



**Health**  
South Eastern Sydney  
Local Health District

# Public Health Unit Research Report, 2015-2017

South Eastern Sydney Local Health District

May 2017

# 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 living 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 by industrial processes of the air, soil or water.

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, and also with Health Protection NSW, the Ministry of Health and the network of Public Health Units across the state.

Whilst there is no ongoing funding specifically tied to research, all teams within the Public Health Unit have research as an element in their annual plans and we have been successful over many years in conducting operational type research as opportunities arose. Our research themes include coverage of and barriers to childhood immunisation, identifying causes of foodborne illness, describing institutional outbreaks of acute gastroenteritis or respiratory illness, measles and other childhood diseases, viral hepatitis, sexually transmissible infections, environmental factors in cancer causation, issues impinging on tobacco control and environmental hazards to health.

Collaboration is essential to public health research and a recent development is the coordination of statewide public health projects undertaken by all Public Health Units with Health Protection NSW. This Report describes research published or presented over the last two years and also summarises some new projects – local, statewide or even global in scope – which we hope will have an impact on the future public health.



## 2 Scientific publications

**Bateman-Steel C, Smedley EJ, Kong M, Ferson MJ.** Hepatitis C enhanced surveillance – results from a south eastern Sydney pilot program. *Public Health Research & Practice* 2015; 25: e2521520

Bouvard V, Guyton K, Grosse Y, El Ghissassi F, Guha N, Mattock H, Straif K, **Stewart BW**, De Smet S, et al. Carcinogenicity of consumption of red and processed meat. *Lancet Oncol* 2015; 16: 1599-1600

Cumming G, Khatami A, McMullan BJ, Musto J, Leung K, Nguyen O, **Ferson MJ**, Papadakis G, Sheppard V. Human parechovirus genotype 3 outbreak among young infants in New South Wales, Australia. *Emerging Infect Dis* 2015; 21: 1144-52

Davey H, Muscatello D, **Ferson M**, Snelling T, Wood J, McCartney K. Impact of high coverage of monovalent human rotavirus vaccine on Emergency Department presentations for rotavirus gastroenteritis. *Vaccine* 2015; 33; 1726-30

**Ferson MJ**, Orr K. Some truths about the 'low' childhood vaccination coverage in Sydney's eastern suburbs. *Med J Aust* 2015; 203: 153, 153e.1

Homaira N, Oei J-L, Mallitt K-A, AbdelOlatif ME, Hilder L, Bajuk B, Lui K, **Ferson M**, **Nurkic A**, et al. High burden of RSV hospitalization in very young children: a data linkage study. *Epidemiol Infect* 2015; 144: 1612-21

Loomis D, Guyton K, Grosse Y, Bouvard V, Guha N, Mattock, H. Straif K, Kogevinas M, **Stewart BW**, et al. Carcinogenicity of lindane, DDT and 2,4-dichlorophenoxyacetic acid. *Lancet Oncol* 2015; 16: 891-2

Lowbridge C, McIntyre PB, Gilmour R, Chiu C, Seale H, **Ferson MJ**, Gilbert GL. Long term population impact of seven-valent pneumococcal conjugate vaccine with a "3+0" schedule - how do "2+1" and "3+1" schedules compare? *Vaccine* 2015; 33; 3234-41

Pearce N, Blair A, Vineis P, Ahrens W, Andersen A, Armstrong BK, **Stewart BW** et al. IARC Monographs: 40 years of evaluating carcinogenic hazards to humans. *Environ Health Perspect* 2015; 123: 507-14

Portier CJ, Armstrong BK, Baguley BC, Baur X, Belyaev I, Belle R, **Stewart BW** et al. Differences in the carcinogenic evaluation of glyphosate between the International Agency for Research on Cancer (IARC) and the European Food Safety Authority (EFSA). *J Epidemiol Comm Health* 2016; 70: 741-5

Post JJ, Goldberg H, Kaufman G, Plit M, **Ressler KA**, **Ferson MJ**. HIV testing rates and co-infection among patients with tuberculosis in south-eastern Sydney, 2008–2013. *Med J Aust* 2015; 202:255-6

Regan DG, Wood JG, C. Benevent C, Ali H, Watchirs Smith L, Robertson PW, **Ferson MJ**, Fairley CK, Donovan B, Law MG. Estimating the critical immunity threshold for preventing hepatitis A outbreaks in men who have sex with men. *Epidemiol Infect* 2015; 144: 1528-37

Smith MT, Guyton KZ, ... **Stewart BW**, Baan R, Coglianò V and Straif K. Key Characteristics of Carcinogens as a Basis for Organizing Data on Mechanisms of Carcinogenesis. *Environ Health Perspect* 2016; 124: 713-721

