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IFIC

International Federation of Infection Control

Volume 1, issue 1, 2005

# The International Journal of Infection Control


## special:

# ISOLATION

## PREVENTION IS THE BEST INTERVENTION

# CONTENTS



# EDITORIAL

*Gertie van Knippenberg-Gordebeke, Editor-in-Chief*

Imagine, sitting outside during a lovely summer evening with nothing to worry about. Then I heard the news on the radio:"some people died in China from an unknown disease". It was not known if it spread from human to human or from animals to human. Later I saw on the late evening news doctors and nurses dressed with gowns, caps and masks, following strict isolation protocols.

This reminded me to write this editorial for the Journal since the main topic is about isolation precautions. Contributions from several countries around the globe make clear that there is a need for good infection control practice. Infection control professionals need to share knowledge and practice. Especially knowledge about the best infection control strategies. We learned a lot the last three years and we must admit we need to go back to basic infection prevention and control. We must continually improve hygienic measures taken in healthcare settings.

Many professional associations and organisations recognise this as well. IFIC is growing fast. We now have 65 members from 55 countries. And this Journal is sent to more than 80 different countries.

To serve you in the best possible way, IFIC has improved this Journal. In 1989 IFIC started with a Newsletter which then changed into a Bulletin. It is now time for a new move.

I am very proud to be the Editor in Chief of the International Journal of Infection Control (IJIC).

A new cover, some colour and advertising make this possible.

The organisational structure has also changed. We have one Editor-in-Chief and additional editors to assist in continuing to make this a useful publication. To make it a real international Journal, we formed an Editorial Council with recognised professionals with expertise in infection control, epidemiology, quality management, occupational health and infection prevention.

Past editors include Coby Paardekooper, Professor Graham Ayliffe, Dr. Mary Castle White and Professor Peter Heeg. They did a great job without as much help.

And last but not least I want to thank MÖLNLYCKE Healthcare AB Sweden who performed the printing and mailing functions all these years.

# Publishing


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*Statements and opinions expressed in articles and communications in the Journal are those of the author(s) and not necessarily those of the Board or Officers of IFIC.*

*The Journal may be freely copied*

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# Welcome to the New Look and the New Name

*Patricia Lynch, Chair IFIC*

The IFIC Bulletin is now the International Journal of Infection Control: IJIC. Colour and advertising are only two of the major changes. Beyond the improvement in appearance, there is improved content, additional editors and more contact with you. However, IJIC is not becoming a peer-reviewed clinical journal: we will still publish reports of successes and failures in infection prevention and your stories about national events and conferences. There are also book reviews, new and interesting web sites and contributions from many member societies.

The web site has been somewhat hampered in the past by slowness: the new site and new server are faster, more reliable and offer greater capacity. Also, you'll find a more professional appearance and easier navigation. Sergey Eremin, the IFIC webmaster from St. Petersburg, Russia and Aaron Cauchi from Malta are pleased with the progress. You can expect a new, more convenient, address: www.theIFIC.org

## Conference and event calendar

At last, a calendar of global IC events. (http://www.chica.org/ific/ific.html) Now that there are so many IC societies holding national and regional events, this will make conference planning much easier. Send your conference announcements to Sergey well in advance: sergey@theIFIC.org

## Tsunami response

Immediately after the tsunami December 26, IFIC established contact with all the member societies and observer members in the affected region. As quickly as we could determine what infection prevention information would be useful, we had it posted on the websites of IFIC, Chica-Canada and APIC-USA. Additionally, we began raising funds for scholarships for people in the region to attend the IFIC Conference in Istanbul this year. We wanted to provide support, of course, but we are also inviting the people who come to speak about the experience. We all need to know more about the infection prevention aspects of health care during and after a disaster.

## Global infection prevention

Nothing improves infection prevention in health care societies like a strong, active local IC society. There are approximately 200 countries in the world and only about 75 have national infection control societies. Threats to world health include fast travelling diseases like influenza but also hospital acquired infections. In some regions, a large proportion of HIV and hepatitis are acquired through improper reuse of injection equipment. Local infection control societies are a critical element to reduce risk from all these situations. IFIC welcomes new member societies from:

Kyrhgyzstan: Infection Control Chapter, Hospital's Association of Kyrhgyzstan Oct 04

Macedonia: Society for Control of Nosocomial Infection Oct 04

Romania: Romanian Society of Microbiology Jan 05

Latvia: Preventive Medicine Society VESELIBAS LABORATORIJA Jan 05

Brasil: Brasil Association of Infection Control and Hospital Epidemiology Jan 05

Malaysia: Infection Control Association of Malaysia Feb 05

Latvia: Latvian Infection Control Society Apr 05

USA: The Society for Healthcare Epidemiology of America (SHEA) May 05

Peru: Peruvian Society of Epidemiology Jun 05

Libya: Libyan Society of Infection Control June 05

## Launch of the Global Patient Safety Challenge

The WHO World Alliance for Patient Safety began in October 2004. The Global Patient Safety Challenge for 2005-2006, a core component of the Alliance, will be launched simultaneously at six sites on October 13, one of which will be the IFIC Congress in Istanbul. The Patient Safety Challenge will be focused on "Clean care is safer care" with a particular emphasis on hand hygiene.

## IFIC Congress in 2006

7th IFIC conference will be held in South Africa, July 3-5, 2006.

# IFIC VISION AND MISSION

*Patricia Lynch, RN, MBA, Chair, IFIC*

***Vision:*** *Every nation has a functioning infection control organisation.*

***Mission:*** *The International Federation of Infection Control provides the essential tools, education materials, and communication that unite the existing IC societies and foster development of Infection Control Organisations where they are needed.* *www.theIFIC.org*

IFIC, founded in 1987, is a federation of infection prevention and control organisations with 63 societies from 53 countries around the globe.
IFIC fosters global development of infection control societies and improvement in infection prevention practices by:

- providing a communication network
- to promote education
- training and exchange of information among the member societies with particular emphasis on assisting those with limited resources.

## Goals

The goals of the federation are to:

- promote high quality educational opportunities, materials and training programs at low cost.
- provide a communication network of support by members via the Journal, the website (www.theific.org), and email.
- maintain a liaison with the World Health Organisation and other organisations that promote infection prevention including prevention and management of occupational blood exposures among health care workers.
- draw on the expertise of member organisations to help each other and to assist with formation of national societies in countries that are in early stages of infection control development.

## Training and Conferences

Besides holding its own conferences, members of the IFIC Board have lectured at IFIC sessions in national or international conferences.

## Scholarship Fund

IFIC has instituted a scholarship fund for deserving but underfunded individuals to attend conferences. Individuals, organisations such as our member societies and corporations can provide scholarships by contributing. IFIC requires scholarship applicants to prepare an abstract for poster or oral presentation on some aspect of their work and the abstracts are judged and ranked. Scholarships are awarded in the order of ranking.
Donations for scholarship should be sent by e-mail (preferred method), post or fax to:
**Executive Administrative Officer Pamela Allen, 47 Wentworth Green, Portadown, County Armagh, Northern Ireland, BT62 3WG**
**Tel: +44 (0) 28 38 612 655 PmaAllen@aol.com**

# IFIC 2004 Scholarship Awards

**FIRST PLACE**

*Treatment and control of skin diseases resulting from Staphylococcus aureus infection:* Ernest Ndalo Omukhulu, RN, RM RPHN, Aga Khan Health Services, Kisumu, Kenya

**SECOND PLACE**

*Experience From Developing World: Impact Of Multidisciplinary Approach In Reduction Of Device Associated Nosocomial Infection Rates:* Afia Zafar, Medical Microbiologist, Assistant Professor, The Aga Khan University, Karachi, Pakistan

**THIRD PLACE**

*Reducing Neonatal Staphylococcus Aureus Epidemics, Banso Baptist Hospital (Bbh):* Nkwan Jakob Gobte, RN, ICN, Banso Baptist Hospital, Kumbo, NWP, Cameroon

**4TH -11TH PLACE**

*Patient Safety and Staff Satisfaction; Developing Hospital-wide Infection prevention & Control Certification Program. St. Michaels Hospital, Toronto, Ontario, Canada:* Maryam Salaripour, ICP, Toronto, Canada

*Control Of Antibiotic Use In Lithuania:* Anna Stefanovic, MD, Vilnius, Lithuania

*Method Of Staphylococcal Mastitis Control:* Sergejs Kuznecovs, MD, Riga, Latvia

*ARMed ESAC Pilot Study Outcome:* Peter Zarb, Antibiotic Pharmacist, Msida, Malta

*A Survey of Medical Students' Knowledge on Nosocomial Infections:* Ljiljana Markovi_-Deni_, MD, Epidemiologist, Belgrade

*Surgical Site Infection rates following Appendectomy the Polish National Surveillance System:* Jadwiga Wojkowska-Mach, MD, Medical Microbiologist, Krakow, Poland

*Rate and Risk Factors of Surgical Site Infections with Antibiotic Prophylaxis:* Moniri Rezvan, MD, Medical Microbiologist, Kashan, Iran

*Handwashing Audit in Hemodialysis Unit:* Manal El Said, MD, Medical Microbiologist, Giza, Egypt

**IFIC SCHOLARSHIPS 2005 WILL BE PRESENTED IN ISTANBUL**

International Federation of Infection Control

# INFORMATION FOR CONTRIBUTORS

*Articles, reports, and letters related to infection control in developing countries or reporting work to establish infection control organisations are welcome.*

IFIC is a multidisciplinary federation, and views from infection control practitioners, nurses, doctors and other health care professionals are sought for the IFIC Journal.

- Manuscripts must be written in UK English.
- Manuscripts must be written in plain text.
- Please separate photographs and other graphics from text.

The length of the article should not exceed six double-spaced manuscript pages.

The article may be modified by the editors depending on space available in the Journal.

Cd's are also most welcome, (besides a printed example of the text with graphics included) preferably in IBM-compatible format and Manuscripts may be sent to the Editor, at the following address:

**Editor in Chief**
**Gertie van Knippenberg-Gordebeke**
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**INTERNATIONAL JOURNAL OF INFECTION CONTROL ISSUES**

| | | |
|---|---|---|
| 2005 | 1 | Isolation |
| 2005 | 2 | Surveillance |
| 2006 | 1 | Wound infection/SSI |
| 2006 | 2 | Handhygiene |



# Two New IFIC Board Members

## *Prof. Dr. Weiling Fu*
## *PR China*

Prof. Fu qualified in medicine at the Third Military Medical University. He has been a PhD director of Laboratory Medicine since 1999. He holds the position of Consultant in Hospital Infection Control and President of the Infection Control Committee of Southwest Hospital.

He is the vice chairman of the National Committee of Nosocomial infection Control and the Nosocomial infection Committee of PLA, the member of China National Accreditation board for Laboratories, the member of China National Institute of Medical Laboratories, and the chairman of the Laboratory Medicine Committee of Chongqing.

His current research interests focus primarily on hospital infections, especially rapid diagnostics and genetics of antibiotic resistance analysis using gene or protein chips. He has published extensively in peer-reviewed journals and has made presentations at many international and national meetings, often as an invited lecturer. His studies on hospital infections were funded by National Natural Science Foundation of China, National Scientific Fund, 863 Chinese High-technique Foundation and other grants. He has a research team of about 10 researchers all of them focus on hospital infection.

*E-mail: weilingfu@yahoo.com*
*Homepage: http://www.chinalabnet.com*

## *Pola Brenner*
## *RN CIC, Chile*

She is currently responsible for the National Nosocomial Infection Program and Quality Evaluation in the Ministry of Health in Chile

She has participated in many national and international projects, research and committees in Infection control. She is also Associated Professor at University of Valparaiso and University Mayor, Director of Chilean Society of Infection Control and Hospital Epidemiology, Surveyor of National Infection Program Ministry of Health and consultant of Pan-American Health Organisation. She has also been responsible for the edition and publication of national guidelines in Infection control. She has made presentations at many international and national meetings. Her current research focus is primarily on risk factors of hospital infections, especially in blood stream infections and surgical wound infections.

*E-mail: pbrenner@minsal.cl*

# Events Calendar

## October 17-21 2005 is the International Infection Control Week

**IFIC Annual General Members meeting 2005, Istanbul,** October 12, 2005 start 12.00pm

**Global Patient Safety Challenge** 13th October 2005
The launch of the Global Patient Safety Challenge will take place centrally at the WHO Headquarters in Geneva Switzerland, As part of the launch the advanced draft of the new WHO Guidelines on Hand Hygiene in Health Care will be made available.Video-links with all WHO regions will ensure worldwide diffusion. The date of October 13 was chosen considering that the following week, October 17-21, is the international Infection Control week.

**2005/2006 Oxoid Infection Control Awards**
To register for information on how to enter please contact Val Kane:
Tel: +44 (0) 1256 841144, Fax: +44 (0) 1256 329728
Email: val.kane@oxoid.com

NEW ZEALAND 24 -26 August 2005
**24th Annual Infection Control Conference for the NZNO**
National Division of Infection Control Nurses will be held at the Hyatt Regency Hotel, Auckland, New Zealand. Email: admin@mianz.co.nz

USA 8- 9 September 2005
**International Conference on " Infections That Have No Boundaries"**
The conference is supported by IFIC.
Hotel Nikko, San Francisco, California. www.apic.org

UNITED KINGDOM 26 -29 September 2005
**The annual International Infection Control Nurses Association (ICNA) Conference**
Riviera International Conference Centre, Torquay.
Tel: +44 (0) 161 301 6857 www.comtec-presentations.com/icna

BULGARIA 26 - 27 October 2005
**6th National Symposium on Vector and Rodent Control**
Tel: +359 2 944 69 99/324 (Assoc. Prof. T. Hristova, K. Alfandary)
+359 2 944 69 99 /241(K. Arabadjiev, T. Lazarova)
+359 2 832 91 12 /216 (Dr. K. Tontcheva, V. Ilieva)
Email: symposiumddd@abv.bg

BULGARIA 27 - 28 October 2005
**4th National Symposium on Nosocomial Infections and Disinfection**
Sofia, Bulgaria, Park-Hotel Moscow "DDD Society" and Bulgarian Association of Prevention and Infection Control "BulNoso"
Tel: +359 2 843 81 02 (Assoc. Prof. Dr. N. Gatcheva
Tel: +359 2 944 69 99/248 ( Dr V. Voynova)
Email: gachevanina@ncipd.netbg.com

EGYPT 15 -17 November 2005
**EMRNIC Eastern Mediteria Region Network Infection Control**
Cairo, Egypt. The conference is supported by IFIC.
www.ems.org.eg/esic/index/htm Email: emric@yahoo.com

CANADA 6 -10 May 2006
**National Education Conference 2006** London, Ontario, Canada
Email: chicacanada@mts.net www.chica.org

USA 11 - 15 June 2006
**APIC Conference** Tampa, Florida www.apic.org

SOUTH AFRICA 3 - 5 July 2006
**Seventh IFIC conference** Venue to be announced

BRASIL 11-15 September 2006
**VI Panamerican Congress and X Congress Brasileño de Control de Infección y Epidemiología Hospitalaria** www.abih.org.br

The NETHERLANDS 15-18 October 2006
**The Sixth International Conference of the Hospital Infection Society HIS** will be held at the RAI Congress Centre, Amsterdam, Netherlands
www.his2006.co.uk

MALAYSIA 8-11 July 2007
**3rd International Congress of the Asia Pacific Society of Infection Control, (APSIC)** Kuala Lumpur, Malaysia. www.APSIC2007.com

# Chilean Society of Infection Control and Hospital Epidemiology

*Pola Brenner, RN*
*IFIC Board member*

SOCIEDAD CHILENA DE CONTROL DE INFECCIONES Y EPIDEMIOLOGIA HOSPITALARIA

## Background

Chile has had a national program led by Ministry of Health since 1983. It has regulations, training programs, a national surveillance system and an accreditation program in nosocomial infections for hospitals.

The national regulations state that every hospital must have an infection control nurse (ICN) and a physician for at least 2 hours a week for 250 beds in 1985. At the same time, the Ministry of Health developed training programs and workshops for nurses and physicians in charge of the nosocomial infections programs in the hospitals. As a consequence for the above , people working in infection control got to know each other and started sharing experiences. Once the initial training programmes were over, the Ministry of Health felt it necessary to continue with the education and training and spread of knowledge among health care personnel.

In Chile, the Chilean society of infectology , was marginally concerned about nosocomial infections in the early 80s. However, since the main interest focus was antibiotics and treatment of infected patients, infection control didn't appear to be a priority for them. Moreover, this was a medical society without participation of nurses. Hence in 1987 the Association of Nurses in Infection Control was created. This association started mainly with infection control nurses and organised the first conferences and congresses in infection control in 1989 and 1990.

However, since this association was only for nurses, and there were many physicians and other professionals interested in Infection Control, the group changed their name and created a new multidisciplinary society in 1992 which is the current Chilean society in infection control and hospital epidemiology.

## Organisation

Chilean Society in infection control and hospital epidemiology has currently 105 members (75% nurses, 20% physicians and 5% other professionals). It has had an important role in the development of the infection control programme in the country. Almost all the professionals working in infection control in the country belong to this society. The society organises an annual congress every year, which is one of the principal activities to share experiences and update knowledge in infection control among infection control professionals and health care workers. The society also organises every two months a scientific meeting to discuss important or new topics in infection control. From this year onwards the society has organised selected courses. We started with Haemodialysis course in April 2005 with participation of 140 professionals. The Society does not have its own journal but has an agreement with the Chilean society of infectology to share its magazine and its members publish and receive this magazine which is recognised for its quality in many Spanish spoken countries.

Chilean society in infection control and hospital epidemiology is well known both at national and international level in Latin American countries. Their members are very active and participate in other countries as experts or participate in conferences and give talks. The society is a member of Pan-American society of infection control which organises Pan-American congress in infection control once in two years.

Problems of the society are similar to other societies all over the world. First of all there is the need of economic support, more resources are required to bring about improvement, also some members do not pay their dues regularly. The other problem is that out of the members, the number of people that work inside the society is very few and many times they get bored and loose interest and energy.

Chile is considered a leader in Infection Control among the Latin American countries because it has a national program and a defined strategy to approach Infection Control in the country. Chilean society of infection control and hospital epidemiology has contributed largely to the achievements in the country and hopes to continue its work in the future.

The society has a web page www.sociedad-iih.cl

**BOARD of the CHILEAN SOCIETY of INFECTION CONTROL and HOSPITAL EPIDEMIOLOGY**

| *Name* | *Position* | *Specialty* | *E-mail* |
|---|---|---|---|
| Dr. Erna Cona | President | Microbiology Infection Control | erna.cona@indisa.cl |
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| Dr. Luis del Piano | Treasurer | Pediatric Infectology Infection Control | ludelpia@mi.terra.cl |
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*left to right: Polina Tupeva, Antoaneta Minkova, Aneta Gandeva, Dr. Valeria Petkova, Dr. Nina Gatcheva, Dani Radoykova, Dr. Vladislav Novkirishki*

# THE THIRD NATIONAL SYMPOSIUM ON NOSOCOMIAL INFECTIONS AND DISINFECTION, SOFIA, BULGARIA, NOVEMBER 22-23, 2004

*Nina Gatcheva, Violeta Voynova*

The National Symposium on Nosocomial Infections and Disinfection is held annually in Sofia, the capital city of Bulgaria. The Third Symposium was organised by the Bulgarian Association of Prevention and Infection Control "BulNoso", a member of IFIC, with the support of the National Centre of Infectious and Parasitic Diseases and the Bulgarian-Swiss Hospital Hygiene Program.

Assoc. Prof. Dr. Nina Gatcheva, President of "BulNoso" and Chair of the Organising Committee, opened the Symposium welcoming more than 200 attendees and guests from Germany, Switzerland and Australia. Thanks to the announcement of the Symposium on the IFIC web site we also expected participants from Nigeria and Iran, unfortunately they were unable to arrange on time because of visa problems.

Professionals from all over the country (infection control nurses, doctors - microbiologists and epidemiologists, clinicians) were brought together to exchange information and experience in the field of infection control and prevention. Hospital directors and members of the Ministry of Health also attended the Symposium. All the participants received a free copy of the first issue of the BulNoso Bulletin "Nosocomial Infections".

In the industry exhibition 10 companies participated (3M, Ecolab, Schülke&Mayr, Antiseptica, Borer Chemie and several local firms).

The main topics of the Symposium included: surveillance of nosocomial infections, modern approach to prevention of device-associated infections and MRSA, SARS infection control principles, new antiseptics and disinfectants, hand hygiene, decontamination of flexible endoscopes.

There were two invited lectures given by the experts of the Bulgarian-Swiss Hospital-Hygiene Program, 29 oral presentations and 14 poster presentations. Discussions were going on not only within the sessions, but also during the coffee breaks. There was a challenging "meet the expert session" for specialists interested in improvement of their practical knowledge.

At the end there were best poster and best oral presentation award (sponsored by 3M).

The social event (gala dinner) was superb.

*The Fourth National Symposium on Nosocomial Infections and Disinfection will be held in Sofia, Bulgaria, October 25-27, 2005 Assoc. Prof. Dr. Nina Gatcheva is chair of the Organising Committee (E-mail: gachevanina@ncipd.netbg.com)*

International Federation of Infection Control Volume 1, Issue 1, 2005

IFIC INFECTION CONTROL: Basic concepts and practices, 2nd edition, chapter 6

# ISOLATION

## Isolation Precautions Introduction

*Organisms causing hospital-acquired infections can be transmitted from infected and colonised patients both to other patients and to staff. Appropriate isolation precautions for all patients, including those who are infected and colonised reduce the risk of transmission.*

There is no need for shoecovers during isolation. Shoecovers are good for protecting the saddle against rain. *Prof Dr Franz Daschner, Germany, IFIC Conference Malta 2003*

### Transmission of Infection

Organisms can be spread by several routes which are listed in the chapter on occupational health. These routes include direct person-to-person contact, indirect contact via an intermediate object, and airborne transmission. Patient-to-patient transmission via staff hands is regarded as the most important route; therefore proper hand hygiene is an important means of preventing spread of infection in the hospital. (See additional information in the chapter on hand hygiene).

