



2023 Quarter 1 Newsletter



Welcome to the Easter Edition of our Newsletter! A lot has happened since our last update, and we are excited to share the news. First of all, we would like to invite you to our first official program meeting:

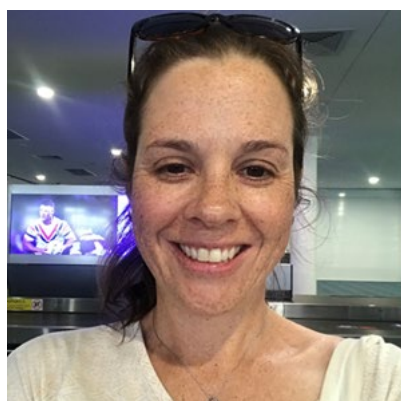


PROGRAM WIDE FACE TO FACE MEETING – SAVE THE DATE: *** 24TH JULY 2023, 4PM ***

At this meeting, we will provide a brief update about our growing program and share the progress of new and ongoing projects. We will hear about each of our **main themes**: (1) Management of Severe Bacterial Infections, (2) Infection Prevention, (3) Pandemic Preparedness, and (4) Will there be a new theme? Join in and find out! We will also get an update from the program's **2022 & 2023 Seed Grant** recipients and potentially see some preliminary data. As always, there will be time for an open discussion of ideas and new projects. Join us in person at the HMRI building, have a drink, and grab some finger food!

STAFF UPDATES

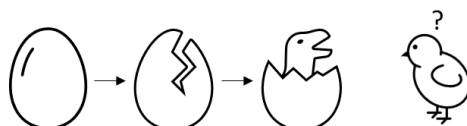
The Infection Research Program is growing. Welcome to the team, Sarah Leask, Stuart Browne, and Dr Behnaz Khavari (left to right).



Sarah works with the HMRI Data Sciences group and has joined the HMRI Infection Research Program to help with data management for the SNAP and ASCOT trials 2 days/week. She only made the jump across to the field of Data Sciences last year after spending the previous 17 years in the veterinary pharmaceutical industry as an R&D Chemist. She's a Newcastle local who loves exploring everything this area has to offer with her partner, two daughters and their two furry, four legged companions.

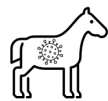
Stuart has joined the program as the PREVENT project officer 3 days/week. He has a background in Allied Health and also works at Wallsend Population Health as a Health Promotion Officer. Stuart also contributed to the COVID-19 response at both the JHH and Belmont Vaccination Centres and was Co-Manager of the PHU Venue Risk Assessment Team.

Behnaz graduated from a PhD program in Medical Biochemistry from the University of Newcastle in 2021. She is currently a postdoctoral research fellow at the School of Biomedical Sciences and Pharmacy. Behnaz will join the HMRI Infection Research Program in May for 2 days/week as a clinical research officer to assist with projects set up and running of clinical trials.





PROJECT UPDATES - THE PREVENT STUDY



PREVENT (Pandemic RESpiratory Virus survEillaNce Trial) is a respiratory virus surveillance study to investigate which respiratory viruses are circulating in the Newcastle and Lake Macquarie LGA over the year. Fifty existing participants of the FluTracking survey will be invited to participate and collect a nasal swab each week for a year starting this May. We will then test by PCR for 16 common respiratory viruses. The PREVENT study will tell us which viruses are predominant in our community cohort at a given time, how many asymptomatic people harbour detectable levels of viruses in their nose like a trojan horse without getting sick, and whether non-SARS coronaviruses are still around since COVID-19 took over. "What if someone has symptoms but tests negative for all tested viruses?" you might ask. Great question! Those samples will be further analysed using a method called shotgun metagenomics and will potentially lead to the discovery of new, unknown viruses.

If you are not a FluTracker already, please consider clicking [here](#) to sign up. Participation takes less than 10 seconds a week



2022 RESEARCH SEED GRANTS – PROGRESS UPDATES

Our two first seed-funded projects will investigate novel diagnostics in prosthetic joint infection, and immune biomarkers in renal transplant recipients. Laboratory consumables have been ordered and both projects have reached their productive phase of generating data. We can't wait to see the outputs! 🧪

2023 RESEARCH SEED GRANTS – RECIPIENTS

Congratulations Dr Toby Mills and Team on your successful application! Dr Toby Mills, Prof Nathan Bartlett, and Dr Camille Esneau will be working on an arbovirus surveillance study in Newcastle and the Hunter to better understand known and emerging threats of **Mosquito Borne Diseases**.

