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U.S. President's Emergency Plan for AIDS Relief

AIDSTAR-One | CASE STUDY SERIES

February 2014

Emergency Planning for HIV Treatment Access in Conflict Settings

The Case of Côte d'Ivoire



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Staff from the Nimbo Health Center in Bouaké and from the Health Alliance International (HAI) program standing outside the clinic where they received a number of displaced HIV-positive patients during the post-election crisis of 2010-2011.

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According to the World Health Organization (WHO), 34.2 million people were living with HIV at the end of 2011. More than two-thirds of these individuals live in countries affected by acute and protracted emergencies. Uninterrupted access to antiretroviral therapy (ART) is critical to both the health of people living with HIV and to the effectiveness of the treatment regimen for the population at large. During emergency situations, violence, displacement, closure of health facilities, and disruption of drug supplies often compromise access to care and treatment services. Because continuous access to HIV treatment is essential, WHO, along with the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Children's Fund (UNICEF), has stated that ensuring the continuation of ART should be a key component of the minimum response to emergencies in high-prevalence settings. To facilitate this, countries have been encouraged to develop national contingency plans to ensure continuous access to lifesaving treatment.

This case study describes Côte d'Ivoire's efforts to ensure continuous access to ART during the political violence following the presidential elections in November 2010. In April 2012, the AIDSTAR-One Project, which is funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the U.S. Agency for International Development (USAID), conducted 29 interviews with 84 government officials and staff throughout the health sector to identify the challenges faced during the post-election crisis and the steps taken to address them. This case

This publication was made possible through the support of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the U.S. Agency for International Development under contract number GHH-I-00-07-00059-00, AIDS Support and Technical Assistance Resources (AIDSTAR-One) Project, Sector I, Task Order I.

Disclaimer: The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

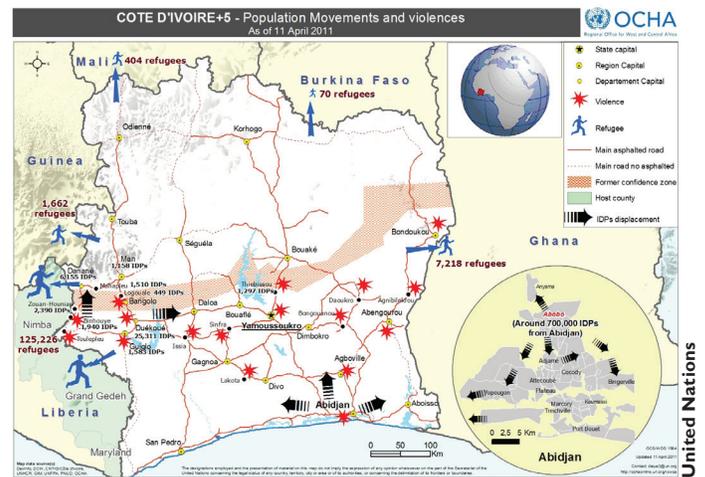
study summarizes the impact of the post-election crisis on the health sector and HIV services, discusses the roles played by various members of the health sector to ensure continued treatment for HIV-positive clients, and shares lessons learned and recommendations which can be used in similar emergency situations to ensure continuation of critical HIV treatment services.

Post-Election Crisis in Côte d'Ivoire

HISTORY OF THE 2010 CRISIS

Although Côte d'Ivoire had long enjoyed a comparatively robust economy and a stable government, both began to erode with the economic hardships of the 1980s, which were then followed by a series of attempted coups and violent outbreaks. In 2002, these outbreaks escalated into civil war. Finally, in 2005, a ceasefire was declared and a timetable for elections was determined as part of the peace process.

After several years of delays and continued tensions, presidential elections took place in October 2010, with run-off elections in November 2010. When the incumbent president disputed the results and refused to cede office, violence erupted in Côte d'Ivoire. For more than six months the country was plunged into uncertainty and political conflict, resulting in violence, deaths, and the disruption of vital services, including health care. Between 1,000 (UNOCI 2011) and 3,000 (HRW 2011) people were killed and about 2 million were displaced, fleeing to safer parts of the country or, in smaller numbers (approximately 200,000), leaving Côte d'Ivoire altogether (UNHCR 2011). Within the country, the Moyen-Cavally and Dix-Huit Montagnes regions, in the west, and the economic capital of Abidjan experienced the greatest amount of violence and turmoil.



Map depicting Côte d'Ivoire's population movement and violence rates during the crisis.

