

# Why Do Antimicrobial-Resistant Organism Screening Practices Vary Across Jurisdictions?

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The findings and conclusions in this report are those of the presenter and do not necessarily represent the official position of the Centers for Disease Control and Prevention

National Center for Emerging and Zoonotic Infectious Diseases

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# Factors Contributing to Variability In Use of Screening-based Strategies

- ❑ **Scientific uncertainty /debate about the effectiveness of screening-based strategies relative to other approaches**
  
- ❑ **Resource intensity of screening-based strategies**
  - Testing
  - additional infection control supplies
  - person time
  - hospital space, opportunity cost
  - other logistical requirements
  
- ❑ **Other contextual factors that can influence screening policy decisions**

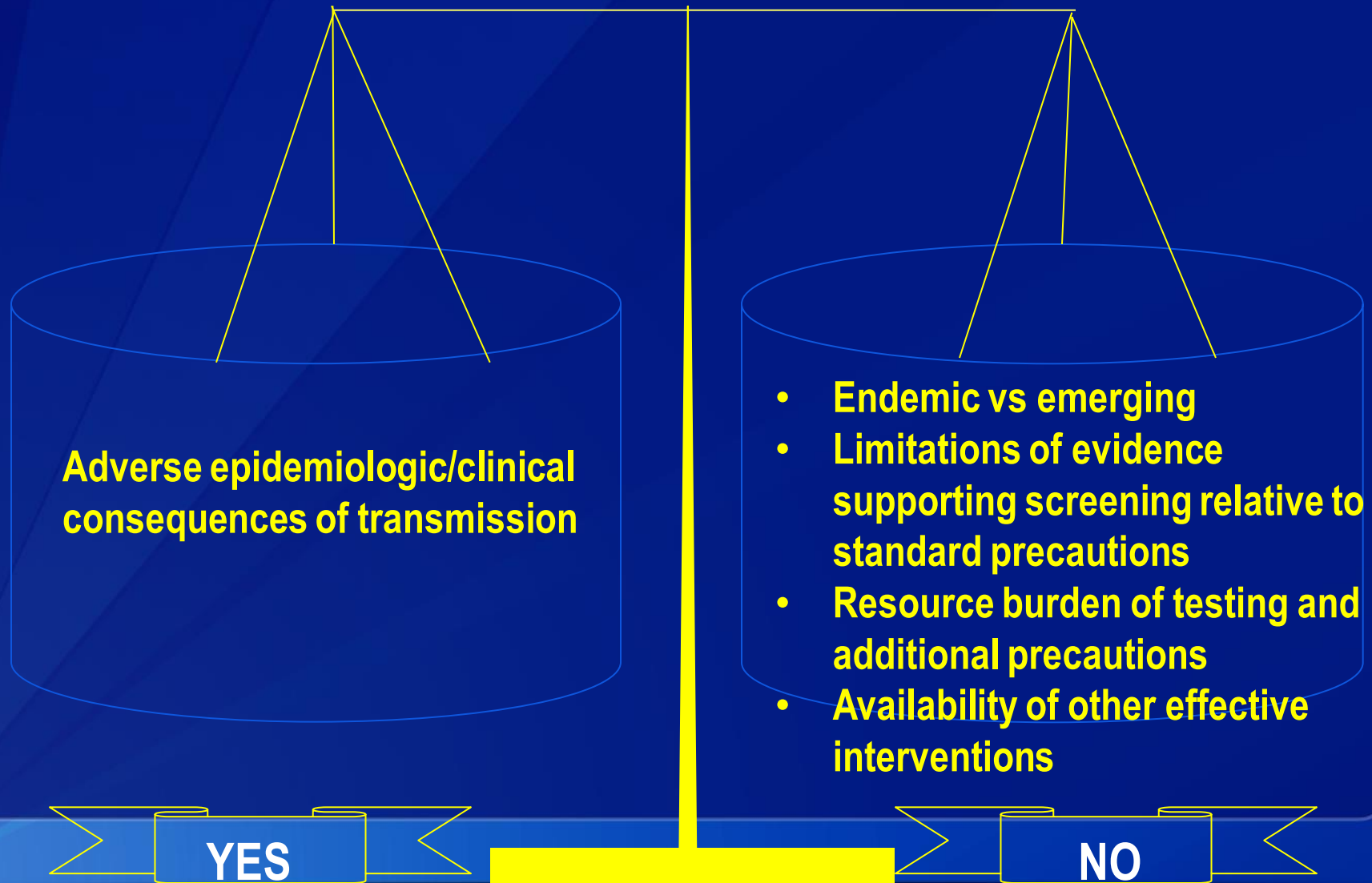
# Contextual Factors to Consider When Considering Screening-based Strategies

- Prevalence of the target MDRO
  - Endemic vs epidemic/emerging
- Are standard (non-screening) approaches working?
- Consequences of transmission of the target MDRO
  - Consequences for individual recipient
    - risk of infection
    - Morbidity and mortality of infection
      - Virulence
      - Underlying host factors
      - Availability of effective therapy
  - Population consequences
    - Contributes to reservoir of transmission (strain and genetic elements)

## Contextual Factors to Consider When Considering Screening-based Strategies (continued)

- Availability of enhanced interventions that do not require screening
- Regionally coordinated approach?

