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# Prevention and Control of Hospital-associated Infections

*Report of a Regional Workshop  
Pune, India, 24–26 September 2002*

WHO Project: ICP DDP 002  
ICP CSR 001



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## **1. INTRODUCTION**

A workshop on Implementation of WHO Guidelines on Prevention and Control of Hospital-Associated Infections (HAI) was organized at Pune, India from 24 to 26 September 2002. Participants from eight countries of the South-East Asia Region of WHO except Bangladesh and Democratic People's Republic of Korea attended. Experts from Thailand, India and the Regional Office facilitated this workshop. A complete list of participants can be seen at Annex 1. The detailed programme of work has been appended as Annex 2. Dr Somsak Wattansari was elected Chairperson and Dr Rohini Kelkar and Dr Rattan Lal Ichhpujani as the Rapporteurs.

## **2. OBJECTIVES**

Following were the objectives of the workshop:

- (1) To review the current status of hospital-associated infections in all the Member Countries of the SEA Region and identify important issues confronting HAI;
- (2) To develop mechanisms to establish programmes for prevention and control of HAI, and
- (3) To formulate country-specific plans of action for strengthening infection control in the respective Member Countries, based on WHO guidelines and provide orientation to various health professionals in the effective use of these Guidelines.

## **3. INAUGURAL PROGRAMME**

Dr S Kumari, BCT, SEARO, New Delhi welcomed the participants and read out the address of Dr Uton Muchtar Rafei, Regional Director, SEARO/WHO, New Delhi. Hospital Associated Infections (HAI) have been a cause for concern for long. Despite rapid advances in therapeutics, diagnostics and a better understanding of the disease process, the problem of HAI persists

throughout the world. The incidence, type and magnitude of HAI vary from hospital to hospital, but it is estimated to be around 10% of all hospital admissions. HAI not only increase morbidity and mortality in patients, but also cause considerable economic loss and an extra burden on health care facilities. Given the prevailing conditions in hospitals in the developing countries, this figure is likely to increase. Hence, there is a strong need to set up systematic control measures and continuous surveillance. There is also an emerging need for undertaking health technology assessment in this important area to facilitate appropriate use of technology and resources. To support these activities, WHO has developed practical and simple guidelines to assist Member Countries in instituting efficient hospital infection control programmes. These guidelines encompass all the steps to be taken in the prevention, surveillance and management of hospital-associated infections.

## **4. WORKSHOP**

### **4.1 Presentations and Discussions**

The genesis of the workshop, importance accorded by WHO to the issue of prevention and control of HAI, development of draft guidelines and its finalization by an expert group was presented by Dr Rajesh Bhatia to apprise the participants with the sequence of events that had culminated in the conduct of this workshop.

Participants were introduced to the need for a national policy and planning for establishing a national programme for prevention and control of hospital associated infections by Dr Rohini Kelkar. She described the various steps required to set up an infection control programme at the hospital level. She emphasized that infection control activities must be integrated into the routine activities of the hospital. The management of these activities should be through a Hospital Infection Control Committee with a full time Infection Control Nurse who should coordinate various activities. The Committee should identify priorities, implement the plan and continuously monitor the situation for assuring quality and its continuous improvement.

The role of hospital environment in spread of HAI was discussed by Dr Somsak. HAI can originate from endogenous as well as exogenous flora and spread between patients as well as patients and hospital staff. He described

the role of water, air, hand washing, ventilation, control of rodents, premises and other environmental elements in HAI and presented various methods of controlling these. Potential of HAI in various special settings of hospitals such as laundry, operation theatres, kitchen was also emphasized. Dr Akeau supplemented the presentation of Dr Somsak by describing the principles of disinfection and sterilization and their appropriate use in the hospitals. She also described a possible mechanism for selection of disinfectants, so that their number could be kept to the minimum, thus saving on the cost as well as retaining their efficacy.

The prevention and control of hospital associated infections require various precautions-some of which are collectively known as universal (standard) precaution and remaining are directed towards system-specific prevention of infections such as respiratory and urinary tract infections, which were described in detail. The various practical aspects of implementation of these precautions to ensure their efficacy was emphasized. Dr Somsak and Dr Geeta Mehta subsequently discussed prevention and control of infections of surgical sites, urinary and respiratory tract and intravascular catheter related infections

The relationship between HAI and antimicrobial resistance and the impact of latter on mortality, morbidity and economic loss was highlighted. Greater use of antimicrobial agents was called for in the hospital settings where congregation of patients with compromised immunity led to selection and persistence of resistant strains. The participants were briefed about the eight components of the WHO Global Strategy for Containment of Antimicrobial Resistance. Strategy No 3 which deals with containment of resistance in hospital settings and has direct bearing upon the HAI was elaborated upon.