### Standard Precautions for All Patients

In all patient care, transfer of potentially harmful microorganisms between patients and staff must be avoided. For this reason, the following general precautions are used:

- Regard all patient blood, excretions and secretions as potentially infectious and institute appropriate precautions to minimise risks of transmission.
- Wear gloves that are clean at the time of use for contact with mucous membranes and nonintact skin of all patients.
- Decontaminate hands between each patient contact.
- Decontaminate hands promptly after touching infective material (e.g., blood, body fluids, secretions, or excretions), infected patients or their immediate environment, and contaminated articles used for patient care. Waterless hand antiseptics are efficient unless the hands are visibly soiled in which case they should be washed first. (See the chapter on hand hygiene)
- Use no touch technique when possible to avoid touching infective material.
- Wear gloves when in contact with blood, body fluids, secretions, excretions and contaminated items. Wash hands immediately after removing gloves. If gloves are not readily available, wash hands thoroughly as soon as patient safety permits.
- Dispose of faeces, urine, and other patient secretions via designated sinks. Clean and disinfect bedpans, urinals and other containers appropriately (see chapter on cleaning, disinfection and sterilisation).
- Clean up spills of infective material promptly (see chapter on cleaning, disinfection and sterilisation). General disinfection of floors and walls is then not necessary.
- Ensure that patient-care equipment, supplies, and linen contaminated with infective material are disinfected or sterilised between each patient use (See chapter on cleaning, disinfection and sterilisation).
- If no washing machine is available for linen soiled with infective material the linen can be boiled.
- Used dressings and other medical waste should be disposed of in sealed, labelled plastic bags and preferably incinerated or deeply buried.

### Gowns and Aprons

Gowns and aprons are frequently recommended to prevent transmission of infectious agents, however they are of less importance than hand hygiene and are costly. They could be of benefit in situations where soiling of staff clothing is likely when dealing with patients with infected or discharging wounds or when cleaning soiled material.

### Masks

Thin, surgical type masks provide minimal protection against airborne pathogens. High efficiency, respirator type masks, may offer additional protection, however these are costly and may not be available for use. When masks are required to stop spread of airborne-spread microbes, a high-efficiency mask should be worn whenever available. For patients with childhood communicable diseases, limiting staff contact to those who are already immune is important as is immunisation of susceptible staff.

### Shoe covers and protective headgear

Shoe covers and hats or caps do not prevent transmission of infectious agents and are costly. They should not be used.

### Additional Precautions for Some Infected Patients

#### Single Rooms

In addition to Standard Precautions, some patients, particularly those infected with pathogens transmitted by the airborne route, need to be placed in single rooms. These rooms should be physically separated from other patients to reduce the risk of transmission.

If appropriate ventilation is provided for these rooms, the air should be extracted to the outside of the building and away from entrances or areas where people are standing or gathering. Patients with the same infection can be placed together in the same room.

Single rooms are also desirable for patients whose infections result in gross soiling or contamination of the environment, such as occurs with large wounds with heavy discharge, massive uncontrolled bleeding or diarrhoea, or heavy dispersal of skin scales (burn patients).

Dressings, secretions and excretions, contaminated linen, gloves, or other barrier items should be disposed of in bags within the room before being removed for incineration or disinfection.

After patients are discharged, the room, bed, and equipment should be cleaned before the admission of a new patient.

Patients who may require single room isolation include those with the following infections:

- Dysentery including cholera with unmanageable diarrhoea
- Methicillin-resistant S. aureus, particularly if there is likely to be considerable contamination of articles in the room
- Tuberculosis
- Infected large burns
- In high risk areas, patients infected or colonised with multidrug resistant pathogens
- SARS

### Precautions for Family Members Providing Care to Patients in Hospitals

It is very important that family members providing care to patients in hospitals be educated by the staff to use good hygiene and appropriate precautions to prevent spread of infections to themselves and to other patients. The precautions for family members may need to be the same as those used by staff.

### Minimal Requirements

- Hand hygiene after handling secretions, excretions or contaminated items from any patient.
- Isolation in a single room, if available, for airborne or particularly hazardous infections, and for situations in which a patients soil the room environment with secretions or excretions.

### *Bibliography*


- *Standard Principles for preventing hospital-acquired infections. Journal Hospital Infection 2001;47(Suppl):S21-S37.*
- *HICPAC. Guideline for Isolation Precautions in Hospitals. American Journal Infection Control 1996;24:24-52.*


# Isolation Workshop

*Anna Hambraeus, Sweden, Ulrika Ransjo, Sweden, Vesna Tripkovic, Croatia*

*During the recent IFIC Congress in October 2004 in Porec, Croatia, a workshop on isolation was held with about 60 participants. This is a report from that workshop. (The report is illustrated by photos taken by Mario who was also the IT operator at the workshop.)*

**From IFIC Infection Control: Basic Concepts and Training.**

**Also stated in WHO and CDC documents we quote:**

*"Infection control is a quality of standard. Infection control is the responsibility of every individual in the healthcare facility.*

*The health care provider should ensure facilities are available that enable good infection control practices.*

*The health care provider should support an infection control programme."*

Organisms causing health care associated infection (HAI) can be transmitted from infected and colonised patients both to other patients and to staff. Appropriate isolation precautions for infected and colonised patients can reduce the risk of transmission if they are applied properly.

The objective of isolation policy is to decrease the transmission of infectious agents between staff and patients to such a level that infection or colonisation does not occur.

Isolation policies have several parts: hand hygiene, protective clothing, single rooms with more or less sophisticated ventilation and restrictions for movements of patients and staff. Isolation policies have shifted over

time, from separate huts for patients with severe infections such as cholera, plague and leprosy, to organism-oriented practices and now back to symptom-oriented routines. Methods of isolation can be classified into those who are evidence based, those where evidence is still lacking but may become available, those where evidence is difficult to obtain but seem sensible, and finally rituals.

Isolation policies are debated, internationally, nationally and locally. Some of the main areas of debate are:

- Ventilation of isolation rooms
- Nature and significance of airborne transmission
- Placement of patients and the role of screening cultures
- Clothes borne transmission of infection
- Hand hygiene - soap and water or alcoholic rub
- Gloves and gowns at close contact only or when entering an isolation room
- Use of masks
- Environmental disinfection at regular intervals or when needed

Evidence for the various parts is sometimes scarce and difficult to find. Reasons for the continuing debate are e.g. that published reports often do not give detailed information or that the relative importance of a preventive measure is not taken into account (e.g. if hand hygiene is poor single rooms do not help). To design and perform an investigation on isolation precautions is difficult and costly, and such investigations are therefore rare. Outbreak reports are numerous, but cannot be used to estimate the effects of preventive measures, as it is usually very hard to determine what actually terminated the outbreak.

To interrupt the chains of transmission, we first need to remember the routes for transmission of microorganisms. They can be categorised as follows:

### A. Contact transmission

Direct contact e.g. a surgeon with an infected wound on a finger performs a wound dressing

Indirect contact e.g. secretion is transferred from one patient to another via the hands of a HCW. Faecal-oral via food

### B. Bloodborne infection

Blood is transferred via sharps injuries or needlesticks

### C. Droplet transmission

Infectious droplets that are expelled e.g. when sneezing, coughing, vomiting are too heavy to remain floating in the air and are transferred less than 2 m from the source.

Direct droplet transmission Droplets reach mucous membranes or are inhaled

Droplet to contact transmission Droplets contaminate surfaces/hands and are transmitted to e.g. mucous membranes, food

Indirect droplet transmission is often more efficient than direct transmission. Examples are: common cold, respiratory syncytial virus, winter vomiting disease

### D. Airborne transmission

Small particles carrying microbes are transferred via air currents for more than 2m from the source e.g. droplet nuclei or skin scales

Direct airborne transmission Particles are inhaled (e.g.Varicella zoster,Influenza, Morbilli) or contaminate wounds (e.g. S.aureus)

Airborne to contact particles contaminate surfaces and are transported on hands or fomites to e.g. mucous membranes, wounds

### How to prevent contact, bloodborne and droplet transmission

Basic hygienic precautions include

- hand disinfection with alcohol
- disposable gloves on contact with secretions excretions and blood
- protective apron or gown on bodily contact with patient or patient bed

but NOT cap, mask or shoe covers.

The routes of transmission that are prevented by basic hygienic precautions are

- Contact
- Bloodborne
- Droplet

Wards can be designed to facilitate basic hygienic precautions.

Sinks may be needed for good hand hygiene, as hands should be washed when visibly dirty. However, hand hygiene is not improved by installing more than one sink per six patient beds . Dispenser for alcohol hand disinfectant placed where they are easy to reach.

Space between beds has been shown to be important. Beds should be at least so wide apart that a nurse cannot touch both beds at the same time. Distance between beds decreasing from 2.5 to 1.9 m increases transfer of MRSA 3.15 times) Spread of MRSA can be directly related to overcrowding.

If gowns are used, a separate gowning area may be useful.

### How to prevent airborne transmission

Airborne transmission between patients is significantly reduced by simply placing the patient in a single room (including bathroom facilities). To prevent airborne transmission between single rooms more effectively a pressure gradient between the room and the corridor needs to be maintained, negative for source isolation and positive for protective isolation. Due to e.g. staff movements, temperature differences such gradients are however very difficult to maintain and it has not been proven that using a room with negative pressure is more effective for the prevention of spread of tuberculosis than a single room with closed door.

A more stable system is achieved if a ventilated anteroom is placed as an airlock between room and corridor. This minimises the risk of air movements between room and corridor and the room can be used for source isolation as well as for protective isolation. The system is easier to maintain but still costly to build.

Prevention of airborne transmission within a room by turbulent ventilation (e.g. dilution) is extremely difficult. High numbers of particles are emitted from a patient with influenza or tuberculosis when coughing or sneezing. These are unlikely to be rapidly diluted by ventilation

Particles carrying bacteria such as skin scales are dispersed continuously. $2.5 \times 10^7$ skin particles are dispersed to the air per 24h. $10^4$ skin particles/min are dispersed when walking10% of these carry bacteria[6] . It is difficult to reach a low "steady state" and prevent environmental contamination.

### Placement of patients

In most cases basic hygienic precautions are sufficient.

Placement of patients should primarily be based on clinical signs and not rely on culture results. Surveillance cultures are costly, have a low sensitivity, usually focus on one or two infectious agents and draw attention and recourses from other areas of concern. Surveillance cultures may, however, be helpful in an outbreak situation.

When placing patients, the following should be considered:

- Single room (including bathroom) when gross contamination of the environment is likely (e.g. large wounds with heavy discharge, massive uncontrolled bleeding, diarrhoea)
- Single room, door closed when airborne to contact transfer is likely (e.g. injured skin with gram positive infection)
- Single room ventilated to the outside when airborne transfer is likely (e.g. TB)
- Single room with airlock when massive airborne transfer is likely (e.g.varicella, large burns)
- The single room is not the whole solution. In one ICU with eight single rooms observed for three years MRSA isolation was practiced after positive surveillance culture. Despite this, 56 community acquired cases caused 80 nosocomial cases. Transmission stopped when barrier nursing of ALL patents was introduced

### Staff, equipment and surfaces

clean, adj. is a key word. The Oxford English Dictionary defines it as:

- free from dirt, marks, or stains
- having been washed since last worn or used
- (of a person) attentive to personal hygiene
- free from pollutants or unpleasant substances

To keep staff, equipment and surfaces clean is among the main objectives of infection control.

## Hands

Risk of hand contamination with any transient organism such as staphylococci, resistant gram negatives or candida has been shown to increase 2.6 times with wearing one ring and with more than one ring 4.6 times. Hand contamination is one third as likely after alcohol based hand rub than after plain soap and water or medicated hand wipe . After soap hand wash, as much as 20% of transient Staphylococcus aureus and 5% of gramnegatives remain on the hands, whereas after alcohol hand rub only around 1% of the transient hand flora is left on the hands.

The high rate of hand problems associated with the hand hygiene of medical professions is due to a combination of damaging factors: (1) the removal of barrier lipids by detergent cleaning and alcohol antisepsis followed by a loss of moisturisers and stratum corneum water and (2) the overhydration of the stratum corneum by sweat trapped within gloves. Together they facilitate the invasion of irritants and allergens which elicit inflammatory responses in the dermis. Among the lipids and water-soluble substances removed are natural antibacterials. Their loss leads to increased growth of transient and pathogenic micro-organisms which jeopardises the very intention of skin hygiene. The simplest way to overcome these problems is to avoid hand wash with soap and water except when hands are visibly dirty, and to avoid disinfectant soap altogether. Hand disinfection with alcohol rub (containing emollient) reduces the contamination 1000 to 10 000 times.

## Gloves

In situations where the contamination is great, hand disinfection is not sufficient to reduce contact transmission below the infective dose. When touching secretions, the hands need to be protected by clean disposable gloves. Gloves are often overused.120 HCW were observed in 784 patient contacts. Gloves were used in 93,5% of contacts but were needed only in 58% of contacts. 82% of contacts that should have been aseptic were performed with dirty gloves. Hand disinfection was missed in 64% of contacts . It must also be remembered that disinfection of gloves with alcohol is ineffective, dissolves the glove material,.and should not be practised.

## Clothes

Contamination of the working clothes can be considerable, and is reduced 20 - 100 times by a protective gown[13]. To wear a plastic apron during nursing procedures reduced the transmission of S aureus in abdominal surgery cases to the patient's bed by thirty times, as compared to wearing a uniform changed daily. [14]When 35 HCW wore impervious gowns in care of patients with MRSA, ARE or VRE, 14 (40%) had patient bacteria on gown (2-200 colonies on contact plates) and none had patient bacteria on the uniform worn underneath[15]. To wear cap, mask, gown and sterile gloves on every visit to a burn patient's room caused significantly more errors in routine, was more costly and was much less effective than simply wearing a plastic apron and clean gloves at close patient contact.

Gowning at direct body contact reduces transmission from patient to model patient 100 fold, the working clothes are kept clean.

A clean gown on top of dirty working clothes releases microorganisms from working clothes by friction, and does not protect the patient.

## Masks ??

Mask, goggles, visor are protection against blood splashes.

There is no evidence that an OR mask protects staff or patients against colonisation or infection of the respiratory tract.

A respirator may be of use as protection against tuberculosis.

## Surfaces

The survival of microorganisms on room surfaces varies greatly. The enveloped viruses such as the herpes group or HIV will survive for hours, whereas hepatitis B, caliciviruses and other non-enveloped viruses can remain infective in the environment for months. Gram negative bacteria survive for days on dry surfaces but much longer in wet conditions, and staphylococci remain viable for weeks.

Expected reduction levels for microorganisms are with

- drying $10^{-1}$
- cleaning with water $10^{-2}$
- cleaning with detergent $10^{-3 \text{ to } 4}$
- disinfection $10^{-3 \text{ to } 5}$
- sterilisation $10^{-6}$

The environment around the patient is not randomly contaminated with her or his bacteria. The normal flora of the intestinal tract. genito-urinary tract and respiratory tract as well as microorganisms causing infections in the patient contaminate the environment via droplets or spillage (urine, faeces, pus, etc). After the acute spillage transfer occurs via touching. Therefore we advocate point disinfection with alcohol plus detergent.

Only bacteria carried on the skin are randomly distributed to the environment. However after 24 h in an inhabited room you can no longer see if housekeeping was done with a cleaning agent or a disinfectant[17]. If point disinfection is performed properly, disinfection of room surfaces such as floors or walls is not only unnecessary but also costly and harmful to the environment.

Microbiological monitoring of disinfection is time-consuming and very difficult to standardise. We find it better to control that a validated product is used in the right concentration.

## Basic precautions

- hand disinfection before and after patient contact
- gloves when touching secretions only
- gown or plastic apron at body contact with patient or soiled equipment
- splash protection or respirator when needed

## Isolation in single room

- to facilitate basic precautions
- to prevent patient movements

## Cohort nursing

To separate those who have been exposed from those who have not

- patients and staff


1 *Gwaltney et al (rhinovirus) Ann Int Med 1978; 88:463-7, Hall et al (RSV) J Pediatr 1988; 99:100-3, Chadwick et al (gastroenteritis) J Hosp Infect 1994;26:251-9, Thorburn et al RSV J Hosp Infect 2004;57:194-201*
2 *Vernon: Infect Control Hosp Epidemiol 2003;24:224-225)*
3 *Kibbler et al J Hosp Infect 1998*
4 *Borg J Hosp Infect 2003*
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6 *W.C. Noble 1975, Brit J Derm 1975; 93:477-485*
7 *Hartstein Al et al Infect Contr Hosp Epidemiol 1995;16:405-411.*

# The present situation in Croatia

### Legal aspects

In Croatia, new regulations about conditions and methods of implementation of measures for prevention and control of hospital infections were instituted in 2002 by the Department Ministry of Health. The measures for prevention and control of HAI include:

§ 4. item 20. Continuous education for whole staff (medical and non-medical) about control and prevention of HAI. Continuous education for hospital Infection Control Committee and specially Infection Control Team

§ 22. Early discovery, isolation and treatment of persons who acquired HAI include (among all diagnostic procedures, epidemiological investigation and treatment):

Item 3: isolation or cohorting of patients and HCW who are infected or colonised, and implementation of other general and specific measures for prevention of spreading of HAI, according to the type of infection and isolate (causative agent)

§ 29. For implementation of measures for prevention and control of HAI, in all health care facilities, Infection Control Committee should be founded .

§ 31. The Infection Control Committee to perform following tasks:

Establish measures for prevention and control of HAI in hospital and produce program for control of HAI.

Produce policies/guidelines/protocols for specific diagnostic procedures, patient care and treatment and periodically every two years verify written guidelines.

As a consequence, every hospital in Croatia has an Infection Control Committee (ICC) that is responsible for producing, implementing and verifying measures and policies (including isolation) for the prevention and control of HAI

New Regulations for minimal conditions for health care facilities, activities and workers, Ministry of Health and Social Welfare have been issued in 2004. These include:

§ 39 and 40: On every 25 pts beds should be one single and two double rooms, and on infection diseases units/wards and paediatric wards, at least two single rooms for isolation.

### Isolation policy

The Isolation policy consists of:

- Implementation of hand hygiene
- Wearing protective clothing
- Single rooms
- Restriction of traffic (pts and hcw)

### Hand hygiene

Protocols for hand hygiene: why, how, when and what are based on international guidelines (IFIC Basic Concepts e.g.) and adjusted to local situation – local policies.

A problem in the implementation of hand hygiene is the low compliance of HCW:s, for several reasons:

- heavy workloads (too busy)
- sinks are poorly located
- skin irritation caused by frequent exposure to soap and water
- hands don't look dirty
- handwashing takes too long

Other problems are the shortage of money for sufficient supply of soaps and disinfectants, and that there are no seniors for good example in order to motivate junior staff.

### Protective clothing

For barrier precautions masks, hats, gloves, gowns and shoe covers have been prescribed. The main problems are the overuse of gloves, hats, masks and shoe covers. Gowns can be seen to be worn outside of the operating rooms or intensive care unit. Supplies are often insufficient.

### Single rooms

Single rooms are often without any type of ventilation system, and there are no rooms with negative / positive pressure.

If there is no single room, screens are placed between beds. Wards and rooms are often overcrowded, and there is not enough space between beds.

### Cohorting of patients

Cohorting of patients can be done in several ways: a) isolation wards (designated for treatment of known or suspected carriers; b)Nurse cohorting - physical segregation of patients and staff designated only to nursing them; and c) Cohorting on general wards – without designated nursing staff is difficult to manage

The problems that we faced are: our hospital buildings are too old, and there are no possibilities for new ( isolation) wards; or there are difficulties during renovation resulting in high expenses.

Shortage of staff often leads to the impossibility of nursing cohorting altogether.

We have special hospitals for infectious diseases and for patients with tuberculosis, but there are no proper isolation rooms.

### Movements of patients and staff

Staff is frequently seen to move between OR and ICU in both directions.

Patients are often seen in the hospital cafeteria wearing their pyjamas.

### What to do???

There are two alternatives:

1. Do nothing – it cannot be worse or
2. the other:

A) organise basic education for nurses and MDs in prevention of HAI
B) create hospital budget which covers all costs for prevention of HAI
C) try to change habits and way of thinking – that is the worst part to achieve.

| group | patient | single room | mask | gloves | env.disinf | gown | alcohol |
|---|---|---|---|---|---|---|---|
| 1 | discharging large wound, no culture | 1 | 0 | 4 | 2 | 3 | 5 |
| 2 | new unconscious trauma case | 0 | 2 | 5 | 1 | 3 | 4 |
| 3 | abdominal SSI with ESBL | 4 | 0 | 3 | 1 | 2 | 5 |
| 4 | leg ulcer with MRSA | 4 | 0 | 2 | 1 | 3 | 5 |
| 5 | urinary catheter with VRE | 1 | 0 | 4 | 2 | 3 | 5 |
| 6 | pneumonia in ICU | 2 | 1 | 4 | 0 | 3 | |

### BUZZ GROUPS IFIC WORKSHOP

After the presentations, six buzz groups were formed around the placement and precautions for six fictive patients. Each preventive measure was ranked, from 1 (lowest) to 5 (highest) . The groups had to argue their choices. The object of the exercise was of course not to establish total consensus, but to create discussion and mutual exchange of views and opinions. The results are given in the table.

Interestingly, most of the groups gave their highest scores to basic hygienic precautions. Group 2 ranked gloves highest because they suspected bloodborne transmission. Groups 3 and 4 ranked the single room before gown/apron and gloves, because it was in their regulations, but the other groups strongly opposed this, as "the single room does not work if basic precautions are not used". The speakers were most pleased to see that the discussion was very lively, and that there was very good agreement on most of the issues.



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# Challenges in establishing a cohort isolation ward at St. Luke's Hospital, Malta

*Michael A. Borg, St. Luke's Hospital, Malta*

*The incidence of multiply resistant organisms within St Luke's Hospital Malta, was generally low until 1995. A cluster of MRSA infections was reported in the third quarter of that year, but adequately controlled. However this was then followed by a steady increase of cases over the subsequent year until the beginning of 1997 when a large outbreak of MRSA occurred within the hospital, concentrated primarily in the intensive care unit but spilling over into the general wards. Although the outbreak was brought under control, cases of MRSA continued to increase steadily in the two subsequent years. At the same time multi-resistance also started to be evident within gram negative organisms. Pseudomonas species resistant to carbapenems, aminoglycosides and cephalosporins started to emerge as did ESBL producing Enterobacteriacae. As a result by the end of 1998 it was extremely difficult to attain a satisfactory level of isolation within the hospital.*

St Luke's Hospital was built in the 1950's and its design, particularly within the general wards, was only fleetingly amended over the subsequent decades. The result was a general ward design which was very non-conducive towards effective infection control. The wards themselves are on the whole structured possess a large Nightingale type section, with 16 beds separated by curtains or aluminum partitions as well as 8 or 4 bedded bay. Each ward only has one single bedded room, with toilet facilities. In addition, hand-washing sinks are significantly at a premium with usually one or at best two sinks found present, even in the large bays. Faced with the ever increasing numbers of multi resistant infections and a gross lack of proper isolation facilities, we proposed to the hospital administration in late 1998 to have one of the hospital wards converted to a cohort isolation unit where any case of multi resistant organism, especially MRSA, would be transferred and managed according to the hospital protocol.

