



Water, Water Everywhere.....Water and Public health

Faculty of Public Health Medicine

RCPI

CME day

Wednesday March 3rd 2010



Drinking Water: Resources and Risk Assessment



Dr BethAnn Roch
HSE National Drinking Water Group

Consultant Public Health Medicine Environment and Health Group



Drinking Water in Ireland

- Large number of supplies
 - 952 public water supplies - 88% population
 - 1500 group water schemes - 8% population
- High proportion of surface water supplies
 - 84% surface water (lakes and rivers)
 - 9% groundwater
 - 7% springs



Context

- Context
 - Legislation
 - Key players
 - National and local context
- Resources
 - HSE National Drinking Water Group
 - Documents and intra/internet access
- Risk assessment
 - Principles
 - Algorithms and checklists



Drinking Water Regulations S.I. No. 278 of 2007

Protection of human health

- Para 9 (1) Where a sanitary authority, in consultation with the HSE, considers that a supply of water intended for human consumption constitutes a potential danger to human health, the authority shall, subject to agreement with the HSE, ensure that
- Para 9 (2) Subject to agreement with the HSE ... the supervisory authority shall issue such direction to the relevant water supplier as it considers necessary.....



Drinking Water Regulations S.I. No. 278 of 2007

Departures from standards

- Para 11 (1) A departure from the parametric values.... may subject to the agreement of the HSE, be granted by the Agency.....



Infectious Disease Regs

S.I. No. 390 of 1981

Para 11 On becoming aware ... of a case or a suspected case of an infectious disease or of a probable source of infection with such disease, a medical officer of health... shall make such enquiries and take such steps as are necessary ... for investigating the nature and source of infection, for preventing the spread of such infection and for removing conditions favourable to such infection



Other Regulations

- Food safety legislation
 - Food Hygiene Regulations S.I. No. 205 of 1950
 - EC Regulations No 852/2004
 - Hygiene of foodstuffs
 - Requires the use of potable water in food business
 - S.I. No 369 of 2006 gives effect in Irish law
- Fluoridation Regulations S.I. No. 42 of 2007
 - provide for the fluoridation of public water supplies by sanitary authorities on behalf of the HSE.



Key players

- Legislators and funders
 - Dept of Environment, Heritage and Local Government
 - Water Services National Training Group (WSNTG)
- Providers
 - Water Services Authorities ie City and County Councils
 - Group Water Schemes
 - Individuals
- Supervisors and enforcers
 - EPA
- HSE



HSE

- Public Health Departments
- Environmental Health Service
- Microbiologists
- Laboratories
 - Public Health
 - Public Analyst
- Dental Service
- Emergency Planners



Public Health Physicians

- Surveillance of notifiable diseases
- Investigation
- Epidemiology
- Evidence base
- Advice to
 - health professionals
 - Water Services Authorities and EPA
 - vulnerable groups
 - general public



National and local context

- National
 - DoE Implementation committee
 - EPA Environmental Enforcement Network
 - HSE meetings with EPA
 - HSE meetings with CCMA proposed
- Local/regional
 - Surveillance of notifiable diseases
 - Water monitoring programmes
 - Protocol/Guidelines
 - Water Liaison Group
 - Incident Response Team



Resources

- HSE National Drinking Water Group
- Documents
- Intra and internet resources



HSE

National Drinking Water Group

- Harmonise national procedures and guidelines
- Update ‘ Drinking water and public health’
- Review advice to immunocompromised and other vulnerable groups
- Review action trigger levels in response to detection of marker organisms and parasites in water in absence of human illness
- Review resource issues and training needs



Members of group

- Public Health Departments
 - Tessa Greally
 - Patricia McDonald
 - Margaret O’Sullivan
 - Heidi Pelly Una Fallon
- HPSC
 - Patricia Garvey
 - Paul McKeown
- Environmental Health Service
 - Andrew Curtin
 - Paul McGuinness
 - Ray Parle
 - George Sharpson Dave Molloy



HSE documents

- 'Drinking water and health, 2008'
- Local Authority/HSE template for Appendix 5 DWIRP
- EPA/HSE communication document
- Health Advice on individual parameters
- Health notification values



HSE intranet and internet

- http://hsenet.hse.ie/HSE_Central/Population_Health/Health_Protection/
 - ‘Drinking water and health, 2008’
 - A to Z
 - Individual parameters
 - Reports
 - Internet resources
- www.hse.ie – go to Publications, Health Protection & Public Health
 - ‘Drinking water and health, 2008’
 - Lead



Risk Assessment

- For protection of human health
- Risk assessment
 - Risk estimation
 - Risk evaluation
- Key question:
 - Is there an ongoing risk to human health?



Protection of Human Health

- Is there a problem?
- If so, what is the cause?
- What can be done now?
- What can be done to stop it happening again?



Advice/action options

- No risk – no action
- Watch and wait
- Restriction of use
 - Microbiological – boil water notice
 - Do not use for drinking or cooking
 - Do not use for drinking, cooking or washing
- Alternative supply – bottled water or bowser
- Advice to vulnerable groups
- Chemical - Dilution of supply



Boil water notice/other restrictions

- Advantages – immediate and effective
- Disadvantages
 - Compliance
 - Resources
 - Duration
 - Criteria for lifting
 - Burns/scalds
 - Alternative supplies
 - Loss of confidence



Microbiological parameters

- Coliforms, E. coli, enterococci
- Algorithms in 'Drinking water and health 2008' and intranet A-Z
- Main issues
 - Remediation
 - Residual chlorine
 - History of supply
 - Human illness



Cryptosporidium

- Algorithm in 'Drinking water and health 2008' and intranet A-Z
- Reports of incidents and outbreaks in intranet A-Z
- Main issues
 - Source
 - Treatment
 - Turbidity
 - Pathogenicity
 - History of illness
 - Immunocompromised
 - Clostridium perfringens



Chemicals

- Algorithm and checklist in 'Drinking water and health 2008'
- Information and guidance for specific parameters in A-Z – under development
- HSE/EPA Position papers – nitrates, THMs
- Main issues
 - Exposure may come from many sources
 - Parametric values may not be health based
 - Effects may be acute or chronic
 - Most guideline values related to long term exposure
 - History – trend/average results
 - Additional toxicological advice may be necessary



Training

- National briefing
- Regional training sessions
 - Public health physicians and Environmental Health Service
 - Planned for May 2010
 - Input for topics and training
- Training slides in intranet A-Z