

# **University of Otago Responding to Infectious Diseases Up-date on Drinking and Recreational Water**

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# What I Will Cover

- Legislation
- Drinking-water Standards
- Compliance with DWSNZ & Legislation
- NPS on Freshwater (RMA)

# Cost of Burden of Disease and Cost of up-grading Drinking-water Supplies

- Cost benefit analysis (CBA) produced in 2010 as part of review of drinking-water legislation
- Cost of water borne bacteriological disease only - \$278.2M
- Cost of water borne bacteriological disease and protozoan disease - \$496.1M

# Cost of DW related disease and up-grades

Population served by non-compliant DW  
supplies:

- bacterial/viral non compliant only 334,000
- bacterial & protozoan non compliant 775,000

Cost of up-grading DW supplies:

- bacterial/viral compliant only \$77M
- bacterial & protozoan compliant \$336M

# Cost of DW related disease and up-grades

- CBA did not look at aspects such as loss of business opportunity, NZ image, reputation or effects on tourism
- CBA and report on cost of up-grading DW supplies is on Ministry of Health web site at:

<http://www.health.govt.nz/publication/drinking-water-cost-benefit-analysis>

# Legislation

- Health Act 1956 amended by the Health (Drinking Water) Amendment Act 2007
- Act Commenced 1 July 2008 but;
- Sections 69S to 69ZC staggered in implementation (main parts of the amendment)

# Legislation – staged commencement

- New & large DW supplies (>10,000) - 1/7/12
- Medium DW supplies (5,001-10,000) – 1/7/13
- Minor DW supplies (501 – 5,000) – 1/7/14
- Small DW supplies (101 – 500) - 17/15
- Neighbourhood DW supplies (25-100)–1/7/16
- RADWS (rural agricultural supplies) – 1/7/16  
(>75% used for agriculture)

# Legislation

- S69v(1) of the Act requires *‘every drinking-water supplier [to] take all practicable steps to ensure that drinking-water supplied by that supplier complies with the drinking-water standards’*.
- S69Z places duty on DW suppliers (>500) to prepare and implement Water Safety Plans
- Section 69H of the Act provides that water suppliers can show that further steps towards compliance with the standards is not practicable by demonstrating that an upgrade is not affordable.



# Compliance

- S69ZZZB requires the DG to publish an ‘Annual Report on Drinking-water quality’.
- Annual report looks at compliance with the DWSNZ and other parts of the Act
- Annual report was published on 27/1/15 and is available on the MoH website at:
- <https://www.health.govt.nz/publication/annual-report-drinking-water-quality-2013-14>

# Compliance – 2013/14 Report

- Survey covers 3,829,000 people on 659 Registered DW supplies serving 100 people or more
- Overall (bacteria, protozoa, chemical) standards compliance 79% - up 2% on previous year
- Bacteriological compliance 97.2% (up 0.5%)
- Protozoal compliance 80.8% (up 1.6%)
- Chemical compliance 97.4% (up 2%)

# Compliance - continued

- Large supplies 88.9% (bacteriological 99.2%, protozoal 89.7% and chemical 99.1%)
- Medium supplies 52.9% (bacteriological 98%, protozoal 57.4%, chemical 87.9%)
- Minor supplies 41.2% (bacteriological 88.8%, protozoal 47.7%, chemical 91.6%)
- Small supplies 20.7 (bacteriological 71.8%, protozoal 23.5%, chemical 97.2%)

# Compliance – Water Safety Plans

- Overall supply population with plans approved or being implemented is 94.6% (93% previously)
- Large supplies with plans approved or being implemented - 100% (99.6% previously)
- Medium supplies with plans approved or being implements – 85.6%
- Minor supplies with plans submitted, approved or being implemented – approx. 80% being drafted, approved or being implemented.
- Requirement from 1 July 2015 but about 80% had started drafting, submitted or had approved plans

# RMA/NPS(FM) Freshwater Management

- National Policy Statement for Freshwater Management 2014 promulgated (July)
- Contains minimum freshwater microbiological quality criteria (for first time since repeal of W&S Conservation Act 1967 in 1991)
- LAs required to ‘give effect’ to NPS in regional & district plans
- Regional Councils may set higher values (attributes) in Freshwater Management Units (FMUs)
- Implementation required by 2025 (can be extended to 2030 if will affect Plan quality!)
- Consents must have regard to NPS-FM

# RMA/NPS (FM)

- Two sets of compulsory values (ecosystem health and human health for recreation)
- Plans must list ‘attributes’ used to set objectives in relation to compulsory values
- Attribute tables ecosystem health and human health for recreation (Appendix 2)

# RMA/NPS-FM Ecosystem Health

- Separate attributes for lakes and rivers
- Lakes - four numeric attributes states for each of phytoplankton, total nitrogen and total phosphorus and a National Bottom line
- Rivers - periphyton, nitrate, ammonia, dissolved oxygen

# RMA/NPS-FM

## Human Health for recreation

- Numeric attributes for E.Coli and Cyanobacteria
- Four attribute states A to D and a National Bottom Line



# RMA/NPS-FM

## Human Health for recreation E.Coli

For example attribute states for E.Coli

- Attribute state A -  $< 260$
- Attribute state B -  $>260$  and  $<540$
- Attribute state C -  $>540$  and  $< 1,000$
- National bottom Line - 1,000
- Attribute state D -  $> 1,000$

# RMA/NPS – FM

## Human Health Recreation – E.Coli

### Description of attribute risk:

- State A – Annual median (AM) very low risk  
0.1% of infection 2ndary contact, 95<sup>th</sup> percentile  
low risk (1%) full immersion
- State B – AM low risk (1%) 2ndary contact, 95%  
moderate risk (<5%) full immersion
- State C – AM moderate risk (<5%) 2ndary  
contact, high risk (>5%) for full immersion
- State D – AM high risk infection (>5%) for  
2ndary contact