The idea was initially treated with the degree of scepticism and resistance by both the administration as well as the Health Department. The hospital, being the tertiary health care facility in the country has always been characterised by a significant pressure on its bed compliment. Despite an active early discharge policy, maximum has been common over the past 10 years. In addition during the winter months, demand often outstretches supply with the result that 30 bed wards will need to be accommodated with additional beds drafted in spaces between the normal bed distribution; an increase to 40 or even 45 patients per ward is not uncommon. The first reaction of the hospital administration as well as the health department was initially very negative as they believed that the proposal would result in an even greater shortage of beds. At the time publications indicating the cost-effectiveness of such facilities were still scarce1,2. An impasse ensued until an increase of MRSA cases to an all time high in 1999. During this year it was necessary to close two wards for periods of up to 14 days at a time to control the outbreaks, an event was highly publicised within the local media. At the same time we were able to establish a link between increases in bed occupancy with MRSA incidence in the general wards3. A meeting held with the hospital director reached a preliminary agreement to establish a dedicated cohort ward for MRSA management. Even then however, we faced a number of problems before the plan could get off the ground. A hostile reaction was met from the surgical firms which up till that time had patients within the ward which was earmarked to be used as the cohort facility, clearly motivated by the desire not to loose their designated bed allotment. They went as far as to state that any adverse patient outcome of whatever nature for individuals transferred to the cohort ward would be our personal responsibility! Extensive discussions and meetings were to no avail, despite our presentation of the alarming epidemiological data and evidence of the benefit that a better nurse to patient ratio and improved hygiene facilities would provide. Nevertheless the attitude of a number of a minority of surgeons remained unchanged and ultimately a ruling from the hospital administrator was the only means of overcoming this resistance. The next step was to recruit adequate numbers of sufficiently trained nursing staff for the cohort isolation ward. This was not an easy task particularly as the sensationalist reporting on MRSA in the local media had made nursing staff very worried and apprehensive about being posted within this ward. The solution was not achieved overnight, but with regular almost weekly meetings and discussions, the fear factor within the nursing personnel was slowly allayed.

The impact of the cohort isolation ward was not immediately apparent, since the figures for 2000 were not significantly different to those of the year before which prompted the surgeons involved in the initial discussions to insist that the isolation ward should be closed and revert back to its original purpose. That we were able to persist can be put to the excellent rapport that we had by that time built up with the hospital and departmental administration who recognised that although the numbers had not decreased the explosive outbreaks which had necessitated ward closure previously had not occurred even at the worst months. Within the next year, we managed to show a drop of almost 50% in the number of cases even during peak overcrowding. It should also be stated that this development could not be solely attributable to the cohort isolation ward, because advantages in hand hygiene and standard precautions had improved had clearly evident during this time especially following a massive increase in availability of alcoholic hand rub.

With a further drop in new cases within the next year, we were faced with a new conundrum. Whereas at its peak in 1999 and 2000 the MRSA cohort facility was in brisk demand, with the drop in incidence in cases the cohort facility became characterised by a regular number of empty beds. Even a degree of "search and destroy" with increased swabbing aiming to also detect colonisation states failed to improve bed occupancy in the isolation ward. The administration faced by an ever worsening bed crisis predictably started to put pressure us. We tried to counter by expounding the importance of having a sufficient contingency to cope with unexpected epidemic situations. However the same administration which had backed us so comprehensively in the past this time made its position very clear that it could not allow overcrowding with bed levels at twice the intended numbers and at the same time have a ward which was more than half empty at any one time. Their initial proposal to remove the cohort isolation facility and revert to isolation in the wards was strongly resisted, despite considerable pressure being borne. At the end, we reluctantly agreed a compromise whereby a smaller ward would be utilised for cohort isolation of hospital acquired infections. The significantly reduced bed state meant that we had to apply a procedure or protocol to determine which cases would get priority for admission to the isolation facility. We developed a scoring priority system in order to have a uniform policy to decide which individuals should be admitted to the unit in the event that demand exceeded supply. We also exploited the situation to improve the facilities of the new isolation ward to install negative pressure ventilation as well as more effective areas for gowning plus better hand washing facilities.

The saga of establishing the cohort isolation unit for MRSA and other nosocomial infections within St Luke's Hospital, brought home the need and importance of having administrative support and credibility for an infection control program. In retrospect we could appreciate the pressures on the hospital as well as departmental administration not to reduce the general bed compliment within the hospital both from a political as well as from a clinical level with fellow consultants of significant standing proposing opposite ideas and attempting to discredit our scientific arguments. We realised that we are able to achieve the required results to a combination of effective scientific arguments using both available literature and well as our presentation of clear and unambiguous local data. We were able to use the national hype and concern about the new "superbug" to our advantage and convince the department that not doing anything would be actually more damaging than agreeing to a relative reduction in general surgical beds. It also spurred us to have self-confidence in our proposals as otherwise the considerable pressures from others consultants and the resistance from the nursing staff would not have been overcome. In retrospect, my only regret is accepting to downsize the isolation facility after we had achieved prior significant success. Nevertheless it is realistic to appreciate that no amount of arguments would have probably convinced the administration under enormous pressure to make beds available and that digging our heels could have actually compromised the credibility that we had managed to build up with the administration.

In conclusion five years after the establishment of a cohort facility in St Luke's Hospital have shown it to a reasonable success which almost certainly contributed to control what were previously very high and escalating levels of MRSA endemicity.

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# Isolation in Sweden

*Kerstin Mannerquist, Infection control nurse, Swedish Institute for Infectious Disease Control*

*The need for isolation of patients is increasing, mainly because of MRSA.*

**Still Sweden has a very low prevalence of MRSA, about 1%.**

**An investigation was made in Sweden that showed that there is a lack of single rooms. 71% of the responsible counties do not have enough single rooms, 52% have inappropriate resources for isolation and 90% of infected patients can not be isolated in in emergency wards.**

**There is also a lack of infection control doctors and nurses, especially in communities.**

**Costs for health-care infections in Sweden are estimated to about 1 million Euros.**

**In contrast to other countries in Europe Sweden has special infectious disease units, where patients with different infectious diseases are treated. Patients with MRSA are transferred to these wards when there is no single room available in the ward, where the patient should be treated for his basic disease.**

**There is a discussion going on about this. There are two opinions: patients with MRSA should always be placed in infectious disease wards as isolation and the other opinion is that it is better for the patient to be placed in a single room in his ordinary ward. The philosophy behind that is, that everybody in the health care system should know about basic precautions and that the patient has a right to be treated in the best possible way.**

**Isolation in Sweden means basic precautions and a single or an isolation room.**

**Basic precautions include: alcoholic handrub before and after patient contact, handwash if visible or noticeable dirt, plastic apron, gown at close patient-contact, gloves and point-disinfection with alcohol.**

**Isolation room means a room with an anteroom and two doors of which one should always be closed. It is important that the door to the single door always is closed too.**

**We do not use shoe-protectives, we do not use masks other than as splash-protection and with droplet-or airborne infections.**

**All hospitals have washer-disinfectors which facilitate cleaning of instruments. That means that we use mainly reusable instruments.**



# Chinese Infection Control Organisation CNICA

*Weiling Fu Professor*
*Vice Chairman of CNICA, Board member IFIC*

The Chinese Nosocomial Infection Control Association(CNICA) is affiliated to the Chinese Prevention Medical Association.

It was found in 1988 by prevention medicine, clinical medicine and nursing association.

The board is formed by chairmen of affiliated associations.

CNICA have 35 affiliated associations (prevention medicine, clinical medicine and nursing) around China and have more than ten thousand members.

The members include doctors, nurses and researchers.

CNICA is member of APSIC (Asian Pacific Society of Infection Control since 1990. CNICA is also a long time a member of IFIC.

CNICA hold a national 4-5 days conference every year with workshops and lectures. The items to discuss are:

- prevention of bacteria resistance
- prudent using of antibiotics,
- management of nosocomial infection,
- nursing for nosocomial infection,
- disinfection,
- isolation,
- clinical treatment,
- education and training in infection control and prevention

The lectures given by doctors, nurses and or researchers.

CNICA have a newsletter and published 4 times for every year. It is sent to all members.

The Main problems to deal with are in China:

Prudent using of antibiotics and prevention of bacteria resistance.

Prevention of virus infection.

Education and training of infection control.

## Teleclass Education for Healthcare Professionals

Dr. Syed Sattar (University of Ottawa) and Paul Webber (Webber Training Inc.) are pleased to announce the schedule of topics and faculty for Teleclass Education 2005. A teleclass is a lecture delivered over the telephone with handout notes e-mailed to registrants in advance. Teleclass recordings and handout notes are also posted on-line. Teleclass registration fees are $35 or £20 per site (not per participant). Healthcare professionals in developing nations are entitled to full access to all Teleclass Education materials without charge. For more information on Teleclass Education or to inquire about registrations, go to www.webbertraining.com, or contact Paul Webber by e-mail, paul@webbertraining.com or by phone +001 613-962-0437

## Teleclass Schedule

Live Teleclasses - 1:30-2:30pm New York Time
Live UK Teleclasses - 1:30-2:30pm London Time

### October 2005

***6 RSV Infections in Infants – Management and Prophylaxis, (Faculty TBA)***

***17 Glutaraldehyde Toxicology and Management of Risk,***
Thomas J. (T. J.) Lentz USA
Sponsored by Dow (www.dow.com)

***18 Tea Tree Oil and Resolving Bacterial Infections,***
Dr. Linda Halcon USA

***19 New W.H.O. Hand Hygiene Guidelines***
Dr. Didier Pittet Switzerland
Sponsored by Deb Medical (www.debmedcanada.com)

***20 Strategies for Adult Learners***
Barbara Soule USA
Sponsored by Trainers Resource for Infection Control (www.trainers-resource.com)

***27 Emerging Threats to Public Health - Miracles, Myths and Mistakes***
Dr. Paul Sockett, Canada

### November 2005

***3 Infection Control in Correctional Services***

***10 Infection Control in Doctors Of•ces***
Jim Gauthier Canada

***15 (UK Teleclass) ESBL's – The Gram Negative Threat,***
Dr. Graham Harvey United Kingdom

***17 Big Picture of Bloodborne Pathogen Control***

### December 2005

***1 Preventing Ventilator Assisted Pneumonia***
Robert Garcia USA
Sponsored by Sage Product (www.sageproducts.com)

***15 C.dif•cile: Environmental Survival***
Dr. Michelle Alfa Canada
Sponsored by Virox Technologies Inc (www.virox.com)

# Isolation procedures in Romania

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*1University of Medicine and Pharmacy "Victor Babes" Timisoara, Romania, Epidemiology Department*
*2University of Medicine and Pharmacy "Victor Babes" Timisoara, Romania, Microbiology Department*

*The purpose of isolation is to prevent transmission of infectious agents from infected or colonised patients to other patients, health care workers (who become infected or carriers), or hospital visitors.*

The final Guideline for Isolation Precautions in Hospitals, recommended by CDC, is from 1996, but in 2004 appeared a new DRAFT Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, only for public comment.

In Romania, isolation procedures are made after CDC 1996 and theoretically, we have the following precautions systems:

Standard Precautions – are applied to all patients receiving care in hospitals. This system synthesises Universal Precautions for risk reduction in transmission of blood-borne pathogens and Body Fluid Precautions (designed to reduce the risk of pathogens transmission, from body fluids). Standard Precautions are applied to

1) Blood;
2) All body fluids, secretions and excretions except sweat, regardless if whether or not they contain visible blood;
3) On intact skin and mucous membranes.

Standard Precautions are designed to reduce the risk of microorganisms transmission from both, recognised and unrecognised sources of infection in hospitals and are applied for health care of all the patients.

These precautions include an adequate hand hygiene, gloves use (when touching blood, body fluids, secretions, excretions, and contaminated items), masks and eye protection, gowns, cleaning and disinfection of medical equipment and environmental surfaces, injuries prevention when using needles, scalpels, and other sharp instruments or devices; patients placement is made in accordance with recommendation infection control professionals.

Transmission-Based Precautions - for patients documented or suspected to be infected with highly transmissible or epidemiologically important pathogens for which additional precautions beyond Standard Precautions are needed to interrupt transmission in hospitals. They have to be used in addition to Standard Precautions and may be combined for diseases with multiple routes of transmission. There are three types of Precautions: Airborne Precautions, Contact Precautions and Droplet Precautions.

Airborne Precautions are applied to patients known or suspected to be infected with epidemiologically important pathogens that can be transmitted by airborne route (dissemination through airborne droplet nuclei with 5 µm size or smaller: Measles virus, Varicella-Zoster virus, M.tuberculosis.

In this system, the patient is placed in a private room, whit adequate ventilation and the room door closed, or in a room with other patients who have active infection with the same microorganism. The mask is recommended for all medical personal and other persons who come in contact with patient.

Droplet Precautions – are applied to any patient known, or suspected to have serious illnesses transmitted by large particle droplets (larger than 5 µm in size) that can be generated by the patient during coughing, sneezing, talking, or during procedures. Transmission via large droplets requires close contact between source and recipient persons, because droplets do not remain suspended in the air. In this category we include Streptococcal (group A) pharyngitis, pneumonia, or scarlet fever in infants and young children, diphtheria, whooping cough, Neisseria meningitidis disease, viral infections produced by Adenovirus, Influenza, Mumps and Rubella viruses.
In this system, the patient is placed in a private room, or in the same room with other patients who have active infection with the same microorganism, or in other places but maintaining spatial separation of at least 1-2 m between patients. The mask is recommended when working in patient proximity.

Contact Precautions - are applied to specified patients known or suspected to be infected or colonised with epidemiologically important microorganisms that can be transmitted by direct or indirect contact (through contaminated intermediate objects). In this category we include respiratory infections whit Para influenza virus, Respiratory syncytial virus; gastrointestinal infections (hepatitis A, Rotavirus infections, enteroviral infections); skin or wound infections with Herpes simplex virus, Varicella-Zoster virus; abscesses, cellulites, Pediculosis, Scabies, Staphylococcal furunculosis.
In this system, the patient is placed in a room with other patients who have active infections with the same microorganism, or in other places with recommendation of infection control professionals. The gloves and the gowns use, hand hygiene, the use of single patient equipment, adequately clean and disinfected are recommended.

In Romania we may also use specific isolation systems, with individualised conditions for each disease (especially for infectious diseases).

Unfortunately, the legislation regarding nosocomial infections control in Romania is in course of implementation at national level and hospitals architecture is sometimes improper, so that patient's isolation isn't always properly applied.





# ISOLATION IN PERU

*Rosa Rosales, RN*

*Since 1998 in my country was development national Epidemiology surveillance of nosocomials Infections.*

Thanks to the financial aid of PROJECT VIGIA- USAID, we become qualified a group of professionals in infection Control.

In 1999, the works of preparation of manual began with or subjects of national and common interest that in I diagnose of situation prioritised as important and I criticise at hospitable level such as Disinfection and Hospitable Sterilisation and Hospitable Isolation documents that were culminated and approved in 2000 in consensus and that today serves as national Guide for their implementation and fulfilment.

This document are based and suitable of the existing international norms developed by specialists of the CDC, APIC, AORN, IFIC that are published and are of international knowledge. In the first, and most important, tier are those precautions designed for the care of all patients in hospitals, regardless of their diagnosis or presumed infection status. Implementation of these "Standard Precautions" is the primary strategy for successful nosocomial infection control. In the second tier are precautions designed only for the care of specified patients. These additional "Transmission-Based Precautions" are for patients known or suspected to be infected by epidemiologically important pathogens spread by airborne or droplet transmission or by contact with dry skin or contaminated surfaces.

One of the problem main that we had to confront people that we worked in Control of Infections was the one to break existing paradigms such as the indication of individual room because most of the hospitals they have many years of construction and we counted on hospitals of very great rooms and they do not count on single rooms in case are needed, and if these require special ventilation they are not counted.

The implementation of the measures such as the washing of hands, use of gloves or any physical barrier among others cause financial problems to the institutions that did not have them, exists 50 % from hospitals at national level now that included in their programs such measures.

We know that still we need to work in the fulfilment of these measures in ahead but the important thing is that we counted on the recommendations of the central level and will have to work arduously in the awareness of the professionals of the equipment of health in the attention of our patients.

# Cairo, Diagnosis-based Isolation measures in ICU

*Nagwa Khamis, MD*

**Introduction:**

The increasing number of patients with serious and potentially fatal infectious diseases (HIV, HBV and HCV) has resulted in escalating concern among health care providers and workers about both the potential for transmission of these pathogens to patients and staff and about the appropriate isolation of these patients in health care settings. (1)

The first published recommendations for isolation precautions appeared as early as 1877, when a hospital handbook recommended placing patients with infectious disease in separate facilities, (2) which ultimately became known as infectious disease hospitals. However, nosocomial transmission continued to occur because infected patients were not separated from each other according to their disease, and few, if any, aseptic procedures were practiced. Personnel in infectious disease hospitals began to combat problems of nosocomial transmission by setting aside a floor or ward for patients with similar diseases. (3)

By the early 1990's, isolation had become an infectious control conundrum. (4)

As it is well known, nosocomial infection occurs when there is a source of infection in the hospital environment, a susceptible host and transmission of microorganism through the following routes:

1) Contact transmission (direct and indirect).
2) Droplet transmission.
3) Air borne transmission.
4) Common vehicle as food, water, medication devices and equipment.
5) Vector borne transmission.

Isolation precautions are designed to prevent transmission of microorganisms by these routes in hospitals.

| Type of isolation | Hand washing | Priv. Room necessary | Gowns | Masks | Gloves | Indication | Lab. Sp. |
|---|---|---|---|---|---|---|---|
| Strict | + | + | + | + | +- | ✓ Chicken pox<br>✓ Herpes zoster<br>✓ Diphtheria (pharyngeal)<br>✓ Major burn<br>✓ Haemorrhagic fevers<br>✓ Pneumonic plague<br>✓ Congenital rubella | All inf. |
| Contact | + | - | If soiling likely | + | If contact | ✓ Staph. & strept wound infection<br>✓ Colonised patient with multiple antibiotic resistant organism | |
| Respiratory | + | + | - | + | - | ✓ Influenza – rubella<br>✓ Measles<br>✓ Meningococceal infection<br>✓ Pertussis | Sputum |
| Tuberculosis (AFB) | + | + | To prevent contamination | + | - | ✓ Tuberculosis | Sputum |
| Enteric | + | For children only | If soiling likely | - | If contact with patient | ✓ Hepatitis A<br>✓ Salmonella<br>✓ Shigella | Stool |
| Blood born | + | - | If contact with patient | - | + | ✓ Hepatitis B<br>✓ Hepatitis C<br>✓ HIV --- Malaria | All sp. |

**Modified CDC guidelines for isolation measures – Transmission based policies**

## HICPAC Isolation precautions (5)

First and foremost, the important precautions are those designed for the care of all patients in hospitals, regardless of their diagnosis or presumed infection status. This is known as "standard precautions". Secondly, are precautions designed for the care of specified patients, these are "transmission – based precautions" applied for patients known or suspected to be infected by epidermis logically important pathogens spread by airborne or droplet transmission or by contact with dry skin or contaminated surfaces.

### Standard precautions

Standard precautions apply to all patients receiving care in hospitals, regardless of their diagnosis or presumed infection status. They apply to:

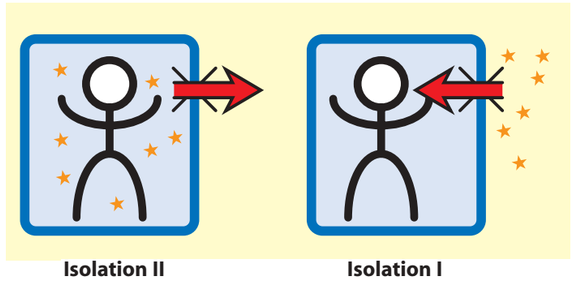
1) Blood.
2) All body fluids, secretions and excretions except sweat, regardless of whether or not they contain visible blood.
3) Non-intact skin.
4) Mucous membranes

### Transmission-based precautions

Transmission-based precautions are designed for patients documented or suspected to be infected with highly transmissible or epidemiological important pathogens for which additional precautions beyond standard precautions are needed to interrupt transmission in hospitals.

### Purpose for isolation precaution: (6)

1) Prevent the transmission of infection from infected patient with MDR ‡ isolation II (septic isolation)
2) To protect immune compromised patients from acquiring infections from the hospital environment ‡ isolation I (protective isolation)



**Isolation II** **Isolation I**

**(Fig.1) Purpose of isolation measures**

## Material and Methods

In a 300 beds tertiary care hospital, this work was conducted as a part of the infection control program. It included the surveillance of carriage of multiresistant bacteria, as MRSA & ESBL, in ICU patients.

The figures obtained were very helpful for the application of isolation measures.

This protocol was titled as: "detection of carriers with multiresistant bacteria in ICU patients".

1) Nasal swab ‡ for MRSA
2) Rectal swab ‡ for ESBL

This was done once a week for ICU patient and for each new admission to ICU department.

### Microbiological technique:

1) Nasal swab
   a. Culture on blood and manitol salt agar media.
   b. Sensitivity for Staph aureus colonies (oxacillin and vancomycin discs).
2) Rectal swab
   a. Culture on blood & MacConkey agar media (+ triple sugar)
   b. Sensitivity for gram –ve bacilli & gram +ve cocci (enterococci)

* In case of detection of a multiresistant strain either MRSA or ESBL



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## > Alarming sign > Isolation measures should be applied.

However,we don't prescribe any antibiotic therapy (the result of antibiotic sensitivity will be kept in the lab as a feed back & will be prescribed only if the patient develops fever instead of the empirical antibiotic) to minimise the emergence of resistant strains & to avoid their endemicity).

In addition isolation measures were applied for patients infected with MRSA & ESBL microorganisms.

For all patients, isolation measures were done according to the type of transmission of infection.

