



MONASH University

M8Alliance

Medicine, Nursing and Health Sciences

Water Quality Research

School of Public Health and Preventive Medicine

Water Quality Research

Through its partnership with Water Quality Research Australia Limited (WQRA), the Water Quality Group within the Infectious Disease Epidemiology Unit is a leading centre for research on public health issues relating to water quality. Research projects in this area include the health impacts of microbial pathogens in drinking water, the development of improved monitoring and risk management systems for drinking water supplies and public health aspects of alternative water sources (including rainwater, greywater and recycled water).

Capabilities

- Development and conduct of epidemiological studies
- Analysis of research and surveillance data
- Links to policy and regulation
- Supervision of doctoral and post-doctoral students
- Input into undergraduate and postgraduate courses

Application

- Risk assessment
- Public health policy – contribution to Australian drinking and recycled water guidelines



Major Projects

Recent/current projects:

- **Estimating the Disability-Adjusted Life Year (DALY) burden of major gastrointestinal (GI) pathogens in order to establish Australian health-based targets for microbial water quality** – National guidelines exist for management of drinking water, but currently there are no targets for determining whether water has an acceptably low level of infectious agents. In this project, we moved towards national consensus for a DALY health target for microbial water quality. We also updated the estimated burden from selected GI pathogens for the current Australian setting.
- **Assessing the practices and potential health risks associated with household greywater recycling** – This project involved administering a survey to Melbourne householders asking them about their greywater use and monitoring greywater quality at selected households. Results have fed into a mathematical model to predict greywater related infection risk and disease burden.
- **Health effects of drinking water from rainwater tanks** – 300 households in Adelaide who were already drinking untreated rainwater were recruited and randomly allocated to receive either a real or sham water treatment unit for treating rainwater. Rates of gastroenteritis in the two groups were compared to determine whether removal of micro-organisms from consumed water was associated with a detectable change in illness rates. The results showed that people who drank untreated rainwater displayed no measurable increase in illness compared to those who drank filtered rainwater.



- **Health services utilisation and urban dual reticulation systems** – This study was carried out in the Rouse Hill area of Sydney and examined three selected health outcomes (acute gastroenteritis, acute skin complaints and acute respiratory conditions) among residents of an area supplied by a dual water reticulation system. The proportion of GP presentations for these health complaints was compared to the proportion seen among residents of an otherwise similar area with a conventional water supply system. No significant difference in presentation rates for the three conditions was found between residents of the two areas, indicating there was no measurable increase in illness associated with recycled water use.
- **Refining estimates of exposure to water during outdoor water activities** – Recycled water guidelines set targets for public health protection on the basis that even during non-potable (non-drinking) uses, small quantities of water are inadvertently ingested from exposure to sprays and aerosols. These estimates of water ingestion are based on expert opinion because no experimental information currently exists. This project will measure actual water ingestion by volunteers when washing a car using a high pressure spray. These data will be used to improve risk assessment for future guideline revisions.

Planned future projects:

- Case control study assessing novel risk factors associated with legionella infection;
- Monitoring health effects from water consumption in the international setting and the impact of improving water quality.

Contact Us



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