From the Chief Medical Officer
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HSS(MD)6/2012

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Your Ref:
Our Ref: HSS(MD)6/2012
Date: 9 February 2012

For Action:

Chief Executives of HSC Trusts *(for onward distribution to Directors of Infection and Prevention Control, Estates and Facilities Managers and those with responsibility for the safe operation of the water distribution systems within the Trust)*
Chief Executive, Health and Social Care Board
Chief Executive, Public Health Agency
Chief Executive, NIAS
Chief Executive, RQIA
Medical Directors of HSC Trusts *(for onward distribution to relevant medical staff)*
Executive Medical Director/Director of Public Health, PHA *(for onward distribution to all relevant public health staff)*
Directors of Nursing, HSC Trusts *(for onward distribution to relevant nursing staff)*

Dear Colleague

WATER SOURCES AND POTENTIAL FOR *PSEUDOMONAS AERUGINOSA* INFECTION FROM TAPS AND WATER SYSTEMS:

FURTHER INTERIM NORTHERN IRELAND GUIDANCE ON:

i. **SCHEDULE FOR *PSEUDOMONAS AERUGINOSA* TESTING OF WATER FOLLOWING INSTALLATION OF NEW TAPS IN NEONATAL UNITS;**

ii. **UPDATED ADVICE FOR OTHER AUGMENTED CARE UNITS**
(for example, but not limited to, adult and paediatric critical care, cystic fibrosis, renal, transplant, haemato-oncology and burns units)

This interim guidance has been developed in consultation with the Health Protection Agency and Public Health Agency. It is situation-specific and applies only to Northern Ireland in the current context of pseudomonas infections and colonisations in babies in neonatal units and subsequent detection of pseudomonas in water samples from taps producing water which may have direct or indirect patient contact. The interim guidance should not be generalised to other UK countries or outbreaks. It is a pragmatic response to an identified need, pending publication of national guidance. While learning from the situation in Northern Ireland will inform the national guidance, the recommendations in this and earlier letters should not be taken as an indication of the form of national guidance currently in preparation.

Introduction

1. The purpose of this letter is:

   - To set out the recommended schedule for *Pseudomonas aeruginosa* testing of water following installation of new taps (in accordance with CMO letter of 28th January 2012) in neonatal units;

   - To provide updated advice for other augmented care units (eg adult & paediatric critical care, cystic fibrosis, renal, transplant, haemato-oncology and burns units) and to draw your attention to the Best Practice advice which has been issued by the Department of Health in England on 6 February 2012 (Annex A).

Infection prevention and control

2. **The essential element in the prevention of transmission of infection in all healthcare settings is strict adherence to infection control policy and robust assurance of implementation of infection prevention and control practices by all staff. This is of particular importance in relation to hand hygiene guidance.**

SCHEDULE FOR *PSEUDOMONAS AERUGINOSA* TESTING OF WATER FOLLOWING INSTALLATION OF NEW TAPS IN NEONATAL UNITS

3. Interim guidance issued on 28 January 2012, (http://www.dhsspsni.gov.uk/hss-md-4-2012.pdf) stated that: 'As a precautionary measure at this time, for the purposes of contact with babies, all water from hand washing stations in neonatal units should be assumed as potentially contaminated until proven otherwise. **For this reason, there should be no direct or indirect contact between this tap water and the babies themselves. Sterile water should be used for all contact with babies, including cleaning incubators or other equipment.'** This guidance minimises the risk of pseudomonas infection to babies in neonatal units while further action is taken. This guidance continues to apply until further notice.

4. The interim guidance issued on 28 January 2012, (http://www.dhsspsni.gov.uk/hss-md-4-2012.pdf) also set out the Northern Ireland interim protocol for testing of tap water from clinical hand wash stations in neonatal units for *Pseudomonas aeruginosa* from 28 January until further notice. The protocol recommended that following installation of new taps in accordance with the guidance, daily testing was required for 7 days post installation and that this would then be reviewed.

5. The following schedule for testing beyond 7 days has now been agreed. This takes into account the situation in Northern Ireland at this time. The schedule is as follows:

Table 1: Testing schedule for water* from new taps (or after remedial work)
(*which may have direct or indirect patient contact e.g. is used for hand washing, patients' personal hygiene and cleaning or maintaining equipment that has patient contact).