*Mosquito borne viruses pose an ongoing risk to human health in Australia, as evidenced by the recent spread of Japanese Encephalitis virus. Key to managing this risk is surveillance of circulating mosquito borne viruses and mosquito populations. This **Infection Research Program Seed Project** aims to establish a local platform for surveillance of mosquito populations. By combining the existing mosquito trapping capacity of Dr Toby Mills (University of Newcastle) with the molecular analysis facilities available at HMRI (Prof Nathan Bartlett & Dr Camille Esneau), we will enable the close surveillance of circulating arboviruses in the Newcastle and Hunter region including the monitoring of*



uncommon arboviruses, and potential discovery of new viruses. Our approach will combine targeted qPCR assays of routinely surveyed arboviruses (Ross River virus, Japanese Encephalitis virus, Barmah Forest virus and Murry Valley encephalitis virus) along with development of pan-flavivirus and pan-alphavirus PCR assays. This project will help us to better understand what local mosquito populations are the most dangerous for the local community and inform the design of local interventions to protect against known and yet to be identified mosquito viruses.





RECENT PAPERS FROM OUR TEAM

In each edition of this newsletter, we will highlight a few recent publications by our affiliates, and relevant to the aims and themes of our program. Please let us know about *your* recent papers.

[Have gloves and gowns had their day? An Australian and New Zealand practice and attitudes survey about contact precautions for MRSA and VRE colonisation](#)

(**S Browning, JS Davis, B Mitchell**, March 2023, *Infection, Disease and Health* - accepted for publication)



- ➔ A cross-sectional online survey of infection prevention professionals, infectious diseases physicians and microbiologists in Australian and New Zealand hospitals was conducted. The purpose was to explore variations in current approaches to known MRSA and VRE colonisation and determine clinical equipoise for a proposed randomised control trial (RCT) to withdraw the use of gowns and gloves in this setting. Of the 122 participating hospitals, interest in removing glove and gown use for MRSA (72% and 73%, respectively) and VRE (70% and 68%, respectively) was expressed by most, further exploring this topic.



[VRE acquisition in hospital and its association with hospital antimicrobial usage -a non-linear analysis of an extended time series](#)

(**JK Ferguson** et al, February 2023, *Infection, Disease and Health*)



- ➔ This sophisticated analysis showed that, during a national shortage of the broad-spectrum antibiotic piperacillin-tazobactam (PT), hospital vancomycin resistant enterococcus (VRE) acquisitions fell significantly by 64%. PT usage greater than 17.4 defined daily doses/1000 occupied bed-days (95%CI: 13.4, 20.5) was associated with higher onset of hospital VRE.



[Effect of Selective Decontamination of the Digestive Tract on Hospital Mortality in Critically Ill Patients Receiving Mechanical Ventilation: A Randomized Clinical Trial](#)

JA Myburgh, ..., **JS Davis** et al, November 2022, *Journal of American Medical Association*)



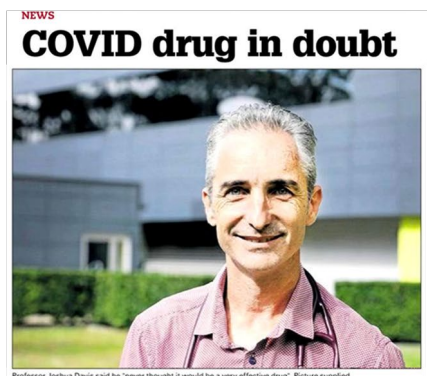
- ➔ In this large multicentre cluster randomised trial, 5,982 critically ill patients were randomly assigned to receive prophylactic antibiotics to decrease the load of pathogenic bacteria in the gut (SDD), or to standard of care. Those who received SDD had a 2% absolute reduction in hospital mortality, but this effect size was small and not statistically significant. So, have we finally answered the question about SDD (it doesn't work)? The waters were muddied by a meta-analysis of over 15 RCTs published in the same edition of JAMA which concluded there is a 99.3% Bayesian posterior probability that SDD reduces mortality. The debate continues....



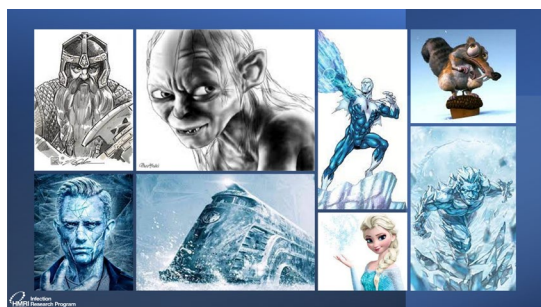


MEDIA NEWS

Program Lead Prof Josh Davis and collaborator Prof Nathan Bartlett were both in the Newcastle Herald at the end of last year. And Nathan was right, the fifth shot became available in NSW to eligible adults and children at risk on the 20th of February. Click [here](#) for the full articles.



OUR NEW TOY HAS A NAME



Thanks to everyone who submitted a name suggestion for our freezer and participated in our survey. We are thrilled to introduce "**Scrat**".

Congratulations on the most popular name suggestions, **Eleanor Majellano**, **Natalie Niessen**, and **Brett Mitchell**!

Short and sweet, that's it from us! We wish you a Happy Easter and a nice long weekend!

Natalie, Josh and Brett

These naughty pathogens have hidden a few easter eggs throughout the newsletter. How many did you find? Send us your answer (infection@hmri.org.au) by the **7th of May** and enter the raffle to win a sweet surprise! The winner will be announced on the 10th of May.

