

Vaccines work – for superbugs too

March 1 2019, by Ed Whiting



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There's a vital set of tools to help us tackle the threat of superbugs that we're not using to their full potential. Vaccines.

Last November, I blogged about [the opportunities ahead in 2019 to supercharge the global response to anti-microbial resistance \(opens in a new tab\)](#). Two months in and we are seeing some promising progress,

both from the UN group charged with improving the global response, and the [UK government publishing their plans \(opens in a new tab\)](#) to step up efforts to produce new antibiotics and conserve the drugs we already have.

As all of this work gathers pace, I wanted to talk about another vital set of tools to help us tackle the threat of superbugs, that we're not yet using to their full potential. Vaccines.

Discovering new antibiotics to replace those that no longer work is essential, but if we could use vaccines (already saving two to three million lives a year) to prevent the spread of infections in the first place we could save many more lives.

There's already promising evidence that vaccines can have both primary and secondary effects on drug-resistant infections. Recent research showed that the H. influenzae b. and S. pneumoniae vaccines dramatically reduced the burden of these diseases and the incidences of resistant strains. Vaccines can also reduce the amount of antibiotics used and therefore the selection pressure on pathogens.

Wellcome recently commissioned a [report to identify the role vaccines could play \(opens in a new tab\)](#) for the bacteria the World Health Organization has recommended as the most urgent priorities in terms of drug resistance. Our report found that for many pathogens there could be huge value in developing a [vaccine](#).

Vaccines also have a unique advantage because resistance to vaccines is incredibly rare. The same routine vaccines we give to young child for diphtheria and whooping cough are still being used 70 years on. As a result, while we urgently need to focus on conserving the antibiotics we have, we can roll out vaccines to as many people as possible without the risk of resistance developing. In fact, vaccines work better the more

people get them.

Using vaccines to tackle AMR is not a new idea. Vaccines were one of the key recommendations from the 2016 O'Neill review, and [GAVI, the Vaccine Alliance \(opens in a new tab\)](#), has committed \$85 million for the next year to introduce a new typhoid vaccine, which is vital as a recent outbreak of extensively drug resistant typhoid is taking hold in Pakistan. Gavi's replenishment in 2020 provides the ideal opportunity to double down on vaccine investment for AMR as well as wider public health challenges.

On 26 February, UK Health Secretary Matt Hancock opened a joint All-Parliamentary meeting on vaccines for antimicrobial resistance and re-emphasised the UK's commitment to addressing the threat of superbugs. The UK government's 20-year vision for antimicrobial resistance rightly recognised a role for vaccines, and we're keen to work with them to make this ambition a reality.

For example, the [CARB-X \(opens in a new tab\)](#) partnership, which we have supported as a founder member (recently joined by the UK government), has also been funding vaccines for superbugs alongside funding for [new antibiotics](#).

We want to see other partners across industry and civil society factor in the possible impact that a [vaccine](#) could have on AMR when they make decisions about which vaccines to invest in – and want this to be part of the conversation when the UK hosts the funding replenishment conference for GAVI next year. We would also like to see the value of vaccines for antimicrobial [resistance](#) recognised by their inclusion in AMR National Action Plans by countries around the world.

This is a really exciting opportunity for both the AMR and vaccines communities to work together on one of the world's most pressing global

health challenges. Vaccines are our first lines of defence against a huge number of health problems – and they can be for superbugs as well.

Provided by Wellcome Trust

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