NCRIS Health Group

Enabling health innovation and translation

NCRIS National Research Infrastructure for Australia An Australian Government Initiative Health Group

Australian Government

Together, we tackle complex, multidisciplinary medical challenges using world-class national research infrastructure. Our experts, data and tools shepherd health discoveries toward better prevention, diagnosis and treatments for Australians. The NCRIS Health Group accelerates Australian health research and industry innovation, reducing the time and costs of getting new health solutions to patients.

Battling bacteria

Defence against antibiotic-resistant infections driven by coordinated national research

Australian researchers and industry partners have used the NCRIS Health Group capabilities to confront infectious diseases that kill more people globally than cancer and drive rising healthcare costs, such as sepsis, pneumonia and meningitis.

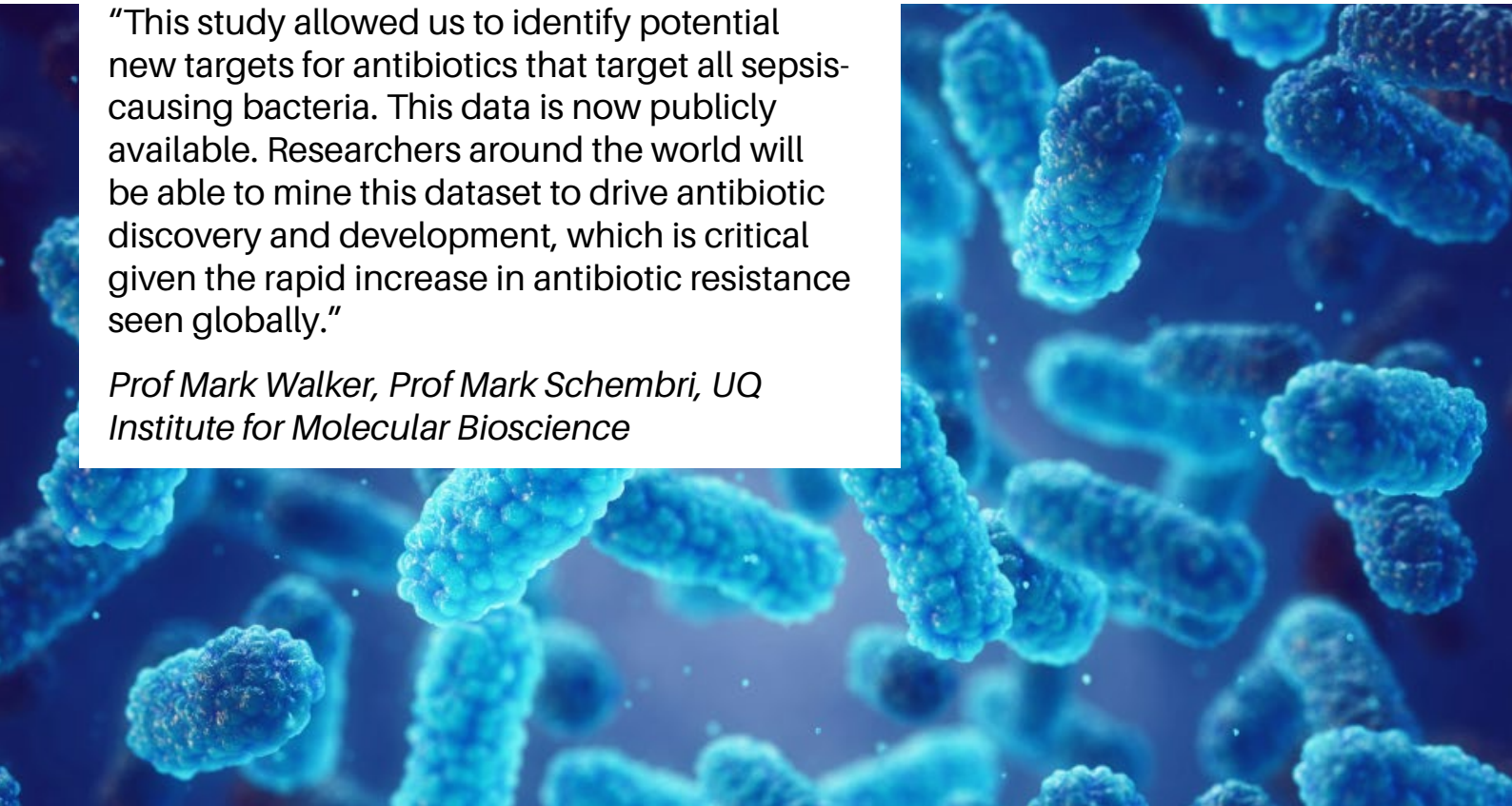
Bioplatforms Australia – through the Antibiotic Resistant Pathogens Framework Data Initiative – created data resources to study virus evolution to help with new clinical treatments; improve early diagnosis, treatment, and prevention of life-threatening bacterial infections; coordinate national teams; and help researchers store, share and analyse data.

This work has guided new strategies that reduce people's illnesses without worsening resistance. The NCRIS Health Group has turned molecular insight into vaccine development, strengthening Australia's capacity to address resistant infections and protect public health.

Invasive pneumococcal diseases
(severe pneumonia, meningitis and bloodstream infections) were at a
20-year high
in 2024, and cause significant illness and mortality in Australia

"This study allowed us to identify potential new targets for antibiotics that target all sepsis-causing bacteria. This data is now publicly available. Researchers around the world will be able to mine this dataset to drive antibiotic discovery and development, which is critical given the rapid increase in antibiotic resistance seen globally."

Prof Mark Walker, Prof Mark Schembri, UQ Institute for Molecular Bioscience



Battling bacteria

Investing in national preparedness: new Australian antibiotic enters Phase 1 trials

Supported by the NCRIS Health Group, Australian researchers working with industry have developed a promising new antibiotic to tackle drug-resistant bacteria that cause life-threatening infections such as sepsis. Antibiotic resistance already affects tens of thousands of Australians each year and is a growing global threat.

Researchers used the NCRIS providers Phenomics Australia and National Deuteration Facility to test its safety, side effects and how the new drug works in the body – generating the high-quality data needed to move from laboratory discovery to human trials. The new drug has now successfully entered Phase 1 clinical trials. Shared capabilities enabled faster collaboration, rigorous testing and confidence in the early results, accelerating the process toward clinical trials.

The Australian Research Data Commons also supported a tool to assess if a bacteria-killing phage is suitable for targeted therapy within 10 minutes. Phages identified using this tool have then been imaged at Microscopy Australia revealing mechanics that help to explain why some are more effective at killing bacteria than others.

This case illustrates how NCRIS Health Group infrastructure enables Australia's healthcare systems with preparedness and prevention.

Each year, sepsis affects over

55,000 Australians

and causes about

8,500 deaths

Antibiotic resistance costs the Australian economy about

$700 million

a year

"Since 2013, Professor Li and his team have been utilising the unique services offered by Phenomics Australia. … Due to the success of the collaboration, there have been a number of publications and advancements in drug development for multidrug-resistant organisms."

Prof Janet Keast, University of Melbourne

