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About RPM Plus

RPM Plus works in more than 20 developing and transitional countries to provide technical assistance to strengthen pharmaceutical and health commodity management systems. The program offers technical guidance and assists in strategy development and program implementation both in improving the availability of health commodities—pharmaceuticals, vaccines, supplies, and basic medical equipment—of assured quality for maternal and child health, HIV/AIDS, infectious diseases, and family planning, and in promoting the appropriate use of health commodities in the public and private sectors.

Recommended Citation

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# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AIDS</td>
<td>acquired immunodeficiency syndrome</td>
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<tr>
<td>AMR</td>
<td>antimicrobial resistance</td>
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<tr>
<td>BCG</td>
<td>bacillus Calmette-Guérin</td>
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<td>DTC</td>
<td>Drug and Therapeutics Committee</td>
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<tr>
<td>DUE</td>
<td>drug use evaluation</td>
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<td>GMP</td>
<td>Good Manufacturing Practices</td>
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<td>HIV</td>
<td>human immunodeficiency virus</td>
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<tr>
<td>IC</td>
<td>infection control</td>
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<tr>
<td>ICAT</td>
<td>Infection Control Assessment Tool</td>
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<td>ICC</td>
<td>Infection Control Committee</td>
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<td>IV</td>
<td>intravenous</td>
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<td>MRSA</td>
<td>methicillin-resistant staphylococcus aureus</td>
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<td>MSH</td>
<td>Management Sciences for Health</td>
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<tr>
<td>QI</td>
<td>quality improvement</td>
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<tr>
<td>RCQI</td>
<td>rapid cycle quality improvement</td>
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<tr>
<td>RPM Plus</td>
<td>Rational Pharmaceutical Management Plus [Program]</td>
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<tr>
<td>TB</td>
<td>tuberculosis</td>
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<tr>
<td>VA</td>
<td>visual aid</td>
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</table>
SESSION 12. INFECTION CONTROL

Purpose and Content

Session 12 introduces basic infection control (IC) practices for members of Drug and Therapeutics Committees (DTCs). An IC program, working in conjunction with an active DTC, is an essential tool in hospitals for preventing and controlling nosocomial infections and the morbidity, mortality, and cost associated with them.

As with many of the sessions in this DTC training course, participants are encouraged to review the articles in the “Further Readings” section for more information. Session 12 is brief, providing basic information primarily for DTC members, and cannot provide all the information and skills necessary for implementing a comprehensive IC program.

Objectives

After attending this session, participants will be able to—

- Understand basic infection control concepts
- Understand the causes of nosocomial infections
- Understand the components of an infection control program
- Understand how the Infection Control Committee (ICC) and DTC can decrease the incidence of nosocomial infections and antimicrobial resistance (AMR)

Outline

- Key Definitions
- Activity 1
- Introduction
- Epidemiology of Nosocomial Infections
- Control and Prevention of Nosocomial Infections
- Core Strategies for Reducing the Risk of Nosocomial Infections
- Implications for the DTC
- Activity 2
- Summary

Preparation and Materials

- Read the Trainer’s Guide and the Participants’ Guide, and review visual aids (VA).
- Instruct participants to read the Participants’ Guide the evening before the session presentation.
**Further Readings**


Websites for infection control information, guidelines, training materials, and articles are available from the U.S. Centers for Disease Control and Prevention, the World Health Organization, EngenderHealth, and American International Health Alliance (see annex 1 for website addresses).

**Visual Aid Listing**

1. Title slide
2. Objectives
3. Outline
4. Key Definitions (1)
5. Key Definitions (2)
6. Activity 1
7. Introduction—Why Infection Control? (1)
8. Introduction—Why Infection Control? (2)
9. Introduction—Development of AMR
10. Epidemiology of Nosocomial Infections (1)
11. Epidemiology of Nosocomial Infections (2)
12. Epidemiology of Nosocomial Infections (3)
13. Root Causes of Nosocomial Infections (1)
14. Root Causes of Nosocomial Infections (2)
15. Infection Control Committee (1)
16. Infection Control Committee (2)
17. Infection Control Committee (3)
18. Core Strategies to Reduce Nosocomial Infections—Hand Hygiene
19. Effect of Antiseptics on Colony Counts after Hand Scrub
20. Isolation and Standard Precautions
21. Ensuring a Clean Environment
22. Cleaning, Disinfection, and Sterilization of Instruments and Supplies
23. Sterile Invasive Procedures and Intravenous Medications
24. Respiratory Therapy
25. Surgery and Surgical Site Care
26. Employee Health and Training Program
27. Food and Water Precautions
28. Antimicrobial Use and Monitoring (DTC and IC Collaboration)
29. Case Study—Cesarean Section
30. Inappropriate Timing of Antibiotic Prophylaxis for Cesarean Section
31. Effect of Appropriate Perioperative Antibiotic Prophylaxis on Surgical Site Infections after Cesarean Section
32. Infection Control Priority Matrix
33. Implications for the DTC
34. Infection Control Resources
35. Infection Control Assessment Tool
36. Activity 2
37. Summary (1)
38. Summary (2)

