN</td>
<td>Catarino Rivas Hospital, San Pedro Sula</td>
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<tr>
<td>Alicia Benítez RN</td>
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<tr>
<td>Lesbia Villalobos MD</td>
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<tr>
<td>A Leiva MD</td>
<td>Director, Macro Distrito, San Pedro Sula</td>
</tr>
<tr>
<td>A Flores MD</td>
<td>Former Director, Hospital El Progreso</td>
</tr>
<tr>
<td>C. Gallo MD</td>
<td>Director Hospital, El Progreso</td>
</tr>
<tr>
<td>S Cantarero RN</td>
<td>Quality Manager, El Progreso</td>
</tr>
<tr>
<td>E. Bricio MD</td>
<td>Epidemiologist HISS, El Progreso</td>
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<tr>
<td>JC Ordoñez MD</td>
<td>HISS Tepeaca</td>
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<td>S Lara RN</td>
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<tr>
<td>Nancy Ávila MD</td>
<td>Regional Quality Manager, San Pedro Sula Region</td>
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<tr>
<td>Gustavo Ávila MD</td>
<td>USAID Representative</td>
</tr>
<tr>
<td>Julio Zúñiga</td>
<td>PASMO Representative</td>
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<tr>
<td>Alberto Vazquez</td>
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</tr>
<tr>
<td>Amy Tovar MD</td>
<td>PAHO Consultant, Communicable Diseases</td>
</tr>
<tr>
<td>D Mayes RN</td>
<td>Quality Coordinator, HISS Tegucigalpa</td>
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Annex B: Summarized Key Findings from the Interviews and Focus Group Discussions

<table>
<thead>
<tr>
<th>Area</th>
<th>Topics</th>
<th>Main Findings</th>
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<tr>
<td>Quality</td>
<td>1) What are the health demographics (public/private, # workforce, breakdown of specialties, # of beds, infrastructure, etc.) of your health facility? 2) What is your experience or understanding of the application of quality and quality improvement approaches in Zika health care? 3) Do you think QI approaches used in health care can be adapted and applied in related areas of emergency preparedness and response as required for a robust integrated emergency management? Explain. 4a) Have QI approaches been applied or integrated into PHEP &amp; R for Zika at your facility? 4b) Is there any QI activity underway to improve Zika emergency preparedness and response at your facility? 4c) What strategies are in place to integrate QI methods into Zika response and care in your hospital? What was the process for integrating QI into this Zika emergency preparedness and response at the facility level? 4d) Which stakeholders were engaged in this process? 5a) What would you consider to be key priority areas which need to be in place to apply QI approaches in Zika and other PH emergency preparedness and response in your facility? 5b) How can these be strengthened to sustain the application of QI approaches in Zika care in your health facility? 6) Are there any tools in place to capture health-related incidences/issues for diseases under surveillance like Zika? If yes, what tools are available for routine quality assessment and disease surveillance? And do health workers have the capacity to use these tools? 7a) Is data from these records synthesized and the information feedback to the health workers to promote the improvement of quality</td>
<td>• Health facilities (local and district hospitals) and PHC are usually assigned a clearly bounded population responsibility with different levels of infrastructure and responsibility over community. • QI strategies are strongly appreciated by health facilities since they witness the improvement of the care delivered and the impact on the assigned population. Their opportunity of their engagement and co-design is also valued. • There is clear belief that QI approaches can play a role in preparedness and response. Though this has only been proved in the Zika outbreak already. But is felt that there might a be a disconnection between the regional and central level on this matter. • All facilities interviewed have been part of QI activities under way. • Still the QI methods in place for Zika are being used exclusively for this condition. There are plans and intentions to escalate its use to other conditions. • Facilities with a more robust QI unit (mainly hospitals) are mostly dedicated to report usage of resources and volume of attendance as well as prepare reports for specific programs (such as infection control and Zika) than focusing on actual improvement. • Usually managers and frontline providers are the ones involved in the planning process of deploying QI strategies to strengthen Zika emergency preparedness with support from regional or SESAL. • With regard to key priorities interviewees mentioned: resources (supplies, kits, printed materials and protected time), training on use of QI resources, mentoring and supervision as well as leadership engagement. Coaches visited their corresponding QITs once or twice weekly to oversee their activities, to provide guidance and feedback on their performance, and to support them with data collection and reporting activities. Additional support was provided throughout the action periods in the form</td>
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</table>
services and care in emergency response?

of virtual feedback and coaching through 90-minute monthly calls, email communication, and one-on-one virtual meetings with teams on an as-needed basis.

