



## **Delivering on Antimicrobial Resistance Agenda (AMR) Not Possible without Improving Fungal Diagnostic Capabilities**

Ignorance of fungal disease and lack of diagnostics across the world is causing doctors to unknowingly overprescribe antibiotics a new report warns\*.

Experts from GAFFI (the Global Action Fund for Fungal Infections) caution that we will lose the battle against antibiotic resistance unless doctors better understand how to suspect fungal disease and have proper access to the appropriate testing for it.

In a paper published today in the cutting edge US journal *Emerging Infectious Diseases\**, several leading authors from GAFFI warn of the gross misuse of antibacterial antibiotics, because doctors treat without knowing what is wrong with their patients. The authors focus on scenarios, all common, where the lack of the best diagnostic tests prevent the correct antimicrobial being given.

Lord Jim O'Neill of Gatley, lately Chairman of the UK's Review on Antimicrobial Resistance\*\* declared: "Improving diagnostic capability and responsiveness is at the heart of better antimicrobial prescribing, everywhere. Major efforts to improve fungal disease diagnostics are obviously necessary to optimise and minimise the use of both antibiotics and antifungals."

Dr David Denning, President of GAFFI and also of The University of Manchester, decried the lack of fungal diagnostics in most of the world. He said: 'Solving AMR is not possible without accurate and timely diagnosis. Fungal disease diagnostics are critical in the AMR fight, and will improve survival from fungal disease across the world. The close link between fungal diagnostics and antibacterial prescribing needs a great deal more attention.'

The GAFFI team report some people diagnosed with TB of the lungs, don't actually have TB (smear negative) but a fungal infection instead. A simple antibody test can pick up the fungus *Aspergillus*, and unnecessary anti-TB antibiotics stopped and antifungal drugs given. In 2013, over 2.7 million 'smear negative TB' cases were notified to the World Health Organization.

In intensive care units *Candida* yeast bloodstream and tissue infections are common, yet only 40 per cent of patient have blood growing the organism. In many cases after antibacterial is given, without success. There are over 750,000 such cases worldwide.

Many asthma and patients with emphysema (COPD) get exacerbations, which are treated with antibacterials and steroids. Some have fungal asthma or are admitted to hospital with COPD. There are over 200 million asthmatics and an estimated 6-15 million have fungal asthma, which is diagnosable with skin testing or blood tests, which would respond to antifungal agents, minimizing antibacterial use. COPD is common in the over 40's, and in China alone nearly 12 million were hospitalized. A study there showed the severe fungal infection aspergillosis developed in 3.9% (462,000), and 43% died (200,000). Almost all will have been give antibacterials to no avail.

*Pneumocystis pneumonia* (PCP) is a common problem in AIDS. Molecular testing is best for diagnosis, but not available outside most of Europe. The only way of diagnosing *Pneumocystis* before death in children, without putting them to sleep for a bronchoscopy, is with the molecular test. So many of the 400,000 with PCP are not diagnosed and even more without PCP are treated unnecessarily. Probably over two million get noxious PCP therapy for no reason each year.

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## Notes to Editors

Reference:

[http://wwwnc.cdc.gov/eid/article/23/2/15-2042\\_article.htm](http://wwwnc.cdc.gov/eid/article/23/2/15-2042_article.htm)

**The Global Action Fund for Fungal Infections (GAFFI):** GAFFI'S vision is to reduce illness and death associated with fungal diseases worldwide. GAFFI works to improve the health of patients suffering from serious fungal infections through better patient care, improved access to diagnostics and treatment, and by provision of educational resources to health professionals. As a Geneva-based Foundation, GAFFI is the major advocacy and fund raising body for a number of implementing partners, including governments and both national and international global health agencies. GAFFI issued a 10-year Roadmap in 2015 entitled '95-95 by 2025' calling for 95% of the world's population to have access to fungal diagnostics and antifungal therapy by 2025.

\*\*The Review on Antimicrobial Resistance (AMR), was commissioned in July 2014 by the then Prime Minister, David Cameron, who asked economist Jim O'Neill - now Lord Jim O'Neill of Gatley - to analyse the global problem of rising drug resistance and propose concrete actions to tackle it internationally.

The Review on AMR was jointly supported by the UK Government and the Wellcome Trust, although operated with full independence from both. Established as a two-year, time-limited process, the Review engaged widely with international stakeholders to understand and propose solutions to the problem of drug-resistant infections from an economic and social perspective, and produced its final report and recommendations last summer.

*If we fail to act, we are looking at an almost unthinkable scenario where antibiotics no longer work and we are cast back into the dark ages of medicine" – David Cameron, Former UK Prime Minister*

It concluded that the real implications of spreading drug resistance will be felt the world over, with developing countries and large emerging nations bearing the brunt of this problem. Routine surgeries and minor infections will become life-threatening once again and the hard won victories against infectious diseases of the last fifty years will be jeopardised. Hospital stays and expenses, for both public healthcare providers and for out of –pocket payers will increase significantly.

Drug resistant infections are already on the rise with numbers suggesting that up to 50,000 lives are lost each year to antibiotic-resistant infections in Europe and the US alone. Globally, at least 700,000 die each year of drug resistance in illnesses such as bacterial infections, malaria, HIV/Aids or tuberculosis.

The Review on AMR assessed solutions to avoid these terrible costs, producing thematic papers looking at all aspects of the problems raised by drug resistance – including the supply of new drugs, the use of diagnostics, surveillance, infection control, alternative treatments and the use of antibiotics in agriculture.

*We have reached a critical point and must act now on a global scale to slow down antimicrobial resistance" – Professor Dame Sally Davies, UK Chief Medical Officer*