Improving patient safety, highlighting the risk and putting policy into practice: *Pseudomonas aeruginosa* - a case study
HTM 04-01 addendum - *Pseudomonas aeruginosa* – advice for augmented care units

Document is concerned with controlling/minimising the risk of morbidity and mortality due to *P. aeruginosa* associated with water outlets and provides guidance on:

- assessing the risk to patients when water systems become contaminated with *P. aeruginosa* or other opportunistic pathogens;
- remedial actions to take when a water system becomes contaminated with *P. aeruginosa*;
- protocols for accurate sampling, testing and monitoring water for *P. aeruginosa*; and
- forming a Water Safety Group (WSG) and developing water safety plans (WSPs).
Policy Development process

The issue  Rationale  Options  Risks and Benefits  Developing the Policy  Internal process  Making it real

Communication  Involvement  Engagement
Applying the policy process to the development of the *P. aeruginosa* addendum
Issue (No.1) – Welsh outbreaks

• In the **summer of 2010** there were **two outbreaks in Wales** attributed to the colonisation of water outlets with *Pseudomonas aeruginosa*.

• Welsh Health Estates issued a draft safety alert, for comment, to the other three nations on actions to take with regards to infra red operated mixer taps.

• Director of Estates (England,) after being made aware of the draft safety alert, called a meeting in order to be fully briefed on the implications for the NHS if the alert was implemented, or not.
Rationale (understanding the problem)

The debate amongst the experts invited to the meeting determined three main outcomes:

- In order to protect vulnerable patients there was a need to issue interim guidance to the NHS in the form of a Dear Colleague letter
- There was a need for the gathering of more evidence
- The safety alert in its current format should not be issued to the NHS in England
Rationale - contd (understanding the problem)

- An internal project team was assembled to gather evidence for inclusion in a report for the Chief Medical Officer (CMO) in England, this included:
  - Visiting hospitals in the UK and France
  - Conducting literature reviews
  - Factory visits to manufacturers of taps and TMVs
  - Meeting and consulting with multidisciplinary experts in microbiology, water quality, materials, infection control, Estates & Facilities, nursing, etc.
- Peer reviewed report produced for the CMO (August 2011) that had input from all major stakeholders.
Options – Report for the CMO

The final report contained seven recommendations for consideration by the CMO:

1. Production of a policy document and associated “top tips”, aimed at both clinical staff and Estate and Facilities staff
2. Liaison with NICE on the need for a quality standard for water quality in healthcare
3. Commissioning of a national survey to gather additional evidence to establish how common *P. aeruginosa* contamination is
4. Develop sampling and records protocol for routine monitoring of pseudomonal contamination within augmented care units
5. Research on modelling of tap & water system colonisation and a call for research proposals
6. Potential need for research on tap design and discussion with professional bodies to identify gaps in current knowledge
7. Revision of HTM 04-01 to include a wider focus on water quality.
Risks and benefits

- CMO requested that the recommendations be reviewed by DH policy leads to ensure the options pursued will produce the greatest benefit in improving patient safety and outcomes.
- Six of the recommendations survived this challenge and a programme developed for their implementation.
Issue (No.2) – Northern Ireland neonatal outbreaks

- As part of implementing Recommendation 1 a Top Tips workshop was held in early January 2012. At this time DH was made aware of the ongoing outbreaks in the neonatal units in Northern Ireland, again attributed to the colonisation of water outlets with *Pseudomonas aeruginosa*.

- Subsequently in February 2012 the CMO issued a Dear Colleague letter with advice for augmented care units, incorporating best practice measures approved by Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection.
The policy process is now restarted to take account of the new highlighted and high profile issue and the need to develop new policy options.
Options – The urgent need for guidance to protect vulnerable patients

- Short term – Produce interim guidance with immediate effect, and with assistance from the HPA and other stakeholders
  - Published March 2012 “Water sources and potential *Pseudomonas aeruginosa* infection from taps and water systems – advice for augmented care units”
- Medium term – Produce an addendum to HTM 04-01 containing detailed guidance for augmented care units
  - A return to implementing Recommendation 1 as per the original report
Risks and benefits

- Development of water management strategy that can be implemented by hospitals
- Development of a sampling strategy that would assist the hospitals in identifying contamination of water outlets with *P. aeruginosa*
- Identification of mitigation techniques to help prevent *P. aeruginosa* contamination occurring
- Identification of remedial actions to remove *P. aeruginosa* contamination

The challenge being that the above would not be over burdensome to implement
Developing the policy

• Production of the addendum to HTM 04-01 containing detailed guidance for augmented care units, including:
  o Evidence from HPA practical studies
  o Evidence and lessons learnt from Northern Ireland
  o Systematic literature review by University of West London, peer reviewed by expert group.
  o Technical engagement with stakeholders on the draft addendum
  o Expert peer review of the final draft
Developing the policy - contd

• Liaison and initial meeting with NICE and the Chief Inspector of the DWI to discuss the need for water quality standards in healthcare buildings
• Identification of the research streams required to enable guidance to be further improved by function of an improved evidence base
Internal process

• Whilst the work was on-going to develop the addendum, in parallel the necessary governance issues were also being addressed:
  o Production of Financial Impact Assessment
  o Production of Equality Impact Assessment
  o DH Gateway approval to publish

• Early engagement with the teams responsible for these governance areas was key to ensuring the project to deliver the addendum met its budget, deadline and complied with overarching DH policy
Making it real

- The addendum to the existing health Technical Memorandum 04-01 titled “Health Technical Memorandum 04-01: Addendum - *Pseudomonas aeruginosa* advice for augmented care units” was published in March 2013.
Making it real

- The document is concerned with controlling/ minimising the risk of morbidity and mortality due to *P. aeruginosa* associated with water outlets providing guidance on:
  - assessing the risk to patients when water systems become contaminated with *P. aeruginosa* or other opportunistic pathogens;
  - remedial actions to take when a water system becomes contaminated with *P. aeruginosa*;
  - protocols for sampling, testing and monitoring water for *P. aeruginosa*; and
  - forming a Water Safety Group (WSG) and developing water safety plans (WSPs).
Making it real

• The guidance is directed towards healthcare organisations providing patient care in augmented care settings. It is specifically aimed at Estates and Facilities departments and infection prevention and control (IPC) teams.

• For the purposes of this document, the patient groups in an augmented care setting include:
Making it real

a) those patients who are severely immunosuppressed because of disease or treatment: this will include transplant patients and similar heavily immunosuppressed patients during high-risk periods in their therapy;

b) those cared for in units where organ support is necessary, for example critical care (adult paediatric and neonatal), renal, respiratory (may include cystic fibrosis units) or other intensive care situations;

c) those patients who have extensive breaches in their dermal integrity and require contact with water as part of their continuing care, such as in those units caring for burns.
Making it real

- Video on the correct methodology for obtaining water samples commissioned from Public Health England and posted on the DH Youtube channel
  [http://www.youtube.com/watch?v=CoVd_40lg30](http://www.youtube.com/watch?v=CoVd_40lg30)
Making it real – what’s yet to come

• Research commissioned, scheduled to commence June 2014, for 12 month snap shot study on ‘Pseudomonas infection in augmented care: detecting water transmission using whole genome sequencing’. Outcomes to be fed into the review of HTM 04-01

• Public Health England have approached manufacturers to work together on tap/TMV component research

• Review of HTM 04-01 in order to integrate:
  o the addendum (including Water Safety Groups and Water Safety Plans)
  o aspects on water quality in healthcare premises
  o HSE’s review of L8
Thank you

Any questions?