

# When Medicines Fail

## A GLOBAL PUSH TO FIGHT DRUG RESISTANCE

### Drug Resistance: Filling the Information Vacuum

#### A PUBLIC HEALTH TIME BOMB

In an interconnected world, drug resistance increasingly threatens global health, placing a heavy burden on health systems, particularly in developing countries. Drug resistance has drastically increased the costs of fighting tuberculosis and malaria, slowed gains against childhood dysentery and pneumonia, and imperiled efforts to effectively treat people living with HIV/AIDS. Significant investment in drug research and development is undermined as therapies lose efficacy. In some cases, resistance appears almost as quickly as new drugs are appearing on the market. And if the first treatment doesn't work, alternatives are almost always more costly, harder to use, cause worse side effects, and require greater medical oversight. The problem demands an urgent and systematic global response.

#### TAKING ACTION AGAINST RESISTANCE

The Center for Global Development's Drug Resistance Working Group was convened in late 2007 to identify practical and feasible ways that governments, the global health community, private funders, multilateral organizations, NGOs, and other actors at the global level can prevent or contain the emergence of drug resistance in developing countries. The group highlighted the threats posed by this growing global crisis and outlined concrete steps that the international community can take to halt and even turn the tide on resistance.

#### PROBLEM: LACK OF INFORMATION IS A DEFINING FEATURE OF DRUG RESISTANCE

Resistance moves swiftly and invisibly through communities as germs adapt to survive in the presence of drug therapy. Patients often don't know why an illness has worsened or become untreatable, and doctors may prescribe ineffective medicines because they don't know how resistance is spreading locally. Health systems often do not record treatment failure, even when it results in death. It is estimated, for example, that less than 1 in 10 cases of resistant tuberculosis is currently detected.

Efforts to tackle resistance are complicated by enormous gaps in our knowledge of where resistance lurks and how it spreads. The combined efforts of the small-scale and disease-specific surveillance programs that do exist offer a woefully piecemeal picture of drug resistance globally. The lack of systematic data leads to a circle of neglect: Insufficient awareness makes drug resistance a low priority for donors and governments, while a lack of attention and resources keeps hidden the evidence required to address drug resistance in a focused manner. One of the most glaring problems is the lack of basic laboratory services in the developing world, where many countries have at best one or two labs capable of detecting drug-resistant forms of disease.

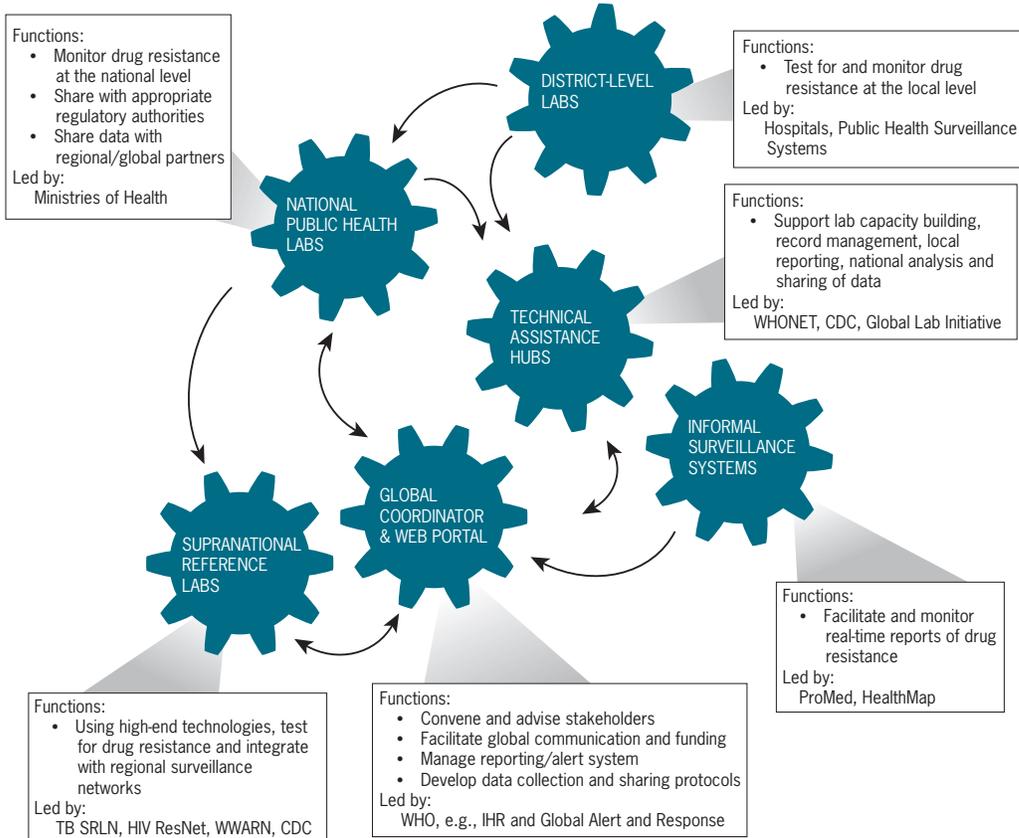
#### SOLUTION: IMPROVE SURVEILLANCE BY COLLECTING AND SHARING RESISTANCE INFORMATION ACROSS NETWORKS OF LABORATORIES

Knowledge about drug resistance provides the foundation to act against it. Global health donors and technical agencies must work with developing country governments to establish a multi-disease surveillance network that can track the emergence and spread of drug-resistant strains of diseases. This can be accomplished by strengthening basic microbiological laboratory services and linking them to public health surveillance systems. Given the common drivers of drug resistance across diseases, groups and networks currently working on disease-specific efforts and focused on surveillance should collaborate to make best use of scarce capacity and identify resistance across diseases.

But simply gathering good information is not enough. It is equally important to ensure that this information is used both to guide policymaking at the national and regional levels and inform patient diagnosis and care at the local level. Three additional steps can be taken to ensure the use of an improved drug resistance knowledge base: (i) produce a biennial global drug resistance report; (ii) create a Web-based resource center to aggregate and share data;

and (iii) have the World Health Organization provide direction to countries on when and how to report on the emergence or transmission of drug-resistant forms of diseases.

## AN INTERLOCKING SYSTEM FOR DRUG RESISTANCE SURVEILLANCE



FOR MORE INFORMATION OR TO READ THE FULL REPORT, PLEASE VISIT [www.WhenMedicinesFail.org](http://www.WhenMedicinesFail.org) or e-mail [drug\\_resistance@cgdev.org](mailto:drug_resistance@cgdev.org).

## RELATED RESOURCES

- HealthMap ([www.healthmap.org](http://www.healthmap.org)) and ProMed ([www.promedmail.org](http://www.promedmail.org)) are examples of 'informal,' real-time disease surveillance platforms.
- WHONET ([www.whonet.org](http://www.whonet.org)) is the only global initiative focused specifically on giving microbiology labs the tools they need to conduct drug resistance surveillance.
- Disease-specific networks focused on surveillance and information sharing include:
  - HIV ResNet ([www.who.int/hiv/topics/drugresistance/hivresnet/en/](http://www.who.int/hiv/topics/drugresistance/hivresnet/en/))
  - WorldWide Antimalarial Resistance Network ([www.wwarn.org](http://www.wwarn.org))
  - Global Laboratory Initiative, focused on TB ([www.stoptb.org/wg/gli/](http://www.stoptb.org/wg/gli/))