- Also feedback on improvement was valued and sharing best practices and data with other health facilities.
- Continuous support from donors and their implementers in the field were highlighted are one of the key factors to strengthen QI approaches on Zika management.
- Health facilities have in place the traditional structure of formularies to report suspicious cases to be confirmed at the central level. These reports are sent to regional facilities that collates them and are then sent to the SESAL. No formal and regular feedback is being delivered back to health facilities. Neither health facility workers felt confident interpreting this data.

| Emergency | 1. What do you consider as quality improvement approaches currently utilized to improve preparedness for Zika outbreak or other emergencies.
2. In your opinion, what does quality improvement approaches (successfully) applied in Zika preparedness, response and care mean?
3)Describe your views on the continuity of services during the Zika outbreak
4. Could QI approaches enhance the preparedness and response to the 2015 Zika outbreak in your facility?
5) Can quality improvement approaches improve existing efforts in emergency preparedness and response to Zika and other emergencies?
6) What do you consider as challenges and priorities for integrating QI approaches in emergency preparedness and response in Zika?
7) How do the quality of laboratory health services contribute to PHEP & R (especially Zika)? How can quality improvement approaches strengthen this area for PHEP&R.
8) How have communities played a role in improving the quality of health services for PHEP & R such as Zika? |
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<td></td>
<td>At the health facility level, providers had a perspective of QI linked to PHEP&amp;R mostly through the lens of the USAID ASSIST Project.</td>
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<td>Overall providers were extremely satisfied with the support they have received in clinical training and operational redesign. They were especially keen on measurement of key processes and development of improvement plans as well for their participation in customized interventions for their own facilities.</td>
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<td>On the interpretation of QI interventions for Zika, opinions were mostly related to better understanding of the process of care, self-measurement of performance and having clear goals on what they have influence in.</td>
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<td>The first months of the Zika outbreak were complex considering the increase of demands from the public besides the experience providers had in dengue and chikungunya. The initiation of the USAID ASSIST Project provided guidance on how to handle appropriately clinical care as well as more clear understanding on how to handle improvement of clinical processes.</td>
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<td>Respondents believed that if QI approaches and resources (repellants, condoms, etc.) are kept in place aligned with the community interventions that</td>
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should be maintained, there is very good chance that their level or preparedness and response will be higher than in 2015. Again, community engagement has been mentioned as a critical piece for containment of the outbreak.

- Extension to other conditions is possible if adequately sustained and oriented to new emergencies (i.e., dengue, TB, chikungunya).
- The main challenges identified were among others: continuous support from leadership and trained professionals. Resources for supplies and prioritization of Zika prevention related activities (measurement, workshops, feedback).
- Lab services for Zika diagnostics are currently centralized at the central level and used to confirm suspicious cases. Recently there have been concerns about delays that may affect the flow of clinical work.
- Communities were very active during the outbreak through their political and nonpolitical representatives (i.e., intersectorial meetings). They did so also promoting the participation in the different patients groups to decrease knowledge barriers (especially among men) as well focusing in vector control.

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<th>Area</th>
<th>Topic</th>
<th>Main Findings</th>
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| Quality| 1) Tell us about your role in quality health service delivery at the region?  
1b) How is Zika health services reflected in overall approach at the district level on improving the quality of health services?  
2) Are you aware of the existence of a national quality policy/strategy/plan in Honduras?  
2b) If yes, does this quality strategy consider the adoption of QI methods to enhance PHEP&R during Zika outbreaks?  
If no, why is that the case?  
2c) Is there a regional quality strategy OR quality team for | Reported findings belong to regional supervisors and liaisons among different levels of the system in the pre-selected regions.  
- Zika is a key priority for the health sector. Its prevention and control strategy is supported by donors, and its methods based on QI and achievements are being transferred now to the SESAL to extend them to rest of the country.  
- A national quality plan exists in Honduras from 2011, a national strategy from 2017 and is known to respondents. In 2016 and 2017 different guidelines have approached the subject on quality supporting activities to improve PHEP&R on Zika.  
- Regional strategies on quality of care are based and aligned to national guidelines and supported by donor’s work in country. Respondents mentioned that it would be desired to have better communication and linkage with the Quality Office of the SESAL. |
1) Is there a regional Zika/infectious disease preparedness and response plan or strategy?
How was it developed?
Which stakeholders participated in their planning?
2a) What quality improvement approaches are currently utilized