Action	Testing Schedule
Install new taps in accordance with the guidance issued in HSS(MD)4/2012, or after remedial work	**Test daily for 7 days** according to the testing protocol in Annex A of HSS(MD)4/2012
Trusts review results, discuss with Estates Directorate (HEIG) and PHA, then, if all samples are clear of *Ps aeruginosa* and have acceptable TVC trends**	**Test weekly for 4 weeks** according to the testing protocol in Annex A of HSS(MD)4/2012
Then, if all samples remain clear of *Ps aeruginosa* and discussions with Estates Directorate (HEIG) and PHA confirm an acceptable TVC trends**	**Test monthly**, pending further review and discussion with Estates Directorate (HEIG) and PHA until directed otherwise through future guidance.

***** Clear is defined (in the current context) as: zero per 100ml. (*There is insufficient data at the present time to provide a quantification of safe levels of Pseudomonas aeruginosa in the water. On that basis a zero per 100ml limit has been set in the current context. This is not definitive and will be reviewed as more data becomes available). For results greater than zero, Trusts should seek advice as outlined in this letter.*

6. In a neonatal unit, if *Pseudomonas aeruginosa* is detected in water samples from any tap producing water which may have direct or indirect patient contact, the Trust should discuss the results with their Trust Water Safety Group and Estates Directorate (HEIG) on a case by case basis. After agreed remedial action is taken, return to the testing schedule as stated in Table 1 above.

Team approach

7. Identifying, managing and reviewing the risks from *Pseudomonas aeruginosa* requires a team approach. When positive water sample results are obtained, the Trust should review, risk assess and determine the need for further investigation and seek advice from HEIG, or if necessary, convene a meeting or a teleconference call, involving Trust personnel and Estates Directorate (HEIG). Planning and implementation of the remedial work is the responsibility of each Trust, but should be undertaken on the basis of appropriate estates advice from Estates Directorate (HEIG). Additional control measures, patient testing and environmental sampling may be required and should be undertaken on the basis of advice from the PHA. The impact of any actions on neonatal capacity should be identified by the Trust and discussed with the PHA and HSCB.

UPDATED ADVICE FOR OTHER AUGMENTED CARE UNITS
(for example, but not limited to, high dependency, adult & paediatric critical care, renal, transplant, haemato-oncology and burns units)

8. Trusts should continue to promptly report information on cases of laboratory confirmed *Pseudomonas aeruginosa* bacteraemias in the context of augmented

care facilities as per normal practice. PHA will monitor *Pseudomonas aeruginosa* bacteraemias in Trusts to identify any potential change in pattern.

9. In line with established good practice, Trusts should review their laboratory information on confirmed infections and clinical isolates within augmented care facilities in order to establish and monitor against their baseline. Any upward trend in clinical isolates above that which would normally be expected will require the Trust to review, risk assess and determine the need for further investigation. In this event, the Trust should convene an Incident Control Team (ICT) and invite PHA to participate. The ICT should then determine the need for further investigation and action; including the need for water sampling; and the appropriate response to any results. NOTE: **Testing of patients** for *Pseudomonas aeruginosa* is only required if a very specific reason has been identified e.g. a suspected or confirmed outbreak, or a series of sequential cases.

10. Routine water sampling for *Pseudomonas aeruginosa* is not recommended for other augmented care units, unless a specific reason has been identified (e.g. suspected outbreak, outbreak, or a series of sequential cases). In those circumstances, the Trust should convene a meeting or teleconference call as outlined above.

11. The advice given in the CMO letter of 22 December 2011, *Water sources and potential infection risk to patients* (HSS(MD)31/2012 22 December 2011 (PDF 203KB)) is being reviewed and will be updated (see paras 20 to 22). **In the meantime,** all Trusts and their infection prevention and control teams, in co-operation with estates staff and the Responsible Person (Water), are **reminded** of the need to carry out regular and thorough risk assessments to establish if water that may have direct or indirect patient contact (eg is used for hand washing, patients' personal hydiene and cleaning or maintaining equipment that has patient contact) is contaminated with *Pseudomonas aeruginosa* and minimise any risks that are identified. Particular attention should be given to the water systems in other augmented care units. You are also asked to have regard to the attached best practice relating to the use of hand wash stations, asssing and managing the risks (Annex A).