The utility and mechanism of hand washing was described in detail and various steps that need to be taken for hand washing as well as use of various disinfectants for hand washing and hand rub elaborated upon. The proper use of gloves, masks, shoes and clothes in the prevention of HAI was also highlighted. Utility of safe injection practices encompassing rational use of injections and proper disposal of sharps was also discussed. Apart from standard precautions, the participants were also briefed about the additional precautions that are transmission specific, e.g. respiratory precautions.



The importance and process of surveillance of HAI was presented through the success story of Thailand where surveillance for HAI has helped the country in bringing about a significant reduction in their prevalence during the past 10 years. The process of surveillance was described with respect to priority, objectives, target population and indicators for effective implementation.

Various components of an investigation of an outbreak viz initial identification of outbreak, establishment of presumptive aetiology, development of case definition, microbiological investigation to identify the causative agent, its antimicrobial susceptibility pattern, epidemiological typing and preservation; correlation between laboratory and clinical diagnosis, line listing, institution of control measures, review and documentation of the outbreak were discussed in detail. An illustration of an outbreak which hit a paediatric hospital in New Delhi in 1990-1991 was also provided.

Community-acquired infections were exemplified by the occurrence and spread of TB and diarrhoea in the community and hospitals and the mechanism of their spread.

Since most of the procedures in prevention and control of HAI require standardization, gave an overview of the use of standard operating procedure (SOP) was given besides the writing, validation, authorization and control of SOP in the hospital settings.

Ensuring the safety and health of the hospital staff is also an integral part of the prevention and control of HAI programme. The participants were briefed on the important diseases for which a health care worker should be monitored and/or protected with specific means such as immunization.

## **4.2 Regional Status**

The status of infrastructure and expertise for prevention and control of HAI in the Member Countries of South-East Asia was presented by the participants and the same has been summarized in Table 1. Hospital infection control committees have been constituted in many hospitals in all the countries. Most of these are, however, not fully functional.

**Table 1:** Status Report on prevention and control of HAI in the SEA Region

Features	BHU	IND	INO	MAV	MMR	NEP	SRL	THA
National infection control programme	+	-	-	-	-	-	-	+
National guidelines	+	-	-	-	-	-	-	+
National regulations for waste management	-	+	-	-	-	-	+	+
Functional infection control team	-	-	-	-	-	-	+	+
In service training / categories	+	+	+	+	No	+	+	+
Training modules/material	-	-	-	-	-	-	-	+
Surveillance system	-	-	-	-	-	-	+	+
Guidelines on waste management	-	H	-	Under preparation	-	-	H	+
Focal point at national level	-	-	-	-	-	-	-	+
HAI rates/data	NA	NA	NA	NA	NA	No	6.2%	6.6%
Outbreak of nosocomial infections	+	+	NA	No	NA	No	+	+
Mechanism of data compilation and feedback	-	-	-	-	-	-	-	+
Antimicrobial policy N/H	-	H	H	-	NA	H	H	H
Standard disinfection and sterilization practices	V	V	V	V	V	V	V	+
HTA	-	-	-	-	-	-	-	+

V: variable; H: Hospital specific; HTA: Health Technology Assessment; NA: Information not available.

### **4.3 Development of Plan of Action**

The participants were briefed about the importance of planning, and identifying priorities, before activities for prevention and control of hospital-associated infections could be initiated in hospitals. They were also informed the participants about the technical support available to them through WHO as well as the facilitators of the workshop. Dr Rohini Kelkar was designated as a coordinator and technical resource person on behalf of WHO for the participants of the workshop to provide technical support. The progress made by the participants as per their respective plan of actions would be periodically reviewed by WHO. Following this, all the participants made their plans of action and presented these for discussion and improvements.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

The workshop highlighted the inadequacies that exist in the state of preparedness of Member Countries in the prevention and control of hospital-associated infections. It also noted and appreciated the efforts put in by WHO in meeting the challenge of hospital-associated infections. The guidelines produced by WHO should act as excellent resource material for initiating and strengthening activities of hospital-associated infections. The participants agreed to initiate all the activities for control and prevention of hospital-associated infections to bring down its incidence in the respective Member Countries. To meet this challenge, the following recommendations were made:

### **5.1 To Member Countries**

- (1) Countries must encourage all hospitals to have efficient and effective infection control programmes.
- (2) Countries must develop policies for the rational use of antimicrobial agents and institute mechanisms for implementing these policies.
- (3) Infection control activities should be integrated into the activities of the hospital and must not be seen in isolation.

