



Health
South Eastern Sydney
Local Health District

Public Health Unit Research Report, 2018-2019

South Eastern Sydney Local Health District

August 2019

1 Foreword

The Public Health Unit is responsible for monitoring, preventing and otherwise minimising public health risks in the community. These risks might be infectious diseases acquired from other people, from animate vectors, such as mosquitoes, or from sources in the built environment, legionellosis being a good example. Other risks might be caused by exposure to toxic chemicals, whether present in tobacco smoke, or a result of contamination of the air, soil or water by industrial processes.

To undertake this work, the Public Health Unit comprises a multidisciplinary professional team of registered nurses and surveillance officers, medical personnel, environmental health officers and epidemiologists, supported by able administrative staff. Staff work closely within the District with population health staff and clinicians in all hospitals and in the community, with Health Protection NSW and with other agencies to respond to and minimize public health risks.



All teams are committed to fitting research where possible around their core activities and have been successful in using opportunities for operational research. In addition to our 'traditional' themes of outbreak investigation, immunisation, STIs, environmental causes of cancer, tobacco control and environmental hazards to health, the *Research report* documents our work in using social media for health protection purposes; it also shows how the advent of the technology of Whole Genome Sequencing has begun to add value to outbreak investigations.

Public health research generally cannot be done without collaboration, and increasingly we are doing our research in partnership with other Public Health Units, with Health Protection NSW, laboratory personnel or universities. This *Research report* showcases research published or accepted for publication or presentation over the last year, and also summarises some new projects which we hope will have an impact on the future public health.

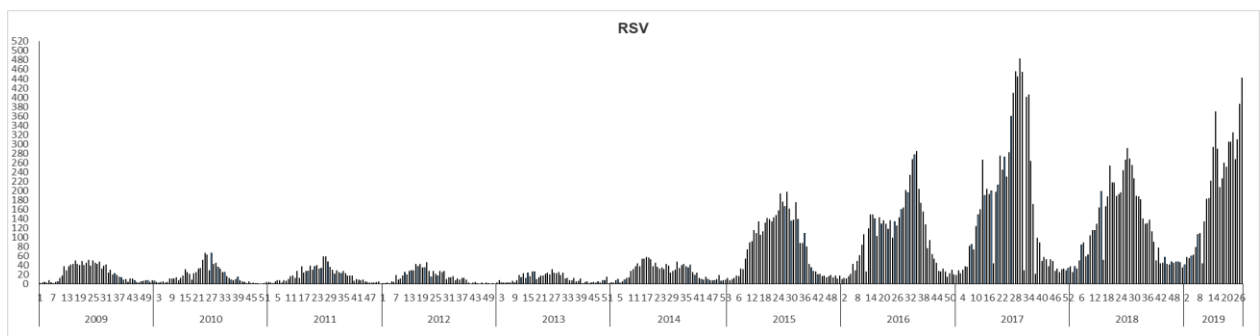
2 Scientific publications

Cashman P, Moberley S, **Chee K**, Stephenson J, **Chaverot S**, Martinelli J, Gadsden T, **Bateman-Steel C**, **Redwood L**, Howard Z, **Ferson MJ**, Durrheim DN. Participant centred safety surveillance of health staff receiving influenza vaccination. *Vaccine* 2019; 37: 2427-9

Farvid MS, Guha N, Stern M, Straif K, Loomis D, Norat T, Sasazuki S, Vineis P, Weijenberg MP, Wolk A, Wu K, Willett WC, **Stewart BW**, Cho E. Consumption of red and processed meat and breast cancer incidence: a systematic review and meta-analysis of prospective cohort studies. *Int J Cancer* 2018; 143: 2787-2799.

Ferson MJ, **Ressler KA**, **Nurkic A**, Spokes P. Gonorrhoea enhanced surveillance for indigenous status and risk factors in the south-eastern Sydney population. *Communicable Diseases Intelligence* 2019; 43:23. Online <https://doi.org/10.33321/cdi.2019.43.23>

Law C, McGuire R, **Ferson MJ**, et al on behalf of the NSW Public Health Network AIR Study Group. Children overdue for immunisation: a question of coverage or reporting? An audit of the Australian Immunisation Register. *Aust NZ J Public Health* 2019; Online; doi:10.1111/1753-6405.12891



Weekly number of cases of respiratory syncytial virus (RSV) detected in sentinel public and private pathology laboratories serving the NSW population -01 January 2009- 29 June 2019.