Impact of the Crisis on the HIV Treatment Program

The post-election violence and strikes placed the health sector at great risk, compromising services for those managing chronic illnesses, such as HIV. As of 2011, Côte d'Ivoire's HIV prevalence is estimated at 3 percent; and at the time of the crisis, 37 percent of those in need (75,237 clients) were receiving ARV therapy (UNAIDS 2011). Numerous clinics and hospitals were closed or severely understaffed during the crisis, as unsafe conditions and transportation strikes often made traveling to clinics nearly impossible. In areas where the conflict was protracted, some health care providers fled to safety in other parts of the country. Typically, these providers were among the higher professional cadres (doctors, nurses, and laboratory technicians), leaving community health workers (CHWs) and members of support groups for people living with HIV and AIDS (PLHIV) with little to no training to provide services. The drug supply was also severely compromised because the only storage warehouse was located in Abidjan, where violence erupted frequently. Health facilities that remained open and adequately staffed

struggled with stockouts of drugs and supplies. Bank closures, recurrent power outages, and looting of property and equipment also hindered the provision of services.



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Members of the Community Support Group at Nimbo Health Center, Bouaké, who were key to assisting displaced HIV patients during the crisis.

Initial Crisis Management for HIV and AIDS

During the first few weeks of the crisis, the health care sector scrambled to address the urgent needs of patients and determine the impact further violence would have on access to care. Initially key leaders and stakeholders planned separately, but by January 2011, PNPEC (the National HIV Care and Treatment Program, or *Programme Nationale de Prise en Charge Médicale des Personnes Vivant avec le VIH*) and the central Ministry of Health (MOH) were conducting joint planning with the Côte d'Ivoire branch of the U.S. President's Emergency

Plan For AIDS Relief (referred to in this case study as 'PEPFAR/CI'). Regular stakeholder meetings were conducted at the PNPEC offices, led by the Directeur Général de la Santé (DGS), a post charged with overseeing the work of the MOH. PNPEC organized the meetings and maintained associated documentation. Planning meetings were originally scheduled monthly, but were held weekly as of January 2011 when the crisis became more acute. Meetings were open to all relevant partners and stakeholders, extending to actors involved in any type of HIV-related service provision. Over time, the number of participants grew significantly. Organizers explicitly stated that the focus of the meetings was health and the continuation of services, rather than politics, to prevent discussions from devolving into political debates. In addition, the MOH asked each of its divisions (e.g., PNPEC, the Directorate for Community Health, the Directorate for Information, Planning and Evaluation, and the National Public Health Pharmacy) to develop and submit its own contingency plan, based on varying emergency scenarios. The plans were consolidated in March 2011, and at the time of preparation of this case study, the document was in the final stages to form a global contingency plan.

ROLE OF MINISTRY OF HEALTH

PNPEC was created in 2001 as the coordinating body for HIV activities under the auspices of the MOH. Its responsibilities include planning, development of policy and standards, coordination and integration of services, monitoring and evaluation, and resource mobilization. Other MOH departments responsible for activities related to HIV are the Directorate for Community Health, the Directorate for Information, Planning and Evaluation, and the National Public Health Pharmacy. These departments are referred to collectively here as the "MOH," unless otherwise specified. The MOH played a critical role in keeping

as many clinics open as possible, adapting screening and treatment guidelines, ensuring delivery of vital drugs, and organizing key stakeholder meetings as detailed on the previous page. Other MOH priorities included:

Maintaining services. Throughout the crisis the MOH urged clinics to stay open and serve patients as long as possible, stating the message clearly to sites and to health care workers (HCWs). To get the message out to patients and communities, the MOH asked districts to make radio announcements informing displaced patients to go to area clinics with existing care and treatment programs for services, especially ART.

Negotiating drug delivery. At various points during the crisis, military and rebel groups threatened to prevent delivery of drugs into the country or to stop delivery from the central warehouse to the regions. MOH staff members were called upon to negotiate with both groups when drug transport was blocked. Throughout the crisis, the MOH worked to maintain neutrality while maintaining collegial relationships with entities such as the Ministry of Defense, emphasizing the impartiality of health needs and the potential for both sides to benefit from the continued functioning of the health system.

Revised directives for screening and treatment. Early in the crisis, the central MOH staff, with PNPEC, developed and disseminated new directives for screening and treatment of HIV patients. The staff recommended the suspension of routine HIV testing in conflict areas, except for patients with major symptoms indicative of HIV, survivors of sexual violence, pregnant women in the delivery ward, and cases of accidental exposure. An emphasis was placed on maintaining current patients on ART and ensuring this continuation, even for displaced patients for whom medical history, regimen information, and medical record codes were

not available, while restricting the number of new patients initiated on ART.