Organization of the Session

Total time: 2–3 hours

Session 12 introduces basic IC practices for members of DTCs. The length of the session depends on whether the activities are completed; allow three hours if both activities are used. This session is not meant to provide in-depth information and is not intended in any way to imply that the DTC should also be an IC committee. DTC members should be aware of IC practices and work closely with an established IC committee to implement the appropriate activities in infection control that will lead to lower nosocomial infections and containing AMR.

First Component: 5 minutes
VAs 1–5: Introduction

Briefly discuss the objectives of the session, the outline, and the key definitions.
Second Component: 45 minutes
VA 6: Activity 1

Activity 1. Describing Infection Control Practices at Your Facilities or Institutions

This activity is intended to get an overview of what kinds of IC programs exist at each participant’s health care facility. Ask the participants to describe their hospital IC program or current practices at a hospital or clinic (or at the ministry level). Include the following—

- Committee membership
- Available policies and procedures
- Surveillance of nosocomial infections
- Hand hygiene and use of gloves
- Isolation and universal precautions
- Cleaning strategies (housekeeping), including waste disposal
- Cleaning, disinfection, and sterilization of instruments and supplies
- Intravenous (IV) catheter and IV fluids and medication
- Urinary catheters and urine drainage systems
- Mechanical ventilation and respiratory equipment
- Surgical site care
- Food and water monitoring
- Training
- Employee health and immunization for staff
- Antimicrobial use monitoring

As a part of this exercise, have the participants answer the following questions concerning their IC practices—

- Are you satisfied with the infection control procedures and activities?
- Is infection control maintained throughout your health care system?
- Are there complaints of inadequate infection control and resultant nosocomial infections
- Is there a formal mechanism for reporting and investigating nosocomial infections?
- Are outbreaks of infectious diseases in the hospital a common problem? What is the usual source of the outbreak?
- Is the DTC involved in any infection control activities? Please describe these activities.

Ask the participants to discuss each individual IC program in their groups, to select one, and to be prepared to present a summary of the program.
Section 12. Infection Control

**Third Component: 30 minutes**

**VA 7–17: Nosocomial Infections and Infection Control Committees**

Describe the most likely sites for nosocomial infections, and mention the importance of methicillin-resistant *Staphylococcus aureus* (MRSA) and the spread of blood-borne pathogens such as hepatitis B and C and HIV/AIDS. Ask the participants about their experience with ICCs in their countries, and then review the structure and functions of an ICC.

Ask participants about specific nosocomial infections that affect their institutions. Ask about surveillance and possibilities of implementing new programs to improve the situation in their hospital.

**Fourth Component: 30 minutes**

**VAs 18–33: Strategies to Reduce Nosocomial Infections**

Brainstorm with the participants to cite different strategies for reducing nosocomial infections. Then review all the strategies using the VAs. Emphasize the importance of all hospitals having an IC program and the role of the DTC in supporting an ICC or instituting IC activities in the absence of such a committee. The specific strategies discussed can improve infection control, but what is really needed is a comprehensive program based in an IC program that is supported by the DTC. Some members of the DTC may also be members of the IC committee.

The case study on VAs 27–30 is important to discuss in some detail. This case study is illustrative of the acute need to have better prophylaxis for cesarean section prophylaxis and will lead into the field study that will also have cesarean section prophylaxis review.

This important case study is a classic example of inappropriate antimicrobial use in surgical prophylaxis. This kind of antimicrobial use leads to increased infections, antimicrobial resistance, higher health care costs, and increased adverse drug reactions.

Slide 28 of the case study is a comparison of two hospitals and their antimicrobial prophylaxis—

- Hospital A uses a prophylaxis for too many patients because it should be used only for high-risk procedures. Only 32 percent received the medicine on time, adding to the inappropriate use in this case.

- Hospital B uses prophylaxis appropriately (i.e., administered to the high-risk population) and gives the medicine at the appropriate time in 70 percent of cases—still too low for administering a single dose. This 70 percent represents an improvement over hospital A, but is still unacceptable because many failures will result from the poor timing of the doses.