Li Y, Reeves RM, Wang X, et al, for the **RSV Global Epidemiology Network** and RESCEU investigators. Global patterns in monthly activity of influenza virus, respiratory syncytial virus, parainfluenza virus, and metapneumovirus: a systematic analysis. *Lancet Global Health*, in press

Staff M, Nyinawingeri A, Denniss K, Ingleton A, Jelfs J, Corben P. Pertussis Morbidity in Children 12–59 Months of Age. A NSW **Public Health Network** Study. *Pediatr Infect Dis J* 2019; 38: 553-558

3 Presentations at conferences

How Chow DN, Brown T, **Ressler KA**, Conway D, Dowdell L, **Nurkic A**, **Bateman-Steel C**, **Ferson MJ** Hepatitis C specialist nurses use notification data to enhance engagement with and education of general practitioners in South Eastern Sydney. *Australasian Viral Hepatitis Elimination Conference, August 2019*

Dianne How Chow presented a poster at the Australasian Viral Hepatitis Elimination Conference.



4 Books, chapters, published reports

Tumour site concordance and mechanisms of carcinogenesis. Eds Baan RA, **Stewart BW** and Straif K. IARC Scientific Publication No, 165. 2019 International Agency for Research on Cancer, Lyon 2019.

Stewart BW. Mechanisms of carcinogenesis: from initiation and promotion to the hallmarks. In: *Tumour site concordance and mechanisms of carcinogenesis*. Eds Baan RA, **Stewart BW** and Straif K. IARC Scientific Publication No 165. International Agency for Research on Cancer, Lyon, 2019; pp 93-106.

Stewart BW. Consumer products – Persisting community anxiety. In: *World Cancer Report. Cancer research for cancer prevention*. Eds Wild CR, Weiderpass E and **Stewart BW**. International Agency for Research on Cancer, Lyon, 2019 (in press).

Cancer Australia. *Risk factors for breast cancer: a review of the evidence*. Expert Reference Group: Whiteman D, Dowty JG, Keogh LA, Laaksonen M, Marles M and **Stewart BW**. Cancer Australia, Surry Hills, NSW, 2018

Professor Bernard Stewart with the Governor of NSW, Her Excellency, the Honourable Margaret Beazley, at his investiture as a Member of the Order of Australia for "significant services to medicine in the field of environmental carcinogenesis, as a researcher and advocate and to professional medical organizations".



5 Research in progress

A social practice approach to improving cruise passenger health/hygiene.

Werder O, Ferson MJ, Bateman-Steel C, Ressler KA

The primary objective of this research is to provide insights into cruises passengers' perceptions of healthy cruising behaviour and how these perceptions inform their actions and responses before, during and after cruising. The study involves recruiting 10-12 family units who are planning to travel during the 2018/2019 season. Participants are asked to fill out a photo diary of images that represent to them what healthy cruising behaviour is. Participants are reimbursed with a \$150 Westfield voucher.

Cruise ship passenger health behaviours. A survey of passengers on an outbreak and non-outbreak cruise to Sydney, Australia.

Ressler KA, Chaverot S, Mayne DJ, Ferson MJ.

A survey of passenger health behaviours was developed as part of the Public health Unit's human biosecurity research program. The purpose of the survey is to understand the preparations passengers make prior to cruising, what they do on board whilst they are well and if they get sick, and what their attitudes are to and compliance with health measures instituted during outbreaks (manuscript in preparation).

Demographics of tobacco retailers that sold tobacco to minors.

Kiss A, Cains T, Karalasingham R, Ferson MJ

Under the Public Health (Tobacco) Act it is illegal to sell tobacco products to people under the age of 18. The NSW Sales to Minors program randomly selects retail outlets with recruited minors to test if they sell tobacco. Tobacco retailer who sell to minors as part of the compliance check are prosecuted. Data from prosecutions for selling tobacco to minors is available for the past five years and this research will provide information on the demographics of those sellers including age, gender, ethnicity, type of retail outlet. It is understood this is a current data gap in knowledge and should assist with targeting the programs into the future (data analysis).

Follow up of new hepatitis C notifications to support SESLHD GPs.

How Chow DN, Brown T, Ressler KA, Conway D, Dowdell L, Nurkic A, Bateman-Steel C, Ferson MJ

This project is a collaboration between the PHU and HARP where new notifications for hepatitis C are identified and provided to the project CNC for appropriate follow-up. The aim of the project is to enhance HCV care cascade progression. Patients are included if the requesting doctor is a SESLHD GP and are excluded if the patient is already under the care of a HCV experienced GP. The CNC makes contact with the GP to offer support in the treatment of their patient and to identify education needs of the practice. Outcomes of this contact and care are documented and provided in 6 monthly reports.

