

SEA-HLM-373
Distribution: Limited

Good Infection Control Practices with Emphasis on Prevention and Control of SARS

*Report of a Regional Workshop
Mumbai, India, 24-27 June 2003*

WHO Project: ICP BCT 001



World Health Organization
Regional Office for South-East Asia
New Delhi
August 2003

© World Health Organization (2003)

This document is not issued to the general public, and all rights are reserved by the World Health Organization (WHO). The document may not be reviewed, abstracted, quoted, reproduced or translated, in part or in whole, without the prior written permission of WHO. No part of this document may be stored in a retrieval system or transmitted in any form or by any means – electronic, mechanical or other – without the prior written permission of WHO.

The views expressed in documents by named authors are solely the responsibility of those authors.

CONTENTS

	<i>Page</i>
1. INTRODUCTION.....	1
2. OBJECTIVES	1
3. INAUGURAL SESSION	2
4. PROCEEDINGS	2
4.1 Orientation on SARS.....	2
4.2 Review of Current Status of Infection Control Practices in SEAR	3
4.3 Training on Good Infection Control Practices.....	5
4.4 Development of Plan of Action	5
5. RECOMMENDATIONS.....	5
6. VALEDICTORY SESSION	7

Annexes

1. Programme.....	8
2. List of Participants.....	11

1. INTRODUCTION

Severe Acute Respiratory Syndrome (SARS) has recently affected a large number of countries necessitating a global alert by WHO. The viral infection is a newly defined clinical illness which is characterized by atypical pneumonia. Though the disease has a case fatality of around 10%, it has the potential to spread rapidly without respecting any geographical boundaries. Cases have been detected in all the continents and new cases continue to occur. Symptomatic cases are highly infectious. The virus appears to spread through close contact as has been shown by the occurrence of a large number of cases in health care workers and immediate family members. Transmission is dramatically reduced if prompt isolation and proper barrier nursing techniques are vigorously implemented. Hospitals and major health care facilities need to prepare a strategy for isolation and barrier nursing of a patient with SARS and train all its staff members to implement proper infection control practices.

Though theoretical knowledge for good infection control practices is available, a four days' hands-on training in a real hospital setting for national trainers was organized by the Regional Office at Tata Memorial Hospital, Mumbai, India from 24 to 27 June 2003 to build a core of national trainers who could subsequently impart skills to their colleagues and other nationals. The detailed programme of the workshop is placed at Annex 1. Thirty participants from all Member Countries of the SEA Region, except Democratic Republic of Korea and Nepal (Annex 2) attended this workshop. These included three staff members of WHO country offices from India and Timor-Leste. Four experts from India and Myanmar facilitated the workshop.

Professor OC Abraham of Christian Medical College and Hospitals, Vellore, India was elected as the Chairperson and Professor Rohini Kelkar of Tata Memorial Hospital, Mumbai as the Co-chairperson of the workshop.

2. OBJECTIVES

Following were the objectives of the workshop:

- (1) Orientation of participants on various aspects of SARS;

- (2) Review of current status of infection control practices in all the Member Countries of the SEA Region;
- (3) Training on good infection control practices in health care facilities and community settings, and
- (4) Formulation of hospital-specific plan of action for implementation of good infection control practices.

3. INAUGURAL SESSION

The workshop was inaugurated by Prof Dinshaw, Director, Tata Memorial Hospital, Mumbai, India. She highlighted the significance of good infection control practices in any health care facility and briefly described the importance ascribed to these practices in her institution to minimize the occurrence of infections in Tata Memorial Hospital. Dr Rajesh Bhatia, STP-BCT, SEARO welcomed the participants and briefed them about the objectives of the workshop. He stressed that SARS pandemic has reemphasized the sustained implementation of good infection control practices in all health care facilities.

4. PROCEEDINGS

4.1 Orientation on SARS

Dr Rajesh Bhatia updated the participants on the latest global status of SARS. He described the characteristics of the newly isolated causative agent of SARS which has been named SARS-CoV, its spread from Guandong Province of China to Hanoi, Hongkong and subsequently to 32 different countries of all the five continents of the world within a few months, causing 8,461 probable cases and 804 deaths till 23 June 2003. Only three countries from the SEA Region viz India, Indonesia and Thailand had reported 3, 2 and 9 probable cases of SARS respectively, with only Thailand reporting two deaths including one of Dr Carlo Urbani, WHO Staff Member. None of the other Member Countries reported local transmission of the infection.

