

# The AMFm and Medicine Diversion: Good intent enabling corrupt practices

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## Abstract

Increased donated and subsidised medicines for malaria are saving countless lives in Africa, but there is probably increasing theft and diversion of those medicines. The impact of medicine diversion is unknown but potentially dangerous and may bolster criminal networks and increase medicine stock outs (1,2). This study demonstrates that diversion is widespread; diverted subsidised medicines were found in 11 of 14 cities investigated, and in four of those, over half the pharmacies researchers visited had diverted subsidised malaria products.

## 1 Introduction

The Affordable Medicines Facility - malaria (AMFm) is a financing mechanism run by the Global Fund to Fight AIDS TB and Malaria (GF). The AMFm is designed to expand access to the best treatments of malaria, artemisinin-based combination therapies, or ACTs. AMFm donors subsidise the price of ACTs in the public and private sectors by negotiating a reduced price for ACTs with manufacturers. Donors pay the majority of the reduced price of ACTs to manufacturers, lowering the cost to first-line buyers. First-line buyers purchase ACTs directly from manufacturers. Since first-line buyers pay a lower price for ACTs, consumers should also pay a lower price, making ACTs more affordable. The AMFm aims to increase the availability and use of ACTs by reducing their cost and thereby driving oral artemisinin monotherapies, which should only be used as part of combination therapies, or poor-quality antimalarial drugs from the market. Additionally, the programme hopes to displace often used, but older and less effective, chloroquine and sulfadoxine-pyrimethamine (SP) treatments by making the more trustworthy ACTs equally affordable for patients (3).

Medicines are valuable, portable and widely traded, and this is often done illegally and across national borders (4,5). One unintended consequence of all forms of malaria donation and subsidy programmes is an increase in product theft and diversion, which can lead to stock outs (6,7) and other health problems. The aim of this study was to assess whether AMFm drugs have been stolen and diverted into other markets, since previous studies have shown that diversion of subsidised public sector products was a problem; most notably that in one study 28% of ACTs bought in the

private sector had been stolen from the public sector (8).

## 2 Method

While conducting research into malaria drug availability and quality in the 14 largest cities of 14 African nations in December 2011 through January 2012, the packaging of the products from at least ten pharmacies in each city was analysed to reveal whether products had been supplied under the AMFm subsidy scheme. The cities were chosen in conjunction with the lead author's previous research, and reflect a variety of both AMFm and non-AMFm countries for comparison. Drug collection and testing was conducted per previous research methodology, with city dwellers from each city beginning a random walk in two median income areas of each city and buying from pharmacies they first encounter (8,9). This is convenience covert shopping and not a detailed assessment of pharmacies from which a truly random sampling could be drawn. There was one addition to previous methodology - all pharmacists in countries participating in the AMFm programme were asked whether their pharmacy was participating in the scheme - the negatives were recorded as non-participating pharmacies.

Five of the cities: Accra, Dar es Salaam, Kampala, Lagos and Nairobi, were in countries participating in AMFm; nine of the cities: Addis Ababa, Cairo, Cotonou, Kigali, Lom, Luanda, Lubumbashi, Lusaka, Maputo, were not in participating countries (10).

## 3 Results

Of the 14 cities where products were procured, five were participating in the AMFm. In each of these, AMFm prod-

**Table 1.** Venue and location, AMFm drugs available for sale

AMFm country	Non-AMFm country	AMFm Country		Non-AMFm Country		City pharmacies with diverted AMFm products?
		AMFm product found in any non-AMFm pharmacy	AMFm product found in >50% of non-AMFm pharmacies	AMFm product found in any pharmacy	AMFm product found in >50% of pharmacies	
Accra		Yes	No			Yes
Dar es Salaam		Yes	No			Yes
Kampala		Yes	No			Yes
Lagos		Yes	Yes			Yes
Nairobi		Yes	Yes			Yes
	Addis Ababa			Yes	No	Yes
	Cairo			No	No	No
	Cotonou			Yes	Yes	Yes
	Kigali			No	No	No
	Lomé			Yes	Yes	Yes
	Luanda			Yes	No	Yes
	Lubumbashi			No	No	No
	Lusaka			Yes	No	Yes
	Maputo			Yes	No	Yes

ucts had been diverted from approved pharmacies to unapproved pharmacies. Of the nine cities assessed in non-AMFm-participating countries, six had AMFm products on sale in private pharmacies. In other words, 11 of 14 cities had diverted AMFm products. See Table 1 for the results by location and pharmacy type.

It is impossible to tell the scale of the diversion. However, in two cities (Cotonou and Lomé) in non-AMFm countries which border AMFm-participating countries (Nigeria and Ghana), over half the pharmacies apparently sold diverted AMFm products - it is possible that some of these products are counterfeit AMFm products. Additionally, in Lagos and Nairobi, over half the self-identified non-participating pharmacies sold diverted AMFm products.