# Should Screening Strategies Be Used to Prevent Transmission of a Particular Pathogen?





## Werkgroep Infectie Preventie (WIP)

De Werkgroep Infectie Preventie (WIP) stelt landelijke richtlijnen op voor de preventie van infecties in Nederlandse zorginstellingen met als doel richting te geven aan het handelen in de praktijk. De WIP is een onafhankelijke stichting. Ze gebruikt de RIVM-website om informatie te delen.

In dit onderwerp

### In de media

#### Laatste nieuws

- > Concept WIP-richtlijn Persoonlijke hygiëne medewerkers open voor landelijk commentaar
- > Besluit bestuur over toekomst WIP
- > WIP publiceert de richtlijn Infectiepreventiemaatregelen bij

## ❑ Dutch MRSA Policy (“Search and Destroy”)

- Admission screening (and empiric isolation pending results of screen) of “high risk” patients
  - High risk examples:
    - foreign hospital last two months
    - foreign dialysis patients
    - Recent hospitalization in other Dutch hospitals with MRSA transmission
    - Pig farmers, etc.

# MRSA Screening Policy Ontario, Canada

- “The following patients are at increased risk for MRSA and should be screened at admission for MRSA:”

- Previously colonized or infected with MRSA
- Admission last 12 months
- Other criteria....

## Annex A: Screening, Testing and Surveillance for Antibiotic-Resistant Organisms (AROs)

In All Health Care Settings

Provincial Infectious Diseases Advisory Committee (PIDAC)

Revised: February 2013



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Health  
Ontario  
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Ontario  
PROTECTORIAT DE LA SANTÉ

# MRSA Screening Policy, Alberta, Canada

- Patients with a history of hospitalization .....within the past 6 months should routinely be screened on admission to an acute care facility



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Provincial  
Methicillin-Resistant *Staphylococcus aureus* (MRSA)  
Infection Prevention and Control Guidelines

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Public Health Division

August 2007



# MRSA Screening Policy, UK

Journal of Hospital Infection (2006) 63S, S1–S44



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## Guidelines for the control and prevention of meticillin-resistant *Staphylococcus aureus* (MRSA) in healthcare facilities<sup>☆</sup>

J.E. Coia<sup>a</sup>, G.J. Duckworth<sup>b</sup>, D.I. Edwards<sup>c</sup>, M. Farrington<sup>d</sup>,  
C. Fry<sup>e</sup>, H. Humphreys<sup>f,\*</sup>, C. Mallaghan<sup>g</sup>, D.R. Tucker<sup>h</sup>,  
for the Joint Working Party of the British Society of Antimicrobial  
Chemotherapy, the Hospital Infection Society, and the Infection  
Control Nurses Association

- “Active screening of patients for MRSA carriage should be performed ..... The fine detail regarding which patients are screened should be determined locally by the infection control team and must be discussed with the appropriate clinical teams and endorsed by the relevant hospital management structure”

# CDC/HICPAC Guidance On Management of Multidrug-Resistant Organisms (MDROs) in Healthcare Settings

**First Tier: General Recommendations  
For All Acute Care Settings**

If endemic rates not decreasing, or  
if first case of important organism

**Second Tier: Intensified Interventions  
(including screening)**

## Strategies to Prevent Methicillin-Resistant *Staphylococcus aureus* Transmission and Infection in Acute Care Hospitals: 2014 Update

David P. Calfee, MD, MS;<sup>1a</sup> Cassandra D. Salgado, MD, MS;<sup>2a</sup> Aaron M. Milstone, MD;<sup>3</sup>  
Anthony D. Harris, MD, MPH;<sup>4</sup> David T. Kuhar, MD;<sup>5</sup> Julia Moody, MS;<sup>6</sup> Kathy Aureden, MS, MT, CIC;<sup>7</sup>  
Susan S. Huang, MD, MPH;<sup>8</sup> Lisa L. Maragakis, MD, MPH;<sup>3</sup> Deborah S. Yokoe, MD, MPH<sup>9</sup>

- ❑ **“Because of conflicting results from recently published studies and the low quality of evidence of many studies as well as differences among acute care hospitals and their associated patient populations, a definitive recommendation for universal screening for MRSA in all hospitals cannot be made**
- ❑ **“AST, however, may be beneficial in hospitals that have implemented and optimized adherence to basic MRSA prevention practices but that continue to experience unacceptably high rates of MRSA transmission or infection”**

# MRSA Screening Policy, Australia



The screenshot shows the NHMRC website header with the Australian Government logo and the NHMRC logo. A search bar is located in the top right corner. Below the header is a navigation menu with the following items: Home, About, Grants, Guidelines & Publications, Health ethics, Media, Research, Research Translation, and Your health. A breadcrumb trail indicates the current page is 'Australian Guidelines for the ...'. The main content area displays the title 'Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010)' and a list of links: Acknowledgements, Disclaimer, and Summary of recommendations. The text below the links states: 'These guidelines provide recommendations that outline the critical aspects of infection prevention and control. The recommendations were developed using the best available evidence and consensus methods by the Infection Control Steering Committee.1 They have been prioritised'.

