SUPERBUGS & THE ROLE OF DIAGNOSTICS EXPLAINED
Superbugs are microorganisms resistant to drugs that were previously effective.
WHAT’S MAKING THE PROBLEM WORSE?

- Antibiotics
- Healthcare
- Public
- Water supply
- Farming
34 million people are living with HIV infection, out of which 8 million are receiving antiretroviral therapy (2011)

Data suggests association between high levels of antiretroviral therapy and increased levels of HIV resistance.

Tuberculosis kills more people globally than any other infection.

In 2012 extensively drug-resistant TB has been identified in 92 countries.

219 million cases of malaria occurred worldwide and 660,000 people died from the disease (2010)

Determining drug resistance for malaria is tough, yet antimalarial resistant variants have been threatening malaria control since the ‘70s.

Source: WHO report on Antimicrobial resistance 2014
DETERMINING HEALTH WITH IN VITRO DIAGNOSTICS

Diagnosis

IVD results help identify a specific condition, its development and treatment selection.

Treatment Selection

Treatment decisions such as medications, therapy or lifestyle changes are prescribed.

Treatment

Treatment is carried out using medical devices or pharmaceuticals.

Monitoring

IVD results help check status of a disease.

Did the treatment work?

No

Yes

CURE
Superbugs have no respect for national borders.
Proper treatment starts with accurate diagnosis.
“Without urgent, coordinated action by many stakeholders, the world is headed for a post-antibiotic era, in which common infections and minor injuries which have been treatable for decades can once again kill,”

“This is a somewhat grim picture, but I also want to point out that it’s not a hopeless picture.. if countries and other stakeholders see this report and respond to this report as a call of action.”

-- Dr Keiji Fukuda, WHO’s Assistant Director-General for Health Security.
Percentage of previously treated TB cases with multidrug-resistant tuberculosis*

* Figures are based on the most recent year for which data have been reported, which varies among countries. The high percentages of previously treated TB cases with MDR-TB in Bahrain, Bonaire – Saint Eustatius and Saba, Cook Islands, Iceland, Sao Tome and Principe, and Lebanon refer to only a small number of notified cases (< 10).

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.


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GREATEST THREATS: MDR-TB*

Total TB cases detected globally (in millions)

Total of MDR-TB cases confirmed globally (in thousands)

*Multi-drug resistant tuberculosis
Source: WHO Global Tuberculosis Report 2013
DIAGNOSING MDR-TB

2 WEEKS

Accelerating time of diagnosis

2 HOURS
**GREATEST THREATS: HIV**

**US:** 16% of newly diagnosed HIV patients carry resistant virus (2010)

**Europe:** drug-resistant HIV increased by 35% in a decade (2003-2013)

**Southern Africa:** drug-resistant HIV increase at 14% per year (2012)

**Eastern Africa:** drug-resistant HIV increase at 29% per year (2012)

Sources:
- WHO HIV Drug Resistance Report 2012
- European AIDS Conference 2013
- CDC Analysis 2013
DIAGNOSING D-R HIV*

Genotypic testing
Do you have HIV?

Phenotypic testing
Do you have drug-resistant HIV?

*Drug-resistant HIV
WHAT ARE PUBLIC BODIES DOING?

2001
WHO publishes Global Strategy for Containment of Antimicrobial Resistance

10.09.2013
UK Ministry of Health publishes 6 year AMR Strategy

20.05.2014
Side-event at WHA on “The Fight Against Antimicrobial Resistance: Are Diagnostics Winning?”

16.10.2007
Debate in the European Parliament on antibiotic resistance urges raise of awareness

30.04.2014
WHO publishes the first Global Report on AMR
WHAT IS THE INDUSTRY DOING?

We work together with governments and supernational organisations:

1. Develop tests that are necessary

2. Make tests more accessible and available

3. Empower healthcare professionals with data necessary to prescribe treatment
Read more about superbugs on medtechviews.eu

MedTechViews.eu is an industry platform for dialogue about medical technologies between various actors in healthcare.

**HERE’S HOW**

- **Superbugs: Incentivising medtech to deliver solutions**
- **Superbugs: How diagnostics can help doctors reduce over-prescription of antibiotics**

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