Proceedings of the isolation measures:

1) We put a label (isolation I or II) on the door of the room of the patient..
2) We put a table on which gloves, overshoes gown and masks are put as well as an antiseptic hand-rub solution.
3) A biological hazards cartoon is put inside the room of the isolated case, for waste disposal.
4) A separate nurse will be in charge to care for the isolated patient.
5) After discharging the patient, good cleaning and disinfection of the room is done (we do surface disinfection by using 0.5% chlorine based solution and arial disinfection by spraying H2O2 solution 2%).
6) For ICU patient, follow up is done every week to make sure of being still carrying the multidrug resistant bacteria or not. If the patient is no more carrier, isolation measures are stopped, and ordinary infection control measures are followed.
7) Patients infected with highly infectious disease as meningococcal meningitis, in addition to isolation measures, working staff are taking prophylactic medication as Refampicin/ 3 times per day for 1 week.

## Results:

The results obtained from these screening studies have helped much to modify some of the practices in the ICU in order to minimise transmission of MDR organisms between patients.

As an example, we used to sterilise the tubes of the ventilators between patients and at an interval of 72 hrs for the same patient. This procedure is no more applied, instead we use disposable tubes that are changed maximally every 2 weeks, for patients staying for long periods in ICU.

This modification lead to minimisation of the cross transmission of multiresistant bacteria among ICU patients. (Fig.2)

The infection rate in ICU was also reduced due to better compliance of isolation measures, either for carrier or infected patients. (Fig.3)

## Conclusion and Recommendations

Isolation precautions are important measures designed primarily to prevent occupational infections in healthcare workers. It also reduces the risks for spread of pathogens from patient to patient or from health care workers to patient. (7)

However which measures should be implemented and how isolation precautions should be accomplished remain somewhat matters of controversy. The combination of standard precautions and the recent publication of the CDC's transmission-based precautions synthesises important elements from a variety of isolation systems and may eventually replace all other systems of isolation (8).

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## Abstract

**Isolation precautions are designed to prevent transmission of microorganisms in hospitals. The first published recommendations for isolation precautions appeared as early as 1877, when a hospital handbook recommended placing patients with infectious disease in separate facilities, which ultimately became known as infectious disease hospitals. However, nosocomial transmission continued to occur because infected patients were not separated from each other according to their disease, and few, if any, aseptic procedures were practiced. Personnel in infectious disease hospitals began to combat problems of nosocomial transmission by setting aside a floor or ward for patients with similar diseases.**

**In a 300 beds tertiary care hospital, this work was conducted as a part of the infection control program. It included the surveillance of carriage of multiresistant bacteria, as MRSA & ESBL, in ICU patients.**

**This protocol was titled as: "detection of carriers with multiresistant bacteria in ICU patients".**

* **Nasal swab ‡ for MRSA**
* **Rectal swab ‡ for ESBL**

**This microbiological study was for all patients admitted to ICU department.**

**The results obtained from this screening study have helped much to modify some of the practices in the ICU in order to minimise transmission of MDR organisms between patients.**

**This modification lead to minimisation of the cross transmission**

# The Hands-free Technique:

## a work practice being evaluated for its effectiveness

Bernadette Stringer, PhD, RN and Ted Haines MD, MSc, Canada

Operating room (OR) personnel involved in surgical procedures are exposed to large quantities of undiluted blood and bloody fluids and may be exposed to hepatitis C and B and HIV. Since surgeries require the use of a large concentration of sharp instruments[1], an enhanced risk of percutaneous injury, glove tear and skin and mucous membrane contaminations exists[2 3]. Not only have such exposures led to occupational transmission, [4 5] but to a lesser extent they have also lead to the transmission from infected caregivers to patients.[6 7]

Operating room studies in which observers recorded exposures and injuries have found that OR personnel, most frequently surgeons, sustained percutaneous injuries in 1.7-15% of surgeries and blood and body fluid contaminations in 6.2-50% of surgeries. And while several OR policies and practices to lessen surgical risk have been proposed, few have been evaluated thus little evidence for their effectiveness exists. Nevertheless, there is good evidence that using blunt tipped suture needles for closure of all layers below the skin and wearing two pairs of gloves during surgery reduces the risk of percutaneous injury, and some evidence that the hands-free technique (HFT) reduces risk, also exists. The HFT is when no two members of a surgical team touch the same sharp item at the same time; instead, sharp items passed between surgeon(s), residents, nurses and other OR personnel are laid down and then later retrieved when required. This procedure applies to passing scalpel and suture needles, which are routinely identified sharp items, as well as others such as trocars, wires and sharp bone fragments. The HFT, is based on the underlying assumption that it is part of a system of regularising operating room practices by establishing a common routine, among a diverse group of skilled workers, who may or may not regularly work together. So it makes the way that sharps are passed more controlled and predictable.

| Non-hands-free Passing | Hands-free Passing |
|---|---|
| Transferring a sharp item from one person's hand to another person's hand, consisting of one action. | Laying a sharp item onto a neutral zone and later retrieval by the same or another person, consisting of two actions |

In the only prospective study in which HFT use was quantified according to five proportions ranging from 0-100% during each of 3,675 surgeries, when the HFT was used 75% or more of the time and 100cc or more blood loss occurred, personnel experienced 60% fewer injuries, contaminations and glove tears.[15] Although encouraging, especially since implementation of the HFT doesn't require additional equipment and only limited little training, additional evidence to assess its effectiveness is required and for this reason, the third phase of a three phase study is currently being conducted in three intervention and three control hospitals in moderate sized Canadian cities.

In Phase 1, individual semi-structured telephone interviews of key informant Canadian and U.S. OR nurses and surgeons, were conducted to further elaborate the reasons why personnel use and do not use the HFT and in Phase 2, interview information, findings from the previous study on the HFT mentioned above, technical guidance and adult education principles, were used to develop an educational video encouraging proper use of the HFT in a variety of surgical contexts. In the current Phase 3 before and after intervention study, the HFT and the HFT video's effectiveness are being assessed. Specifically, rates of percutaneous injuries, contaminations and glove tears in surgeries in which HFT use is 75% or more will be compared to rates in surgeries when HFT use is less and the proportion of HFT use during surgeries before after the video intervention will also be compared. HFT use, type and length of surgery, emergency status as well as a number of other factors are being assessed with the following questionnaire.

### The following organisations endorse the HFT:

1) **The Association of Operating Room Nurses (US)**: 'Surgical team members should use hands-free techniques whenever possible and practical instead of passing needles and other sharp items hand to hand';
2) **The American College of Surgeons (US)**: 'Avoid accidents and self-wounding with sharp instruments by following these measures:
   do not recap needles
   use needleless systems...
   pass sharp instruments in a metal tray during operative procedures
3) **The American Academy of Orthopedic Surgeons (US)**: 'Use instrument ties and other non-touch suturing and sharp instrument techniques whenever possible. Do not tie with the suture needles in your hand. Do not pass sharp instruments from hand to hand; pass them on an intermediate tray.'
4) **The Operating Room Nurses Association of Canada**: 'A hands-free transfer of sharps (e.g. handed in a K-basin) should be practiced'.

As well, OSHA, the U.S. government body responsible for ensuring compliance with health and safety regulations has begun inspecting hospitals to assess whether it is routinely used to pass sharp items during surgery and has even cited at least one hospital, for non-adherence.[16]


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International Federation of Infection Control Volume 1, Issue 1, 2005

McMaster University — Western

## HANDS-FREE TECHNIQUE STUDY (Confidential)

**SECTION A** Must be filled out for each surgery by the circulating nurse

OR # _____
Date _____ mo./day/yr.

1) Incision began _____ hr.
Patient left OR _____ hr.
Total time _____

2) Case status (Check all that apply)
a) in patient [a] out-patient [b]
b) emergency [c] non-emergency [d]

3) Service (Check one)
general surgery [a] orthopedic [b] vascular [c] plastics [d] urology [e] ENT [f] transplant [g] gynecological [h] eye [i] cardiac [j] thoracic [k] other (describe) _____

4) Blood loss (total overall)
_____ cc/ml

5) Personnel present for 75% or more of the time, that the operation lasted? (Number of each by occupational category)
surgeon (attending) [ ]
surgeon (resident) [ ]
surgical assistant [ ]
medical student [ ]
anaesthetist (attending) [ ]
anaesthetist (resident) [ ]
scrub nurse [ ]
circulating nurse [ ]
OR tech/CRNA [ ]
nursing student [ ]
perfusionist [ ]
other (describe below) [ ]

6) Were procedures followed to ensure that surgeons and nurses/techs did not touch the same sharp instrument at same time (hands-free technique)?
Yes [a] No [b]

7) If yes to 6, what method was usually used? (Check one)
Sharp items were placed:
on a section of sterile field [a]
in a kidney basin [b]
in a transfer basin [c]
onto a mayo stand [d]
other (describe) _____

8) What proportion of the time was the hands-free technique used?
Always [a]
about 75% of the time [b]
about 50% of the time [c]
about 25% of the time [d]

9) During this surgery could you easily hear (check one):
Quiet talking [a]
normal talking [b]
loud talking [c]

10) Was noise during this surgery (check one):
not annoying [a]
moderately annoying [b]
very annoying [c]

11) How difficult was this surgery overall (check one):
not difficult [a]
moderately difficult [b]
very difficult [c]

12) Did the main surgeon double glove during this surgery?
Yes [a] No [b]

13) Were blunt suture needle used during wound closure?
Yes [a] No [b]

**SECTION B** To be filled when AN INJURY, GLOVE TEAR or/and CONTAMINATION OCCUR during surgery

14) Person with injury/glove tear/contamination:
Agrees to participate [a]
Does not agree to participate [b]

15) Type of event: (check all that apply)
injury [a] glove tear [b] contamination [c]

16) Was this event: (check one)
self inflicted [a] inflicted by co-worker [b] other (explain) _____

17) Procedure at time of injury/glove tear/contamination (eg. incision, closure) _____

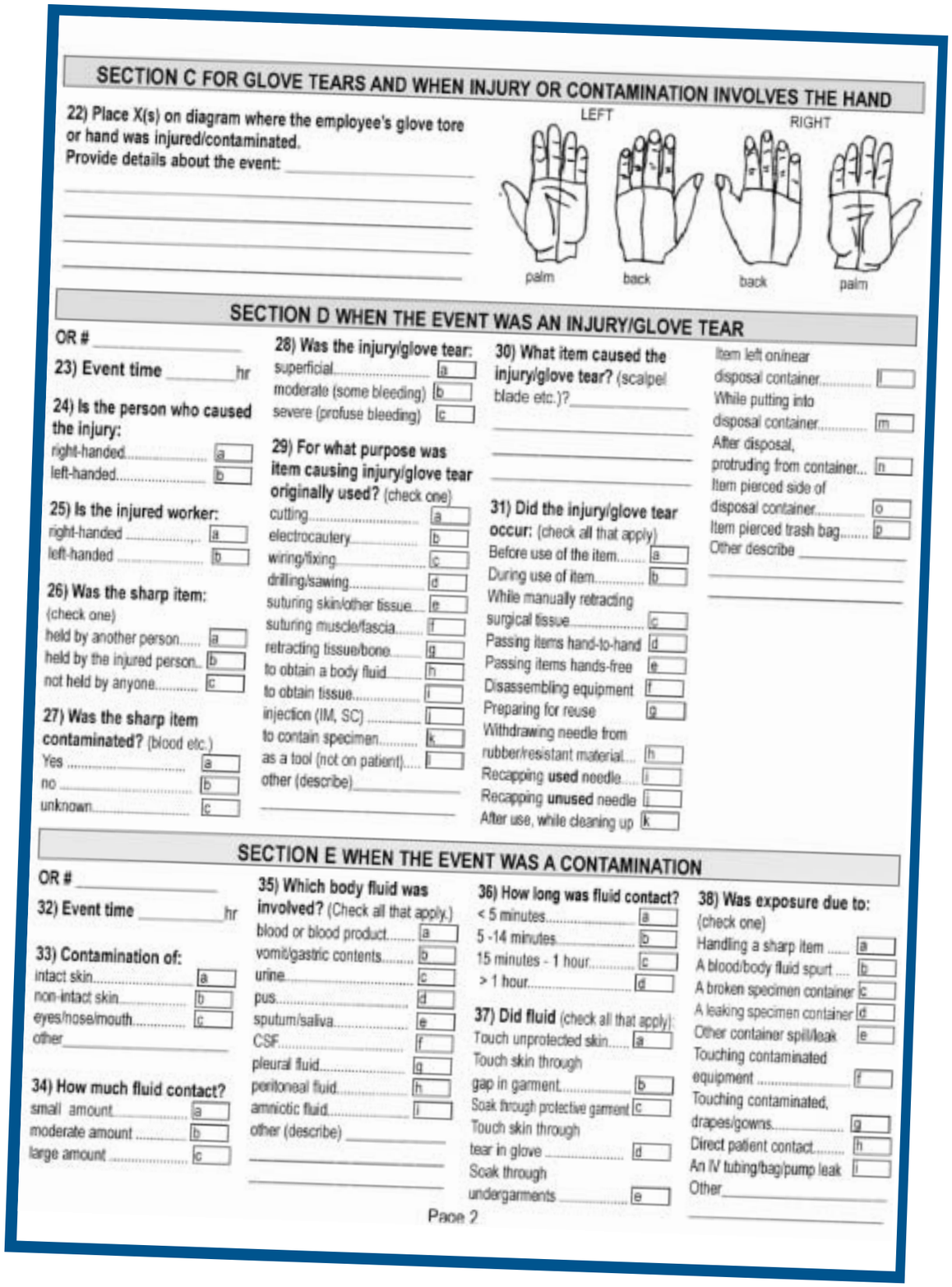
18) Actual time of injury/glove tear/contamination _____ hr

19) Details about event came from:
exposed worker [a] co-worker [b]
(Co-worker nearest to the event should provide details if exposed worker goes for first-aid or to report event. Confirm details when exposed worker returns, if possible.)

20) Job category of exposed person (check one)
surgeon (attending) [a] surgeon (resident) [b] clinical fellow [c] medical student [d] circulating nurse [e] OR tech [f] nursing student [g] perfusionist [h] other (describe) _____

21) What protective apparel was worn by worker when injury/glove tear/contaminatic occured? (check all that apply)
surgical mask [a] other mask [b] surgical gown, disposable [c] surgical gown, reusable [d] single pair latex/vinyl gloves [e] double pair latex/vinyl gloves [f] eyeglasses [g] eyeglasses & side shields [h] goggles [i] faceshield [j] other (describe) _____

CONTINUE OVER



**SECTION C FOR GLOVE TEARS AND WHEN INJURY OR CONTAMINATION INVOLVES THE HAND**

22) Place X(s) on diagram where the employee's glove tore or hand was injured/contaminated.
Provide details about the event: _____

LEFT palm back — RIGHT back palm

**SECTION D WHEN THE EVENT WAS AN INJURY/GLOVE TEAR**

OR # _____

23) Event time _____ hr

24) Is the person who caused the injury:
right-handed [a] left-handed [b]

25) Is the injured worker:
right-handed [a] left-handed [b]

26) Was the sharp item: (check one)
held by another person [a] held by the injured person [b] not held by anyone [c]

27) Was the sharp item contaminated? (blood etc.)
Yes [a] no [b] unknown [c]

28) Was the injury/glove tear:
superficial [a] moderate (some bleeding) [b] severe (profuse bleeding) [c]

29) For what purpose was item causing injury/glove tear originally used? (check one)
cutting [a] electrocautery [b] wiring/fixing [c] drilling/sawing [d] suturing skin/other tissue [e] suturing muscle/fascia [f] retracting tissue/bone [g] to obtain a body fluid [h] to obtain tissue [i] injection (IM, SC) [j] to contain specimen [k] as a tool (not on patient) [l] other (describe) _____

30) What item caused the injury/glove tear? (scalpel blade etc.)? _____

31) Did the injury/glove tear occur: (check all that apply)
Before use of the item [a] During use of item [b] While manually retracting surgical tissue [c] Passing items hand-to-hand [d] Passing items hands-free [e] Disassembling equipment [f] Preparing for reuse [g] Withdrawing needle from rubber/resistant material [h] Recapping **used** needle [i] Recapping **unused** needle [j] After use, while cleaning up [k]
Item left on/near disposal container [l] While putting into disposal container [m] After disposal, protruding from container [n] Item pierced side of disposal container [o] Item pierced trash bag [p] Other describe _____

**SECTION E WHEN THE EVENT WAS A CONTAMINATION**

OR # _____

32) Event time _____ hr

33) Contamination of:
intact skin [a] non-intact skin [b] eyes/nose/mouth [c] other _____

34) How much fluid contact?
small amount [a] moderate amount [b] large amount [c]

35) Which body fluid was involved? (Check all that apply.)
blood or blood product [a] vomit/gastric contents [b] urine [c] pus [d] sputum/saliva [e] CSF [f] pleural fluid [g] peritoneal fluid [h] amniotic fluid [i] other (describe) _____

36) How long was fluid contact?
< 5 minutes [a] 5 -14 minutes [b] 15 minutes - 1 hour [c] > 1 hour [d]

37) Did fluid (check all that apply)
Touch unprotected skin [a] Touch skin through gap in garment [b] Soak through protective garment [c] Touch skin through tear in glove [d] Soak through undergarments [e]

38) Was exposure due to: (check one)
Handling a sharp item [a] A blood/body fluid spurt [b] A broken specimen container [c] A leaking specimen container [d] Other container spill/leak [e] Touching contaminated equipment [f] Touching contaminated, drapes/gowns [g] Direct patient contact [h] An IV tubing/bag/pump leak [i] Other _____

Page 2





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*Journal of Hospital Infection Society*
*(2004) 57, 345-349*
*Letters to the Editor*

# A Practical Lesson in Negative-Pressure Isolation Ventilation

Sir:

We wish to share a few practical lessons in the commissioning and monitoring of negative-pressure isolation rooms. Two negative-pressure isolation rooms were recently installed in an existing respiratory ward, specifically for the containment of multiple drug-resistant tuberculosis (MDRTB).1 Once built, but with the ventilation not yet commissioned, a shortage of beds necessitated that these rooms be occupied. However, this was on the understanding that they were not to be used for patients requiring negative-pressure isolation until staff had been trained in the use of these rooms, an operational policy prepared and the ventilation had been commissioned, which would include the infection control team (ICT) under- taking visualisation of airflow directions between rooms by smoke testing. The ICT additionally recommended that electronic micromanometers with remote alarms at the nurses' station be fitted, so that there could be immediate local awareness of any failure of negative pressure. The engineering contractors were sceptical regarding this latter requirement, as it had been designed such that the supply ventilation would shut down should there be a motor failure in the extract air system and it was considered that this was a fail-safe method of ensuring that the room could never attain positive pressure. As a further measure, an alarm linked to the central building management system would be activated on mechanical failure of the extract motor. Mechanical gauge micromanometers had been installed to show the pressure differentials between each patient room and anteroom with the intention that ward staff would record pressures daily. At the time the rooms were first occupied, before commissioning, the ward staff had not been instructed in their use.

Approximately one month after the rooms were thus occupied as general single rooms, it appears that the hospital Estates Department and their contractors checked that the ventilation supply and extract machinery was working and then, by this criterion alone, 'declared' the rooms suitable for their intended purpose. The ICT were neither informed of this nor invited to perform their own assessment of the ventilation. Still in ignorance of this situation, on a routine visit to the ward, one of the ICT smelled cigarette smoke in the ward corridor. On enquiring about its origin, he was told that the MDRTB patient, admitted four days earlier, insisted on smoking in her isolation room. The significance of the patient's cigarette smoke escaping from the 'negative-pressure' room onto the ward had not occurred to the ward staff. Placing a hand against a gap around the isolation room door confirmed a strong flow of air leaving the room. Subsequent investigation revealed that a damper in the extract ductwork was inadvertently fully closed, blocking any airflow. The interlinked air supply motor had not cut out as the extract motor was still working, albeit removing no air. In this situation air was being supplied but none extracted, thus the room was under significant positive pressure. The alarm linked to the building management system had not acti- vated as it only monitored mechanical failure.

This incident highlights two issues. First, we believe that the ICT and ward staff must be fully involved in the commissioning of such projects. This commissioning would include staff training, the operational policy and a functional assessment of the ventilation system, in addition to any other relevant design parameters. The ICT perceive such matters from the view of overall ward functionality and can assess the practicality of operational design, whereas engineers may be more focussed on checking that a raft of contractual obligations have been met. Second, this highlights the import- ance of monitoring the room's pressure negativity, both at and after commissioning. The engineering contractors and hospital Estates Department had assumed that if the machinery supplying and extracting air was working, the whole system would function as required. This was not the case. An assessment of the end result of the process, pressure negativity, should always be present. In this case, although a mechanical micromanometer gauge had been installed for this purpose, staff had not been instructed in its use, the frequency of reading and recording values, acceptable values, or on actions if unacceptable values were found. An electronic micromanometer, which triggers an alarm at the nurses' station, would give an immediate and more noticeable indication of system failure. (The alarm should have a short activation time-delay so that it does not sound each time the room door is opened.) One of these methods of monitoring pressure negativity should be part of the specification for such rooms. An alarm linked to a remote building maintenance system is not a substitute for local indicators.

Controls assurance encourages communication between the ICT and the Estates Department.2 Current advice is that this includes design par- ameters, operational procedures and staff training needs.3 We also think it essential that the ICT take part in the commissioning process, even when it does not involve microbiological sampling.

We report this incident so that others might learn from our experience; however, we do not recommend that patients are encouraged to provide their own smoke to complete the tests.

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# book review

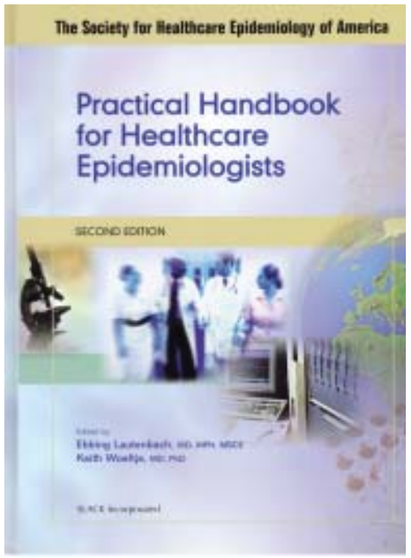
## SHEA Practical Handbook for Healthcare Epidemiologists

*Dr. Undine Thofern, Leipzig, Germany*

Edited by Ebbing Lautenbach and Keith Woeltje

2nd Edition; $94.95; 352 pp Hard Cover or CD-ROM

Slack Inc., Thorofare, NJ, USA, 2004




In 1998 the first edition of this handbook was introduced with the following statement: "Hospital epidemiology and infection control have become increasingly complex fields." Six years later the extensively updated and revised second edition proves that this is even truer at present. Newly or re-emerging diseases like SARS and avian influenza, the necessity of bioterrorism preparedness, fast worldwide germ transmission due to travel activities, rapid increase of antimicrobial resistance, and increasing numbers of immunocompromised patients do mean challenges for healthcare epidemiologists. And the development of healthcare costs does not make things easier. Revising the central title term from hospital epidemiologist to healthcare epidemiologist reflects the changing focus of infection control: infections as well as antimicrobial resistance spread across all kinds of healthcare settings.

