



Canadian Agency for
Drugs and Technologies
in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS



TITLE: Frequency of Rescreening of Patients Positive for Antibiotic Resistant Organisms: Clinical Evidence and Guidelines

DATE: 02 January 2015

RESEARCH QUESTIONS

1. What is the clinical evidence regarding the frequency of rescreening following a positive antibiotic resistant organism (ARO) test result at admission in the acute care setting?
2. What are the evidence-based guidelines regarding the frequency of rescreening following a positive ARO test result at admission in the acute care setting?

KEY FINDINGS

Four non-randomized studies regarding the frequency of rescreening of patients positive for antibiotic resistant organisms were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, Medline, The Cochrane Library (2014, Issue 12), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and December 15, 2014. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

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Table 1: Selection Criteria

Population	Adults who test positive for ARO when admitted to an acute care facility
Intervention	Rescreening or testing during the same hospital admission
Comparator	No rescreening or testing
Outcomes	Safety Patient satisfaction Infection control Guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Four non-randomized studies regarding the frequency of rescreening of patients positive for antibiotic resistant organisms were identified. No health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Two studies^{1,4} addressed repeat screening to identify patients with methicillin-resistant *Staphylococcus aureus*. The findings were conflicting. Repeat screening within six months of the same or subsequent hospitalization was not recommended in one study,¹ yet another study recommended weekly screening in addition to admission screening.⁴

One study² compared screening frequencies of every month or every two to three months for multidrug-resistant tuberculosis. The authors concluded that less frequent testing results in delays of identifying treatment failure.²

Another study³ examined vancomycin-resistant enterococci (VRE) in hemodialysis patients. This study found three weekly cultures to be insufficient in identifying patients with VRE.³

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Weir SK, Fram J, Berg G, Kabbani D, Strymish J, Tang M, et al. Molecular epidemiology of methicillin-resistant *Staphylococcus aureus* isolates from patients newly identified as nasal carriers. *J Clin Microbiol* [Internet]. 2012 Oct [cited 2014 Dec 19];50(10):3283-6. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3457428>
[PubMed: PM22837329](#)
2. Kurbatova EV, Gammino VM, Bayona J, Becerra M, Danilovitz M, Falzon D, et al. Frequency and type of microbiological monitoring of multidrug-resistant tuberculosis treatment. *Int J Tuberc Lung Dis*. 2011 Nov;15(11):1553-5.
[PubMed: PM22008772](#)
3. Park I, Park RW, Lim SK, Lee W, Shin JS, Yu S, et al. Rectal culture screening for vancomycin-resistant enterococcus in chronic haemodialysis patients: false-negative rates and duration of colonisation. *J Hosp Infect*. 2011 Oct;79(2):147-50.
[PubMed: PM21764175](#)
4. Rymzhanova R, Thouverez M, Talon D, Bertrand X. Usefulness of weekly methicillin-resistant *Staphylococcus aureus* screening. *Infect Control Hosp Epidemiol*. 2009 Nov;30(11):1113-5.
[PubMed: PM19780674](#)

Guidelines and Recommendations

No literature identified.

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APPENDIX – FURTHER INFORMATION:

Clinical Practice Guidelines – Uncertain Methodology

5. Implementation of modified admission MRSA screening guidance for NHS (2014) [Internet]. London (GB): UK Department of Health, Expert Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI); 2014 [cited 2014 Dec 19]. Available from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/345144/Implementation_of_modified_admission_MRSA_screening_guidance_for_NHS.pdf
See: Interventions # 6, page 9
6. Roberts A. MRSA & management of antibiotic resistant organisms (infection prevention and control policy: appendix 14) [Internet]. Version 2. Southampton (GB): Southern Health National Health Service; 2014 Mar [cited 2014 Dec 19]. Available from:
<http://www.southernhealth.nhs.uk/EasysiteWeb/getresource.axd?AssetID=42604&type=full&servicetype=Attachment>
See: 3.2.4 Inpatients identified as MRSA positive, pages 12-13
7. Section T - management of patients colonised or infected with meticillin-resistant *Staphylococcus aureus* (MRSA) & PVL *Staphylococcus aureus* [Internet]. Version 7. Huddersfield (GB): Calderdale and Huddersfield National Health Service; 2014 Mar [cited 2014 Dec 19]. Available from:
http://www.cht.nhs.uk/fileadmin/departments/infection_control/policies/new_for_2014/Section_T_-_Management_of_Patients_Colonised_with_MRSA_PVL_Version_7_CG_.pdf
See: 11. MRSA Screening, third paragraph, page 8
Elective screens, page 9
8. Prevention and control methicillin-resistant *Staphylococcus aureus* (MRSA): national clinical guideline No. 2 [Internet]. Dublin (IE): Health Protection Surveillance Centre, National Clinical Effectiveness Committee; 2013 Dec [cited 2014 Dec 19]. Available from:
<http://www.hpsc.ie/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHAI/Guidelines/File,14478,en.pdf>
See: Practical Guidance: Who to screen and when; c), pages 9-10
9. Guidelines for the control of multidrug resistant organisms: volume 10 – infection prevention and control [Internet]. Christchurch (NZ): Canterbury District Health Board; 2012 Jun 11 [cited 2014 Dec 19]. Available from:
<http://www.cdhb.health.nz/Hospitals-Services/Health-Professionals/CDHB-Policies/Documents/4815-Volume-10-Guidelines-for-the-Control-of-Multidrug-Resistant-Organisms.pdf>
See: 1.5.4 MRSA testing, page 8
1.6.2 ESBL risk assessment for screening, page 12
1.7.2 VRE risk assessment, page 16
10. Guidelines for the prevention and control of multi-drug resistant organisms (MDRO) excluding MRSA in the healthcare setting [Internet]. Dublin (IE): Royal College of Physicians of Ireland; 2012 [cited 2014 Dec 19]. Available from:

<http://www.hpsc.ie/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHAI/Guidelines/File,12922,en.pdf>

See: *Third bullet, page 27*

Additional References

11. McGeer A, Fleming CA. Antimicrobial resistance in common hospital pathogens in Ontario: report 2011. Toronto (ON): Ontario Medical Association, Quality Management Program - Laboratory Services; 2012 Apr [cited 2014 Dec 19]. Available from: <https://iqmh.org/Portals/0/Docs/Resources/Antimicrobial%20Resistance%20Report%202011.pdf>
See: 63. *When are precautions discontinued?*, page 23