A National Approach to Healthcare-Associated Infection
Prof. Chris Baggoley, Australian Commission on Safety and Quality in Health-Care
Broadcast live from the 2010 conference of the Australian Infection Control Association

A national approach to HAIs – where no one has gone before?

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Australian Commission on Safety & Quality in Health Care

Broadcast live from the 2010 conference of the Australian Infection Control Association

www.webbertraining.com
October 5, 2010

“I have a right to safe and high quality care”

This means:

• To be free of being infected by my hospital or health worker
• To be given the right medications at the right time
• To be assessed for the risk of VTE
• To undergo the correct procedure, operation, test, x-ray
• To be rescued if my condition unexpectedly deteriorates

The quality and safety problem

The incidence of:

- Experiencing an adverse event in an intensive care unit [1]: 1:2
- Being injured if you fall in hospital [2]: 1:2
- An adverse event in ICU being serious enough to cause death or disability [3]: 1:10
- Experiencing an adverse event or near miss in hospital [4]: 1:10
- Experiencing a complication from a medication or drug [5]: 1:20
- Developing a hospital-acquired infection [6]: 1:30


Time line of the rapid rate of resistance

- Discovery of new classes of antibiotics
  - Sulfonamides
  - Beta-lactams
  - Aminoglycosides
  - Chloramphenicol
  - Macrolides
  - Glycopeptides
  - Quinolones
  - Oxazolidinones
  - Tetracyclines
  - Lincosamides
  - Lipeptides
  - Glycopeptides

- Ten year trend in antibiotic submissions to FDA

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New antibacterials in the pipeline

New Molecular Entities Publicly Disclosed in R&D Programs Of the World’s 15 Largest Pharmaceutical Companies
Source: Adapted from Spellberg 2004

Effecting Change

Australian Commission on Safety and Quality in Health Care (ACSQHC)

- Commenced January 2006.
- Reports to Australian Health Ministers (AHMC)
- Works with policy makers from jurisdictions, private hospital sector and primary care.
- National Health and Hospitals Network Bill (2010)

Result of scoping mid 2007

No systematic Australia-wide approach
- Considerable variation
- Work undertaken by many disparate specialist groups
  - Despite widespread activity in most jurisdictions
  - Many individual initiatives (some endorsed by AHMC)
  - Publication of a number of national reports
    - 1999 - Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR)
    - 2001 - National surveillance of HAI in Australia
    - 2003 - National Strategy to Address Health Care Associated Infections
    - 2004 - Health Care Associated Infections Advisory Committee
    - 2006 - Expert Advisory Group on Antimicrobial Resistance (EAGAR)

HAI prevention program

Commenced May 2007
1. HAI Surveillance
2. Clinician Capacity
3. National Infection Control Guidelines
4. National Hand Hygiene
5. Antimicrobial Stewardship

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HAI Surveillance

- Addressing areas of national importance in surveillance
  In December 2008, Health Ministers approved the following actions for implementation of a national approach to the surveillance of Staphylococcus Aureus (including MRSA) and other virulent microorganisms:
  1. All hospitals establish HAI surveillance; and
  2. All hospitals monitor and report into a national data collection;
     - Staphylococcus Aureus (including MRSA) blood stream infections; and
     - Clostridium Difficile infections.

Core hospital-based outcome indicators

3. Hospital standardised mortality ratio (HSMR)
4. Death in low-mortality Diagnosis Related Groups (DRGs)
5. In-hospital mortality rates for:
   a. acute myocardial infarction (AMI)
   b. heart failure
   c. stroke
   d. fractured neck of femur
   e. pneumonia
6. Unplanned hospital re-admissions of patients discharged following management of:
   a. AMI
   b. heart failure
   c. knee and hip replacements
   d. depression
   e. sepsis, septic shock and severe sepsis
   f. percutaneous transluminal coronary angioplasty
7. Healthcare associated Staphylococcus aureus (including MRSA) bacteraemia
8. Clostridium difficile infections
9. Obstetric trauma - third and fourth degree tears

HAI Surveillance – recent work

- National definitions of Healthcare Associated SAB and CDI
- Data dictionary for Healthcare Associated SAB and CDI – lodged in METeOR
- SAB and CDI Implementation Guidelines
- Standardised laboratory requesting and reporting
  - Clostridium difficile workshop August 2010
  - Clostridium difficile 027 Snapshot Study, October 2010

Central Line Associated Bacteraemia (CLAB) Project

ANZICS CLAB Prevention Project funded by the Commission.

Endorsed by IJC in June 2010
Builds on work presently being undertaken
Reference groups to be set up in each state/territory

Next steps:
- Surveillance database, including an automated/real-time reporting process
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⚠️Clinician capacity building

The Implementation Advisory Committee brings clinical, academic, professional, research and government expertise with geographical representation from across Australia.

⚠️Implementation Advisory Committee

- Literature review of The Infection Control Practitioners’ Scope of Practice
- Review of Australian Infection Control Programs
- Elements of an Infection Control Program
- C1 Management and Clinical Governance
- Australian guidelines for the prevention and control of infection in health care (2010)

⚠️10 on-line education modules

- Developed for managers and infection prevention staff
- Who undertake infection prevention as part of other clinical roles or in small healthcare facilities.
- Available on the Commission’s website from October 2010.
- To Health Ministers Nov 2010
- Further modules in 2011.

