

# Antimicrobial Resistance

(AMR) is recognised as one of the world's most pressing global health priorities

The World Health Organisation has described antimicrobial resistance (AMR) as one of the key global health issues facing our generation. If no action is taken, it has been estimated<sup>1</sup> that 10 million lives a year could be lost as a result of AMR by 2050, exceeding the number of deaths caused by cancer (8.2 million).

In Australia, a recent study<sup>2</sup> has found that on any given day, one in every ten acute adult inpatients has at least one hospital acquired infection.



## WHAT IS AMR?

AMR occurs when bacteria and other pathogens evolve so that they can resist the drugs that have been used to combat them and they become resistant and survive treatment with antibiotics.<sup>3</sup>

## WHY IS AMR A PROBLEM?

AMR reduces the range of antimicrobials available to treat infections. It also increases morbidity and mortality associated with infections caused by multidrug-resistant organisms.<sup>4</sup> New antimicrobial drugs are

urgently needed to address this growing threat, however there has been a significant decline in the number of companies investing in antimicrobial innovation.

## THE MARKET FOR NOVEL ANTIMICROBIALS IS BROKEN

In Australia there are multiple challenges facing companies that invest in the development of novel antimicrobials:



**Uptake of novel antimicrobials is slow** as they are typically held in reserve by healthcare practitioners until resistance has emerged to older treatments.



**There is no national reimbursement system** for antimicrobials in Australia. They are purchased by individual hospitals, which have highly constrained budgets.<sup>5</sup>



The need for hospitals to manage their budgets means that **the use of novel antimicrobials can be discouraged**, even when they may be a more appropriate treatment for a patient than a generic antimicrobial.<sup>6</sup>



**Novel antimicrobials are generally undervalued** by reimbursement systems relative to the benefits they bring to society as indispensable, life-saving drugs, because of the low cost comparator, which is often generic.<sup>7</sup>

## THE UK'S NEW APPROACH TO ENCOURAGING ANTIMICROBIAL R&D INVESTMENT



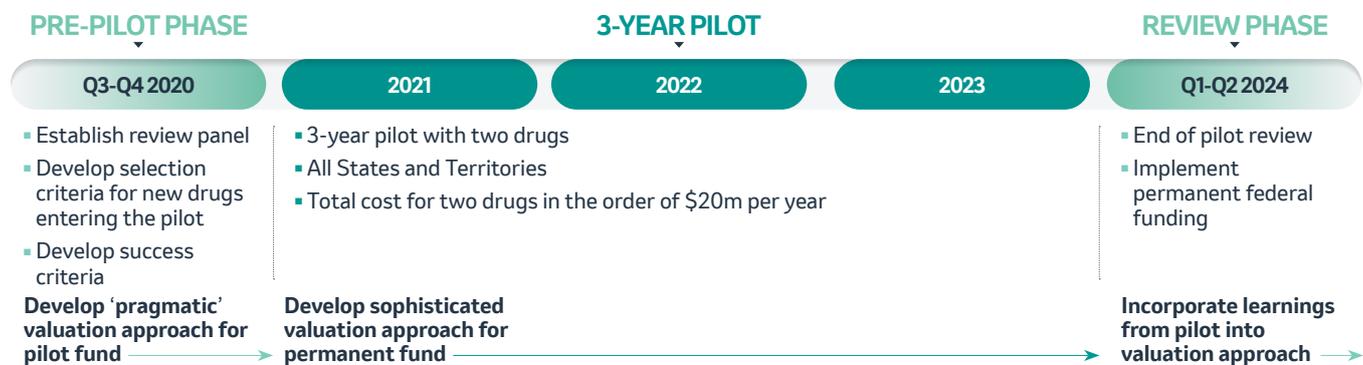
The UK recently launched a pilot using a model which de-links value and volume - companies are paid an annual subscription fee to supply as much or as little of an antimicrobial as required.