The economic loss caused by SARS in Asian countries where tourism was severely affected was reiterated. While describing the epidemiology of SARS, Dr Bhatia elaborated upon the fact that during the initial phase of the pandemic, a large number of hospital care workers contracted this infection,

most of which was due to inadequate infection control practices. From health care workers, the infection spilled over to the community and modern age air-travel rapidly carried the infection to various countries of five continents. Since the infection spread to the community through those who provided close care to patients, disease containment was possible only through efficient infection control practices.

Dr Bhatia gave an overview of the unprecedented global efforts to understand virology, epidemiology, management of cases and control measures as well as sharing of information, resources and expertise. He also highlighted the leadership role played by WHO in the pandemic of SARS wherein global wisdom was harnessed effectively and swiftly for the benefit of humanity at large. He briefed the participants about the magnificent role played by WHO coordinated virtual networks of epidemiologists, clinicians, and laboratories and contributions of various international groups on communication, disease modelling and Global Outbreak Alert and Response Network in SARS.

4.2 Review of Current Status of Infection Control Practices in SEAR

The country presentations made by the participants revealed that though all countries have stepped up efforts to combat emergence of SARS, except in Thailand, good infection control practices are inadequate, even in major hospitals. A brief of SARS preparedness and infection control measures is shown in Table 1 below.

The care provided to Dr Carlo Urbani was described by participants from Thailand who also demonstrated various personal protective equipment (PPE) that were in use in their country. All countries have designated hospitals for patients with suspect or probable SARS (Maldives has designated a hospital in an uninhabited island for this purpose).

Whereas India, Indonesia, Maldives, Sri Lanka and Thailand have at least one health care facility that can efficiently handle cases with SARS, Bangladesh, Bhutan, Myanmar and Timor-Leste lack this facility at present. All countries reported inadequacies in physical infrastructure, continuous availability of PPE, trained manpower, guidelines (including standard operating procedures) and monitoring mechanism for good infection control mechanisms in most of their hospitals

Table 1: SARS preparedness in SEAR countries

	BAN	BHU	IND	INO	MAV	MMR	SRL	THA	TIMOR
National Task Force	+	+	+	+	-	+	+	+	+
Awareness at highest level	+	+	+	+	+	+	+	+	+
Inter-sectoral coordination for policy making	+	+	+	+	-	+	+	+	-
Media pressure and interaction	+	+	+++	+	++	+	+++	+++	+
Entry screening	+++	+++	+++	+++	+++	+++	+++	+++	++
Knowledge of affected areas	-	-	-	---	-	-	-	-	-
Designated hospital for SARS cases	+	+	+	+	+ island	+	+	+	-
Trained manpower for SARS	-	-	-	-	-	-	-	+	-
SOP for handling cases of SARS	-	-	-	-	-	+	-	+	-
HICC* (all or major)	M**	M	M	M	M	M	M	M	-
Trained staff about good infection control practices	+	+	+	+	+	+	+	+	-
Lab infrastructure for PCR	+	-	+	+	-	-	+	+	-

*HICC: Hospital Infection Control Committees

**M: Major hospitals

Inspite of unambiguous recommendation by WHO, all countries resorted to entry screening of passengers from countries reporting probable cases of SARS irrespective of local transmission. The concept of affected area with local transmission and potential of export of infection was not understood by the countries in the right perspective. Though there was sufficient advocacy and concern for SARS at the highest levels as evidenced by an overdo in entry screening and quarantine, the state of preparedness could not be translated into an efficient infection control system in all the countries with the exception of Thailand.

4.3 Training on Good Infection Control Practices

The participants were imparted training on various good infection control practices through short presentations, group work and visit to various units of Tata Memorial Hospital including the Central Sterilization Supplies Department (CSSD), isolation wards, intensive care units, and facilities for day care and 24-hour health care services. Proper use of disinfection and sterilization practices, personal protective equipment and training of all health care workers were demonstrated by the facilitators. Intensive interaction with the participants ensured effective dissemination of good infection control practices. The waste disposal mechanism with many locally developed cost-effective techniques and modifications were shown to the participants. Various management issues for implementation of infection control programme were also discussed with the participants.

Participants deliberated on three important issues in group work viz. hand washing, management of cases with SARS and waste disposal policies. These were presented in the plenary session and consensus opinion synthesized for implementation in health care facilities.

4.4 Development of Plan of Action

Participants were briefed about the components of an action plan comprising various types of activities, official responsible for performing the same, time period, inputs required to complete the activity and indicators to assess the progress of the workplan. In a group work they developed country-specific draft action plans to implement the good infection control practices learnt in this workshop to strengthen preparedness against infections such as SARS. These draft action plans were discussed in the plenary session. Post workshop support was assured through all facilitators and Tata Memorial Hospital, Mumbai.