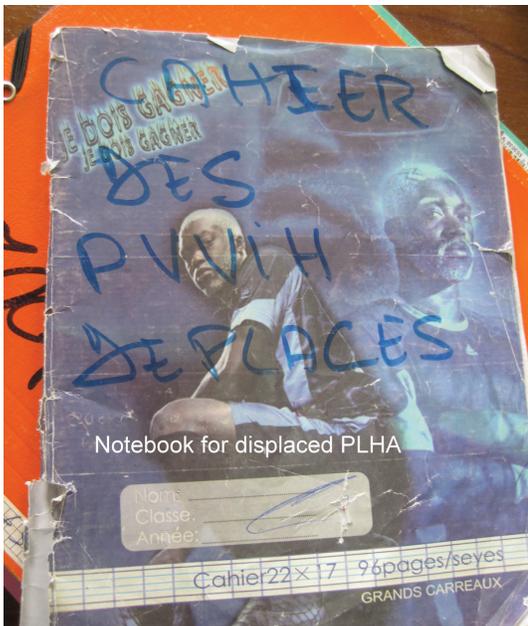
Increased supply of drugs to patients. For ART clients, the amount of treatment to provide was increased from one month to two or more months' supply of medicines, depending on patient circumstances (e.g., distance to clinic, anticipated travel). These guidelines, along with the screening and treatment initiation guidelines described above, were formalized in a memo distributed to all health facilities.

ROLE OF PEPFAR/CÔTE D'IVOIRE

Throughout the crisis, PEPFAR/CI worked alongside the MOH to organize the health sector response for HIV and AIDS services. PEPFAR has been active in Côte d'Ivoire since 2004, with a focus on prevention, treatment, and care, including supply chain strengthening and OVC support. In 2007, the US government was responsible for 70% of all HIV funding in Côte d'Ivoire, with PEPFAR/CI supporting 160 care and treatment sites in 2008. By 2011, PEPFAR/CI supported 64,800 patients on ART (PEPFAR 2011). Although U.S. Government (USG) expatriate staff were evacuated from Côte d'Ivoire to other regional (e.g., Accra, Ghana) or home offices (Washington, DC, or Atlanta, GA) in December 2010, the team realigned roles and shifted responsibilities to ensure management of the crisis response. Information gathering, triage, drawing attention to the crisis, providing support to implementing partners (IPs), and emergency data management were key components of PEPFAR/CI's role.

Role of local staff. The backbone of the PEPFAR/CI response was the local PEPFAR/CI staff, who managed the response with support from evacuated staff. The staff distributed formal weekly updates, along with daily emails and phone calls.

The collaborative effort was reported to be highly functional, demonstrating an efficient and reliable team approach. Local PEPFAR/CI staff also played a critical role in emergency planning by gathering information and surveying partners about potential threats to their programming. Potential issues were presented to the PEPFAR/CI leadership and MOH for remediation, which made strides to fill gaps in service delivery.



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Notebook used to track displaced HIV patients seen at Nimbo Health Center, Bouaké.

Role of evacuated staff. Evacuated staff advocated for resources at PEPFAR headquarters offices, providing local PEPFAR/CI staff with documentation from other USAID and CDC partners on managing the crisis and approaches used in other settings. Evacuated staff reported that their placement in headquarters offices allowed them to better advocate for patient treatment support in Côte d'Ivoire.

Triage planning. Predicting potential crisis scenarios based on an earlier conflict period (2004) and minimum services required was an integral part of the planning process. PEPFAR/CI surveyed

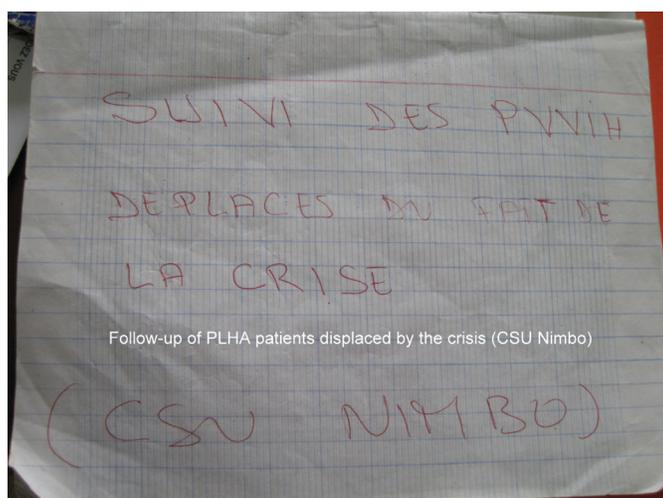
each IP and asked for a readiness assessment for possible outcomes of the crisis (e.g., lack of commodities, lack of staff, patient displacement, etc.) and a triage of work plans by level of instability to develop plans for addressing program needs. The guiding principles of this triage activity were risk reduction, moral support, and continuation of essential activities for as long as possible. The results of the survey guided decisions on which activities to suspend, which to continue, and what type of support would be needed as the crisis continued.

