



# Stop AMR

## Global Media Monitor

11 – 17 January 2020

### New strategy in the fight against antibiotic resistance

Bacteria that evolve antibiotic resistance naturally outcompete non-resistant strains in the presence of said antibiotic. As such, the overall bacterial population soon consists of a majority of resistant individuals leading to the overall rise of antibiotic resistance we see today. In addition to developing new traditional antibiotics that target individual bacteria through the classical mechanisms, which would also eventually lose its efficacy in the face of evolutionary pressure, it is interesting to develop drugs that target mechanisms that are beneficial for bacteria in a group. In other words, target biofilm formation mechanisms. Indeed, biofilms are a significant reason for bacterial infections resisting to mechanical and chemical attacks and as such is a worthy target in itself. However, researchers at the University of KU Leuven have discovered that by targeting the slime production of Salmonella bacteria, ergo weakening the community, there was no development of resistance. If one bacterium develops resistance and persists in producing slime, which is an energy costly endeavour, it will do so to the benefit of the population of non-slime producing bacteria, and therefore be outcompeted.

"In contrast to traditional antibiotics, this substance therefore does not cause selection for, but against resistance. "Antimicrobial treatments that stop bacteria from working together can therefore be a viable solution to the current problem of antibiotic resistance." Stated Professor Steenackers, lead author of the study. "Our aim is to introduce these new antimicrobials into clinical practice," explains Steenackers. "They can be used as a preventive medicine in the form of a pill, or as a coating on implants to reduce the risk of infections."

Applications of such methodology would range further than medicine including sectors such as agriculture or

industry, where biofilms can present significant problems.

Source: [ScienceDaily](#), 14 January 2020

### Antibiotics often sold without prescription in retail pharmacies in China

In 2016 China announced a plan to address AMR at the G20 summit; the plan included making all antibiotics prescription only in all provinces by 2020. Despite this, a recent study published in Antimicrobial Resistance & Infections Control suggests this goal has not yet been met. From July to September 2017 forty medical students acted as real patients in 13 Chinese provinces to investigate whether they could obtain antibiotics without a prescription. The authors of the study found that students were able to obtain antibiotics 82.6% percent of the time (925 times out of 1,106 different pharmacies). 25.2% of the pharmacies gave out antibiotics when only mild symptoms were described; 52.1% gave out antibiotics when specifically asked for them. Only 113 pharmacies in the sample (10.2%) refused to give antibiotics, specifying the legal need for a prescription.

The authors found no significant difference across urban and rural pharmacies or between independent and chain pharmacies. They did note, however, that it was easier to obtain antibiotics from pharmacies further than 2km from a hospital.

Source: [EurekAlert!](#) 14 January 2020

### Lack of ID consult tied to higher death rates, inappropriate antibiotics

University of Minnesota researchers found that having no infectious disease (ID) consultation is associated with



four times the risk of death at 3 months and six times the risk of death in the hospital among MRSA patients. They found that patients who received consultation were nine times more likely to receive the appropriate antimicrobials. The study included 229 bloodstream infections; of those patients, 181 had ID consultation.

Source: [CIDRAP](#), 11 January 2020

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### **C difficile carriage tied to living near livestock farms**

In a study of 3,043 adults treated at Medical College of Wisconsin, researchers found those living near livestock farms had a higher rate of *Clostridioides difficile* carriage at hospital admission. 10.4% of participants test positive for *C difficile* and patients admitted to haematology-oncology unites were 35% more likely to test positive. Additionally, hospitalization in the preceding months increased the likelihood of colonization by 70%.

Regardless of previous hospitalization, the authors found that living 1 mile from a livestock farm doubled the likelihood of colonization compared to those living 50 miles from a farm. They did not find similar associations with water treatment plants, meat processing plants, or farm raw material plants.

Source: [CIDRAP](#), 10 January 2020

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### **Report: Thailand's coronavirus patient didn't visit outbreak market**

Thai health officials have confirmed that a woman travelling from China to Thailand has been infected with the new coronavirus strain linked to the Wuhan outbreak. The woman was identified and hospitalized on 8 January, making her the first known case outside of China.

Of the 41 diagnosed with the virus, 1 has died, 7 have been discharged from the hospital, and 6 are still in critical condition. Chinese authorities have reported there is no evidence of human to human transmission, but many are still sceptical after the misleading information given by officials following the 2002/2003 SARS outbreak.

New information has highlighted that the infected woman had not visited the market at the epicentre the epidemic and this could point towards the possibility of human-to-human infection.

Source: [CIDRAP](#), [The Guardian](#), 14 January 2020

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### **Japan has 1st novel coronavirus case; China reports another death**

In addition to Thailand, Japan has become the second country to report a patient of the Wuhan outbreak of novel coronavirus (2019-nCoV). This latest patient did not visit the seafood market at the epicentre of the epidemic but could have had close contacts with some of the pneumonia patients, which raises further concerns of possible human-to-human infection spread. In addition, the second death has been reported by Chinese authorities.

The WHO has acknowledged Japan's report and stated it was not surprising and that other countries should be ready for similar cases and prepare accordingly. They added that "The fact that some cases do not seem to be linked with the Huanan seafood market means we cannot exclude the possibility of limited human-to-human transmission."

A new diagnostic test for this new coronavirus has just been developed by a research team from the German Centre for Infection Research in collaboration with biologists at Charite Hospital in Berlin. The team leader stated that "Now that this diagnostic test is widely available, I expect that it won't be long before we are able to reliably diagnose suspected cases. This will also help scientists understand whether the virus is capable of spreading from human to human."

Source: [CIDRAP](#), 16 January 2020

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### **Estimating the Size of the U.S. Market for New Antibiotics with Activity against Carbapenem-Resistant Enterobacteriaceae**

Antibiotic development is a costly endeavour, both in terms of funding and time, and the result is never guaranteed thereby making this market unattractive. This is further compounded by an increase in stewardship measures that will decrease the overall antimicrobial



market. One particular sector of this market is the development of new antibiotics that target carbapenem-resistant Enterobacteriaceae (CRE), such as ceftazidime-avibactam, meropenem-vaborbactam, and plazomicin. The companies developing these drugs are facing financial difficulties with the overall US market share of these drugs between February 2018 to January 2019 only amounting to \$101 million. The authors of a study in the American Society for Microbiology, Cornelius J. Clancy, M. Hong Nguyen, estimate that at the moment, the market for new anti-CRE antibiotics is at \$289 million and that in the absence of a radical change in model that would include pull investments for the industry, this sector will lose its viability.

Source: [CARB-X](#), 14 January 2020