- (4) Surveillance should be the core of all infection control activities. All hospitals should develop baseline surveillance data, on high risk areas to begin with, and periodically review the status as per the guidelines.
- (5) The Hospital Infection Control Committee should have a full-time trained infection control nurse who should coordinate various activities with the Infection Control Officer.
- (6) A core group of national trainers should be identified and charged with the task of training various categories of health professionals in infection control.
- (7) Surveillance data generated in the hospitals should be used for improving the quality of care and infection control. This should also be shared with other staff of the hospital as well as with other hospitals through infection control committees.
- (8) The environment of the hospitals should be designed and/or monitored as per the guidelines of ICC to reduce Hospital-Associated Infections.
- (9) A comprehensive employee safety policy should be integrated into infection control activities.

## **5.2 To WHO**

- (1) WHO should continue advocacy at the highest level for sensitization of decision makers for strengthening of infection control programme in all the Member Countries.
- (2) WHO Guidelines on Hospital-Associated Infections should be disseminated to all Member Countries.
- (3) Training curriculum and teaching material on infection control should be developed for health care workers and disseminated to all Member Countries.
- (4) Technical support should be provided to Member Countries on their request.
- (5) Follow-up of this workshop should be undertaken through a coordinator at the regional level, who will not only provide technical support, but will also review the status of progress through quarterly questionnaires to all the participants in close collaboration with BCT/SEARO

## Annex 1

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## Annex 2

### PROGRAMME

24 September 2002		
09.00 to 09.45 hrs	Registration	
09:45 to 10:15 hrs	Introductory Session Inaugural address of Regional Director, WHO/SEARO Brief on the workshop objectives Self Introductions by participants Election of chairman and rapporteur	Dr S Kumari
10.30 to 11:00 hrs	Genesis of WHO Guidelines on Prevention and Control of HAI	Dr Rajesh Bhatia
11.00 to 12.00 hrs	Establishment of national programme for HAI Infection control programme in a hospital setting	Dr Rohini Kelkar
12.00 to 13.00 hrs	Hospital environment (including wastes) and HAI	Dr Somsak
14:00 to 17.00 hrs	Presentation of country reports on the current status of HAI in member countries (10 minutes each + 5 minutes of discussion)	
25 November 2002		
09:00 to 10:00 hrs	Prevention of hospital associated infections Prevention of viral hepatitis and HIV/AIDS Universal/Standard precautions Special settings (nurseries, ICU)	Dr Rohini Kelkar



710.00 to 11.00 hrs	Prevention of HAI Surgical site infections Urinary tract infections Respiratory tract infections Intravascular catheter related infections	Dr Somsak/ Dr Geeta Mehta
11.15 to 11.45 hrs	Antimicrobial resistance and HAI	Dr Rajesh Bhatia
11.15 to 12:00 hrs	Surveillance of HAI	Dr Somsak
12.00 to 13.00 hrs	Investigation of an outbreak of HAI	Dr Geeta Mehta
14.00 to 14.30 hrs	Community acquired infections commonly associated with HAI	Dr Somsak
14.30 to 15.15 hrs	Hospital staff and HAI	Dr Geeta Mehta/ Dr RL Ichhpujani
15.30 to 16.00 hrs	Overview of development of SOP	Dr Rajesh Bhatia
16.00 to 16.30 hrs	Guidelines for development of action plan	Dr Kumari
16.30 to 17.00 hrs	Group work on Plan of Action for establishment of Infection Control Programme including Health Technology Assessment as applied to Hospital Associated Infections	Group work
<b>26 September 2002</b>		
09:00 to 11:00 hrs	Development of individual plan of actions	Group Work continued
11:15 to 13:00 hrs	Presentation of action plans	
14:00 to 16:00 hrs	Formulation of recommendations and adoption of WHO guidelines	Chair: Dr Kumari
16:00 to 17:00 hrs	Concluding remarks	