5. RECOMMENDATIONS

Realizing the importance of good infection control practices in the prevention of various infections including SARS and also the deficiencies being faced by the health care workers in almost all the Member Countries of SEAR, the participants made the following recommendations:

To Member Countries

- (1) Comprehensive national guidelines for establishment of good infection control practices in all health care facilities should be formulated by the national authorities through a national multidisciplinary expert group.
- (2) The national guidelines on infection control practices should be adapted by hospitals and standard operating procedures developed. Their continuous use by all the health care workers must be ensured by the top management of health facilities.
- (3) In addition to existing infection control measures, appropriate physical infrastructure in all health facilities should be provided to facilitate implementation of good infection control practices.
- (4) Health care staff of all categories should be educated and trained in good infection practices, periodically reoriented and continuously monitored for implementation of practices.
- (5) Personal protective equipment (PPE) appropriate to the needs of health care workers should be provided and the proper utilization and disposal of these PPE be ensured.
- (6) Efficient environment - friendly waste disposal mechanisms should be developed and stringently implemented.
- (7) Designated facility for new, severe and rapidly transmissible infections (e.g. SARS) should be strengthened with appropriate physical infrastructure, PPE, trained manpower and waste disposal mechanism.

To WHO

- (1) WHO should continue advocacy at the highest level to sustain awareness on good infection control practices initiated during the SARS pandemic.
- (2) WHO should develop minimal standards for good infection control practices that could be adapted by Member Countries.
- (3) WHO should organize additional 'hands-on' training courses to create a sizeable core of national trainers in good infection control practices.
- (4) WHO should ensure post-training technical support to trainees to provide appropriate trouble shooting.

6. VALEDICTORY SESSION

The valedictory session was chaired by Dr Sudarshan Kumari, BCT, SEARO/WHO. She gave the participants a roadmap for efficient implementation of the skills acquired in this workshop. She also briefed the participants about the role expected of them in their respective countries on implementation of good infection control practices and assured all possible technical support to them by WHO.

Annex 1
PROGRAMME

Tuesday, 24 June 2003

0900-0945 hrs	Registration	
0945-1015 hrs	Introductory Session	Local Organizers
	<ul style="list-style-type: none">• Brief on the workshop objectives• Self Introductions by participants• Election of chairman and rapporteur	
1030-1115 hrs	Global and regional status of SARS-an update	Dr Rajesh Bhatia
1115-1200 hrs	Establishment of infection control programme in a health care setting	Dr Rohini Kelkar
1200-1300 hrs	Management issues in health care facilities where patient with SARS is admitted	Dr Duangvadee Sungkhobol
	Minimum requirements for isolation rooms	
1400-1700 hrs	Presentation of country reports on the current status of SARS and infection control measures in health care facilities in Member Countries (10 minutes each + 5 minutes of discussion)	

Wednesday, 25 June 2003

0900-1000 hrs	Standard and transmission based precautions	Dr Rohini Kelkar
---------------	---	------------------

1000-1100 hrs	Barrier nursing and personal protective equipment	Dr Duangvadee Sungkhobol
1115-1200 hrs	Disinfection and Sterilization practices	Dr Rohini Kelkar
1300-1700 hrs	Visit to Hospital Demonstration of all procedures discussed in forenoon	All facilitators

Thursday, 26 June 2003

0900-0930 hrs	Review of visit to hospital on day 2	
0930-1015 hrs	Waste Disposal	Dr Rohini Kelkar
1015-1100 hrs	Early detection of SARS cases and their management Training of Hospital staff in SARS Multisectoral integrated approach	Dr Abraham
1115-1200 hrs	Management of community acquired SARS and contacts Domestic quarantine	Dr Abraham
1200-1300 hrs	Laboratory in management of SARS and update on laboratory tests	Dr Rajesh Bhatia
1400-1445 hrs	Role of hospital infection control committee	Dr Nita Munshi
1445-1515 hrs	Guidelines for development of action plan	Dr Rajesh Bhatia
1530-1700 hrs	Group work on Plan of Action for establishment of Infection Control Programme	Group work

Friday, 27 June 2003

0900-1000 hrs	Development of individual plan of actions	Group Work contd
1000-1100 hrs	Open discussion on various methods on good infection control practices	All facilitators

1115-1300 hrs	Visit to Hospital to solve participants queries on infection control practices	All organizers
1400-1600 hrs	Presentation of action plan, development of recommendations	
1600-1700 hrs	Concluding remarks	

Annex 2

LIST OF PARTICIPANTS

Bangladesh

Dr Md Al-Mamun
Medical Officer
Airport Health Office
ZIA International Airport
Dhaka
Email: mamamun@bdonline.com