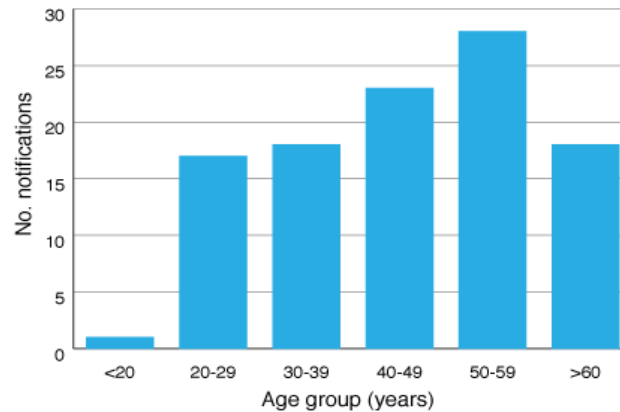
**Stewart BW**, Bray F, Forman D, Ohgaki H, Straif K, Ullrich A, and Wild CP. Cancer prevention as part of precision medicine: 'plenty to be done'. *Carcinogenesis* 2016; 37: 2-9

Templeton, D., **Ressler, KA**, Hope, K., Poynten, I. Enhanced surveillance of a lymphogranuloma venereum outbreak in Sydney 2010-2012. *ANZ J Public Health* 2016; 40: 368-70

Vineis P, **Stewart BW**. How do we judge what causes cancer? the meat controversy. *Int J Cancer* 2016; 138: 2309-11.

Yapa CM, Furlong C, Rosewell A, Ward K, Adamson S, Shadbolt C, Kok J, Tracy SL, Bowden S, **Smedley EJ, Ferson MJ**, Sheppard V, McNulty JM. First reported outbreak of locally acquired hepatitis E virus infection in Australia. *Med J Aust* 2016; 204: 274.e1-e6

### Hepatitis C enhanced surveillance: results from a south-eastern Sydney pilot program



Hepatitis C virus notifications in the surveillance period by age group

## 3 Presentations at conferences

**Bateman-Steel CR, Vyas A, Gupta L.** General practitioner management of notifiable diseases in central to communicable disease control. *Med J Aust* 2015; 202: 524-525.

**Bateman-Steel C, Smedley E, Kong M, Ferson M.** Hepatitis C enhanced surveillance: results from a southeastern Sydney pilot program. *Public Health Research & Practice* 2015; 25 (2).

**Bateman-Steel C, Ferson MJ, Thomson D, Nyinawingeri A.** Improving uptake of influenza vaccination in pregnancy in South Eastern Sydney. *Population Health Congress, Hobart, 6-9 September 2015.*

Davey H, Muscatello D, **Ferson M**, Snelling T, Wood J, McCartney K. Population impact of monovalent human rotavirus vaccine on Emergency Department presentations for rotavirus gastroenteritis. *Population Health Congress, Hobart, 6-9 September 2015.*

**Glasgow K, Bateman-Steel CR, Ferson M.** The right kind of 'viral': Infectious public health messages for social media. *Communicable Disease Conference, Melbourne June 2017 (accepted).*

**Ferson MJ, Ressler KA.** Infectious disease surveillance on cruise ships entering the Port of Sydney from international waters. *Biosecurity in a Globalised World: Adoption of the International Health Regulations – 10 Years on, Brisbane, 27-28 July 2015.*

**Stewart BW.** Causes of lung cancer beyond active smoking (invited presentation). *Fifth Conference of the Union Asia Pacific Region, Sydney, 31 August-1 September 2015.*

**Stewart BW.** Environmental aspects of cancer cluster investigations (invited presentation). *Annual Scientific Meeting, Clinical Oncology Society of Australia, Hobart, 15-17 November 2015.*

**Stewart BW.** Understanding the content, limitations and implications of *IARC Monographs* (invited presentation). *Annual Scientific Meeting, Australasian College of Toxicology and Risk Assessment, Adelaide, 22-23 September 2016.*

**Stewart BW.** Coping with fake news about mobile phones and power lines (invited presentation) .Kids Cancer Alliance – Brain Cancer Symposium. Sydney, 18 August 2017

Yapa C, **Smedley L, Ferson M,** Staff M, Sheppard V, McAnulty J. First outbreak of locally acquired hepatitis E virus infection in New South Wales, Australia. International Conference on Emerging Infectious Diseases. Atlanta, 24-26 August 2015.

#### 4 Books, chapters, published reports

Baan RA, **Stewart BW,** Straif K (eds). *Tumour concordance and mechanisms of carcinogenesis.* International Agency for Research on Cancer, Lyon, 2017 (in press)

**Bateman-Steel C,** Zwi AB, 'Forced migrants and other displaced populations', in, *Oxford textbook of global public health (6th Ed.)*. Oxford University Press, USA, 2015; 1425-44

Griffiths E, Gilmour R, Carlin M, Adamson S, Timms V, Chen S, Sintchenko V, Smith A, **Pope B, Ferson M,** Scalley B, Sheppard V, McAnulty J. *Summary public health investigation into legionella outbreaks in Sydney CBD, March and May 2016.* NSW Health, Sydney, 2016