Emergency

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<th>Health care aligned with national priorities?</th>
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<tr>
<td>3) How can QI approaches improve the outcomes of Zika care? And can improvements in Zika care influence PHEP &amp; R in Honduras?</td>
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<tr>
<td>4) What quality improvement approaches/interventions are you applying in Zika care management?</td>
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<tr>
<td>5) Can you elaborate on the governance arrangements for quality in health care and emergency preparedness and response at the sub-national level? Is there collaboration and coordination between them?</td>
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<td>6) Are there any mechanisms to capture and share learning from quality improvement practices among health facilities on Zika care?</td>
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<td>7) Do you share these experiences with other sectors/departments involved in PHEP &amp; R for Zika?</td>
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<tr>
<td>8) Are there any promising examples of health facilities that have demonstrated good QI integration into PHEP &amp; R?</td>
</tr>
<tr>
<td>8) What challenges do you face in the application of QI interventions in PHEP &amp; R?</td>
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| Quality approaches have improved understanding of clinical tasks needed, gave more awareness, made possible the co-design of interventions by health care managers and workers, increased patient engagement, made possible measurement of key processes and creation of action plans based on region-owned data. Gave them also ownership and understanding of the current situation of performance in coping with the Zika epidemic. |
| At the regional level, QI approaches effectively conducted are based on monitoring activities and feedback on performance data mainly from the USAID ASSIST Project. They actively shared data collected in health facilities to evaluate improvement. |
| No active linkage is reported for governance arrangements between QI and PHEP&R at the regional level. They behave as parallel paths since they have different reporting strategies and no formal agreement is evident beside what is coordinated by donors in country. |
| The activities of the ECOR and the SINAR meetings help to improve the coordination of efforts among the different members of the health system at the regional level. In those meetings results from monitoring activities are shared as well as best practices that could be replicated. These meetings are usually attended by health facility managers, regional coordinators (including QI and PHEP&R regional representatives and donor field staff). |
| The intersectorial tables (comprised of local social players as well as government and civil society) are also an excellent activity when they exist (mainly in the San Pedro Sula Region) to improve awareness, promote participation, and coordinate efforts. |
| Sharing of best practices among health facilities was useful then the ones that have developed innovative strategies to comply with critical processes of Zika management such as patient engagement (e.g., male discussion groups). A systematic procedure to generate more innovation (prioritization meetings) promoted its extension to rest of the country. |
| The main challenges reported were: continuity of activities beyond donor support, having feedback on surveillance reports from central HSOH, having the means and support to replicate the work on Zika to other conditions such as dengue and TB. |