Most. Zakia Fatema Loskor
Senior Staff Nurse
Airport Health Office
ZIA International Airport
Dhaka

Dr Md Matiur Rahman
Junior Consultant (cc) Medicine
Infectious Diseases Control Hospital
Mohakhali
Dhaka
Email: rahmanmm31@hotmail.com

Bhutan

Ms Pema Yangzom
Assistant Nurse
Paro Hospital
Paro
Email: Chodeylekzm@hotmail.com

Mr Tandin Chogyal
Programme Officer
Public Health Division
Health Department
Thimphu
Email: Tandinchogyal@hotmail.com

Ms Tinley Choden
Jigme Dorji Wangchuk National Referral
Hospital
Thimphu

India

Dr Shashi Khare
Consultant (Microbiology)
National Institute of Communicable Diseases
22, Sham Nath Marg
Delhi
Email: shashikhare@hotmail.com

Dr Ravindran
ADG (EMR)
Directorate General of Health Services
Nirman Bhawan
New Delhi
Email: ravindranp@vsnl.net

Dr Jagvir Singh
ADG (IH)
Directorate General of Health Services
Nirman Bhawan
New Delhi
Email: adgih@nb.nic.in

Indonesia

Dr Tutty Hendrarwadati
Supervisor, Intensive Care Unit
Indonesian Infectious Diseases Hospital
Jakarta
Email: wuv@infeksi.com

Ms Edha Barapadang
Infection Control Nurse
Indonesian Infectious Diseases Hospital
Jakarta

Dr Dewi Murniati
Chairperson
Nosocomial Infection Committee
Indonesian Infectious Diseases Hospital
Jakarta
Email: info@infeksi.com

Maldives

Dr Mohamed Shafiu
Senior Registrar in Surgery
Indhira Gandhi Memorial Hospital
Male'
Email: shafiuz@hotmail.com

Ms Aminath Firag
Deputy Director Nursing
Indhira Gandhi Memorial Hospital
Male'

Ms Nazeera Najeeb
Senior Staff Nurse
Indhira Gandhi Memorial Hospital
Male'

Myanmar

Dr Khin May Nyunt
Medical Superintendent
Special Hospital
Waibargi
Email: doh@mptmail.net.mm

Dr Khin Maw
Consultant Anaesthetist/Lecturer
Yangon General Hospital
Yangon

Dr Tin Tin New
Anaesthetist
Mandalay General Hospital
Mandalay

Daw Khin San New
Sister
Special Hospital
Wibargi

Daw Kyi Sann
Sister
Mandalay General Hospital
Mandalay

Sri Lanka

Dr (Mrs) Paba Palihawadana
Consultant Epidemiologist
Epidemiological Unit
Colombo
Email: pkp3@sltnet.lk

Miss Nilmini Priyanga Gamage
Infectious Control Nursing Officer
Infectious Diseases Hospital
Angoda

Dr Osmand Rupasena
Actg. Medical Officer incharge
Infectious Diseases Hospital
Angoda

Thailand

Dr Jurai Wongsawat
Medical Officer
Bamrasnaradura Institute
Department of Disease Control
Bangkok
Email: jurain@hotmail.com

Mrs Tanomchitt Daundaun
Nurse
Bamrasnaradura Institute
Department of Disease Control
Bangkok

Miss Chaweewan Praiwan
Nurse
Bamrasnaradura Institute
Department of Disease Control
Bangkok

East Timor

Mr Alvaro Godinho
Focal Point Officer/Control Infection SARS
Officer
Ministry of Health
Dili
Email: godinhous@yahoo.com

Temporary Advisers

Dr Rohini Kelkar
Tata Memorial Centre
Dr E. Borges Marg
Parel, Mumbai
Email: kelkars@tmcmail.org

Prof OC Abraham
Infection Control Specialist
Department of Medicine
Christian Medical College and Hospital
Vellore (Tamil Nadu)

Dr Nita Munshi
Secretary
Hospital Infection Society
Inlaks and Budhrani Hospital
Pune (Maharashtra)

Prof. Ne Win
Professor/Consultant
Yangon General Hospital
Yangon

WHO Secretariat

Dr S Kumari
RA-BCT
WHO, SEARO, New Delhi

Dr Duangvadee Sungkhobol
NUR
WHO, SEARO, New Delhi

Dr Rajesh Bhatia
STP-BCT
WHO, SEARO, New Delhi

Dr Roderico H Ofrin
STP/WHO-Dili Office
Email: rod.whodili@east-timor.org

Dr Sampath Krishnan
NPO, WRO, India
New Delhi

Dr Manish Kakkar
Consultant in Microbiology
NICD, Delhi