CONTENTS

Welcome from the chair  4
IFIC Vision and Mission  6
Scholarship Awards  6
New Board members  8
Events Calendar  9
Bulgaria review  11
Isolation Feature  12
Isolation Workshop  14
Cohort Isolation Ward in Malta  19
Diagnosis-based isolation measures in ICU  23
The hands-free technique  26
A practical lesson in Negative Pressure Isolation Ventilation  29
Book Reviews  30
Evaluation of Compliance of Isolation Practises in a high complexity teaching hospital  32
Dutch national MRSA guidelines  34
Turning up the heat on infection control  38
In-service training on infection prevention and wound care  40
APIC 2005 in Baltimore  42
Control team of the year awards  45
Implementation of Courses for Operators and Engineers on Sterilisation of Medical Supplies  46
Useful websites  48
IFIC Board Members  49
Member Organisations  50

EDITIORIAL

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 hygiene 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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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, IJC 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 website 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 can 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/ifc/ifc.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 their 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:

- Kyrgyzstan: Infection Control Chapter, Hospital’s Association of Kyrgyzstan 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:

- 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: Mo Zahir, 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 Salarpoue, 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: Lidija Markov, DDr., MD, Epidemiologist, Belgrade

Surgical Site Infection rates following Appendectomy in 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: Ljiljana Markovic, MD, Epidemiologist, Belgrade

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IFIC SCHOLARSHIPS 2005 WILL BE PRESENTED IN ISTANBUL
Two New IFIC Board Members

Prof. Dr. Welling Fu
PR China

He is the vice chairman of the National Committee of Nosocomial Infection Control and the Nosocomial Infection Prevention 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, Chinese High-technology 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.chinanet.net

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 days from 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 NZINO

National Division of Infection Control Nurses will be held at the Hyatt Regency Hotel, Auckland, New Zealand. Email: admin@mnzanz.co.nz

USA 8-9 September 2005

International Conference on "Infections That Have No Boundaries"

The conference is supported by IFIC. Hotel Nikka, 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 6657 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. Alfardani)
Tel: +359 2 944 69 99/241 (K. Arabadjiev, T. Lazarova)
Tel: +359 2 832 91 12 /216 (Dr. K. Tontcheva, V. Ilieva)
Email: sympomudd48@abv.bg

EGYPT 15-17 November 2005

EMIRMIC Eastern Mediterria Region Network Infection Control Cem, Egypt. The conference is supported by IFIC.

Email: emric@yahoo.com

SOUTH AFRICA 3 - 5 July 2006

3rd International Congress of the Asia Pacific Society of Infection Control

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 Brasileiro de Control de Infeccao Epidemiologia Hospitalaria www.abih.org.br

THE NETHERLANDS 15-16 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


International Federation of Infection Control

Volume 1, Issue 1, 2005
The national regulations state that every hospital must have an infection control programme. Antibiotics and treatment of infected patients were of interest, and the Ministry of Health 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. As a consequence, training programs and workshops for nurses and physicians in charge of infection control were organised. The society organise 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. The society 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 infection control 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 lose 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 at www.sociadadish.cl.
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.

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 feces, 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 diarrhea, 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.

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 diarrhea
- 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 colonized 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 patient soiled the room environment with secretions or excretions.

Isolation Workshop

Anna Hambraeus, Sweden, Ulrika Raujo, Sweden, Vessa 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 colonization does not occur.

Isolation policies have several parts: hand hygiene, protective clothing, single rooms with or 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 appropriate 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 modes 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 or 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

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 formines to e. g. mucous membranes, wounds

How to prevent contact, bloodborne and droplet transmission

Basic hygiene 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 before and after handling dirty items. However hand hygiene is not improved by installing more than one sink per 6 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 effective 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 a closed door.

A more stable system is achieved if a ventilated anteroom is placed as an airlock between room and corridor. This minimizes 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 by 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 x 107 skin particles are dispersed to the air per 24h. 103 skin particles/min are dispersed when walking and 10% of these carry bacteria.

It is difficult to reduce a so “steady state” and prevent environmental contamination.

Placement of patients

In most cases basic hygiene 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 diathesis)
- 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
- Single room with arlock 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 MRA isolation was practiced after positive surveillance culture. Despite this, 56 community acquired cases caused 80 nosocomial cases. Transmission stopped when barrier nursing of ALL patients 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
  - clean, adj.
- 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 gram negatives 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 antiseptics followed by a loss of moisturisers and stratum corneum water and (2) the overheating 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 100 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 at close patient contact, is much less effective than simply wearing a plastic apron and clean gloves.