#### 4 Discussion

Medicine diversion is a problem with uncertain implications. The limited evidence available indicates that it can increase corruption (11), empower criminals, especially narcotics traders (12), and, in a few instances, undermine expected medicine delivery and distribution systems and hence interrupt treatment (8). Medicine stock-outs in rural, malarious Africa in particular can quickly become deadly. The AMFm is a laudable attempt to increase access to the best medicines, but diversion is a side effect of supplying tens of millions of subsidised treatments; in some places, our results suggest diversion occurs on a significant scale.

It is possible that some of the AMFm products were in fact counterfeit versions, and this will only be known for certain when the products are analysed in later research. It is, however, unlikely the products are counterfeit, since there have so far been no reports of counterfeit AMFm products, or counterfeiting of the AMFm logo.

The Global Fund, which oversees the AMFm, should fund a thorough independent review of its distribution procedures to ascertain where the AMFm drugs are being stolen from, and where they are going. This should be followed by policy solutions, including the possible termination of the AMFm. The Fund should also assess the quality of the diverted medicines, since stolen products are probably stored in poor conditions that could degrade products, increasing the likelihood of drug resistance.

#### 5 Conclusion

The AMFm antimalarial drug subsidy is increasing access to the best medicines, but it also provides opportunities for increased drug theft and diversion. Although such opportunities existed before the subsidy was introduced, it is likely to have been exacerbated by the subsidy. Indeed, this studies' data indicate that actors from multiple countries are taking advantage of the pricing asymmetries in the antimalarial market by selling subsidized ACTs to non-registered pharmacies and across international borders. This is not only

illegal, it may undermine the success of the AMFm subsidy. As the subsidy programme expands to new countries, opportunities for theft and diversion will continue to grow, with possible detrimental effects on the antimalarial drug market. This may cause significant problems for future drug distribution and medicine access.

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## References

1. Bate R: Do Aid Agencies Want to Know When Their Medicines Go Missing? *Health Policy Outlook*. 2010, 5. Available at: <http://www.aei.org/files/2010/12/03/2010-HPO-05-g.pdf> (accessed: January 23, 2012).
2. The PLoS Medicine Editors. Time for a 'Third Wave' of Malaria Activism to Tackle the Drug Stock-out Crisis. *PLoS Med*. 2009, **6**(11): e1000188
3. Source: Affordable Medicines Facility - malaria, The Global Fund to Fight AIDS, Tuberculosis and Malaria. Available at: <http://www.theglobalfund.org/en/activities/amfm/>.
4. Ayodele T, Bate R, Cudjoe F, Hess K, *et al.*: The Global Fund's Malaria Medicine Subsidy: A nice idea with nasty implications. Africa Fighting Malaria 2011. Available at: <http://www.fightingmalaria.org/pdfs/AMFmPolicyPaper.pdf> (accessed: January 23, 2012).
5. Bate, R: Partners in Crime: National Theft of Global Fund Medicines, 2011. Available at: [http://www.fightingmalaria.org/pdfs/AFMBrief\\_NationalTheftofGFMed.pdf](http://www.fightingmalaria.org/pdfs/AFMBrief_NationalTheftofGFMed.pdf) (accessed: January 23, 2012).
6. The PLoS Medicine Editors. Time for a Third Wave of Malaria Activism to Tackle the Drug Stock-out Crisis. *PLoS Med*. 2009, **6**(11): e1000188.
7. Goodman CA, Kangwana BB, Kedenge SV, Memusi DN, *et al.*: Malaria drug shortages in Kenya: A major failure to provide access to effective treatment. *Am. J. Trop. Med. and Hyg*. 2009, **80**: 737-738.
8. Bate R, Hess K, Mooney L: Antimalarial medicine diversion: stock-outs and other public health problems. *Research and Reports in Tropical Medicine*. 2010, 1.
9. Bate R, Coticelli P, Tren R, Attaran A: Antimalarial Drug Quality in the Most Severely Malarious Parts of Africa - A Six Country Study, *PLoS One*. 2008, **3**(5).
10. The Global Fund, Affordable Medicines Facility - malaria, Frequently Asked Questions, July 2011. available at: [http://www.theglobalfund.org/documents/amfm/AMFm\\_AffordableMedicinesFacilityMalaria\\_FAQ\\_en/](http://www.theglobalfund.org/documents/amfm/AMFm_AffordableMedicinesFacilityMalaria_FAQ_en/).
11. Fake medicines may kill a million a year, Inter Press Service (October 8, 2010). Available at: <http://www.verifybrand.com/brand-protection-news/pdfs/Fake-Medicines-May-Kill-A-Million-A-Year.pdf>
12. Taylor P: UK Gang Jailed for Counterfeit Medicines Plot. *Securing Pharma*. February 25, 2011. Available at: <http://www.securingpharma.com/uk-gang-jailed-for-counterfeit-medicines-plot/s40/a869/>