12. If water sampling is indicated and *Pseudomonas* aeruginosa is found in tap water which may have direct or indirect patient contact (e.g. is used for hand washing, patients' personal hygiene and cleaning or maintaining equipment that has patient contact) further precautions will be needed to protect patients. The Health Protection Agency has advised that clinical hand wash stations in these units may still be used by staff to wash hands, provided that strict adherence to best practice in relation to hand hygiene is maintained at all times. This includes:

    - using the 'WHO 5 moments' to inform opportunities for hand washing (the 'when to') and the '7-step technique' to inform hand-washing practice (the 'how to'), then;

    - scrupulous drying of hands after washing, using disposable paper towels provided at each hand washing station which should be disposed of in pedal operated foot bins, then;

- using a hand rub conforming to BS EN 1500 (*Chemical disinfectants and antiseptics. Hygienic hand rub. Test method and requirements)* after washing. This is sufficient to eliminate the risk of infection.

Management of water delivery systems in healthcare facilities

13. A team approach to water management is recommended, as outlined above. The following professional letters from DHSSPS provide all relevant guidance on this topic.

14. *Water sources and potential Cross Infection risks from taps and basins - Interim advice.* Issued on 15 September 2010, see link:
http://www.dhsspsni.gov.uk/hss-md-34-2010.pdf

15. *PEL (11) 13: Water systems and potential infection risks.* Issued on 1 July 2011, see link:
http://www.dhsspsni.gov.uk/hss-md-31-2011-attachment2.pdf

16. *Water sources and potential infection risk to patients.* Issued on 22 December, reinforcing the previous guidance and including the letters of 15 September 2010 and 1 July 2011 as attachments for convenience. This guidance reminded colleagues of the potential infection risk posed by water systems in healthcare facilities and outlined the action required of Trusts. See link:
http://www.dhsspsni.gov.uk/hss-md-31-2011.pdf

17. *Interim Guidance on Pseudomonas and Neonatal Units.* Issued on 28 January, see link: http://www.dhsspsni.gov.uk/hss-md-4-2012.pdf

Action required

18. Chief Executives should:

- familiarise themselves with the contents of all the above letters and ensure that these are brought to the attention of all relevant staff;

- ensure that their organisation is fully compliant and provides robust assurance and documentary evidence with the best practice outlined in management of water systems and infection control practice.

Conclusion

19. We are liaising closely with the Chief Medical Officers in the other UK administrations, the Health Protection Agency, and colleagues in the Public Health Agency.

20. The advice given in the CMO letter of 22 December 2011, Water sources and *potential infection risk to patients.*
(HSS(MD) 31/2011 22 December 2011 (PDF 203 KB)) is being reviewed and will be updated to reflect emerging evidence relating to the control of *Pseudomonas aeruginosa* in water systems, advice from the Health Protection Agency (HPA) in

respect of the recent outbreak in Northern Ireland and views of Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI).

21. Technical guidance will be available at end of March 2012 on:

    i) sampling, testing and monitoring aspects;

    ii) what action to take in event of a problem; and

    iii) advice which can be drawn on to help inform local water safety action plans.

22. Local risk assessment processes should also provide an assurance that they are compliant with HTM 04-01 *The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems*, and that manufacturers' installation and maintenance instructions have been followed. An addendum to HTM 04-01 to cover *Pseudomonas aeruginosa* is being developed and will be available by March 2013.

23. In conclusion, we would draw your attention to the Best Practice notes issued by the Department of Health in England (See Annex A). These remain applicable to all settings, however it is important to note that **during management of the current situation in Northern Ireland, additional interim guidance applies to neonatal units. Where there is any conflict between the Northern Ireland interim guidance for neonatal units and the best practice notes, the NI interim guidance takes precedence at this time.**
    [NOTE:
    Item 1.1, bullet point 4: para 10 of this letter applies.
    Item 1.8 details the Healthcare Cleaning Manual for cleaning hand wash basins. Further specific guidance on cleaning is under discussion at present in Northern Ireland.
    Items 2.4 and 2.7 are specific to England.]