The textbook is divided into 31 chapters in 6 sections. Each chapter is clearly structured, most of them with a short introduction and a recapitulating summary or "conclusions". For further reading a comprehensive reference list is given after each chapter.

The first section, "Getting Started", introduces the textbook and its goals, and shows educational and training needs and tools. Tips and tricks how to communicate the concern and benefit of infection control may help increase its acceptance. Particularly noteworthy is the chapter on ethical aspects of infection control - a point that is rarely recognised.

All aspects of "Surveillance and Analysis" are treated in the second section: basic epidemiologic principles and approaches to the respective methods are followed by an overview on basics of surveillance and surveillance systems. These topics get deepened in individual chapters on prevention of nosocomial pneumonia, surgical site infections, and vascular catheter associated infections, as well as on outbreak investigations, exposure workups, and isolation measures. And, as the title of the book promises, all information is really practice-orientated.

"Support Functions" of the microbiology laboratory, molecular typing systems, and computer hard- and software are described in section 3, recognising the increasingly important role of these tools in modern epidemiology.

The fourth section, "Antimicrobial Resistance", presents a topic of central importance in nosocomial infection prevention and control. It deals with both the occurrence and selection of resistant microorganisms by inappropriate use of antimicrobial agents, and the transmission of such bacteria in healthcare facilities.

"Special Topics" in the fifth section include a wide variety of chapters on self-contained issues that often reflect the development of only the past few years. For instance, the chapter on hand hygiene acknowledges the critical role of this measure in infection prevention. Furthermore, infection control became crucially important regarding bioterrorism preparedness, and details given in this chapter are of high relevance for the development of individual response plans. Another chapter deals with prevention from the healthcare worker's viewpoint; this is where infection control must work in concert with occupational medicine. The resurgence of tuberculosis in connection with multi drug resistant Mycobacterium tuberculosis strains implicate the need of special infection control measures, the basic framework of which is described in one chapter in this section. Furthermore, detailed information is provided on infection control in long-term care facilities and in outpatient settings. Infection control as a patient safety issue is an interesting (and obvious) vantage point that offers bundling of efforts and networking for the sake of our patients.

The final section, "Administrative Issues", provides information on the infection control committee, its members and functions in one short chapter. Another treats principles of the development of guidelines and control policies and how to meet accreditation requirements. Two chapters give tips how to prepare for inspections by the US Occupational Safety and Health Administration (OSHA), and how to survive a Joint Commission on Accreditation of Healthcare Organisations (JCAHO) inspection. Two more chapters describe infection control issues regarding renovation and construction, and how to evaluate medical devices and products considering costs and the possible risk of pathogen transmission.

All in all this is a recommendable textbook. It complies especially with the healthcare system of the USA, but it is still helpful for infection control related HCWs from other countries. Most aspects are generally accepted and hold true worldwide, so the reader is enabled to establish all parts of an individual infection control system. There are only very few and marginal shortcomings, e.g., "household bleach" as recommended for disinfection in case of exposure to bioterroristic agents (anthrax, plague, haemorrhagic fever viruses) should be defined chemically regarding substance and concentration of the stock solution. Why hasn't peracetic acid even been mentioned in this context? Nevertheless, this cannot derogate the benefit epidemiologists and infection control practitioners will gain from this work.



International Federation of Infection Control Volume 1, Issue 1, 2005

# book review

*Reviewer: Dr Nizam Damani, Craigavon Area Hospital, N Ireland, UK*


## Sterilisation of Medical Supplies by Steam

***Volume 1: General Theory (2nd edition) 2004***

***by Jan Huys ISBN 90 75829 04 3***

***Publisher: Heart consultancy, Quadenoord 2, 6871 NG Renkum, The Netherlands.***

***Website: http://www.heartware.nl***

*The main task of the Central Services Department is to provide safe sterile medical supplies. In order to provide a quality service, training of all personnel involved is essential. Moreover, in the recently published European standards on sterilisation, education is required of everybody involved in the process of sterilisation, whether it concerns manufacture of the sterilising equipment, or technicians who are maintaining and using it.*

The text of this book was originally developed to educate technical service personnel in the sterile supply department of remote healthcare institutions. The text has now expanded into a text book and is recommended reading by the International Federation of Sterile Supply and European Forum for Hospital Sterile Supply.

Sterilisation of Medical Supplies by Steam is the first in a series of publications; Volume II & III, which are currently in preparation, will deal with the daily practices of steam sterilisation and provide guidance to the steriliser technicians respectively. Volume one (General Theory) is divided into 3 sections. Part one deals with the basic microbiology and gives the basic concepts of spread of microorganisms. Part two deals with the concepts of bioburden, cleaning, decontamination and methods of sterilisation. Part three deals with science behind the steam sterilisers, sterilisation process and sterilisation of hollow instruments & porous load. Chapters 12 and 13 are devoted to process control and introduce the international standards for sterilisation with which modern sterilisers must comply.

The main aim of this book is to provide basic information on microbiology and infection control as well as in-depth knowledge of all aspects related to the supply of sterile products to personnel working in sterile supply department. The book has succeeded in achieving these objectives. All concepts and principles of physics and engineering which are required to understand processes and equipment for sterilisation are fully explained in a simple and easy way. The book is written in simple English and text is supplemented with 200 coloured photographs, illustrations, graphs and tables. Technical and scientific terms are eloquently explained in 'Glossary of Terms' section at the end of the book.

Although this book is essentially aimed at technicians and supervisors in sterile supply departments, as an Infection Control Doctor, I found this book extremely useful and feel that this book should be an essential read for all the Infection Control Practitioners who wish to gain a better understanding of the theory and practice of the sterilisation process. Having read the first volume in the series, I am looking forward to read next book and gaining further insight in to the working of my sterile supply department.

## IFH (International Forum Home Hygiene)

Home Hygiene & Health News, the IFH electronic newspage where you can learn about the latest news, research, events, and library updates in the field of home hygiene, has been updated. Following you will find an excerpt of the news contained in this issue: to view the complete news, just visit the IFH site at www.ifh-homehygiene.org

### IFH 1997-2004 - what has it done, where is it going?

Professor Sally Bloomfield, Chairman of the International Scientific Forum on Home Hygiene, reviews the work which IFH is doing to develop and promote home hygiene in response to ongoing concerns about the importance of hygiene in reducing the burden of infectious disease, both in developed and developing country situations.

### Global WASH Forum? Water, sanitation and hygiene for all

The first Global Wash Forum was organised by the Water and Sanitation Collaborative Council in Dakar, Senegal from 29 November to 3 December 2004 Throughout the conference a considerable amount of attention was given to hygiene and the need to integrate hygiene promotion into water and sanitation programmes. IFH organised a partner event on "Developing and promoting hygiene practice in the home and community setting". A report of the IFH session can be downloaded from the "events" section of the IFH website.

### IFIC conference , Porec, Croatia

The annual conference of the International Federation of Infection Control was held in Croatia on October 9-12 2004. IFIC is a worldwide federation of infection control societies working to reduce risks for patients and personnel related to health care. IFIC produces two very valuable resource documents on infection control which may be of interest to readers of this newsletter. The first - "Information Resources in Infection Control"- is a significant "global" collation of materials supporting infection control activities including publications, guidelines and website addresses. The second "Infection control: Basic concepts and training" outlines the basic principles and practices of hospital infection control.

New study of cost-effectiveness analysis of hygiene promotion in developing country situations This new WELL study by Trea Christoffers and Christine van Wijk of the IRC

Water and Sanitation Centre reviews the results of a number of studies which assess the cost-effectiveness of hygiene promotion as part of, or in addition to, investment programmes for water supply, sanitation and/or health and hygiene. The study critically reviews the methodologies used in these assessments.

## Upcoming conferences

**31st WEDC International Conference**

Maximising the Benefits from Water and Environmental Sanitation Kampala, Uganda 31 October - 4 November 2005

Organised by the Water Engineering and Development Centre at Loughborough University in the UK.

*Severe acute respiratory syndrome coronavirus on hospital surfaces. Dowell, S.F. Simmerman, J.M. Erdman, D.D. Wu, J.-S.J. Chaovavanich, A. Javadi, M. Yang J.-Y. Anderson, L.J. Tong, S. Mei, S.H. Clinical Infectious Diseases, 2004, 39: 652-657.*

*Toys in a pediatric hospital: Are they a bacterial source? Avila-Aguero, M.L. German, G. Paris M.M. and Herrera J.F. American Journal of Infection Control, 2004. 32: 287-290.*

*Effect of intensive handwashing promotion on childhood diarrohea in high-risk communities in Pakistan: A randomised controlled trial. Luby S.P.; Agboatwalla M.; Painter J.; Altaf A.; Billhimer W.L.; Hoekstra R.M. Journal of the American Medical Association, 2004, 291, 2547-2554.*

**The IFH Secretariat**

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# Evaluation of Compliance of Isolation Practices in a High Complexity Teaching Hospital

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## Introduction

The concept of isolating people with communicable diseases is very old. By the turn of the century, general hospitals were beginners to isolate patients with communicable diseases in individual rooms. The goal of isolation techniques is to prevent the spread of communicable diseases in hospitals and microorganisms among patients, personnel and visitors. Isolation techniques have evolved from confinement of patients to the current practice of the use of protective barriers in relation to route of transmission. These barriers minimise the risk of bodily fluid exposures to healthcare personnel by protecting skin and mucous membranes from potentially infective materials.

Centers from Disease Control published in 1970 the first isolation guidelines in which, there were seven specific categories of isolation. Afterwards, new recommendations became disease-specific precautions, as a means to a more tailored approach to patient uniqueness. The current system of isolation advocates Standard Precautions for each patient and transmission-based precautions for special patient needs. Standard Precautions are universally applicable to all patients, are fundamental to patient care and are the standards of practice.

Up to date there is no consensus among health care workers regarding the best practices in isolation. In general all systems have proved to be effective if health care workers follow the recommendations.

There are few studies that evaluate compliance of isolation practices, which is crucial to avoid dissemination of microorganisms within hospital.

Carlos Van Buren Hospital is a teaching 652 beds hospital located in Valparaiso Chile. Is one of the larger hospitals in the country and has an Infection Control Program since 1984. From this time we have a surveillance system and a permanent program to minimise risks of nosocomial infections.

The first isolation guidelines in the hospital were made in 1991 and they have been upgraded each 3 years. Since 1998 we implement standard precautions and special recommendations according to CDC and national guidelines.

With this work we want to evaluate critical aspects of compliance in isolation practices in pathologies transmitted by air and droplets.

## Method

We reviewed clinical records of patients hospitalised between 1999-2000 in our hospital with diagnosis of lung tuberculosis (LTB), meningitis (MEN) and chickenpox (CHI). We determined the opportunity of isolation (between 24 hrs), type and long of isolation, registration of indications and responsible.

## Results

We analysed records of 19 LTB patients, 10 CHI and 35 MEN (13 N. meningitidis, 5 S. pneumoniae, 1 H. influenzae and 16 probably virus). We evaluated compliance with regulations of Individual room with negative pressure, opportunity of the indication (between 24 hours), type and length of isolation, writing indications and indications by physician. Sample is all the discharged patients with this diagnosis in the period. The results are summarised in Table 1.

## Discussion

One of the difficulties of instauration isolation practices is the risk perception in personnel. In spite of education programs health care personnel perceive risk independently from the route of transmission and this is critical in the compliance. For example, they perceive more risk in meningococcal meningitis than tuberculosis probably due to mortality and severity of acute illness.

Even though the route of transmission of the majority of infections is by direct contact, its compliance is very difficult to evaluate because this is only possible by direct observation. The selected practices in this study can be evaluated easily because have structural elements that can be checked in clinical records and can be an indicator of compliance of other practices.

**3Table 1**

| Diagnosis | Individual room with negative negative | Opportunity of the indication | Length of isolation | Writing indications | Indications by physician |
|---|---|---|---|---|---|
| Lung TB | 100% | 78% | 88% | 63% | 42% |
| Chickenpox | 80% | 90% | 90% | 30% | 80% |
| Meningitis | 94% | 94% | 91% | 71% | 51% |

In our hospital this study was very useful to realise that in the high-risk perception illnesses the compliance is always good (over 80%) and that is essential to implement permanent evaluations and education programs for the other illnesses in which personnel don't perceive risk.

## Conclusions

We observed higher compliance in MEN (81%) probably due to higher risk perception. Higher compliance: Individual room (94%) long and opportunity (91%). Lowest compliance: writing indications about type (63%) and indications by physician (53%), probably because culturally, isolation is associated to nurse responsibility even though in VAR the medical indication was 80%. Difference in risk perception among personnel can contribute to lack of compliance. Evaluation is crucial to avoid dissemination.



International Federation of Infection Control Volume 1, Issue 1, 2005

# Evaluación del cumplimiento de prácticas de aislamiento en hospital de docente de alta complejidad

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## Introduccion

Los conceptos de aislamiento de pacientes son antiguos, ya desde inicios del siglo veinte los hospitales generales comenzaron a aislar pacientes en salas individuales.

El objetivo de las prácticas de aislamiento en los hospitales es prevenir la diseminación de microorganismos, entre pacientes, personal y visitas. Estas prácticas han evolucionado desde la confinación de pacientes al uso de estrategias que corten la vía de transmisión conocida de los microorganismos. Estas barreras también minimizan el riesgo de exposición a fluidos corporales del personal, mediante la protección de piel y mucosas.

El Centro de Control de Enfermedades (CDC) publicó en 1970 las primeras normativas de específicas sobre este tema, basado en siete categorías de aislamiento. Posteriormente hubo nuevas recomendaciones específicas por tipos de infecciones, como una manera de adecuar las recomendaciones a los requerimientos específicos de las patologías infecciosas. Las actuales recomendaciones se denominan Precauciones Estándar, las cuales deben aplicarse a todos los pacientes y de acuerdo a la vía de transmisión, se deben agregar precauciones específicas.

En la actualidad no hay consenso acerca de las mejores prácticas de aislamiento y en general todas han demostrado ser eficaces, si el personal sigue las recomendaciones. Están pendientes estudios de eficiencia.

No hay muchos estudios de evaluación del cumplimiento de prácticas de atención, aspecto crucial para evitar la diseminación de agentes microbianos dentro del hospital.

El Hospital Carlos Van Buren es un hospital del sector público con docencia de pre y postgrado, localizado en la ciudad de Valparaíso. Es uno de los hospitales más grandes del país y tiene un Programa de Control de Infecciones desde 1984. Desde esa fecha se cuenta con un sistema de vigilancia y un programa para reducir los riesgos de infecciones intrahospitalarias.

Las primeras normativas de aislamiento del hospital datan de 1991 y ellas se han actualizando cada tres años. Desde 1998 se implementaron las Precauciones Estándar y recomendaciones basadas en el mecanismo de transmisión de acuerdo a las normativas del CDC y normativas nacionales.

El objetivo de este trabajo fue evaluar el cumplimiento de aspectos críticos de las recomendaciones de aislamiento en patologías transmitidas por vía aérea y gotitas.

## Material y Metodo

Se revisaron las historias clínicas de todos los pacientes hospitalizados durante los años 1999 y 2000, con diagnósticos de tuberculosis pulmonar (TBP), meningitis (MEN) y varicela (VAR). Se evaluó el momento de inicio del aislamiento (dentro de 24 horas), tipo y duración de este, registro de la indicación y responsable de indicarla.

## Resultados

Se analizaron las historias clínicas de 19 pacientes con TBP, 10 con VAR y 35 con MEN (13 por Neisseria meningitidis, 5 Streptococcus pneumoniae, 1 Haemophilus influenzae y el resto probablemente virales), que correspondió al total de pacientes hospitalizados por esos diagnósticos en el período estudiado.

## Discusión

Una de las mayores dificultades en la instauración de las prácticas de aislamiento está relacionada con el grado de percepción de riesgo del personal, a las diferentes patologías infecciosas. A pesar de la capacitación realizada, el personal percibe los riesgos de infección independientemente de la vía conocida de transmisión, lo cual resulta crítico al momento de cumplir con las recomendaciones. Por ejemplo, el personal percibe mas riesgo en meningitis meningocócica que en TBP, probablemente por la mayor mortalidad de la primera.

Aún cuando la ruta principal de transmisión en la mayoría de las infecciones intrahospitalarias es por contacto directo, la evaluación del cumplimiento de las prácticas de atención es difícil de evaluar, ya que esto es solo posible por la observación directa del personal. En este estudio se seleccionaron patologías en que las prácticas de aislamiento, pueden ser evaluadas por elementos estructurales y por revisión de documentos.

| Diagnóstico | Sala individual c/ extracción de aire | Oportunidad duración | Duración | Indicaciones escritas | Indicaciones por médico |
|---|---|---|---|---|---|
| TB pulmonar | 100% | 78% | 88% | 63% | 42% |
| Varicela | 80% | 90% | 90% | 30% | 80% |
| Meningitis | 94% | 94% | 91% | 71% | 51% |

En el hospital, esta evaluación fue muy útil para documentar que el cumplimiento de las prácticas de aislamiento se encuentra por sobre un 80% de lo esperado, y que los déficit observados podían mejorar con estrategias de capacitación específicas.

## Conclusiones

En este estudio observamos alto cumplimiento en MEN (81%), probablemente debido a la alta percepción de riesgo de contagio. En cuanto a prácticas, los mayores cumplimientos se observaron en habitación individual, duración y oportunidad del aislamiento adecuado. Los menores cumplimientos se observaron en indicaciones escritas del tipo de aislamiento e indicación médica de éste, probablemente por razones culturales en cuanto a que las indicaciones de aislamiento son de responsabilidad de enfermería. La falta de cumplimiento de algunas prácticas puede relacionarse con las diferencias en la percepción de riesgo en las diferentes patologías infecciosas, por parte del personal. La evaluación del cumplimiento de prácticas de aislamiento es crucial para evitar la transmisión de estas patologías.

# Dutch National MRSA Guidelines

## Hospitals Policy for Methicillin-resistant Staphylococcus aureus

WIP (Dutch Working party Infection Prevention)



### Table of Contents



### Policy for Methicillin-Resistant Staphylococcus Aureus

#### Introduction and definitions

Methicillin-resistant Staphylococcus aureus (MRSA) was first reported in1961, less than 1 year after the introduction of methicillin [1]. The first MRSA epidemics were reported in the literature soon afterwards. An increase in the problem has been observed in Europe and the United States since the1970s. In most countries the percentage of MRSA in hospitals is now higher than 20% [2, 3].[4]. Percentages greater than 50% have even been reported in some countries. Along with the Scandinavian countries, the Netherlands has

proven capable of keeping the MRSA percentage to a minimum (<1%). This has been achieved partly thanks to the national policy described in this guideline. To ensure the success of such a policy, it is important that all the hospitals in the country comply with it. The insensitivity of Staphylococcus aureus to methicillin is caused by the presence of the mec A gene. The presence of this gene makes these strains insensitive to all beta-lactam antibiotics. There are also varying degrees of sensitivity to aminoglycosides and many other groups of antibiotics. Methicillin resistance can be confirmed in the laboratory by means of sensitivity testing.

The Dutch Society for Medical Microbiology has drawn up a guideline for this purpose. The National Institute of Public Health and the Environment (RIVM) carries out surveillance on the prevention of MRSA in the Netherlands. To this end, one isolate from each patient or staff member found to have MRSA is sent to the RIVM. In special cases, it is possible to have several isolates from one patient typed in consultation with the RIVM. The person submitting the isolates does not have to pay for the investigation. MRSA in hospitals must be combated to prevent prophylaxis and treatment of S. aureus infections from becoming ineffective.Moreover, since the appearance of strains that are insensitive or have reduced sensitivity to glycopeptides,there is a very real danger of the development of even greater resistance [5-8]. These VRSA strains are difficult to impossible to treat with existing antibiotics. MRSA is just as virulent as methicillin-sensitive Staphylococcus aureus. Some MRSA strains spread more rapidly in hospitals than other

strains, which can lead to hard-to-control epidemics. On the one hand the fight against MRSA is focused on optimising the detection of MRSA by specifically searching for it, while on the other hand aiming to curtail the problem by implementing isolation measures when MRSA is found. Early identification of patients with MRSA is essential in order to be able to take measures as quickly as possible. Therefore, the hospital hygiene/

infection prevention department must be informed as soon as possible in the event of suspected MRSA. The hospital hygiene/infection prevention department can take measures immediately. Because patients admitted to foreign hospitals have a greater chance of being colonised with MRSA, it is important to take precautions for these patients as soon as they enter the hospital or nursing home. These precautions should also be taken for patients who have an increased chance of MRSA colonisation for other reasons. These measures

are not necessary for patients transferred from Dutch hospitals or nursing homes unless an epidemic is occurring in the institution in question at the 4 Policy for Methicillin-resistant Staphylococcus aureus For the time being, MRSA still occurs sporadically in Dutch nursing homes. Staff who have worked in a foreign hospital or nursing home can also be colonised with MRSA, as can visitors who work in foreign hospitals.

#### Definitions

As a rule a distinction is made between colonisation and infection. Colonisation occurs when microorganisms grow after contamination. An infection occurs when the host experiences an (inflammatory) reaction with the accompanying symptoms as a result of colonisation. Colonisation of patients and staff members and the transfer of bacteria by the hands play an important role in the spread of Staphylococcus aureus. Therefore the fight against MRSA should not be limited to people with infections. This guideline describes the measures that need to be taken to prevent the spread of MRSA in the hospital.