In situations where the working clothes are soiled, a protective gown is worn. The clothes are sterile at the point of donning, but the removal of barrier lipids by detergent cleaning and alcohol antisepsis 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 100 to 10 000 times.

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 to 4 - disinfection 10 5 to 10 6 - sterilisation 10 6 The environment around the patient is not randomly contaminated with or by 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.12 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

References
2 Vernon Infect Control Hosp Epidemiol 2003;24:224-225
3 Kibbler et al J Hosp Infect 1998
4 Borg / Hosp Infect 2003
6 WJ McKay 1985; Brit J Derm 1975; 93:477-485

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 gram negatives 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 antiseptics followed by a loss of moisturisers and stratum corneum water and (2) the overheating 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 100 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 at close patient contact, is much less effective than simply wearing a plastic apron and clean gloves.

In situations where the working clothes are soiled, a protective gown is worn. The clothes are sterile at the point of donning, but the removal of barrier lipids by detergent cleaning and alcohol antisepsis 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 100 to 10 000 times.

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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 colonized, 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 beds to be one single and two double rooms, and on infection diseases units/wards and paediatric wards, at least two 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, when, and what are based on international guidelines (IFIC Basic Concepts e.g.) and adjusted to local situation—local policies.

If the implementation of hand hygiene is the low compliance of HCW-L, for several reasons:
- Heavy workloads (too busy)
- Too many steps
- 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 sensors for good example in order to motivate junior staff.

Protective clothing
For barrier precautions masks, hats, gowns, shoe covers and protective clothing 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.

Cohort of patients
Cohorting of patients can be done in several ways:
- Isolation wards (designated for treatment of known or suspected carriers)
- Nurse cohorting—physical segregation of patients and staff designated only to treat them.
- 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 hospital 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 can 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.

BUZZ GROUPS IFIC WORKSHOP

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 spreading 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 Enterobacteriaceae. 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 1950s 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 wholly unsuited to effective infection control. The wards themselves are on the whole constructed of large Nighingale type sections, with 16 beds separated by curtains or aluminum partitions as well as 8 or 4 bedded rooms. Each ward only has one single bedded room, whereas 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 multiple resistant infections, the lack of proper isolation facilities we propose to the hospital administration in late 1998 to have one of the multi 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 complement. Despite an active early discharge policy, maximum has been common, not the April or May 1999, where in addition during the winter months, demand often outstrips 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 scarce. An impasse ensued until an issue of MRSA cases at 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 wards.

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 and control of the top that 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 the 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, note 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 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 nurses 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 alleviated.

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 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 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 revet to isolation in the wards was strongly resisted, despite worsening bed crisis predictably started to put pressure on us. We tried to convince the department that not doing anything would be actually more damaging than agreeing to a relative reduction in general surgical beds. We were able to use the national arguments using both available literature and our presentation of clear and unambiguous local data. We realised that we are able to discredit our scientific arguments. We were able to use mainly reusable instruments.

All hospitals have washer-disinfectors which facilitate cleaning of instruments. That means that we use mainly reusable instruments. Isolation room means a room with an anteroom and isolation room. Contact, gloves and point-disinfection with alcohol. Basic precautions include: alcoholic handrub before and after patient contact, handwash if visible or noticeable dirt, plastic apron, gown at close patient-contact, goggles 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.
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.

Infection in hospitals and are applied for health care of all the patients. Standard Precautions are designed to reduce the risk of microorganisms 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 Streptococcus (group A) pharyngitis, 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.

Transmission-Based Precautions - are applied to patients documented 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 with Para influenza virus, Respiratory syncitial virus, gastrointestinal infections (Hepatitis A, Rotavirus infections, enteroviral infections), skin or wound infections with Herpes simplex virus, Varicella-Zoster virus, abscesses, cellulites, Pediculosis, Scabies, Staphylococcus 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 are used; hand hygiene, the use of single patient equipment, adequately clean and disinfect are recommended.

In Romania, isolation procedures are made after CDC 1996 and theoretically, we have the following precautions: Standard Precautions are applied for all patients receiving care in hospitals. This system synthesizes 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, infections prevention when using needles, scalpels, and other sharp instruments or devices.

When using needles, scalpels, and other sharp instruments or devices, medical equipment and environmental surfaces, injuries prevention is used, individualised conditions for each disease (especially for infectious diseases).

Transmission-Based Precautions - for patients documented or suspected to be infected or colonised with epidemiologically important pathogens that 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, Droplet Precautions, and Contact 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.