Communicable diseases PHEP&R plans are national, and regions follow them with some particular adaptations at the operational level. These adaptations may arise from ECOR and SINAR meetings. The intersectorial tables may also provide more input to the implementation processes of the national guidelines at the community level. They were developed by experts in consultation with PAHO, donors and other local agencies.
| Policy | 1) Has QI approaches been applied to improve the outcome in Zika response and care? Can improvements in Zika care have an impact on overall PHEP & R in Honduras?  
2) Can you share the level of collaboration and coordination between stakeholders on quality improvement and those involved in emergency preparedness and response for Zika?  
3) Can you elaborate on the link between PHEP & R (especially Zika response) and health care services and quality |
|---|---|
|  | • Along the data collection process, the following QI approaches were mentioned among others: development of improvement plans based on data, co-design of interventions, data sharing for improvement, adequate interpretation of performance data (i.e., run charts), visual display of goals, data and results (storyboards). These methods were shown to be useful to reach desired performance levels in activities key to prevent, control, and mitigate Zika’s impact.  
• No interviews were conducted with PHEP&R representatives at the regional level. Coordinators interviewed mentioned the support from the National Strategic Command, guidelines development, and donor-coordinated work.  
• For Zika work the available resources were the ones provided by the SSESAL and HISS on regular basis added to the supplies and workforce time provided by donor funding (mainly the USAID ASSIST project)  
• Through the support of donors with the deployment of key actions to handle the epidemic and the use of improvement plans, they helped to increase performance in the field for activities related with health care (prevention, early detection and rehabilitation).  
• It is unknown to respondents to have a prediction on the impact of QI activities on National PHEP&R but escalation is desired. Nevertheless, this process has to be supported by national leadership with training to create a base of understanding that will eventually link PEHP&R to QI.  
• The current dengue outbreak was seen an opportunity to replicate interventions in order to improve performance levels but having taken into account that both outbreaks required different strategies to be applied.  
• The coordination strategies (ECOR and SINAR) were the place where collaboration between QI and PHEP&R is observed and can be reinforced with continuity.  
• Interviewees appreciated the use of QI tools and the level of engagement of health professionals helped to created more customized and successful interventions to improve performance. |
Table 3: Main findings from interviews and focus groups for data collection: Central government perspective

<table>
<thead>
<tr>
<th>Area</th>
<th>Topics</th>
<th>Main Findings</th>
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<tbody>
<tr>
<td>Quality</td>
<td>1) Tell us about the work you do to ensure a health system with services that deliver quality care.</td>
<td>• A national quality plan exists in Honduras from 2011, a national strategy from 2017 and is known to respondents. In 2016 and 2017 different guidelines have approached the subject of quality, supporting activities to improve PHEP&amp;R on Zika. Although they behave as separate perspectives from the interview’s perspective.</td>
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<tr>
<td></td>
<td>2a) Is there a written national policy/plan/strategy on quality or quality improvement?</td>
<td>• The national Zika management guidelines do not include QI tools to improve performance on suggested activities. These tools can be found in separate documents (developed in 2017 and 2018) that provides insights on the use of QI tools and strategies. Supplementary information and more detailed information on QI can be found in donors’ materials.</td>
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<tr>
<td></td>
<td>2b) Do these quality strategies and plans include emergency preparedness and response?</td>
<td>• Current guidelines offer metrics and tools to measure quality of Zika care. They were developed with donors support under the USAID ASSIST Project.</td>
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<tr>
<td></td>
<td>3) What QI interventions and support systems for quality improvement exist within the Honduras health system?</td>
<td>• Regarding priorities for the application of quality improvement, adequate performance on activities related to prevention as well early detection was among the top. Also providing access to patients (newborns) to complete diagnostic evaluations or rehabilitation was of paramount importance.</td>
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<td></td>
<td>4) Are there currently any metrics or tools used to measure the quality of care offered during health emergencies like Zika?</td>
<td>• At the central level, Quality improvement (Department of Quality Assurance) and PHER&amp;P (Epidemiological Surveillance) belong to different departments and do no jointly work together unless they are summoned to regular committees’ meetings to update the circulation of the Zika virus from surveillance reports submitted by health facilities and gathered at the regional level. The low levels or circulating Zika virus has led to the decision of disbanding the central command for Zika. A similar structure has not yet been established for the dengue outbreak although regular interdepartmental meetings are being</td>
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<td>5) What would the main priorities be when considering application of quality improvement in Zika/ emergency preparedness and response?</td>
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<tr>
<td></td>
<td>6) What are organizational/governance structures in place for emergency and preparedness and quality improvement? ) Probe for policy and operational linkage between health emergency preparedness and quality improvement.</td>
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<tr>
<td></td>
<td>6b) What quality improvement interventions are you applying within the context of Zika? How are your interventions linked with: -Zika clinical care services - Public health response services for Zika</td>
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held on priority topics. Their linkage can be clearly observed at the regional and health facility levels where under the USAID ASSIST Project multiple joint activities are being conducted to provide consistent care to at risk population, already infected or suffering for its consequences.