Ongoing management support to IPs. PEPFAR/CI developed tools, provided data, provided support for monitoring and evaluation (M&E) at site level, and maintained regular communication with IPs by phone and email. A sample tool developed by PEPFAR/CI to help IPs track availability of staff, supplies, and patients presenting at sites can be found online at http://www.aidstar-one.com/ci_emergency, along with the summary form used at regional levels. Partners also struggled with financial management, especially when the banks unexpectedly closed. Although PEPFAR/CI was unable to provide supplementary funds, it provided guidance on financial management, emphasizing the need for documentation.

Support for emergency delivery of drugs. Later in the crisis, when the Pharmacie de la Santé Publique (PSP, the national drug authority) was no longer able to deliver drugs to service sites (discussed in “PSP and SCMS” on page 6 of this case study), PEPFAR/CI provided logistical and management support to IPs to deliver drugs. The country was divided into areas of responsibility for each partner to organize the delivery, ensuring an efficient use of resources to support all facilities.

Data management in emergency settings.

PEPFAR/CI's Strategic Information Unit developed a draft plan on managing strategic information during emergencies. The document included instructions for backing up data and was shared with partners and finalized in March 2011, along with a tool for PEPFAR to keep track of data-saving practices used by IPs. During the crisis, most IPs were able to save their data, although some partners had problems with looting and lost data when computers and/or external drives were stolen.



Title page of the notebook for displaced HIV patients seen at Nimbo Health Center, Bouaké.

The emergency data-saving plan was also shared with the MOH's Directorate for Information, Planning, and Evaluation (DIPE), in March 2011. Safeguarding individual client data during an emergency, when patient data can be lost or compromised, was a key issue. Individual patient treatment information is typically updated and saved at the site level. The IPs and the MOH receive a copy, while PEPFAR/CI receives only aggregate information.

During the crisis, it was recognized that PEPFAR/CI had greater access to resources to guarantee the security of patient data, so the possibility of PEPFAR/CI being temporarily responsible for individual-level

client data was raised; the question was not resolved before the crisis subsided. An alternative identified for consideration was to have the MOH contract with a strategic information organization with the ability to save the data outside the country.

Data management issues, including the development of tools to accommodate special data needs (discussed on page 7 under "Role of Implementing Partners") were an ongoing focus during the crisis. However, planning for data analyses and exit reports at the conclusion of the crisis was an overlooked area that needed to be addressed. Some IPs prepared their own exit reports, notably EGPAF, whose office in Bouaké worked with one of the supported sites, Centre SAS, to present the results of its efforts to provide care and treatment for displaced patients. Details of these results can be found on page 8 under "Role of HIV Care and Treatment Facilities."

ROLE OF PSP AND SCMS

The national drug authority in Côte d'Ivoire, PSP, manages drug procurement and distribution, with support from the Supply Chain Management System (SCMS). SCMS seconded two staff to PSP (one of whom provides data and statistics support to the ARV unit) and leads training in logistics management information systems (LMIS).

PSP normally maintains a six-to-nine-month supply of ARV stock held in the only central drug warehouse in Côte d'Ivoire in Abidjan. When the crisis began, the central warehouse held six months' worth of ARVs intended to last until March 2011. Stock was already at an "alert" level, since ideally the central warehouse should have nine months' worth of stock. However, having even six months' stock proved crucial since, as the crisis developed, many partners (e.g., the World Bank, and the Global Fund to Fight AIDS, Tuberculosis and Malaria) suspended

financing, banks closed, and activities at airports, seaports, and land borders became restricted or shut down completely, making it difficult for drugs and supplies to reach the country.

Typically in Côte d'Ivoire, government sites provide data to the district level, and the district quantifies drug supply needs and submits orders to PSP. Private sites order directly from PSP and PSP is responsible for drug distribution throughout the country. In general, PSP has the capacity to make one trip per month to sites in the interior assuming a normal rate of consumption, though most of its vehicles are not in good repair and getting approval for the trips is a lengthy process.

To address the challenges to this system of ordering and supplying, PSP and SCMS conducted analyses and made temporary changes to distribution and delivery, taking several key steps:

Ensuring an adequate supply of ARVs to patients. PSP and SCMS took part in MOH-led emergency planning activities starting in December 2010. Their objective was to ensure that an adequate supply of products reached patients, using a strategy of increasing the amount of drugs distributed to patients from one to two months' supply. PSP and SCMS therefore directed all distribution sites to increase the amount of drugs on hand. The MOH's decision to limit the numbers of patients initiated on ART during the crisis allowed the existing stock to stretch further for continuing ART patients.

Performing site consumption analysis. In January and February 2011, SCMS conducted an analysis of recent monthly site drug consumption to ensure that an adequate supply of drugs was delivered to districts and sites in the event sites or districts were unable to submit orders.