Yours sincerely

Dr Michael McBride
Chief Medical Officer

Deputy Secretary/Chief
Estates Officer

This letter is available on the DHSSPS website at
www.dhsspsni.gov.uk/index/phealth/professional/cmo_communications.htm

These Best Practice notes have been issued by the Department of Health in England. During management of the current situation in Northern Ireland, additional interim guidance applies to neonatal units and other augmented care settings. Where there is any conflict between the Northern Ireland interim guidance for and the best practice notes, the NI interim guidance takes precedence at this time.

In particular:
Item 1.1, bullet point 4: para 10 of this letter applies.
Item 1.8 details the Healthcare Cleaning Manual for cleaning hand wash basins. Further specific guidance on cleaning is under discussion at present in Northern Ireland.
Items 2.4 and 2.7 are specific to England.

1. Best Practice for hand wash stations to minimise the risk of P*seudomonas aeruginosa contamination*

1.1 Only use the hand wash station for hand washing[1]

- Do not dispose of body fluids at the hand wash basin – use the dirty utility area.
- Do not wash any patient equipment in hand wash basins
- Do not use hand wash basins for storing used equipment awaiting decontamination
- Wash patients, including neonates, on augmented care units[2] with water from outlets demonstrated to be safe established by water sampling and risk assessment.

1.2 Use **all** hand wash stations regularly

1.3 Flush **all** taps on augmented care units regularly (manually or automatically) and keep a record of when they were flushed.

1.4 Identify any problems or concerns relating to safety, maintenance and cleanliness of the hand wash stations to the Infection Prevention & Control team and the Estates and Facilities Department

1.5 Maintain good dialogue and communication between the Director of Infection Prevention and Control, the Infection Prevention and Control, Estates and Augmented Care Unit(s) teams at all times.

1.6 Do not locate alcohol gel dispensers at hand wash stations – locate at the point of care or use individual hand-rub dispensers

1.7 Use pre-filled single-use bottles for alcohol based handrubs or cleaning solutions. Do not top-up cleaning spray, alcohol or other bottles.

1.8 Ensure that cleaning staff have been trained on the correct cleaning procedures for taps and sinks and follow the guidance in the Healthcare Cleaning Manual for cleaning hand wash basins paying particular attention to limescale deposit. See http://www.nrls.npsa.nhs.uk/resources/?EntryId45=61830

[1] Advice on hand hygiene can be found at: epic2: National evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England (2007) *Journal of Hospital Infection* 65 (Supplement). Available from: http://health.tvu.ac.uk/richardwells/pdfs%20and%20documents/_epic2-final%20glines.pdf
World Health Organisation http://www.who.int/gpsc/5may/background/5moments/en/

[2] For example high dependency, adult and neonatal critical care, renal, transplant, haemato-oncology and burns units

2. Best Practice for assessing and managing the risks* in augmented care units[1] to minimise the risk of *Pseudomonas aeruginosa* contamination

2.1 Set up a Water Safety Group to develop a water safety action plan for the Trust - see link for more information http://whqlibdoc.who.int/publications/2011/9789241548106_eng.pdf

2.2 Trusts should develop a risk assessment and written scheme specific to *Pseudomonas aeruginosa* in addition to that in place for *legionella*. The risk assessment should identify elements such as: at risk patients and services, the suitability of the water distribution system – including types of taps used, identifying under-used outlets and hand wash basins, use of flexible hoses.

2.4 Ensure a policy is in place to demonstrate compliance with the Code of Practice for the prevention and control of infections and related guidance[2].

2.5 Ensure the details of the Responsible Person (Water) as required by HTM 04-01 are easily accessible.

2.5 Ensure correct clean and dirty separation is maintained along with use of sink free zones for high risk procedure areas, for example, where intravenous drugs are being prepared.

2.6 Ensure taps and thermostatic mixing valves (manual and automated) have been commissioned (including programming auto flushing cycles), and routinely validated, as per the manufacturer's instructions.

2.7 Advice can be obtained from the Health Protection Agency via the Regional Microbiologists and Health Protection Units where concerns are identified

* Technical guidance on testing, sampling and managing the risk of *Pseudomonas aeruginosa* contamination in augmented care units will be published at the end of March 2012

1 For example high dependency, adult and neonatal critical care, renal, transplant, haemato-oncology and burns units

2. The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_122604