We have tried to find a certain balance between the desired and practical feasibility of the measures to be taken. The measures described in this guideline should be viewed as a guide for the development of the local policy. With that, care should be taken to ensure that this guideline in no way leads to a patient with (suspected) MRSA not receiving the care he/she requires [9]. The current MRSA policy in the Netherlands has been pursued for more than10 years. Surveillance carried out in the year 2000 showed that less than 0.3% of patients were carriers of the bacteria upon admission, which is reason to continue pursuing this policy. Some of the measures described in this guideline are based on proper research. However, sometimes such data are lacking. Therefore, as far as a number of recommendations are concerned a survey was conducted among the users of the WIP guidelines.

This method was used to try to find a policy for:

1. the period between discharge from a foreign hospital and admission to a Dutch hospital; the most commonly used value was 2 months
2. taking samples for culture to determine when to discontinue isolation
3. taking samples for control cultures from staff
4. discontinuing control cultures from people contaminated with MRSA.

For information on the specific implementation of strict isolation measures, please refer to the WIP guideline Isolation measures www.wip.nl

### 1 Risk categories

The risk of the presence of MRSA is not the same in all cases. Therefore, we distinguish between four categories:

1. proven MRSA carrier
2. high risk of being a carrier
3. moderately increased risk of being a carrier
4. no increased risk of being a carrier

In case of doubt, experts in the hospital (clinical microbiologist, infectious disease specialist or Infection Control Practitioner (ICP) hospital hygienist) should be involved in the classification into a risk category. The difference between categories 3 and 4 in particular often requires consideration by experts.

The groups of patients or staff that fall into each category are shown in summaries 1 and 2 below.

#### 1.1 Summary 1, Patients in each risk category

**Category 1**

Patients demonstrated as being MRSA carriers.

**Category 2**

Patients who were treated in a foreign hospital for more than 24 hours less than 2 months ago, or who had surgery or were given a drain or a catheter abroad, or who were intubated or have skin lesions, or possible sources of infection such as abscesses or furuncles/ boils.

- Foreign patients in the dialysis department ('visiting dialysis/patients').
- Patients from another Dutch hospital or nursing home, from a department or unit experiencing an MRSA epidemic that has not yet been brought under control.
- Patients who were treated in the same room with an unexpected MRSA carrier.
- Category 1 patients after being treated for carrying MRSA, whose control culture results are not yet known.
- Adopted children have a higher chance of carrying MRSA. However, screening is only recommended if these children have an illness that requires them to be admitted to hospital or to visit an outpatients' clinic on a regular basis. It is important to realise that being an MRSA carrier is not a disease in and of itself.

**Category 3**

- Dutch haemodialysis patients given dialysis abroad. 6 Policy for Methicillin-resistant Staphylococcus aureus
- Patients during the first year following treatment for being MRSA carriers, with negative control cultures.
- Patients cared for in a foreign hospital more than 2 months ago, who still have persistent skin lesions and/or risk factors, such as chronic respiratory or urinary tract infections. This should be determined by experts.

**Category 4**

- Patients cared for in a foreign hospital more than 2 months ago, unless they still have persistent skin lesions.
- Patients cared for in a foreign hospital more than 2 months ago who have no persistent skin lesions and/or risk factors, such as chronic respiratory or urinary tract infections. This should be determined by experts.
- Patients who spent less than 24 hours in a foreign hospital and did not have surgery or receive a drain or a catheter, who were not intubated and have no skin lesions or possible sources of infection such as abscesses or furuncles/boils.
- Patients cared for in a department where one or more patients with MRSA are being treated, whereby adequate precautions have been taken.
- Patients treated for being carriers, whose control cultures have remained negative for a year.

#### 1.2 Summary 2, Staff in each risk category

This refers to staff who come into contact with patients or who work in departments where patients reside.

**Category 1**

- Staff proven to be MRSA carriers.

**Category 2**

- Staff who have had unprotected contact with MRSA carriers.
- Staff admitted to a foreign hospital less than 2 months ago, who had surgery abroad, or were given a drain or catheter abroad, or were intubated or have skin lesions, or possible sources of infection such as abscesses or furuncles/boils.

**Category 3**

- Staff who have had protected contact with MRSA carriers.
- Staff who worked in a foreign hospital or nursing home for more than 24 hours less than 2 months ago.
- Staff who regularly work in a foreign hospital or escort patients from a foreign hospital to a Dutch hospital.

  Policy for Methicillin-resistant Staphylococcus aureus 7
- Staff who have been carriers, and whose control cultures are negative, for 1 year after the control samples are cultured.

**Category 4**

- Staff who were successfully treated for being carriers more than a year ago, and whose cultures have remained negative for a year.
- Staff whose cultures were negative following the last protected contact with an MRSA carrier (samples should be cultured during the first 3 weeks of isolation).

### 2 Measures for patients

#### 2.1 Bacteriological examination

Within the framework of bacteriological examination, two types of culture can be used: screening cultures when MRSA is suspected or to rule out MRSA contamination, and control cultures after treatment for MRSA contamination. Samples should be cultured from:

- nose
- throat
- faeces (rectal swab) or perineum
- sputum, if coughed up
- urine (if a urinary catheter is present)
- skin lesions and wounds (including insertion openings)

The first MRSA isolate from each person should be sent to the RIVM, where it will be examined free of charge to confirm or rule out MRSA and for national surveillance purposes. In the event of epidemics, one strain should be sent from all contaminated people. In special cases, it is possible to have several isolates from one patient typed in consultation with the RIVM, for instance following readmission to hospital or during a long-term episode of negative cultures.

##### 2.1.1 Screening cultures

The number of screening cultures depends on the method used in the laboratory. If no accumulation medium is used, all culture samples must be taken at least twice within 24 hours. If an accumulation medium is used, one set of cultures is sufficient [11].

A cotton bud, which can be moistened with tap water or sterile physiological saline, should be used to make a smear of the mucous membranes. 8 Policy for Methicillin-resistant Staphylococcus aureus

For patients with extensive wounds, additional attention must be paid to ensure that smears are made properly from all wounds.

##### 2.1.2 Control cultures

Control cultures are only indicated once carrier treatment has been completed. See section Treatment of MRSA-positive patients.

#### 2.2 Measures for category 1 and 2 patients (proven MRSA carriers and high carrier risk)

A category 1 or 2 patient should be cared for in STRICT ISOLATION, in accordance with the WIP guideline Isolation measures [10].

- A mask should be worn while treating a patient in strict isolation.
- Staff should wear caps to prevent contamination of the hair.
- A long-sleeved coat with cuffs should be worn as protective clothing.

Fairly intensive skin contact can occur, particularly during activities such as lifting the patient.

Screening samples should be cultured from a category 2 patient (see section Bacteriological examination).

The patient should be cared for by the smallest possible set team of experienced nurses, and contact with other disciplines should be kept to a



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minimum. Staff with skin defects such as eczema or psoriasis may not come into contact with MRSA patients.

People with such skin defects are more likely to become colonised with staphylococci and are more difficult to treat.

A list of staff who (have) come into contact with the patient should be drawn up.

For category 2 patients, the prescribed measures can be discontinued once the screening cultures are negative. However, if the patient's condition changes, for example by administration of antibiotics or a change in the course of the disease, there is a chance that the MRSA cultures will still turn out positive. Therefore it is advisable to culture samples again in such situations. An expert should assess this risk for each situation.

### 2.3 Measures for category 3 patients (moderately increased risk)

Category 3 patients do not have to be cared for in isolation.

Screening cultures should be taken upon admission (see section Bacteriological examination).

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Restraint should be exercised with regard to transfer, examination and treatment of the patient until the results of the cultures are known. Please note that the patient should always be given the care and treatment he/ she needs. If the results of a culture are positive for MRSA, the patient is assigned to category 1. If all cultures are negative, the patient may be regarded as category 4 and additional measures are no longer necessary.

### 2.4 Measures for category 4 patients (no increased risk)

No additional measures are required for category 4 patients.

### 2.5 Measures for patients unexpectedly colonised with MRSA

Naturally, an unexpected MRSA-positive patient should be treated as a category 1 patient. Patients who have been in the same room with a patient with unexpected MRSA are considered category 2 patients and should be cared for in strict isolation. This can be done in cohort isolation if necessary. Cohort isolation is defined as caring for several patients potentially contaminated with the same pathogen in the same room, and keeping them strictly isolated from the outside world.

In some departments, it is difficult to make a distinction between room and ward, for example the ICU or the CCU. In such departments the decision may be taken to immediately isolate all patients and to close the department to new admissions.

Furthermore, screening cultures should be taken from all patients in the department and from staff who have been in contact with people in the department (see section Measures for staff, paragraph Screening cultures).

Admissions to the department should be kept to a minimum until the results of the cultures are known. There will then be two possibilities:

1. All cultures are negative: discontinue isolation for all of these patients (category 4).
2. The cultures from one or more patients or staff are positive. In this case there is an epidemic. For additional measures, see section Proclaiming an epidemic. If MRSA is found in patients who are not in isolation, the department should be closed to new admissions. 10 Policy for Methicillin-resistant Staphylococcus aureus

The new MRSA-positive patients are considered category 1 and should be cared for in strict isolation, either individually or in cohort, and must be separated from the MRSA-negative category 2 patients.

New samples should be cultured from the remaining patients. If these cultures are negative, the former roommates can be taken out of isolation. This procedure should be continued until the last non-individually isolated patients' results are negative. For staff, see the section Measures for staff.

### 2.6 Transfer of patients

If possible MRSA transmission has occurred in a department, clear information must be provided beforehand when a patient is transferred to another department, hospital or nursing home. Of course, if necessary, the rehabilitation clinic, home care, home for the elderly, and other parties involved in the chain of care must also be informed and advised.

## 3 Measures for Outpatients' Clinic and Accident & Emergency Department

The general practitioner can play an important role by taking screening cultures before referring the patient to an outpatients' department. The hospital will then have to make arrangements with the general practitioners who refer the patients to the hospital. The general practitioners will have to be kept informed on the policy.

Visits to outpatients' clinics by category 1 and 2 patients should be scheduled for the end of the day as much as possible. There must be enough time afterwards to thoroughly clean and disinfect the room. The patient should be taken to a room immediately and may not sit amongst the other patients in the waiting room.

## 4 Treatment of MRSA-Positive Patients

### 4.1 Treatment of carriers

Treating a carrier is only useful if the patient has no infections, no wounds (including IV lines) and no skin defects (eczema).

#### 4.1.1 Skin and hair disinfection

The skin and hair should be disinfected by washing with povidoneiodine shampoo or a chlorhexidine soap solution every day for 5 days.

#### 4.1.2 Nose disinfection

The nose should be treated with mupirocin nasal ointment. The ointment should be applied in the Vestibulum nasi, or nose picking area, 3 times a day for 5 days. The application should then be discontinued and control cultures taken 48-96 hours afterwards. If the cultures are still positive, a doctor with specific knowledge of infectious diseases (clinical microbiologist or infectious disease specialist) should be consulted. It would be irresponsible to apply mupirocin for more than 5 days unchecked in view of the possible selection of resistant strains. Policy for Methicillin-resistant Staphylococcus aureus 13

#### 4.1.3 Treatment with systemic antimicrobial drugs to combat MRSA

A doctor with specific knowledge of infectious diseases (clinical microbiologist or infectious disease specialist) should be consulted if a systemic antimicrobial therapy is chosen. After treatment of the patient, one can never be entirely certain that the MRSA has disappeared. If control cultures (3 sets of negative cultures, taken at 7-day intervals) remain negative and the patient's condition is reasonable, isolation can be discontinued. However, if the patient's condition changes, for example by administration of antibiotics or a change in the course of the disease, there is a chance that the MRSA cultures will be positive again. Therefore it is advisable to take new culture samples in such a situation and to consider putting the patient in isolation until the results of the cultures are known. An expert should assess this risk for each situation.

#### 4.1.4 Unsuccessful carrier treatment

Carrier treatment can be unsuccessful for a number of reasons, such as a source outside the hospital. In that case, a doctor with special knowledge of infectious diseases (clinical microbiologist or infectious disease specialist) should be consulted.

### 4.2 Treating patients with infections

MRSA patients with infections should be treated in consultation with a doctor with special knowledge of infectious diseases (clinical microbiologist or infectious disease specialist). This also applies to MRSA patients infected with microorganisms other than MRSA.

### 4.3 Patient information

The attending physician should inform the patient on the reason for the extra measures that have to be taken during hospital admission and visits to the outpatients' clinic.

## 5 Discontinuing Isolation Measures

Isolation measures cannot be discontinued until it can be reasonably assumed that the patient is MRSA-negative. This is possible when the control cultures (at least 3 times with 7-day intervals) remain negative and when none of the risk factors below are present anymore]:

- the use of antibiotics
- skin defects, such as wounds, eczema or psoriasis
- drains, catheters, intravascular lines. 14 Policy for Methicillin-resistant Staphylococcus aureus



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## 6 Discharge of a Patient Colonised with MRSA

The general practitioner and other care providers such as ambulance staff must be informed of the fact that the patient is contaminated with MRSA. Data exchange is necessary in order to be able to pursue the MRSA policy successfully. Therefore, the attending physician and the infection prevention department (if present) must be consulted before the patients discharged to a nursing home, psychiatric institution or other hospital [9]. The patient's case history, including any outpatient history, should mention that the patient is or has been contaminated with MRSA. This can be mentioned in the case history itself. However, it is better to pass this information on by means of the Hospital Information System (HIS). The patient's room must be cleaned and disinfected thoroughly as described in the WIP guidelines Isolation measures and Cleaning and disinfection of rooms, furniture and objects [10, 12].

## 7 Measures for Staff

### 7.1 Bacteriological examination

Bacterial examination can be divided into screening cultures and control cultures. In both cases, preferably before the shift commences, samples should be cultured from the nose, throat, perineum and any skin lesions such as eczema. In general it cannot be certain whether culture samples taken by the staff member himself/herself are taken correctly.

### 7.2 Screening cultures

The extensiveness of the investigation among staff depends on the findings at the time.

If the patient was only in the department for a short period of time, a 'ring investigation' may be chosen. This investigation is then only indicated for the staff members that had the closest contact with a patient contaminated with MRSA, such as staff members who provided direct nursing or medical care, or physiotherapists. If the patient was in the department for a longer period of time, it is recommended

that culture samples be taken from all the staff in the department. Staff members from outside the department itself who had contact with the patient are often difficult to identify at such a late stage. In this case, a situation- specific policy should be determined by experts (MRSA committee).Policy for Methicillin-resistant Staphylococcus aureus

### 7.3 Category 1 staff

#### 7.3.1 Staff with MRSA, with skin defects

Staff members diagnosed with MRSA who also have skin defects may not work. On the day the staff member is found to be MRSA-positive (day 1), culture samples should again be taken from the throat, nose and any skin defects. Furthermore, carrier treatment should be initiated on the same day, consisting of skin and hair disinfection and treatment of the nose with mupirocin ointment, as described for patients in paragraph 4.1.Control cultures should be taken on the 10th, 15th and 20th day.

The staff member may not resume working until all 3 sets of control cultures are negative.

#### 7.3.2 Staff with MRSA, without skin defects

Staff members diagnosed with MRSA and who have no skin defects may not work for 2 days. Treatment should be initiated immediately. On the first day the culture is known, before commencing treatment, culture samples should again be taken from the throat and nose. Furthermore, carrier treatment should be initiated on the same day, consisting of skin and hair disinfection and treatment of the nose with mupirocin ointment, as described for patients in paragraph 4.1. If the cultures from day 1 are positive on the 5th day, the staff member should again be banned from working temporarily. Subsequently, control cultures should be taken on the 10th, 15th and 20th day. The staff member may not resume working until all 3 sets of control cultures are negative.

If the cultures from day 1 are negative on the 5th day, the staff member may continue working. However, control cultures should still be taken on the 10th, 15th and 20th day. Cultures from treated MRSA-positive staff should proceed as follows: - weekly for the first 3 months- monthly after 3 months.- Culturing can be discontinued after a year.

This policy is not applicable with regard to transient colonisation.

#### 7.3.3 Procedure in the event of unsuccessful treatment with mupirocin ointment

If treatment with mupirocin ointment is not effective, the staff member should be referred to a doctor who specialises in this area. 16 Policy for Methicillin-resistant Staphylococcus aureus

### 7.4 Category 2 staff

Category 2 staff may only work in their own department until screening cultures confirm that they are not MRSA carriers. For practical members who have worked or been treated in a foreign hospital or nursing home the practical execution depends on the possibilities. This also applies to surgeons who have worked abroad for a short period of time, but more than a day. Culture samples can be taken from them on their first day of work. Further treatment of a category 2 staff member colonised with MRSA should take place in the same way as a category 1 staff member.

### 7.5 Category 3 staff

Culture samples must be taken from a category 3 staff member. This staff member may be allowed to proceed with work as usual. Culture samples must be taken regularly from staff members who regularly work in foreign hospitals. The frequency should be agreed with the staff member in question beforehand, taking into account the work situation and degree of exposure. This staff member may be allowed to proceed with work as usual (see also 7.2).

### 7.6 Category 4 staff

No special measures are required for category 4 staff.

## 8 Proclaiming an Epidemic

By definition an epidemic exists if two or more patients in the hospital are colonised or infected with the same strain of MRSA. A policy team must then be formed in order to handle the situation effectively. This policy team should be put together as recommended by the infection committee and can consist of management representatives and staff members charged with day-to-day execution of the work.

The measures to be taken by this team include organising cohort nursing and putting together a set group of nurses, for example nurses already colonised with MRSA. The policy team is responsible for the following:

- reporting to the Board of Directors and the Health Care Inspectorate
- communication inside and outside the team's own organisation
- good reporting of the epidemic
- clearly identifying responsibilities
- making arrangements concerning whether or not to close the department where a patient was found to have MRSA.

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# Turning up the Heat on Infection Control

## Report: APIC's 31st Annual Educational Conference and International Meeting 2004

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**Abstract**

Infection prevention and control is facing new challenges worldwide: emerging and re-emerging infectious diseases, increasing resistance of bacterial pathogens, virtually unlimited possibilities of germ transmission due to travel activities, and the necessity to improve emergency and bioterrorism response capabilities. In a way it is designative that the Association of Professionals in Infection Control (APIC) met in Phoenix, the name of which is symbolic of rebirth. Accordingly the conference covered a wide spectrum of infection control-related topics and new aspects thereof. Recognised speakers provided an insight into basic principles and latest updates on several infectious diseases, detection and prevention strategies, patient safety as well as professional development, to name just a few. Networking was the magic word of the event, and all participants were successfully encouraged to start right away with it.

### Introduction

"Turning up the heat on infection control" - this slogan was well chosen for a field that is facing new challenges all over the world we can only imagine. Emerging and re-emerging infectious diseases, increasing resistance of bacterial pathogens, virtually unlimited possibilities of germ transmission due to travel activities, demographic changes, and the necessity to improve emergency and bioterrorism response capabilities make infection prevention and control a difficult but rewarding task.

The slogan was also corresponding to the location where the Association of Professionals in Infection Control (APIC) had arranged the 31st Annual Educational Conference and International Meeting this year: Phoenix was hot from June 5 to 10 in 2004, but it was a dry heat - no reason not to start hard work that has to be done. After all, this city's name is symbolic for rebirth. Accordingly the conference covered a wide spectrum of infection control-related topics. Surveys of basic principles and latest updates on several infectious diseases, detection and prevention strategies, patient safety as well as professional development were given by recognised speakers like Julie L. Gerberding, William R. Jarvis, Elaine Larson, William A. Rutala, Glen Mayhall, William Atkinson, and Michael Osterholm, to name just a few. Networking was the central concern of the meeting, and an extraordinarily communicative atmosphere encouraged participants to start right away with it.

### Protecting people's health in a transforming world (Julie Gerberding, CDC)

Tempora mutantur, nos et mutamur in illes (times change, and we change with them too). In her keynote address Julie Gerberding elaborated on a "small world" that is connected by countless weak ties providing links between highly clustered communities. Several events, especially SARS, have shown us in the past few years how small our world has become. This is illustrated by a profound thought: either way, everybody on this planet is separated by only 6 people.

CDC has developed 6 new strategic imperatives regarding 1. the health impact of any respective action, 2. the customer focus, 3. public health research, 4. leadership (leverage CDC unique capabilities to improve the health system), 5. global health impact, and 6. accountability, efficiency and effectiveness. The focus is on prevention, health protection and preparedness.

The economical impact of SARS woke up politics and resulted in great efforts to come up against such threats. Infection control professionals (ICPs) play a key role in connection with such endeavors and can be forged into strong links of a worldwide network. Being pros with good expertise ICPs are competent knowledge managers as well as fast detection and early warning leaders. They must act as trusted experts spokespersons ("be first, be right, be credible") before other less right, credible or empathetic "experts" emerge. Furthermore, ICPs are real global health ambassadors who seek to improve health on a global scale. But, first of all, they are patient advocates that listen and touch, so that maybe by the year 2010 CARING has been put back in healthcare.

### Patient safety (Jeannie Cimiotti, Patricia Stone, Carla Alvarado, Elaine Larson)

A symposium borne by four excellent speakers from New York, Wisconsin and New Jersey focused on healthcare-acquired infections (HAI) as an indicator for patient safety. Endeavors about patient safety aim at preventing adverse patient outcomes resulting from errors. Not all errors (failure of planned action to be completed as intended, or use of the wrong plan to achieve an aim) result in adverse events (injury resulting from healthcare intervention), and not all adverse events are a result of an error. Among the many AHRQ quality indicators patient safety indicators also reflect quality of care inside hospitals, but focus on surgical complications and other iatrogenic events. This is the interface of infection control and patient safety, as HAI are "staffing-sensitive" just like many other adverse patient outcomes. Both should influence the design of work processes and areas.

Research studies in hospitals might affect patient safety and have to be approved by institutional review boards (IRB). Surveillance measures have to be regarded as research 1) whenever the publication or dissemination of results beyond the respective setting is planned, 2) when patients are in any way identifiable, or 3) when results are generalisable beyond the respective setting. Since even routine surveillance and data collection activities will be increasingly monitored ICPs should know the IRB processes in their settings and keep with it.

Many investigations have analysed the interrelation of understaffing, overwork, or insufficient education and training on the one hand, and the incidence or prevalence of HAI on the other. No doubt that bad working conditions have a tremendous impact on patient safety and nosocomial infections, and, furthermore, the turnover of nurses that often follows from nonsatisfying working conditions is an expense factor that is not to be disregarded.