Surmounting delivery capacity challenges. As the crisis unfolded, it became clear that the PSP did not have the capacity to handle increased delivery demands, especially in areas with uncertain security. Moreover, in March 2011, the PSP ceased operations for three weeks. After much negotiation, the IPs agreed to assist with drug delivery despite serious concerns about security and their lack of experience with drug distribution. At the central warehouse, PSP packed drugs for most programs and prepared them for delivery, with assistance from some of the IPs. PEPFAR/CI assisted the IPs with creating a delivery plan for sites according to region and with successfully carrying out distribution. Interviewees reported no site missed a delivery. Although interviewees emphasized that assistance from a humanitarian organization such as the Red Cross would have been ideal, one benefit to having the IPs carry out distribution was that their familiarity with the areas and sites strengthened their ability to redistribute deliveries in cases of community displacement or clinic closure (See "Elements where additional attention could have further improved the contingency response: Coordination of drug delivery at the national level" for more information).

ROLE OF IMPLEMENTING PARTNERS

The care and treatment IPs in Côte d'Ivoire that receive USG support include ACONDA, EGPAF, HAI, ICAP, SCMS, and CNTS (the National Blood Transfusion Center, or Centre National de Transfusion Sanguine). SCMS and CNTS operate at the national level, while ACONDA, EGPAF, HAI, and ICAP support sites in various parts of the country. During the crisis, some IPs provided support to treatment sites in conflict areas while other partners worked with sites receiving large numbers of displaced patients—and some supported sites in both types of zones. In accordance with guidance from PEPFAR and the MOH, the first priority of

During the peak of the conflict, in March and April, one implementing partner’s program pharmacist went to the clinic in Yopougon, an area of conflict in Abidjan, despite the fighting, to provide treatment to patients. Once patients learned he was there, they told others in the community to seek treatment at the clinic, telling them that it was a choice to “stay home and die or come out and die.” The pharmacist’s actions ensured continued treatment for a large number of patients.

the IPs was to safeguard the security of staff while ensuring the continuation of services. Several steps were taken toward meeting this mandate.

Reinforcing communications and reorganizing operations. To support vital communications among staff and between staff and patients, IP staff established contact trees and verified client contact information. Alterations were made to ensure security at the site level, such as changing clinic hours to avoid forcing staff and clients to travel at night. Nevertheless, clinics were often understaffed. In such cases, many IPs went to extreme lengths to ensure that HIV services were available for patients; see the box above for one example.

Adapting drug orders and negotiating drug and laboratory exchanges. All IPs took the step of pre-ordering drugs and supplies to ensure adequate stock. Second-line drugs are more commonly available at the regional hospitals than at smaller public and private clinics. Displacement of patients, however, resulted in smaller clinics adjusting to greater numbers of clients receiving second-line ART and/or co-infection treatment. Some partners facilitated negotiations between sites for surplus drugs and second-line drugs. IPs also facilitated

laboratory-services exchanges during power outages so that samples and reagents from a site affected by cuts were transferred to sites with reliable sources of power.

Special tracking for displaced patients. IPs created new tools to assist and track displaced patients, such as registers to maintain displaced patient information in parallel with information collected for regular patients, to ensure that displaced patients were not incorrectly registered as new to treatment. Implementing partners also developed patient health cards detailing medical history and treatment regimens, which patients could take with them when they traveled. Patients did not use these cards as anticipated, and providers reported that determining a patient’s treatment regimen and medical history often posed a significant challenge. One IP with patients in different regions of the country made a master list of all its patients early in the crisis, so that providers in one area treating patients displaced from another had access to as much patient information as possible.

ROLE OF HIV CARE AND TREATMENT FACILITIES

The primary job of treatment facilities and health care providers was to manage patient care with minimal resources and limited support. Health care providers and patients who were interviewed reported that patient care was continued at a satisfactory level at the sites that remained open. To date, there has not been a country-wide analysis of the clinical outcomes of the patients receiving ART during the crisis period. However, some individual sites have examined their data (see Box 1 on page 9). In addition to direct patient care, health care facilities focused on maintaining communication with patients and sharing drug supplies with local clinics.

BOX 1. CLINICAL OUTCOMES DURING THE CRISIS

Clinical outcomes from Centre SAS, a treatment site in Bouaké, were analyzed in conjunction with its supporting partner, EGPAF. Bouaké received a large number of displaced patients and Centre SAS reported that, starting in January 2011, they received 75 displaced patients who were HIV-infected, compared to 1,700 HIV-positive patients enrolled at that time. Of these 75 displaced patients, 90 percent came from Abidjan, 87 percent were female, and all were on ART. Twenty-eight percent reported experiencing a break in treatment, with the duration largely lasting between 1 and 15 days, although three patients experienced a break in treatment greater than 30 days. Both EGPAF and Centre SAS reported that they successfully provided care, treatment, and support for all HIV-positive displaced patients received at the facility, using good clinical, psychosocial, and documentation practices.