- At the central level the Quality of Care office disseminates policies, strategies and technical content on QI. These policies have been developed in recent years in the context of Public Health Emergencies as well by the support as organizations such as PAHO/WHO and donors. They also coordinate and deploys this technical content through continuous training programs as well as the scale-up of the Zika program to the rest of the country. TB and dengue (recurrently considered Public Health Emergencies) are also current and future targets of QI activities to improve performance on their appropriate management.

- As for current QI initiatives, the Quality of Care office is deploying seminars on basic tools for prioritization, problem solving, creation of improvement plans, and monitoring of key process indicators.

- These strategies are being deployed either by current donor’s work as well as part of the scale-up process in different parts of the country.
## Emergency response

<table>
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<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>1) What role do you play in the health system?</td>
<td>The role of PHEP&amp;R is to monitor disease frequency and response to it and specifically in the case of Zika, to detect increases of virus circulation, cases as well contribute to the effective control of the vector in the community. The approach used is based on early detection and reporting from health facilities to regional offices and then evaluated at the central headquarters, where diverse measures are used to control the spread of disease.</td>
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<tr>
<td>2) What do you consider quality improvement approaches currently utilized to improve the preparedness for Zika outbreak or other emergencies?</td>
<td>The current initiatives to improve preparedness for Zika are the most developed ones in terms of using QI strategies, since donor-supported work has established strong components of improvement techniques in the assigned areas. For other outbreaks such as dengue, chikungunya, and TB, they are going through a similar process.</td>
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<tr>
<td>3a) Is there a national policy and strategy for emergency preparedness &amp; response? How is Zika placed within this strategy?</td>
<td>There is no national broad strategy for PHEP&amp;R but specific ones associated to selected conditions. This was a more common situation when the HSOH had vertical programs on selected conditions.</td>
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<tr>
<td>3b) Is there an agreement/MOU on multi-sectorial engagement in emergency preparedness and response?</td>
<td>From 2015 the Zika outbreak created a multisectorial response agreement to promote effective measures to control the spread of the virus. The most important agreement was to create the National Zika Strategic Command to deal with the situation. To date this initiative has been dissolved considering the end of the outbreak and replaced with less integrated mechanisms.</td>
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<td>3c) Is there a coordination mechanism for health service actors on PHEP&amp;R? How are quality issues addressed in these fora?</td>
<td>The HSOH has recently dissolved vertical disease programs and the interaction between PHEP&amp;R (mostly through the Epidemiological Surveillance Unit) and experts from communicable diseases in each department is made under per needed basis deploying coordination groups that regularly meet, set goals, and monitor performance. Quality of care is addressed by certain specific condition measures that have been mostly developed for Zika. Usually virus circulation and number of</td>
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<tr>
<td>4) What is the role of health facilities in Zika preparedness planning, and response activation in Honduras?</td>
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<td>5) How has Zika outbreaks impacted health service delivery in the Honduras health system?</td>
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<td>6) How do you perceive application of QI approaches in relevant areas of PHEP &amp; R (surveillance including contact tracing, notification, Incident Management System, including EOC, response coordination, medical supplies)?</td>
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<td>7) Do you share the information generated from the field data collected on the quality of services rendered during an outbreak, with frontline health facilities for service improvement and post-Zika recovery?</td>
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</table>
Surveillance reports (notification and contact tracing) and interaction with local officials (for vector control report) is the critical piece of contribution to activate the response to public health emergencies. The information provided is collected at the regional level and submitted through various channels to the Epidemiolocal Surveillance Unit. Process measures (more related to quality of care) usually gathered and consolidated for evaluation at regional level but by staff overseen by the Quality Unit. This applies to public facilities as well the social security services.

- The Zika outbreak was a huge blow for the health system since the impact of resources channeled to this emergency affected regular services. Nevertheless, the country with the help of donors did a good job of coping with the situation, and several lessons were learnt for future Zika epidemics as well as for other conditions.

- Observing the work done by the USAID ASSIST Project, the improvement in process measures as well in engaging health facilities and communities when possible in the control of disease were much appreciated. To date no application of QI strategies is conducted at the central level where basically surveillance information is collated and analyzed.

- No formal feedback on process measures as well from Epidemiological Surveillance is being shared with health facilities or regional offices from the central level. This was a fact that is actually desired by them. Some information is shared at the SINAR meetings.