### Preparedness (Michael Osterholm)

Healthcare systems all over the world have to consider the tremendous influence of changes like emerging infections, the aging population, healthcare financing, terrorism, globalisation, and medical technology when preparing for tomorrow. Osterholm gave a talk on how infection control professions can support public health efforts to collect health information and data for emergency as well as bioterrorism preparedness. The surveillance tools ICPs have been quite familiar with for a long time may be very useful in assessing occurrence and progression of events with epidemiologic relevance. Furthermore, healthcare epidemiology can provide valuable information that might result in a realistic risk perception of the public: e.g., food radiation for preservation is not accepted by the broad public, even though it is a very safe measure to prevent foodborne disease outbreaks. A realistic appraisal of exposure and other risks is essential to ensure compliance - not only in case of emergency.

### State of the science (William Jarvis)

Guidelines and recommendations are based on results of studies published in the scientific literature. In praxi the implementation of recommended measures often seems to bring about conflicting outcomes. Jarvis pointed up how misinterpretation of published results may occur, e. g., if we are not precise with our terms: giving an account of the "successful eradication of MRSA using standard infection control practices and nasal mupirocin" does not help the reader if those standard measures are not exactly defined. Furthermore, he reminded to take into account the consequences that any measure may have and that are not necessarily linked to the outcome they are aiming at. For instance, attending physicians are about half as likely to examine patients in contact isolation compared with patients not in contact isolation - a fact that makes it difficult to assess the effect of isolation measures.

Jarvis summarised the latest recommendations and guidelines regarding prevention of antimicrobial resistance, staffing requirements (Nurse/ICP), West Nile virus, SARS, and allograft-associated infections. He reasoned that advancements in the science of healthcare epidemiology and patient safety must be implemented to improve the outcome of our patients.

### Subsequent topics

The main messages of the general sessions were deepened, complemented and detailed in several concurrent sessions, workshops and "Meet the Expert" lectures. All of them were scheduled in a way that avoided overlapping of presentations on similar topics. So the participants could keep with self-chosen learning tracks like infectious diseases, professional development, special populations, bioterrorism and emergency planning, patient safety/best practices, and detection and prevention strategies. And the audience experienced the necessity to critically assess measures recommended and taken to prevent infection or the spread of multi drug resistant organisms like MRSA (methicillin resistant Staphylococcus aureus) or VRE (vancomycin resistant Entrococcus faecalis and E. faecium). A vivid and controversial debate on the differences of guidelines governing isolation best practices issued by CDC's Healthcare Infection Control Practice Advisory Committee (HICPAC) and by the Society for Healthcare Epidemiology of America (SHEA) made clear that the input of experts and critical reading of the literature is indispensable if we want to succeed in preventing more nosocomial infections.

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# Announcement of the Launch of the Global Patient Safety Challenge:

## Clean Care is Safer Care

Health care-associated infection is a major issue in patient safety as it affects hundreds of millions of people worldwide and complicates the delivery of patient care. Infections contribute to patient deaths and disability, promote resistance to antibiotics and generate additional expenditure to those already incurred by the patients' underlying disease.

The World Health Organisation and its partners within the World Alliance for Patient Safety have selected health care-associated infection as the target of the first Global Patient Safety Challenge "Clean Care is Safer Care".

The launch of the Challenge will take place centrally at the WHO Headquarters in Geneva Switzerland, on 13th October, 2005. Video-links with all WHO regions will ensure worldwide diffusion.

The launch aims to strengthen the commitment of Member States to the Global Patient Safety Challenge and the critical role of hand hygiene in controlling health care-associated infection and multiresistant pathogens. To achieve this goal, the Challenge also integrates actions in the areas of blood safety, injection and immunisation safety, clinical procedures safety and water, sanitation and waste management safety. As part of the launch, the advanced draft of the new WHO Guidelines on Hand Hygiene in Health Care will be made available.

Ministers of health and major associations of health care professionals have been invited to formally pledge to tackle health care-associated infection, to give priority to hand hygiene in health care, and to share results and learning internationally.

WHO Director-General, Dr LEE Jong-wook, and Sir Liam Donaldson, Chair of the World Alliance for Patient Safety, will lead the launch. The Global Patient Safety Challenge is led by Professor Didier Pittet, Director of the Infection Control Programme at the University of Geneva Hospitals.

The Global Patient Safety Challenge is an unprecedented event. Today, perhaps for the first time in the history of public health, it is possible to initiate, from a global perspective, a powerful response to tackle the infections that spread in health care settings worldwide.

Further information regarding the Global Patient Safety Challenge is available at: http://www.who.int/patientsafety/challenge/en/

# In-service Training on Infection Prevention and Wound Care

## Turiani Hospital, Turiani, Tanzania

### Evaluation report November 2004

*Foundation Burns Turiani, Groningen, the Netherlands*
*Wieneke Boldewijn, teacher ACADE, Groningen*
*Ina Boerma, nurse practitioner Martini Hospital, Groningen*
*Willem Nugteren, surgeon / inspector Health Care Services, NL*

**Introduction**

Training on 'Infection prevention and wound care' was prepared and executed as the third phase of the training project in Turiani Hospital. The activities of the Foundation Burns Turiani in Groningen are directed to support the hospital worker in her medical and nursing skills towards adequate standard of patient care, promote hygiene and infection control, reduce (postoperative) wound infections and improve the management and treatment of wounds.

The training was given during the period from October 18th to October 27th 2004. Parallel with the workshops for nurses, lead by Ina Boerma and Wieneke Boldewijn, two lectures were given by Willem Nugteren to the doctors concerning Surgical Site Infections (SSI) and communication / teamwork between doctors and nurses during patient care. Good assistance was offered by a poster, composed by Paul Caesar (Infection Control Practitioner, Leeuwarden) on the surveillance of SSI in Turiani Hospital in the period January - November 2003. In this survey 127 operated patients were included and the outcome was 13% infections after caesarean section and about 7% SSI after inguinal hernia repair.

At the same time, a promotional film was produced in the hospital supporting the Foundation in its efforts to find sufficient financial resources for the achievement of its goals during the next years.

This report is follows the steps of the continuing process of quality care:

PLAN – DO – CHECK – ACT

This was also the basic concept for thinking and acting during the training.

PLAN Preparation of the training

The general goals for the training were:

1. Implementation of infection control protocols and the surveillance of infections in daily practice;
2. Wound care: actualisation of knowledge, skills and attitude;
3. Wound care practices: inventory of present practices, the results of these practices and what can be improved.

To achieve these 3 goals the following subjects were planned for the programme:

- How to prevent infections during wound care procedures;
- Positive and negative factors influencing the wound healing process;
- Discussion on best practices related to admitted patients with problems in wound healing;
- Design and presentations of working procedures or protocols related to wound care.

To connect our ideas to the present practices on the wards and to create support among the nurses, we planned parallel observations of wound care procedures in the hospital and how to communicate these with the involved health care workers.

The way of teaching and learning:

The most effective way of learning is to work together in small groups in an active, meaningful and practical way. We prepared assignments to be worked out in small learning groups to stimulate the participants to express their learning questions, seek more information, share ideas and look for the most adequate way to solve practical problems.

Two workshops were prepared for the nurses and the nurse assistants:

1. Wound care, facts and principles and
2. Wound care, best practice.

The organisation, information and planning were done by the management of Turiani Hospital.

DO Execution of the training

The workshops for nurses were attended by 31 participants. They were divided in two training groups and were active in two sessions during the morning or afternoon on two successive days.

During the workshops there was a continuous transfer from theory to practice and vice versa.

The following issues were discussed:

- The transmission of infections between patients and HCW and how to prevent this (chain of infection and how to break the chain).
- Principles of Infection control related to wound care.
- Anatomy and physiology of the skin.
- The general phases of wound healing.
- Different types of wounds in Turiani Hospital.
- The influence of positive and negative factors in the wound healing process.
- Patient studies: patients admitted in the hospital with problems in wound healing.

- The outcome of the workshops (process and results) and learning needs for further education.

CHECK Evaluation outcome and learning process

Evaluation statements of the participants, written down in 5 groups

I learned about:

- skin function, skin damage;
- process of wound healing;
- types of wounds e.g. burn wounds, cut wounds, incision wounds, bed sores and how to care them;
- negative and positive factors related to wound healing;
- management and nursing care of the wound.

The practice I want to improve in:

- how to take care of the skin in order to prevent skin damage and how to take care of different types of wounds like wound dressing and changing position of the patient to prevent pressure;
- giving health education (like hygiene) to patients, relatives and health care workers;
- follow up of discharged cases at home;

What is needed to improve practice:

- enough working tools e.g. dressing pack, etc;
- enough staff in the wards;
- communication between doctors, relatives, nurses and patient.

I need more education about:

- hygiene in the hospital in order to prevent any infection e.g. wounds, Diarrhoea, Malaria, etc;
- how to prevent cross infection
- other infectious diseases like air borne diseases, sexual transmitted diseases, HIV, Tuberculosis, Malaria;
- information about unconscious patients;

What is needed to improve education:

- Travel outside the country to exchange ideas to see what they are doing in in other countries ( like you coming here)
- More Workshops in order to improve our knowledge.

**Results**

The participants were able to:

- mention the function of the skin;
- describe the positive and negative factors in the wound healing process;
- describe patient cases and seek more information;
- make the transfer from theory into practice;
- make the connection between nursing interventions and their results.

**Learning process**

Most of the subjects were discussed in small groups. Each group was able to present the results to the whole group. The willingness to act as an active learner was inspiring.

**Teaching process**

Interactive learning sometimes means doing a step backwards in order to give the learner time and to encourage the learner in her/his development. This way of learning took place in a motivating and friendly atmosphere.

ACT Recommendations

With reference to the results of the training and our observations on the wards of the hospital we recommend:

- Infection control protocols should be visible in each ward;
- Continuous attention to acting according to the protocols and procedures such as wound care dressing;
- Increased awareness of the risk factors related to the transmission of micro-organisms from the environment to the patient (e.g. wet and or dirty bed sheets);
- more attention to thinking and acting in a methodical way, addressing the following:
- what is the health problem and etiology;
- what are the signs and symptoms;
- what are the interventions and results;
- what should be improved;
- Increased professional communication between (assistant)nurses and patients, relatives, doctors and nurses, colleagues and other HCW.

**Plans for the future**

In the future we would like to come back for a follow up. As a result of the evaluation of this training we propose the following main subjects:

1. Special wound care procedures.
2. Patient studies: design of nursing standards and individual plans for each patient;
3. Communication and teamwork, concerning all health care workers;
4. Train the trainer (for 2 or 3 selected staff nurses): like consultants in Infection Control, specific nursing procedures, clinical education etc.

During the preparation and execution of the programme, the teachers from the Netherlands could be assisted by the Health Care Officer of the hospital and 2 or 3 selected nurses for the train the trainer programme.



International Federation of Infection Control Volume 1, Issue 1, 2005

# THE SOCIETY FOR HEALTHCARE EPIDEMIOLOGY OF AMERICA (SHEA).

*Leonard A. Mermel, DO, ScM SHEA President*

The Society for Healthcare Epidemiology of America (SHEA), founded in 1980, provides both independent and collaborative leadership, domestically and globally, to further the prevention and control of infections in healthcare settings. SHEA is built on a set of values to which it adheres in all its activities: advancing the science of healthcare epidemiology through research and education, abiding by high ethical standards and promoting honesty and ethical principles in the practice of epidemiology, translating knowledge into effective policy and practice, mentoring, training, and promoting professional development in healthcare epidemiology, and collaborating and sharing expertise with other organisations and agencies.

1,200 members from around the world, working as epidemiologists, infection control practitioners, staff physicians, nurses, researchers, investigators, administrators, and others involved in healthcare epidemiology and infection control, support SHEA in its purpose and work. SHEA's members participate in the Society's committees and task forces, providing expert guidance to healthcare regulatory and accrediting agencies. Its members develop SHEA position papers and guidelines, direct its educational programs, communicate its vision to its members, policy makers, and the healthcare community, and support its many other activities.

SHEA provides a forum for its members and the healthcare epidemiology community at large with the publication of scientific papers in Infection Control and Hospital Epidemiology (ICHE), SHEA's official journal, and with the selection and presentation of papers and abstracts at SHEA-sponsored meetings. SHEA's website also affords members and other viewers timely updates of epidemiology news and SHEA events and concerns, as well as previous annual meetings' abstracts, ICHE archives (for members only), SHEA guidelines and position papers, healthcare epidemiology job opportunities, and other items of importance.

SHEA's views its Annual Scientific Meetings, SHEA/CDC Training Courses in Healthcare Epidemiology, and other educational activities as integral to its purpose. Every year, the SHEA Annual Meeting Planning Committee creates a program that encompasses the year's most important and relevant healthcare epidemiology information. For four days, an expert international faculty teaches the program's sessions to more than 1,000 healthcare professionals. The 16th Annual Scientific Meeting of SHEA, to be held from March 18-21, 2006 in Chicago, IL, will provide updates on longstanding issues of concern, including antibiotic resistance, Clostridium difficile, hand hygiene, and healthcare worker and patient safety, as well as instruction on more recently emerging issues, including avian influenza, rapid detection methods, advances in epidemiologic methods, and new paradigms for infection prevention.

The SHEA/CDC Training Course in Healthcare Epidemiology provides intensive training and a comprehensive introduction for professionals involved in the field of healthcare epidemiology, as well as others concerned with issues related to hospital epidemiology and infection control. Its co-sponsored courses, including an introductory course sponsored with Johns Hopkins Medical Institutions and an online course sponsored with the Infectious Diseases Society of America (IDSA), also uphold its mission to provide exceptional educational, training, and mentor-ship opportunities to professionals involved in healthcare epidemiology and infection control.

SHEA values its collaborations with other organisations and agencies involved in healthcare epidemiology and infection control, and looks to these institutions as partners in preventing and controlling infections in healthcare settings. SHEA thanks IFIC for the opportunity to explain its organisation to the International Journal of Infection Control (IJIC) audience.

# Successful Meetings at APIC 2005 in Baltimore

*Gertie van Knippenberg-Gordebeke, RN CIC, Editor-in-Chief IFIC*
*Patricia Lynch, RN MBA, Chair IFIC*

This year three delegates from the IFIC Board were again invited by the Board of the Association for Professionals in Infection Control and Epidemiology (APIC) conference 2005 in Baltimore. Pola Brenner, Gertie van Knippenberg-Gordebeke and Patricia Lynch staffed the IFIC table which was visited by many attendees.

They also followed up on contacts during the conference and receptions and were generally able to promote IFIC. The conference was great: about 3500 participants & 173 exhibitors. IFIC received $US 750 in donations for the Scholarship Fund and a $1500 grant to publish Basic Concepts in Farsi for Iran and Afghanistan.

Jasminka Horcavic from Croatia presented a poster with the results of the South- East Euro regional network projects. This project was an initiative through IFIC.

Gertie van Knippenberg-Gordebeke attended the American Journal of Infection Control editorial board meetings. AJIC is quite supportive of our intention to develop the Journal.

## International Focus Group

At the International focus group meeting the attendees discussed different topics around avian flu and the WHO preparedness plan. APIC brought together health professionals from around the world to discuss how their governments are preparing for pandemic influenza and to highlight best practices. The meeting was chaired by Jeanne Pfeiffer, co-chair of the APIC International Steering Committee, and included presentations from health experts from Chile, Hungary, Vietnam, and the Netherlands. For meeting participants, the experiences of these countries pointed the way toward possible actions at home. Few communities have adequate communications systems or emergency response plans in place. Hospitals lack enough respirators, personal protection equipment (such as gloves and masks), antibiotics, and other supplies to handle a sudden surge of patients. Nor are there adequate plans in place to safely handle the burial of a large number of flu victims.

Pola Brenner, R.N., a nurse from Chile's Ministry of Health, described strategies that her country uses to protect its 15 million people from avian influenza and other respiratory diseases. About 85 percent of health care facilities in Chile are operated by the government while 15 percent are privately run. Chile's democratic government has had a national hospital-based infection program in place since 1981. Ms. Brenner emphasised the importance of frequent training programs to ensure that health care workers are always ready to respond to an emergency. "In simulated situations, everything works," she said. "But in real situations, people tend to forget what to do unless they are trained regularly."

Dr. Emese Szilagyie represented the National Center for Epidemiology in Budapest, Hungary, The Center's work is overseen by the Epidemiological Defense Committee within the Ministry of Health. Dr. Szilagyie reported that more than 22,000 people have died from influenza in Hungary since 1950, when a democratic government was first established. The government has responded by creating an effective surveillance system that monitors influenza-like illnesses and respiratory infections.

In addition, free influenza vaccinations for health care workers and high-risk populations are provided through both a domestic influenza vaccine production system and a nationwide vaccination program. As a result, more than 10 percent of the Hungarian population is vaccinated free-of-charge each year.

Dr. Szilagyie stressed the need for all countries to have an influenza pandemic preparedness plan in place that includes a clear assignment of tasks and responsibilities. "We must find ways to harmonise our domestic intervention with international organisations," she said, "and we need up-to-date information about the global influenza situation."

Vietnam was represented by Dr. Le Thi Anh Thu, who focused on her country's efforts to care for patients with avian influenza—dozens of cases have been detected in the country since the disease began its march across Asia in 2003.

According to Dr. Thu, health and veterinary sectors work closely together on both the urban and rural levels. The Vietnamese government raises public awareness of avian flu prevention methods through television programs and newspapers. Considerable effort is underway to strengthen the diagnostic capacity of laboratories and train health care workers. However, major challenges remain, particularly in regard to regulation of the poultry industry and the prevention of the spread of the avian flu virus into a broad environment.

Dr. Thu discussed some of the steps being taken to try to control outbreaks, including using disinfectants in poultry feeding areas, implementing a trial poultry vaccination program, and giving the drug oseltamivir to people who may have been in contact with sick people or poultry. "We need to organise and conduct prevention strategies from the city to the village level," she said. "Raising awareness of avian flu prevention methods is as important for people in our local communities as it is for health care workers." With this in mind, staff at medical facilities are required to attend infection control lectures during flu outbreaks.In addition hospitals implement stricter infection control measures for certain patients, for example those with unknown respiratory illnesses and suspected avian flu cases.

Gertie van Knippenberg-Gordebeke, R.N., talked about the experience with avian flu in bird and human populations in The Netherlands. In 2003, the country faced 83 human cases (Human, really?) of avian flu (including one fatality). Infectious disease control in the Netherlands is organised by 39 municipal health services in cooperation with the Ministry of Agriculture and the Ministry of Health.

The National Coordinator of Infectious Disease Control draws up guidelines and coordinates outbreak management. A pandemic task force covers prevention and therapy, surveillance, diagnostic procedures, hygienic precautions, vaccination and prophylaxis, control, and communication among general practitioners, hospitals, and radio and television outlets. The Netherlands' comprehensive plan also features a local crisis team and a call center for the public.

## Conclusions

We heard about policies from 4 different countries.The hygienic precautions include the use of a protective gown, gloves, ffp2 (is this a type of mask?) mask, goggles, and shoe covers. Hand hygiene information is also included in these precautions.

Everyone should know these guidelines, but many people are not yet aware of them. The pandemic task force covers prevention and therapy; surveillance; diagnostic procedures; hygienic precautions; vaccination and prophylaxis; control; and communication among the media.

But all the speakers reminded the group that there is a difference between knowledge/policies and real practice. A lot of work is still left to do.


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# Eastern Mediterranean Regional Network of Infection Control (EMRNIC)

## 2004/2005 Report

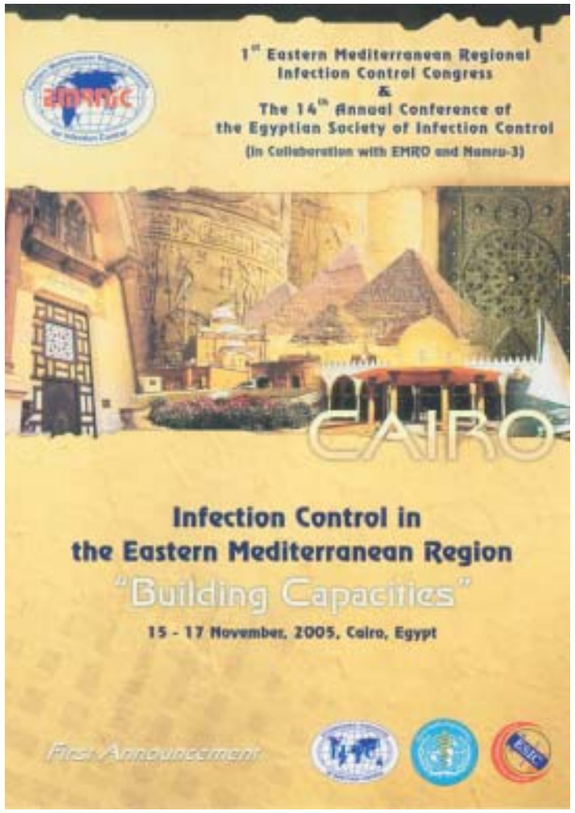
*Prof. Ossama Shams El-Din Rasslan, MD,PhD, Egypt*

### 1 Establishment

EMRNIC has been established in Mid 2004 after Portadown (Belfast) meeting, where the IFIC board decided to start regional activities and prof. Ossama Rasslan (Secretary General ESIC) was assigned the responsibility of the Eastern Mediterranean region networking initiative.

### 2 Membership

Every infection control body "whether governmental or non governmental" in each of the 22 EMR countries is targeted to be included in the network and to have an active share in its activities. To date 12 countries are involved:- Egypt, Saudi Arabia, Kuwait, Emirates, Oman, Bahrain, Yemen, Qatar, Sudan, Syria, Libya & Jordan.




### 3 Board

A temporary Board of directors has been established comprising IC experts from: Egypt (Ossama Rasslan & Essam A. Mohsen)., Saudi Arabia (Ziad Memish), Kuwait (Haifaa El-Moussa)., Sudan (Malek Abdo Ali).

### 4 Gulg Cooperation Countries support

Direct contact has been established with Dr. Tawfik Khoja (Executive director of the council of the ministers of health of the Gulf cooperation countries), augmented by an invitation letter from Pat Lynch). A decision has been taken by the council to actively participate in the network and to start establishing IC teams within the 7 member countries. Currently they are in the process of nominating a representative in the EMRNIC Assembly. An orientation IC course has been organised in Sultanate of Oman for the IC professionals (Doctors & Nurses), May & June 2004.

### 5 EMRO Support

Three meetings have been established with Prof. Zuhair Hallag, Head of Communicable Diseases and Infection Control Dept. in EMRO/WHO, concerning establishment, support and enhancement of EMRNIC activities within the 22 EMRO member states. A very encouraging letter of correspondence has been received and now we are working jointly to hold the first regional congress by the end of September 2005.