Maintaining communication with patients. With the assistance of affiliated community support programs, sites attempted to maintain communication by phone or home visits with patients to ensure patients received treatment when necessary and safe. Many facilities changed their hours of operation, and one clinic in Bouaké with a strong community program reorganized services during the week of runoff elections. Because its staff knew the contact information and homes of many of their patients, they were able to contact patients scheduled to come in that week and ask them to come in beforehand or accept home visits from clinic staff. Home visits continued throughout the crisis as safety and funding allowed.

Sharing drugs and supplies. Site staff negotiated to share or access drugs and supplies via other sites according to need and availability. In some cases, negotiations were supported by the IPs and/or regional and district staff, but often they took place on a site-to-site basis, with varying degrees of success. In Duékoué, for example, laboratory and pharmacy technicians at the general hospital had good contacts with colleagues at neighboring sites and were able to ensure adequate sharing of drugs and supplies between sites. In Bouaké, however, sites reported that cross-site sharing efforts were not as successful and that higher-level support may have been more helpful to them.

Providing voluntary services. Many staff worked on a voluntary basis when funding for their salaries was not available due to government uncertainty or the closure of the banks. The difficulties faced by HCWs in achieving even basic service delivery functions should not be underestimated, particularly in a context when funding for staff salaries was suspended due to the bank closure and other tightening of resources.

Lessons Learned for Côte d'Ivoire

Information gathered on successful approaches and areas for improvement, though specific to the experience in Côte d'Ivoire, may be useful for other programs undertaking their own emergency planning activities. These findings are not intended as an assessment of any single organization's performance, but rather as lessons learned by all stakeholders involved in managing the crisis response in Côte d'Ivoire.

BOX 2. TRIGGERS TO ACTION

- Political language in media reports became hostile, with implications of violence.
- Violence occurred in some areas during the presidential campaigns.
- Residents began to be displaced.
- Military and rebel checkpoints were erected in certain areas.
- At the site level, some IPs noticed changes in their patient data (e.g., increasing number of patients in peripheral areas on second-line drugs, increased numbers lost to follow-up, decreased number of new patients).
- Two governments were in place simultaneously.
- An embargo was enforced, restricting shipments into the country.
- Banks were shut down.

“TRIGGERS” TO ACTION

Recognizing “triggers” to action. Recognizing when to take action during a crisis can be challenging. Despite “lessons learned” from other programs that had experienced similar crises, as well as other contingency planning resources, little guidance was available on what events should be seen as “triggers” for action in anticipation of more serious problems to come. Another serious challenge was the risk that, in the context of a political dispute, actions taken could be interpreted as political statements rather than sensible planning steps. The very act of contingency planning could be seen as a lack of faith in or criticism of the government’s ability to maintain order.

To address these challenges, PEPFAR/CI staff members suggested establishing a list of triggers to action. Interviewees indicated several events or situations when they sensed that the political situation could present challenges to service delivery. Box 2 contains a list of the circumstances that providers in Côte d’Ivoire experienced, either at the time or in hindsight, as a prelude to greater problems. This list may be helpful to providers in other countries facing similar circumstances as relevant signals for planning and action.

ELEMENTS OF THE CONTINGENCY RESPONSE THAT HELPED ENSURE CONTINUITY OF HIV TREATMENT SERVICES

Many people interviewed asserted that the HIV sector’s response was generally strong. Overall, interviewees reported that delivery of HIV services continued and most patients who sought treatment received it. Several areas of strength were identified:

Planning. Planning began early in the crisis and continued as events unfolded. Most of the case study participants, especially at the national level, cited good communication between actors, and many of them commended PNPEC in particular for its efforts to coordinate planning meetings and disseminate information to all concerned parties.

Coordination and collaboration. With some exceptions (discussed below), the coordination and collaboration that took place were also frequently cited as very good—from the national level, where

all relevant partners from MOH departments to nongovernmental organizations to community groups were invited to participate, to the local level, where many IPs and sites reported negotiating with neighboring sites to share surplus medications and supplies.

Voluntary spirit and engagement. Most interviewees reported high levels of voluntary spirit and engagement. Most IPs and sites told stories of staff working extra hours, taking on extra duties, and, during the worst part of the crisis, working without receiving their full salaries.

Commitment of community-level workers. Interviewees at all levels cited the key role that CHWs and support group members played in ensuring the continuation of services. In many cases, health professionals, especially those who were not from the part of the country where they were posted, left their posts to stay with family elsewhere. Because CHWs and support group members were from the same areas as their clients, they were more likely to stay with their clients, whether staying in their home areas when other HCWs left or relocating with their communities in the process of displacement. CHWs, then, were essential to tracing patients, helping them access medicines, and linking the most vulnerable to needed services.