In slide 29, squares represent the surgical procedure, and circles represent antimicrobial prophylaxis administration. Diamonds represent post-operative infections. As the antimicrobial administration is given closer to the surgical procedure, there is a corresponding decrease in the incidence of post-operative infections.
Slide 30 describes the IC activities undertaken to improve cesarean section outcomes. The appropriate use of antimicrobials tops the list because it is within a hospital personnel capacity to improve practices in a short period of time.

Appropriate use of antimicrobials is an important issue for the DTC and the ICC. The committees must work together to achieve rational use.

VA 31 summarizes the implications for the DTC concerning infection control activities. Give sufficient time to this slide so that all participants have a good understanding of these concepts as they apply directly to DTCs.

**Fifth Component: 15 minutes**  
**VA 34–35 Infection Control Resources**

Discuss the availability of infection control resources online. (See the resources list in annex 1.)

Discuss the utility of using the new Infection Control Assessment Tool (ICAT) and quality improvement program developed by the Rational Pharmaceutical Management (RPM) Plus Program of Management Sciences for Health (MSH). The ICAT and quality improvement (QI) program provides a standardized approach by combining an infection control self-assessment tool (ICAT) and rapid cycle quality improvement (RCQI) (or rapid team problem solving) methods to improve hospital infection control practices. RCQI is a quality improvement approach in which a multidisciplinary team collaborates on improving an identified situation. The team identifies and prioritizes areas that need improvement, agrees on specific goals for improvement, and uses QI (or problem solving) tools to analyze available data about existing systems. The team then develops, tests, and implements a series of focused and affordable changes that can be implemented locally in the system to improve the situation and achieve the agreed-upon goals. The strength of RCQI is in synergizing team ideas in learning about systems and developing appropriate solutions to improve them. The methodology has been applied in various health care settings around the world.

For more information, contact MSH’s RPM Plus/SPS programs in Arlington, Virginia (e-mail: rpmplus@msh.org; website: www.msh.org/rpmplus).

**Sixth Component: 45 minutes**  
**VA 36: Activity 2**  

**Activity 2. Developing Recommendations for Your Facilities or Institutions**

Tell the participants to review this session and make recommendations for their hospitals for starting an ICC, improving the current committee, or making an infection control subcommittee of the DTC. Consider these questions—

- What would be the benefits to your hospital if an effective infection control program is started?
• How can your DTC contribute to improving infection control practice within your health care facility?

In your groups, discuss recommendations for each individual IC program, select one, and be prepared to present a summary of recommendations for the program.

The facilitator should select 2–3 groups to make presentations. Allow 30 minutes for group work and a maximum of 5 minutes per group presentation.

**Seventh Component: 10 minutes**

**VAs 37–38: Summary**

Summarize the key points. Discuss information sources available online including training programs, policies and procedures, and assessment tools.
Annex 1. Internet and CD-ROM Resources: Infection Control Information, Guidelines, and Protocols

RPM Plus/MSH


U.S. Centers for Disease Control and Prevention (CDC) Documents and Guidelines

Centers for Disease Control infection control index:
http://www.cdc.gov/ncidod/dhqp/a_z.html

Hand hygiene:
http://www.cdc.gov/handhygiene/

Guidelines for preventing the spread of TB in hospitals:
http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00035909.htm

Guidelines for surgical site infections:
http://www.cdc.gov/ncidod/dhqp/gl_surgicalsite.html

Improving compliance with hand hygiene:
http://www.cdc.gov/ncidod/eid/vol7no2/pittet.htm

Infection control guidelines for hospital personnel:
http://www.cdc.gov/ncidod/dhqp/gl_hcpersonnel.html

Intravenous catheters:
http://www.cdc.gov/ncidod/dhqp/gl_intravascular.html

Isolation procedures:
http://www.cdc.gov/ncidod/dhqp/gl_isolation.html

Prevention of needle stick infections:
http://www.cdc.gov/niosh/docs/2000-135
“Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis”: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm

Urinary catheters:  
http://www.cdc.gov/ncidod/dhqp/gl_catheter_assoc.html

Utilizing surveillance data:  
http://www.cdc.gov/ncidod/eid/vol7no2/gaynes.htm

**Alliance for Patient Safety (World Health Organization)**  
(Hand Hygiene and Safe Surgery)

http://who.int/patientsafety
http://who.int/patientsafety/challenge/en

**American International Health Alliance Website**

Website and training manuals:  
www.aiha.com

**EngenderHealth Website**

Online infection control training program:  
http://www.engenderhealth.org/IP/index.html