### 6 AMU Support

Three meetings have been established with the supreme council (1 meeting in Cairo) and executive board (2 meetings in Jordan & Bahrain) of the Arab Medical Union (comprising 15 arab countries) to actively participate in the regional network. They have nominated key IC figures in some countries for the membership of the EMRNIC assembly. Representation of the other countries is currently in process.

### 7 Cooperation with ACCPD

Infection Control training courses are now proposed to be held in UA Emirates (Ajman University) and Libya as a joint work between EMRNIC and the Arab Centre for continued Professional Development (ACCPD), under the umbrella of AMU (next April & May 2005) as a start for continuing cooperation in IC educational & training activities.

### 8 Cooperation with NAMRU -3

Two meetings were held with the IC professionals in the US-Naval Medical Research Unit-3 in Cairo, to study ways of cooperation and to draft the 1st announcement of the regional congress. On the other hand, Prof. Ossama Rasslan has actively participated in the NAMRU- 3 evaluation program for the national IC program in Egypt-with the participation of CDC professionals.

### 9 Call for EMRNIC Board meeting

With the support of EMRO, we are currently planning for a meeting of the board of directors to discuss promotion and enhancement of EMRNIC activities and to draft an action plan for the year 2005/2006 as well as to finalise the program of EMRNIC upcoming congress.

### 10 Regional Congress

The 1st EMRNIC regional congress is proposed to be held as a joint meeting with ESIC .



International Federation of Infection Control Volume 1, Issue 1, 2005

*Oxoid are pleased to announce that the £5,000 first prize in the 2004/2005 Oxoid Infection Control Team of the Year Awards has been awarded.*

# Oxoid Infection Control Team of the Year 2004/2005

This is the second year of the Oxoid Infection Control Team of the Year Awards and the judges found the task of awarding the winning prizes equally as difficult as last year. "The standard of entries was extremely high with many examples of excellent practices and falling rates of infection that contradict media headlines about inadequate standards of infection prevention and control," said Cheryl Mooney from Oxoid, who was Chairman of the Judges. "The results given by many entrants prove that their work is contributing to better patient and public outcomes, which is encouraging news for us all. The winning teams should be justly proud of their achievements." The winners are as follows:

### 1st Prize UNITED KINGDOM

Kingston Hospital NHS Trust, Kingston on Thames

Left to right in the picture: Fran Brooke-Pearce, Clinical Nurse Specialist Infection Control; Pat Cattini, Clinical Nurse Specialist Infection Control; Dr Jill Leach, Consultant Microbiologist and Infection Control Doctor, Zoe Brockbank, Infection Control Surveillance and Projects Nurse.

In awarding Kingston Hospital the £5,000 first prize, the judges commented that the small infection control team showed numerous examples of good practice that could be emulated by others and had a proactive and practical approach. Their many successes included reduced infection rates in orthopaedic surgery (which has led to them being asked to present their work nationally), implementation of Creutzfeldt-Jakob Disease guidance, instigation of an intravenous implementation group to look at improving practices and hand hygiene audits that have led to raised compliance. Their commitment to education and the sharing of knowledge was also evident. As well as weekly training for clinical staff on infection control matters, they have held infection control conferences that have been attended by other hospitals, GP practices and community healthcare workers. They have also made excellent use of a digital camera as an environmental monitoring tool to capture examples of good and bad practice for audit purposes and have worked closely with the hospitals' Estates Department and management in the planning and design of a new surgical block.

### 2nd Prize ARGENTINA

Sanatorio Adventista del Plata, Entre Rios

The Sanatorio Adventista del Plata entry outlined how, with very limited resources or support in a country that has experienced economic crisis in recent years, this infection control team had demonstrated significant improvements to infection prevention and control. The infection control team have taught patients, clinical staff and visitors about infection prevention and control procedures, negotiated with hospital management for improved hand washing facilities, written infection control manuals and undertaken and supervised cleaning and building operations. The improvements these actions have brought about have been dramatic, with substantial reductions in rates of nosocomial infection within Intensive Care Units and surgical site infections in general, orthopaedic and gynaecological surgery, nosocomial bacteraemia, nosocomial isolation of Methicillin Resistant Staphylococcus aureus (MRSA) with considerable savings also being made in the cost of prophylactic antimicrobials.

### 3rd Prize UNITED KINGDOM

Doncaster and Bassetlaw Foundation NHS Trust, Doncaster,

The team demonstrated a co-ordinated approach to microbiological procedures within the laboratories at Doncaster Royal Infirmary (DRI) and at Bassetlaw Hospital (BH), collaborated with the antibiotic pharmacist and surgeons at DRI and BH to produce a unified prescribing policy in orthopaedic surgery with resultant savings in antibiotic costs and reduced antibiotic selection pressure. Their focus on antibiotic prescribing, hand hygiene and central line management was also associated with a reduction in MRSA bacteraemia and a low rate of Clostridium difficile infection

### Highly Commended UNITED KINGDOM

The University Hospitals of Leicester NHS Trust, Leicester,

demonstrated a focussed approach to bringing about transformational change to the Trust, whereby clinical staff are being re-skilled to prevent infection and to manage patients with communicable infections.

### Highly Commended JAPAN

Juntendo University Hospital, Tokyo, who showed evidence of a significant reduction in rates of MRSA within just 8 months of the team being formed.

### The Judging Panel:

- Dr Robert Spencer, Chairman of the Hospital Infection Society
- Christine Perry, Nurse Consultant and Director of Infection Prevention and Control at United Bristol Healthcare Trust
- Professor Mark Wilcox, Clinical Director in charge of Microbiology for The Leeds Teaching Hospitals (the largest group of teaching hospitals in Europe).
- Control Committee and Board Member of the International Federation of Infection Control
- Cheryl Mooney, Marketing Manager, Oxoid Ltd
- Professor Gary French, Chairman of the Guy's and St Thomas' Hospital Trust Infection
  IFIC board member

# China Speech

*Jan Wille, Dutch Institute for Healthcare Improvement, (CBO) The Netherlands*

**On March 14, 2005 I was asked by Gertie van Knippenberg, the Dutch member of the board of IFIC and editor of this journal, to give a presentation about the surveillance of hospital acquired infections (HAI) within two weeks, in China!**


*From left to right: Prof Wu, Mr Ternström, Mr Wille and Mr Lee*

**Just before the IFIC Board had been asked by Bengt Ternström, Training Manager of Getinge Academy (Getinge International AB, Sweden) to give a presentation at the training centre for infection control of the Chinese Ministry of Health. Unfortunately, none of the board members was able to give this presentation at such short notice. Being one of the two project leaders of the Dutch Network for Prevention of Nosocomial Infections through Surveillance (PREZIES) and an old friend of Gertie, she asked me if I was able to give this presentation about the surveillance of nosocomial infections in Europe.**

**On March 28 I met Raymond Lee, Marketing Manager of Getinge Shanghai Trading Co., Ltd., at Beijing airport. Mr. Lee had translated my English PowerPoint presentation into Chinese. While waiting for Bengt Ternström to arrive from Sweden, we discussed the presentation in detail. Later that day the three of us flew to Changsha, a medium size Chinese city with approximately two million inhabitants. The next day we attended the training course organised by Professor Wu (Director of the Nosocomial Infection Control Centre, Xiang Ya Hospital, Central South University, Changsha). This meeting was the 58th consecutive 6-day training course for doctors in infection control organised by the National Nosocomial Infection Surveillance, Management & Training Centre of the Chinese Ministry of Health. It was attended by approximately 150 participants.**

**In my presentation I shared our experiences with the surveillance of HAI in the Netherlands within our surveillance network PREZIES. The surveillance methods of our network have been described previously in this journal (Wille JC, Boer AS de. Surgical site infections (SSI) surveillance in the Netherlands. Bulletin of the International Federation of Infection Control 2003; 16: 26). We discussed the setup of an incidence study for HAI in detail, the importance of postdischarge surveillance and the validation of hospital data, meaningful comparison with other hospitals' rates and the positive effect of surveillance on infection rates. In addition, I briefly discussed the HELICS network (Hospitals in Europe Link for Infection Control through Surveillance). HELICS is an international network aiming at the collection, analysis and dissemination of valid data on the risks of nosocomial infections in European hospitals (http://helics.univ-lyon1.fr).**

**In the Netherlands the organisation of a national network is feasible because there are only 98 hospitals in our country. Since the start of PREZIES in 1996, more than 60% of all Dutch hospitals have participated. The participation of a significant percentage of Chinese hospitals will be an enormous challenge, as China has over 63.000 hospitals nationwide!**

# Implementation of Courses for Operators and Engineers on Sterilisation of Medical Supplies

## Lilongwe Central Hospital, Lilongwe, Malawi

## March 24 – April 4 2003

J. Huys*, P. Mwalilino**

*Jan Huys, HEART Consultancy, Wageningen, The Netherlands. E-mail: jh@heartware.nl

**Patrick Mwalilino, Chief Biomedical Engineer, Ministry of Health and Population, Malawi

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The courses in Kampala, Uganda (2002) and Moshi, Tanzania (2001) were facilitated and financed through the Medical Mission Institute based in Würzburg, Germany

Copied with permission: Zentr Steril 2003; 11 (5): 342–343

**Keywords**

- sterilisation
- training
- Malawi

In any health institution, the sterilisation of medical supplies is an essential link in adequate patient care and preventing nosocomial infections. In many health institutions in low-income countries however, the sterilisation equipment is in poor condition due to insufficient maintenance, limited supplies and poor training of technical personnel. Moreover, the operating personnel in the sterilisation department are often not adequately trained in the operation of the equipment and general practices for sterile supply.

### Context of the Courses: the MoHP Physical Assets Management Programme

This alarming situation in relation to sterile supply was experienced in the facilities serviced by the Physical Assets Management (PAM) program of the Ministry of Health and Population (MoHP) and is underlined by independent studies in similar institutions in other countries. In 2002 it was decided to improve sterilisation practices and resulted in the planning of a training programme for operators and engineers to be started in 2003. The financial input required for the implementation of the courses was made available through the MoHP/PAM budget, which in turn is supported through the European Union. HEART Consultancy, based in the Netherlands, was requested to work out the curricula and to present the first courses, both in close collaboration with the MoHP/PAM. The curricula are based on a concept for sterile supply developed for the health services in countries with limited resources.

It reflects the core of the international standards on sterile supply but also considers the socio-economic situation these countries. The elements of the concept were elaborated during the past decennium of thorough research, field visits and training sessions.





### Preparing for the courses at Lilongwe Central Hospital, Lilongwe

Through the MoHP/PAM the venue for the courses was decided to be the Lilongwe Central Hospital (LCH). MoHP/PAM was taking responsibility for invitations and selection of participants, arrange availability of training rooms, workshop, boarding and lodging of the participants and the majority of the equipment required. HEART Consultancy prepared the curricula, training material and arranged ordering the equipment that was not available in Malawi. The curricula were similar to the courses that took place in 2002 at the Joint Medical Store in Kampala, Uganda1. As in the Malawian health facilities more automatic sterilisers are in use, on request of MoHP/PAM, more time was scheduled for these machines.

### Implementation

It is essential that practices and procedures required for sterile supply be done well; at least as important it is that the equipment is in good working order. That is why courses were planned for operators and for engineers. Both courses took one week, which was considered the maximum time that staff could be withdrawn from their departments/workshop.

In both courses all steps in the sterile supply cycle were covered with special attention on quality assurance in all steps of the cycle. Where the user course was focusing on packaging, loading, steriliser operation, sterile storage etc; in the engineering course more weight was put on the technology and maintenance and repair of sterilisation equipment.

The training sessions were held in March to April 2003. Both courses were very well attended: For the operators course, which had 26 (!) participants, mainly key staff of all the larger regional hospitals were invited. They were all people authorised to disseminate and implement the knowledge acquired during the course. The engineering course, with 13 participants, was attended by senior technical staff of all 4 RMU's (Referral Maintenance Units) in the country. The ratio between theory and practical was approximately 70–30%. The participants underwent a pre-test and a post-test and all received a certificate of successful attendance. The tests taken, confirmed a significant improvement of the knowledge level on sterilisation issues. The average score went up from 57% to 82%.

### Hospital visits

During and after the courses the sterilisation departments in 4 health facilities were visited in order to know the hospitals where the participants came from and to get an impression of the general situation of the sterile services. The visits confirmed the need for improvement, training and support. It was encouraging to see that in the CSSD Queen Elizabeth Central Hospital in Blantyre, that was visited after the courses, a range of improvements as suggested during the courses, were already implemented. In several hospitals that were visited the technical status of the equipment is worrying due to limited budgets available for spare parts. In the prioritising of budgets it is essential to consider the importance of a well working CSSD, upon which so many departments are depending.

### Course evaluations

In general the courses have been received very well. In the post course evaluation many participants valued the courses as an eye-opener and stated that the gained knowledge would contribute significantly in the general operations of their department. A general feeling – especially of the technicians – was that the time available for practical training was too short. Suggestions to extend the courses ranged from an extra day to a full month.

### Follow-up

Through the courses, staff holding key positions were trained. It is now envisaged that the trainees will implement the suggested concept for sterile supply and train their staff, which ultimately should lead to improved patient care. A nation-wide training programme for the health facilities at the lower levels of the health system is to be planned and implemented (District Hospitals, Health Centres etc). Operators shall test the performance of their sterilisers, followed by validation by the engineers. Where necessary, protocols or processes are to be adapted. Sterilisers that passed the validation can be approved for a limited period of time after which a revalidation shall take place thus ensuring reliable performance. In order to facilitate more economic maintenance and repairs, standardisation to a limited range of adequate sterilisers is recommended. A set of minimum specifications for sterilisers was formulated and is recommended to be referred to when new sterilisers are to be procured. The Medical Stores are recommended to stock a number of additional items related to the improvement sterile supply. For implementing these activities it will be necessary to allocate the required resources in terms of manpower and funding.

### The "Moshi Spirit" remained alive

As the courses were progressing the conviction was growing that "we can do it", even with the often limited resources that are available. It expressed itself in the enthusiasm during the lively discussions during the lectures and the practical sessions. Indeed the atmosphere of enthusiasm and friendship, that, at the end of the first course of this kind, held in Moshi, Tanzania, was coined, "the Moshi Spirit", could remain alive, also here in Malawi.

# Websites for Infection Control Professionals

In conjunction with the International Federation of Infection Control (IFIC), CHICA-Canada presents an information page for our infection control partners around the world. **http://www.chica.org/ific/ific.html**

Hospital Infection Society Travel Grant. Travel Grants are primarily intended to enable trainees to attend meetings of educational benefit, particularly if research is to be presented:

**www.his.org.uk**

Global Patient Safety Challenge at:

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

Infection Prevention in Healthcare Environments on HealthExecTV

This programme is permanently available online:

**http://www.healthexectv.tv**

The Sharps Injury Prevention Center:

**www.isips.org**

**www.premierinc.com/safety**

CDC/NCID/Division of Healthcare Quality Promotion* home page:
*formerly Hospital Infections Program

**http://www.cdc.gov/ncidod/hip**

### Educational products for PPE and Influenza and TB

Educational products about personal protective equipment (slides, video, poster):

**http://www.cdc.gov/ncidod/hip/ppe/default.htm**

Influenza A (H2N2) Laboratory Situation:

**http://www.cdc.gov/flu/h2n2situation.htm**

Poster to be used in healthcare settings to inform patients to report if they have flu symptoms, cover their cough, and clean their hands:

**http://www.cdc.gov/ncidod/hip/INFECT/RespiratoryPoster.pdf**

MMWR December 22 2004
Updated Interim Influenza Vaccination Recommendations (2004--05 Influenza Season):

**http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5350a7.htm**

MMWR issue on influenza - See December 17, 2004 Volume 53(49):

**http://www.cdc.gov/mmwr/mmwr_wk.html**

Updates regarding influenza are posted regularly at:

**http://www.cdc.gov/flu/**

Hand-rub dispensers/infections from IV flush/AR broadcast:
1. CMS Rule for placement of hand-rub dispensers - March 25, 2005:

**http://www.cdc.gov/handhygiene/firesafety/cmsRuling.htm**

2. MMWR - March 25 2005
Pseudomonas Bloodstream Infections Associated with a Heparin/Saline Flush:

**http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5411a1.htm**

CDC/NCID/Division of Healthcare Quality Promotion* home page:

**http://www.cdc.gov/ncidod/hip**

3. Satellite Broadcast - April 8, 2005 2:00-3:00pm ET Antimicrobial Resistance: Old Bugs, New Threats, and the Public Health Response:

**http://www.publichealthgrandrounds.unc.edu/**

A new NIH-funded Centerfor Interdisciplinary Research on Antimicrobial Resistance:

**http://www.cumc.columbia.edu/dept/nursing/CIRAR/**

1. Marburg Haemorrhagic Fever Outbreak - Angola 2005:

**http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5412a5.htm**

For information regarding viral haemorrhagic fevers go to:

**http://www.cdc.gov/ncidod/hip/BLOOD/ebola.htm**

2. Inadvertent Laboratory Exposure to Bacillus anthracis California,2005:

**http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5412a2.htm**

3. Influenza Vaccine Prebooking and Distribution Strategies for the 2005-06 Influenza Season:

**http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5412a4.htm**

### Websites useful at disaster

CARE International:

**www.care.org**

International Red Cross:

**www.redcross.org**

Medecins sans frontiers (doctors without borders):

**www.msf.org**

Center for International Disaster Information:

**www.cidi.org**

**http://www.cnn.com/2004/WORLD/asiapcf/12/27/tsunami.disease/index.html/**

**http://www.who.int/csr/disease/cholera/en/**

**http://www.who.int/water_sanitation_health/diseases/cyanobacteria/en**



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# Member Organisations

| Country | Member Organisation |
|---|---|
| ARGENTINA | Asociacion Argentina de Enfermeros en Control de Infecciones (ADECI) |
| AUSTRALIA | Australian Infection Control Association (AICA) |
| AUSTRIA | Austrian Society for Hygiene, Microbiology & Preventive Medicine (OGHMP) |
| BANGLADESH | Bangladesh Society of Infection Control Practitioners |
| BELGIUM | Association Belge pour l'Hygiene Hospitaliere |
| BHUTAN | Health Department Bhutan |
| BOSNIA & HERZEGOVINIA | Microbiology Society of Bosnia & Herzegovinia |
| BRAZIL | Brazilian Association of Infection Control and Hospital Epidemiology |
| BULGARIA | Bulgarian Association of Microbiologists |
| BULGARIA | Bulgarian Association of Prevention and Infection Control (BulNoso) |
| CANADA | Community & Hospital Infection Control Association (CHICA) |
| CHILE | Chilean Society of Infection Control and Hospital Epidemiology |
| CHINA | Chinese Nosocomial Infection Control Association |
| CROATIA | Reference Centre for Hospital Infections |
| CROATIA | Croatian Medical Association - Croatian Society for Medical Microbiology and Parasitology |
| CZECH REPUBLIC | Infection Control Society of Czech Republic |
| DENMARK | Danish Society of Infection Control Nurses |
| DENMARK | Danish Society of Hospital Hygiene & Sterile Supply |
| EGYPT | Egyptian Society of Infection Control |
| FINLAND | Finnish Society for Hospital Infection Control |
| FRANCE | Societe Francaise d'Hygiene Hospitaliere |
| GERMANY | German Society for Hospital Hygiene |
| GERMANY | Vereinigung der Hygiene-Fachkrafte der Bundesrepublik Deutschland |
| GREECE | Helenic Society for the control of the Nosocomial Infections & Healthcare Quality Assurance |
| HUNGARY | Hungarian Society of Infection Control Practicioners |
| INDIA | Hospital Infection Society of India |
| ISRAEL | Israeli Infection Control Nurse Association |
| JAPAN | Japanese Society of Environmental Infection |
| JORDAN | Jordan Society of Infection Control |
| KENYA | Infection Control Association of Kenya |
| KYRHGYZSTAN | The Infection Control Chapter, Hospital's Association of Kyrhgyzstan |
| LATVIA | Latvian Infection Control Society |
| LATVIA | Preventive Medicine Society "VESELIBAS LABORATORIJA" |
| LIBYA | Libyan Society of Infection Control |
| LITHUANIA | Lithuanian Association of Hospital Infection Control |
| MACEDONIA | Macedonia Society for Control of Nosocomial Infection |
| MALAYSIA | Infection Control Association of Malaysia |
| MALTA | Infection Control Unit - Department of Health - Malta |
| MEXICO | Infection Control for Mexico |
| NETHERLANDS | Vereniging voor Hygiene en infectiepreventie in de Gezondheidszorg (VHIG) |
| NEW ZEALAND | National Division of Infection Control |
| NORWAY | Norwegian Forum for Infection Control |
| NORWAY | Norwegian Association of Infection Control Nurses |
| PAKISTAN | Infection Control Society of Pakistan |
| PERU | Peruvian Society of Epidemiology |
| PHILIPPINES | Philippine Hospital Infection Control Society |
| POLAND | Polish Society of Hospital Infection |
| ROMANIA | Romanian Society of Microbiology |
| RUSSIA | Hospital Infection Control Society of St Petersburg |
| SAUDI ARABIA | Infection Control Forum Saudi Arabian National Guard |
| SAUDI ARABIA | Arab Society of Chemotherapy, Microbiology and Infectious Diseases |
| SINGAPORE | Infection Control Association |
| SLOVAKIA | The Society of Nosocomial Infections Prevention in Slovakia |
| SLOVENIA | Slovenian Society for Clinical Microbiology and Hospital Infection |
| SOUTH AFRICA | Infection Control Association of South Africa |
| SWEDEN | Swedish Association for Infection Control (SAIC) |
| TAIWAN | Infection Control Society of R.O.C. Taiwan |
| THAILAND | Nosocomial Infection Group of Thailand |
| TURKEY | Turkish Microbiological Society |
| UK | Hospital Infection Society (HIS) |
| UK | Infection Control Nurses Association. (ICNA) |
| USA | Assoc. for Professionals in Infection Control and Epidemiology (APIC) |
| USA | Certification Board of Infection Control and Epidemiology Inc. (CIC) |
| USA | The Society for Healthcare Epidemiology of America (SHEA) |
| ZIMBABWE | Infection Control Association of Zimbabwe |

# SIXTH CONGRESS OF THE INTERNATIONAL FEDERATION OF INFECTION CONTROL

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Congress Homepage
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