This results in more predictable revenue for the manufacturer, and coverage for the health system in the event of disease outbreaks.<sup>8</sup>



# An Australian pilot fund for novel antimicrobials would show global leadership

Investing \$20M per year for three years in an innovative pilot for funding novel antimicrobials would demonstrate Australia's policy leadership in the face of a looming global health crisis.



## FEATURES OF THE PILOT

- A three-year pilot, using the de-linked model currently being explored by the UK, whereby a set fee is paid annually to the sponsor, regardless of how much or how little of the antimicrobial is required.
- Two novel antimicrobials selected to participate, targeting priority pathogens.
- A pragmatic approach to valuation of the participating drugs.



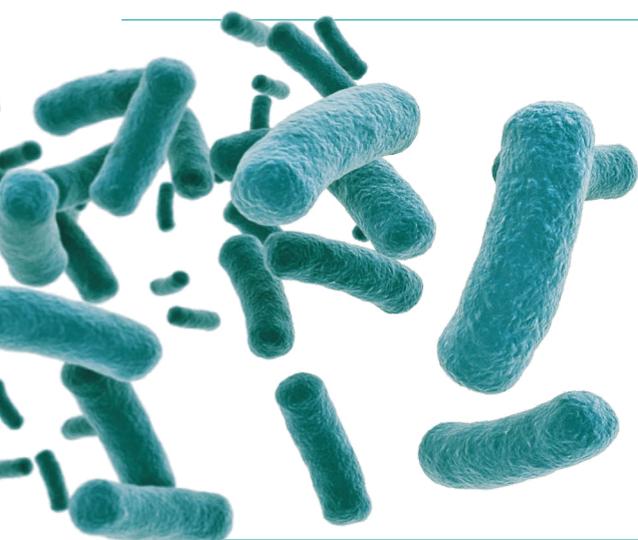
## ESTIMATED COST OF PILOT

- The cost will depend on the specific drugs that are chosen to participate in the pilot.
- A pragmatic valuation approach shows that the cost of funding one drug could be estimated at \$10.4M per year.
- The total cost of the pilot would then be in the order of \$20M per year, for three years.



## BENEFITS OF THE PILOT

- Short term:** two novel antimicrobials, targeting priority pathogens, would be available for clinicians to prescribe to the right patient at the right time, with no budget constraints.
- Long term:** the pilot would encourage investment in research and development, and would also set an example for other countries to establish similar programs.



## We must work together to tackle the growing threat of AMR

A new funding pathway for novel antimicrobials is just one piece of the puzzle. In order to slow the development of AMR in Australia and the region, all stakeholders must partner more closely to improve stewardship, surveillance, diagnostics and the regulatory framework. Working on all of these aspects in parallel will give the best chance of addressing the growing threat of AMR.

1. Jim O'Neill, 2014, *Review on Antimicrobial Resistance. Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations* 2. Philip L. Russo et.al 2019, *The prevalence of healthcare associated infections among adult inpatients at nineteen large Australian acute-care public hospitals: a point prevalence survey*, *Antimicrobial Resistance and Infection Control* 3. Jim O'Neill, 2014, *Review on Antimicrobial Resistance. Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations* 4. Australian Group on Antimicrobial Resistance; *Sepsis Outcome Programs, 2018 Report* 5. Department of Health and Agriculture, *Responding to the Threat of Antimicrobial Resistance: Australia's First National Antimicrobial Resistance Strategy 2015-2019* 6. Bhatti, T et.al 2018, *A Perspective on Incentives for Novel Inpatient Antibiotics: No One-Size-Fits-All*, *Journal of Law, Medicines and Ethics*, p60 7. Neri, M., Hampson, G., Henshall, C., and Towse, A., 2019. *HTA and payment mechanisms for new drugs to tackle AMR*. OHE Research Paper, London: Office of Health Economics 8. Neri, M., Hampson, G., Henshall, C., and Towse, A., 2019. *HTA and payment mechanisms for new drugs to tackle AMR*. OHE Research Paper, London: Office of Health Economics