Investigating cancer clusters

Stewart BW and Zheng A

This collaboration, a project of NSW Health, initially involved review of existing guidelines for the investigation of 'cancer clusters', as this matter has been addressed both within different Australian jurisdictions, and overseas. On this basis, guidelines to be employed by Public Health Units in NSW were drafted and are currently being finalized. Previously available guidelines from within Australia

and overseas overwhelmingly focused on means to establish whether an anecdotally-apparent increased incidence of cancer could be validated by epidemiological assessment. Research of the peer-reviewed literature, however, established that evidence of exposure to potentially causative agents should be given at least equal weight in any cancer cluster investigation and the draft NSW guidelines have been developed on this basis.

***Legionella pneumophila* serogroup 1 case associated with the use of an apartment spa pool, February 2018.**

Cains T, Shalak H, Kiss A, Jeffrey R, Smith A, Timms V, Sintchenko V, Ferson MJ

In February 2018 a notification was received for a case of *Legionella pneumophila* serogroup 1. The case identified using a communal spa pool in the apartment complex he was living in. Environmental Health Officers collected water samples for microbiological analysis. The analysis, by the Government Analyst, found a level of *Legionella pneumophila* serogroup 1 in the water sample. The case cultured sputum and the environmental and human isolates were subjected to whole genome sequencing which provided unexpected findings (manuscript ready to be sent for publication).

Mumps outbreak in members of a rugby league team despite pre-existing immunity

Chee K, Workman C, Irvine S, Ferson MJ.

Whilst mumps outbreaks in various rugby code and ice hockey teams have been reported in the mass media, scientific reports are scarce. We report an outbreak which affected 12 people associated with the team, including players who had previously been demonstrated to have mumps-specific IgG present. The outbreak investigation also raised questions about the reliance on mumps specific IgM for diagnosis in previously vaccinated cases.

Risk factors for endometrial cancer

Stewart BW and an Expert Reference Group convened by Cancer Australia

Very few risk factors for endometrial cancer have been clearly established, though more than 50 have been implicated. Under the guidance of an Expert Reference Group convened by Cancer Australia, all reported risk factors for endometrial cancer are to be reviewed, specifically with regard to strength of evidence and, where possible, specification of relative risk in numeric terms. Thus far, literature search has established that obesity/body fatness is the key risk factor, with at least some evidence of a reduction in risk consequential upon intentional weight loss. The results of this investigation are anticipated to be published by December 2019.

Survey of colonic lavage centres in South Eastern Sydney Local Health District

Hansen S, Cains T, Ferson MJ

Since 2000 colonic lavage has been defined as a skin penetration procedure for the purposes of regulation under the Public Health Regulation. Health risks associated with colonic lavage include infection due to unsterile equipment, trauma to the colon, a reduced capacity to control bowel movements and the removal of normal intestinal flora. A search found 11 centres operating in SESLHD and using a standardised questionnaire all centres were surveyed. Additionally microbial water samples were taken from water storage tanks for analysis. To the authors knowledge this is the first survey of colonic lavage premises since its inclusion in the Regulation. Findings include the number of types of equipment being used, a stronger need for plumbing guidance, a need for operators to wear suitable personal protective wear, liaison with TGA about approval for equipment and a legislated requirement for infection control training of operators (data analysis stage).

Use of Facebook Messenger for contact tracing

Kelly M, Catherine Bateman-Steel, Ressler KA, Chaverot S, Ferson MJ

This project explores the use of Facebook Messenger for contact tracing in order to expand the Unit's contact tracing capability. Facebook Messenger will be trialled as an additional contact tracing tool by sending private messages to individuals identified on Facebook according to a set criteria in a confidential manner. The Facebook message will request the person to call the Public Health Unit for further information - and if successful, complete the public health investigation using the traditional communication method.



Cruising to Better Health



Did you know more than 600,000 cruise passengers from around the world arrive in Sydney Harbour each year?

We don't want you to miss a moment!



WASH your hands frequently



DRINK bottled water when on shore tours



SPEAK to the medical crew on board if you feel unwell



STAY in your cabin until you feel better



COVER your coughs and sneezes



DON'T swim in the pool if you have a skin infection or have had diarrhoea in the past two weeks

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Produced by South Eastern Sydney Local Health District

