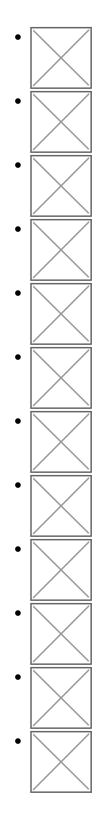


## IN POST-CONFLICT CÔTE D'IVOIRE, THE SUPPLY CHAIN FOLLOWS THE FRONT LINES

A motorcycle bouncing along a rutted red dirt road carries a nurse from a public health center near the village of Tai. Clutched in his arms is a box packed with vaccines: a month's supply for his village that sits close to the Liberian border, in Côte d'Ivoire's restive and fractious west.

The precarious 86-kilometer journey from the district capital of Danané by motorcycle would seem an improvement over the historical transport of drugs around the region on the rooftops of shared-transport minibuses over roads often rendered impassable by rain or bandits or the waves of conflict that have pitted community against community as part of the wider civil conflict in Côte d'Ivoire that erupted in 2001 and has only recently achieved some measure of calm.

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For every village in the district there is a story about the vagaries and challenges that interrupt the supply chain, lamented Siaka Coulibaly, the district's chief pharmacist, like how the flooding of the river Cavally can add to the four hours it already takes to go 60km to Zoupleu.

At monthly district health meetings that draw nurses from each of the village dispensaries, therefore, Coulibaly spends considerable time and effort packing and distributing the monthly allotment of drugs and vaccines for them to carry home. But the bales of mosquito nets are heavy and impossible to carry on the back of a motorbike, so they end up on top of a massa, or minibus, and take considerably longer to arrive.

While the situation in the west is particularly difficult, it is not, unfortunately, unique, according to Dr Serge Yapo,

the commercial and marketing director for the national Pharmacy for Public Health, which coordinates all medical deliveries from the economic capital Abidjan to the districts and general hospitals across the country.

"The weakest link in the chain is delivery between the districts and the health centers," he told Aidspan. That's not to say that the rest of the supply chain is all that sturdy, he cautioned: even delivery from the central warehouse in Abidjan to general hospitals at the district level can be easily compromised — another casualty of the extended conflict.

"The crisis interrupted the supply chain and really exposed the weaknesses in having a single, centralized distribution point," he said. "We are hoping that by mid-2015 we will have a decentralized, regional system in place.

Delays, stockouts and communication challenges

Any regional system that is eventually implemented must have as its core objective the resolution of persistent, and maddening, delays that lead to inevitable stockouts, said Coulibaly. In Danané they can wait up to two months for a delivery — and when it finally arrives, a new order for stock has already been placed.

Better stock management has been the priority of a delivery program paid for and coordinated by the Global Fund and the (US) President's Emergency Plan for AIDS Relief (PEPFAR) that will eventually represent 45% of all deliveries. Administrative concerns have, however, delayed the start date of the two-year program to be run by the national program for people living with HIV (PNPEC).

While the administrative wrangling continues, people are suffering, said one of the nurses at the Tai health center. Stockouts and delays mean that people are interrupting their anti-retroviral treatment because the drugs just aren't available. About 100km away in Doké, where endemic malaria poses a year-round threat, there have been no adult doses of artemisinin combination therapy (ACT) for two months.

In acknowledging the pervasive problems with stockouts, the Global Fund attributed many of the delays to the "low distribution capacity of the Pharmacy of Public Health into the districts, and the transport challenges from the district level to treatment sites".

A 2013 rebranding of the central pharmacy as the New Pharmacy of Public Health was accompanied by some modest improvements, acknowledged one pharmacist at the general hospital in Duékoué, which was in 2011 the site of one of the worst massacres during the post-election period. Before the rebranding, deliveries were never on time, he said from his office: a dank, unventilated and humid corner of the pharmacy where temperatures could soar to 39 degrees Celsius. Now, the service is achieving a 38.5% on-time delivery record nationally, Duékoué included: a vast improvement over the conflict-era level where weeks, if not months, of delays were common.

The NPSP still has to contend with considerable logistical obstacles, many of them linked to a lack of resources. As a sub-recipient of Global Fund money funnelled through the national program for people living with HIV, there is likely to be some room to fund the necessary improvements. This may include the rehabilitation of the Abidjan central warehouse and the construction of a second one to accommodate the eventual shift to a more regional, decentralized distribution system, according to Dr Carine Codo, director of special programs at the NPSP. Other plans include improved quality control mechanisms and a more sophisticated and automated stock management system.

But topping the wishlist of the NPSP is a fleet of well-maintained vehicles, including trucks with cold-storage capabilities, motorbikes and even bicycles to facilitate and improve deliveries at the district and health-center level. While the Global Fund is moving away from this kind of infrastructure investment under the new funding model (NFM), there is precedent in Côte d'Ivoire: the national malaria control program used Fund money in 2013 to buy two 15-ton trucks to facilitate deliveries.

Any type of vehicle would be a vast improvement over the delivery system currently in place. As of now, preserving the cold chain means replacing the blocks of ice that line the drinks coolers stacked in unrefrigerated trucks that make the slow journey from the central warehouse to the district hospitals, and then further on to the village-level

facilities.

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