- When the incidence or prevalence of MROs is not decreasing despite implementation of the core strategies outlined above, further measures (e.g. screening) to control transmission need to be considered

# CRE Screening Policy, Australia



Recommendations  
for the control of  
Multi-drug resistant  
Gram-negatives:  
**carbapenem resistant  
Enterobacteriaceae**

**The Recommendations within Section 2.1 are consistent with information on screening patients with multi-resistant organisms outlined in the *Australian Guidelines for the Prevention and Control of Infection in Healthcare* and the *National Safety and Quality Health Service Standards: Standard 3*.**



## Recommendations

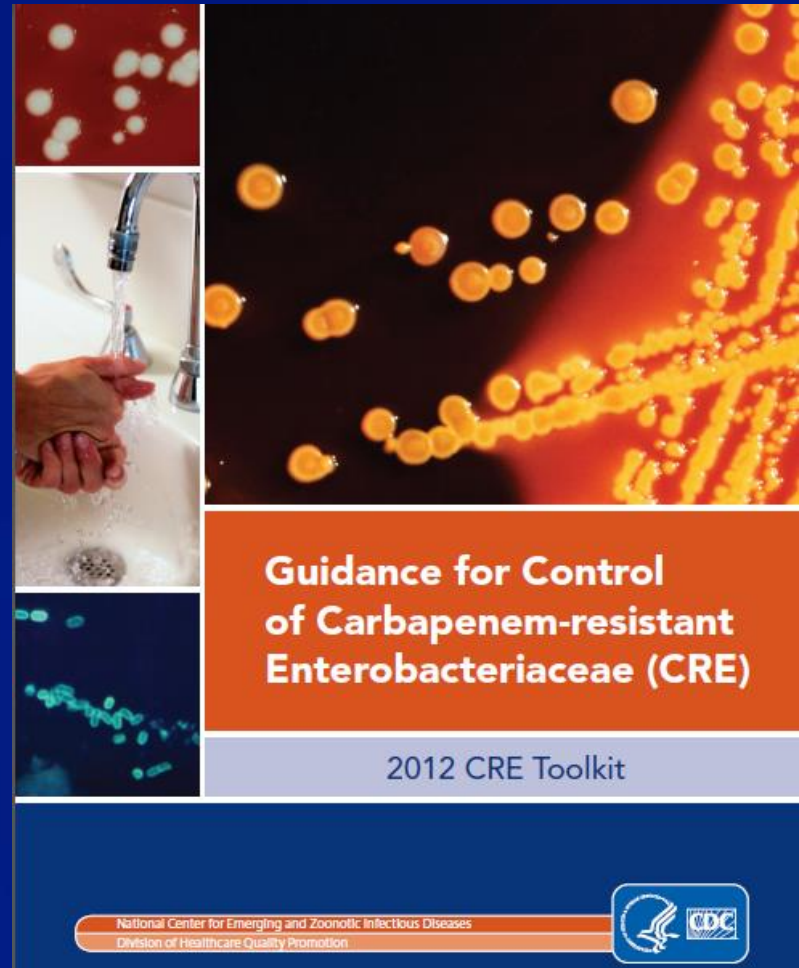
**2.1.1** All the following should be actively screened for CRE colonisation or infection:

- Patients directly transferred from any overseas hospital.
- Patients who have been admitted overnight to any overseas hospital or who have resided in an overseas residential aged care facility within the past 12 months.
- People who are identified as a CRE contact during their hospitalisation and have not been shown to have negative post-contact cultures.
- Patients with past demonstrated CRE colonisation or infection.

These risk factors should be specifically elicited in the clinical history. See Recommendation 4.1.1 for recommended screening specimens.

# CDC Recommendations for Control of CRE

- Includes CRE Screening as a “core “ strategy, in the form of:
  - Point prevalence surveys
  - Screening of epidemiologically linked patients
- Routine active screening is considered a “supplemental” measure



# Summary

- ❑ **Decisions on using screening-based strategies for MDRO control are complex**
- ❑ **Important knowledge gaps regarding effectiveness of screening strategies remain**
- ❑ **No “one size fits all”**
  - **must take into account multiple contextual factors**
    - **Target organism**
      - prevalence of the targeted pathogen
      - consequence of infection by the pathogen
      - Pathogen-specific evidence for screening-based interventions
    - **resource availability**
    - **population at risk**
    - **Availability of alternative prevention strategies**



# Summary

- ❑ **Complexity/uncertainty + local contextual factors = wide variability of practice across jurisdictions**

# Thank You!

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