Financial guidance provided. Prior to the banks actually closing in February 2011, many partners experienced a tightening of resources. They were advised by PEPFAR/CI not to stockpile large amounts of cash for security reasons. Therefore, when the banks closed in February, many partners and sites were already in constrained circumstances. PEPFAR/CI was unable to provide funding to partners or to identify means to acquire funds, but it did provide financial management guidance,

emphasizing that partners should work within their organizational rules, understand the risks they were taking on, and maintain good documentation. Partners worked within this guidance and largely managed to apply strategic planning and creativity to acquire funds to keep their services going as long as possible.

Attention to stock management and maintenance of appropriate levels of buffer stock. Most interviewees reported that medication and supply shortages experienced were not as severe as they could have been. PSP and SCMS were able to get sufficient stock of drugs into the country early in the crisis, and direct service providers reported that they were generally able to provide supplemental drugs to patients as appropriate (e.g., two to three months' stock for patients versus one month's stock, depending on patient distance from the clinic). Interviewees also acknowledged that had the crisis continued much longer, severe shortages would have likely occurred.

ELEMENTS WHERE ADDITIONAL ATTENTION COULD HAVE FURTHER IMPROVED THE CONTINGENCY RESPONSE

Interviewees identified aspects of the response that could have been stronger. These areas should be given thoughtful consideration as part of general emergency preparation.

Creation or updating of contingency plans prior to episodes of instability. Although planning started early in the crisis, emergency planning should have taken place prior to the crisis. Côte d'Ivoire is now experiencing stability and calm, creating an opportunity to review and modify the plans developed in 2011 and prepare for response during future emergencies.

Development and reinforcement of communication channels between national and regional/district levels. Although the national-level planning process was marked by good communication among various sectors and partners, some regional and district staff interviewed reported that information about decisions made at the national level did not always reach them.

Coordination of drug delivery at the national level. Although coordination and collaboration were widely reported to be strong, some gaps existed at the national level, particularly in the area of drug delivery. Although the PSP explored the possibility of collaborating with the Red Cross to assist in delivery of ARVs, in the end, the collaboration did not come to pass and the treatment partners were asked to deliver the drugs to sites. Despite some benefits of this arrangement in terms of IPs' familiarity with the site context, the treatment partners lacked experience in providing drugs and supplies on such a scale and had serious security concerns about doing so. A suggestion for the future is to develop a plan and initiate advance collaboration among the national drug authority, treatment partners, and humanitarian organizations experienced in providing secure transport of medications and supplies.

Development and reinforcement of coordination channels at the local level. Due to power outages, many laboratories lacked electricity during regular working hours. In one city, laboratory staff at a private facility came in after hours when power was available and conducted tests. Other facilities sent their samples to this laboratory for testing, increasing its workload and use of resources. Laboratory staff from this facility reported that they were willing and able to carry the extra workload in the spirit of ensuring access to services, but that they encountered difficulties in getting the other sites to share their resources in exchange; for example, samples sometimes arrived for testing

with an inadequate amount of reagents. While the informal, site-to-site sharing of resources was often efficient and beneficial, this case illustrates that such negotiation is not always successful and could benefit from the intervention of district staff to manage resource sharing in a more structured way.

Development of plans for record keeping, data management and analysis, and use of data for future contingency planning. The MOH advised sites to keep a parallel register for the displaced HIV-positive patients they received, and some IPs created new forms for providers at their supported facilities to use. While this effort appears to have succeeded at managing patients on a daily basis, an analysis of the data has not been conducted to determine the numbers of displaced people who accessed treatment services. Finally, there was little planning among service providers at any level to write exit reports after the conclusion of the crisis documenting the service provision. Such reports would provide vital information for use in planning for future emergencies.

General Recommendations and Conclusion

The recommendations in the following tables have been collected from interviewees at all levels, from the MOH to PEPFAR, IPs, site staff, and patients and are intended for broad application in any type of emergency. Recommendations encompass the areas of planning, implementation and data and communication and are organized according to the health actor who should be applying them.