⚠️Ten modules on basic principles of IC management

The education modules comprise ten online interactive sessions, a workbook, and assessment tools to facilitate learning.

The ten modules include:
1. Principles of Infection Prevention and Control
2. Basic Epidemiology and Statistics
3. Surveillance and Quality Improvement
4. Basic Microbiology and Multi-resistant Organisms
5. Risk Management of Infectious Agents and Infectious Diseases
6. Infectious Agent Screening and Immunisation of Healthcare Workers
7. Outbreak Management
8. Renovation, Repairs and Redevelopment Risk Management
9. Management of Occupational Exposures
10. Cleaning, Disinfection and Sterilisation

⚠️Education Modules content

MODULE ASSESSMENT
1. Which one of the following bacteria can often be found as part of the normal flora of the skin or groin but can also cause post operative infections?

Further reading:

LINKS
- Refer to Module 4 for details of these organisms

Bibliography:
American Society for Microbiology (ASM): Microbe Library (2009). (Last accessed 18.06.09)
http://www.microbelibrary.org/
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Infection Control Guidelines

Australian Guidelines for the Prevention and Control of Infection in Healthcare
- Commission engaged the NHMRC to produce guidelines based on:
  - Best available current scientific evidence
  - International guidelines (CDC, EPIC II)
  - Best practice / expert opinion
- Public consultation March 2010
- Available October 2010

Supporting the use of the Guidelines

- Workshops, conferences and events
- e-learning tool for infection prevention and management, designed for orientation to a healthcare facility
- OSSIE Implementation guide and OSSIE for Primary Care

Implementation strategies target:
- Healthcare workers, including nurses and doctors
- Ancillary staff, including wardsmen and cleaners
- Infection control practitioners
- Healthcare facility management
- Education and training facilities involved in the development of infection control curricula

To Health Ministers 2010

Core practice principles

- Hand hygiene
- Patient placement
- Care of healthcare workers
- Equipment and supplies
- Sterilisation and disinfection
- Biological hazard management
- Healthcare worker illness
- Hand hygiene

Implementation resources developed to support the guidelines.
- For managers and infection prevention staff
- For Primary Care workers

Key elements:
- Principles of change management
- Implementation strategies

National Hand Hygiene Initiative

HHA model
- Standardises practice across Australia
- Work with infection control community
- Adapted WHO guidelines for Australian context
- Majority of amendments have been incorporated into new standard WHO policy
- Validated audit tool
- Credentialing of auditors
- Educational module with on-line questions (100,000+ participants)

Appropriate for:
- Public Sector Hospitals
- Private Hospitals
- General Practice
- Consumers
- Aged care facilities

All states and territories now submitting compliance data

OSSIE Implementation Guide & Toolkit

Implementation resources developed to support the guidelines.
- For managers and infection prevention staff
- For Primary Care workers

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Evaluating hand hygiene interventions and their ability to reduce Healthcare Associated Infection
April 2010 – March 2013

The Aim: The Hand Hygiene Evaluation is an NHMRC Partnership project which aims to evaluate the effectiveness and cost effectiveness of the National Hand Hygiene Initiative (NHHI)

The Research Team:
Prof Nicholas Graves
Health Economist
A/Prof Katy White
Psychologist
A/Prof Nerina Jimmieson
Organizational Psychologist
A/Prof Adrian Barnett
Health Statistician
Prof Lindsay Grayson
Director - Hand Hygiene Australia
Prof David Paterson
Infectious Disease Consultant
Prof Naomi Fulop
Health and Health Policy - King’s College London
Megan Campbell
Project Manager

Research Questions:
Do measurable factors, other than hand hygiene compliance affect rates of healthcare associated Staphylococcus aureus bacteraemia?

The researchers will investigate what factors - other than NHHI - might influence SAB rates
- at Hospital level and
- at Healthcare worker level

Is a hand hygiene intervention a cost effective use of scarce health care resources?
The researchers will estimate the:
- wide range of costs from rolling out the NHHI
- cost savings from reduced cases of infection
- health benefits from reduced infection by lives saved and quality of life gains

Outcomes:
The research will show:
- whether other factors are associated with positive outcomes
- how the effects vary across Australian HCW and hospitals
- whether it is cost-effective as a national policy
- whether hand hygiene interventions should be targeted based on value for money

This will allow policy makers to:
- decide how hand hygiene interventions should be organised
- decide how to target healthcare spending

The findings will be novel

Hand Hygiene Evaluation Project

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Hand Hygiene Evaluation Project

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Aim: to promote optimal use of antibiotics in maximising efficacy in individuals while minimizing impact of antibiotic resistance on Communities.

Publication, The Role of Antimicrobial Stewardship in Australian Hospitals, due October 2010
Education module development with NPS

Education modules for antimicrobial prescribing (NPS)
Antimicrobial Stewardship Forum – early 2011
Workshop on antimicrobial usage data (NAUSP)

Accreditation

Standards for infection control

Elements of HAI standard
1. Systems and governance
2. Infection prevention policies and protocols
3. Managing patients with infections
4. Antimicrobial stewardship
5. Cleaning, disinfection and sterilisation
6. Consumer information

28 Pilot sites including primary care acute

Thank you
www.safetyandquality.gov.au

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