**Map of investigation areas and positive cooling towers, March and May 2016 legionellosis outbreaks**



Source: <http://www.health.nsw.gov.au/Infectious/Publications/legionella-cbd-report.pdf>

**Stewart BW.** 'Mechanisms of carcinogenesis: from initiation and promotion to the hallmarks', in, *Tumour concordance and mechanisms of carcinogenesis*. IARC, Lyon, 2017; in press

## 5 Grant received

**The inspiring Ideas Challenges 2017:** The right kind of 'viral': social media for public health messaging - \$30,000



## 6 Research in Progress

### **Community knowledge of outdoor smoke-free provisions**

*Pope B, Ressler KA, Cannata S, Glasgow K, Shalak H, Lingstrom M, Kiss A, Ferson MJ*

This project was designed to evaluate changes in the knowledge among Sydney CBD users about outdoor smoke-free areas at various times during the roll out of the NSW Health outdoor smoke-free awareness campaign. A total of 380 people were interviewed by environmental health officers. The street intercept surveys identified a significant increase in knowledge of certain smoke-free areas one month after the changes, but this improvement did not appear to be sustained.

### **Determinants of vaccination uptake inequality in SESLHD high schools**

*Chaverot S, Bateman-Steel C, Allen A, Whiteway A, Ferson MJ*

Uptake of human papilloma virus vaccine by year 7 students in the Unit's school vaccination program during 2016 varied greatly between schools. This project aims to better understand disparities in uptake of vaccination and identify the determinants of immunisation inequality.



### **Enhanced surveillance of infectious syphilis in men**

*Ressler KA, Nurkic A, Bateman-Steel C, Ferson MJ*

Enhanced surveillance of notified cases of infectious syphilis does not collect information on HIV status and therefore cannot monitor the link between infectious syphilis and HIV coinfection. Since 2006, we have had HREC approval to collect this additional information and its ongoing analysis provides valuable data on syphilis and HIV coinfection during epidemic and non-epidemic periods.

### **Enhanced surveillance of gonorrhoea in south-eastern Sydney**

*Ressler KA, Spokes P, Nurkic A, Ferson MJ*

Routine gonorrhoea notification does not currently provide indigenous status or risk factor information. During 2013, the Public Health Unit trialled enhanced surveillance whereby requesting doctors were sent a brief survey, with an 80% response rate. Men comprised 88% of cases. Indigenous status was provided in 94% and valuable information obtained on risk factors for acquisition of the infection. However, due to the large amount of time taken by clinical and public health staff, other approaches to collecting this data should be explored.

### **Protective and risk factors for pertussis and severe pertussis infection in infants in NSW**

*Ressler KA et al*

This study aims to provide a reliable estimate of the effectiveness of vaccination in late pregnancy against confirmed infant pertussis (whooping cough) and to examine other risk factors for infant pertussis. The study is the first to be conducted state-wide by the NSW Public Health Network and a paper is currently in preparation.

### **Pertussis impact and morbidity study in children 12 months to 59 months in NSW**

*Ressler KA et al*

The objectives of this research are to describe the morbidity associated with Pertussis among children aged 12 to 59 months and their families and to determine whether cases' morbidity is associated with age, vaccination status and antibiotic treatment. The study is the second to be conducted across the state by the NSW Public Health Network.

### **Pilot survey of hepatitis B vaccination status and safety procedures in skin penetration premises**

*Starling –Schwanz R, Gulevska-Risteska B, Cannata S, Bateman-Steel C, Ferson MJ*

This survey will assess staff hepatitis B vaccination uptake and safety procedures in a sample of ear and body piercing businesses in the District. It will provide important information on current vaccination needs of this at-risk group of professionals and their understanding of hygiene.

### **Assessment of the carcinogenic risk presented by perfluorinated compounds**

*Stewart BW (with the Chief Health Officer's Expert Advisory Panel)*

Contamination of ground and surface water by perfluorinated compounds from firefighting foam has been documented at a number of sites in Australia, including near Williamtown, NSW. In the context of a broader toxicological assessment, this component of the project is to evaluate all emerging data concerning carcinogenic risk.

### **Evaluation of carcinogenicity data for melamine and seven other chemicals contaminating food and consumer products**

*Stewart BW in collaboration with the International Agency for Research on Cancer*

An IARC Working Group will shortly meet in Lyon to draft vol. 119 of the series *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*. Professor Stewart has been given responsibility for summarising data concerning the absorption, distribution, metabolism and excretion of melamine, a plastic that has been identified as an accidental or intentional cause of food adulteration.

### **Consumer products causing cancer**

*Stewart BW*

Community concern about cancer arising because some consumer products are contaminated by carcinogens is generally disproportionate compared to cancer risks attributable to smoking, alcohol drinking, and sun exposure or to overweight/obesity and lack of exercise. The last review of findings that give rise to concern about cancer from consumer products was published in 1981; a systematic search of the literature is being undertaken to allow the preparation of a contemporary review.