RECOMMENDATIONS: PLANNING

WHO	WHAT
ALL	Develop a plan during stability that: <ul style="list-style-type: none"> • Includes different scenarios and the minimum services provided in each scenario • Demonstrates that the planners have expected the unexpected (e.g. banks closing, main city being unable to manage response).
	Train people on the plan and do simulations.
	Anticipate that numbers of people affected by the crisis will increase.
MINISTRY OF HEALTH	Establish crisis committees/cellules at different levels of the health system.
	Create a secondary national planning team based in another city in case the primary team is incapable of reacting (e.g., in cases where the primary team is located in the capital, which is often at the center of the conflict, and is suddenly without means to communicate and/or respond to needs).
MINISTRY OF HEALTH/PEPFAR/ OTHER DONORS	Before a major event likely to cause problems (e.g. elections), have a one-day meeting with all partners to confirm that they have contingency plans in place and can activate them.
	Drug and supply distribution: during stability, plan with partners (e.g., the Red Cross) who can provide vehicles and security, and who knows site capacities and relationships.
	Develop a Plan B (and C and D...) for drug distribution ahead of time.
	Create an emergency fund and a management strategy for that fund.
	Include humanitarian organizations in planning discussions from the beginning.
	Provide early guidance on how to handle funds to meet new needs and to advise on time points when it is okay to take actions that differ from established procedures.
	Establish/strengthen a logistics management information system (LMIS).
	Decentralize drug depots.
IMPLEMENTING PARTNERS	Partners who support multiple sites can develop a single master patient list with information on regimens and share it within their network.

RECOMMENDATIONS: IMPLEMENTATION

WHO	WHAT
<p>ALL</p>	<p>Avoid shutting down services to the extent possible.</p>
	<p>Assure security of staff, through simple measures such as changing hours of operation so that staff and patients aren't traveling during times when problems are likely.</p>
	<p>Maintain solidarity/avoid political discussions in the context of health service planning and delivery so that ensuring health care remains the primary focus.</p>
	<p>Do an inventory early on during the start of tension/conflict to know stock levels at sites.</p>
	<p>Recognize and support the role of community workers, local NGOs and support groups since these persons are closest to the population served and are most likely to remain in the community when others (e.g., higher-level HCWs) have fled, or be displaced with the community.</p>
	<p>Let air out of car tires at night to reduce the likelihood of their being stolen.</p>
<p>HEALTH FACILITIES/ COMMUNITY ORGANIZATIONS</p>	<p>Train other health cadres (nurses, counselors) on services they don't typically provide so they are ready to step in if necessary.</p>
	<p>Ensure availability of generator and extra fuel for continued laboratory services.</p>
	<p>Patients can benefit from moments of calm to go seek treatment.</p>
	<p>Staff should maintain friendly reception of patients and encourage them to stay on treatment, especially for displaced patients who are strangers to the area.</p>
	<p>Plan early to reorganize patient visits scheduled for times of possible disruption (e.g., election days).</p>

RECOMMENDATIONS: DATA AND COMMUNICATION

WHO	WHAT
ALL	Set up communication trees with partners/staff/patients in advance.
	Start gathering relevant data immediately; e.g., on numbers and locations of displaced patients and their breakdown by gender and age, and regimens used by patients who are new to the clinic to track needs for second-line and other less commonly stocked medications, etc.
	Use all available resources to get information; e.g., newspapers, radio and other typical media sources, but also reports from clients/patients/staff in other locations.
	Ensure good coordination of meetings and other types of communication, so that participants stay focused on the topic (health) and discussions do not devolve into political dispute.
	Save data in multiple places, e.g., desktops, portable hard drives, and email accounts.
	Keep multiple SIM cards and a good supply of phone credit.
	Each partner/actor should prepare for and execute an exit report that briefly describes what happened at their level, how they responded, and any data on outcomes for patients.

The crisis in Côte d'Ivoire in 2010–2011 resulted in significant loss of life and damage to the economy and public services. Despite these challenges, PNPEC/MOH, direct service providers, the PEPFAR/CI team, and implementing partners worked together to minimize the disruption to essential HIV care and treatment services as well as respond to the needs of HIV-positive clients. This case study provides several examples of innovative and adaptive responses to the crisis, coupled with recommendations for public health and program planners, that can be of use to others facing similar crisis situations and striving to ensure continued treatment for clients on ART. Planning ahead, remaining flexible to new approaches as needs and opportunities arise, and collaborating with other stakeholders emerged as key aspects of a strong response.

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ACKNOWLEDGMENTS

The authors would like to thank all of the many people who were so generous with their time and insights in interviews for this case study including national and regional representatives of the MOH and PNPEC, staff of PEPFAR/CI, PSP and SCMS, CNTS, DIPE, EGPAF, ACONDA, ICAP, IRC, AVSI, HAI, Save the Children, CSU Nimbo, Centre SAS, and HG Duékoué. Special thanks to Jennifer Walsh of PEPFAR/CI for providing organizational and technical support for this case study.

Thanks also to Robert Ferris and Tom Minior with the U.S. Agency for International Development in Washington, DC for their support of this case study.

RECOMMENDED CITATION

Eagan, Sabrina, and Eustache Akpane. 2013. *Emergency Planning for HIV Treatment Access in Conflict Settings: The Case of Côte d'Ivoire*. Case Study Series. Arlington, VA: USAID's AIDS Support and Technical Assistance Resources, AIDSTAR-One, Task Order 1.



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