Precautions - for patients infected or suspected to be infected by epidemiologically important pathogens that can be transmitted by direct or indirect contact with patient. Droplet Precautions - are applied to patients in a room with other patients, who have active infections 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 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 with Para influenza virus, Respiratory syncitial virus, gastrointestinal infections (Hepatitis A, Rotavirus infections, enteroviral infections), skin or wound infections with Herpes simplex virus, Varicella-Zoster virus, abscesses, cellulites, Pediculosis, Scabies, Staphylococcus 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 are used; hand hygiene, the use of single patient equipment, adequately clean and disinfect 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 (lack of implementation at national level and hospitals architecture) is sometimes improper, so that patient’s isolation isn’t always properly applied.

ISOLATION IN PERU

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 criticize at hospital level such as Disinfection and Hospitalable Sterilization and Hospitalable 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, IIFIC 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 Infection was the one to break existing paradigms such as the indication of individual room basically because 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

Naywa 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 possible direct and indirect 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 pathogens 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.
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, precautions are designed for the care of specified patients, which 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 epidemiologically 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 II isolation II (septic isolation)
2) To protect immune compromised patients from acquiring infections from the hospital environment II isolation I (protective isolation).

> 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 feedback & will be prescribed only if the patient develops fever instead of the empirical antibiotic to minimise the emergence of resistant strains & to avoid their endemity).

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 with the use of a disinfectant solution 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 Rifampicin 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 sterilize the tubes of the ventilators between patients and at an interval of 72 hrs for the same patient. This procedure is no more applied, and we use disposable tubings 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.

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 synthesis important elements from a variety of isolation systems and may eventually replace all other systems of isolation (8).

References
(2) Lynch T (1949): Communicable Disease Nursing, St. Louis, MO, Mosby.
(5) Hospital Infection Control practices Advisory Committee membership List, November 1994.

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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”. An attempt to make an issue less murky: a comparison of four systems for infection precautions. Infection Control Hosp. Epidemiol, 12:448-450.

Microbiological technique:
1) Nasal swab
   a. Culture on blood and macConkey agar media.
   b. Sensitivity for Staph aureus colonies (oxacillin and vancomycin disc).
2) Rectal swab
   a. Culture on blood & MacConkey agar media (+ triple sugar)
   b. Sensitivity for gram +ve bacilli & gram +ve cocci (enterococcus)

* In case of detection of a multiresistant strain either MRSA or ESBL...
The Hands-free Technique: a work practice being evaluated for its effectiveness

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

Operating room (OR) personnel involved in surgical procedures are exposed to large quantities of undiluted blood and bodily fluids and may be exposed to hepatitis C and HIV. Since surgeons require the use of a large concentration of sharp instruments, an enhanced risk of percutaneous injury, injury to skin and mucous membrane contaminations exists. Not only have such exposures led to occupational transmission, but to a lesser extent they also have led to the transmission from infected caregivers to patients. Operating room studies in which observers recorded exposures and injuries have found that OR personnel, most frequently surgeons, sustained percutaneous injuries in 17-15% of surgeons and blood and body fluid contaminations in 6.2-5.9% of surgeons. 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 sutures 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 surgeons, residents, nurses and other OR personnel are laid down and then later retrieved when required. This procedure applies to passing scalpels 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 regularizing 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 is the way that sharps are passed more controlled and predictable.

The following organisations endorse the HFT:
1. The Association of Operating Room Nurses (UI): 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 Orthopaedic 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 intermediary tray.
4. The Operating Room Nurses Association of Canada: ‘A hands-free transfer of sharps (e.g. handled in a K-Box) should be practiced’.

As well LOSH, 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.

15. Stringer B, Infante-Rivard C, Halyer J (Effectiveness of the hands-free technique in reducing operating theatre injuries. 16. Occupational Safety and Health Review Commission in Los Angeles Hospital (25/HR.

### Non-hands-free Passing

<table>
<thead>
<tr>
<th>Transferring a sharp item from one person's hand to another person's hand, consisting of one action.</th>
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<tr>
<td>Laying a sharp item onto a neutral zone and later retrieval by the same or another person, consisting of two actions.</td>
</tr>
</tbody>
</table>

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 or 100% or more blood loss occurred, personnel experienced 60% fewer injuries, contaminations and glove tears. 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 controls hospital in medium 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 surgeons in which HFT use is 75% or more will be compared to rates in surgeons 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.
A Practical Lesson in Negative Pressure 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). 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) undertaking 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. It was also considered that this was a fail-safe way of monitoring of negative-pressure isolation rooms. Two negative-pressure micromanometers, which triggers an alarm at the nurses’ station, would 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 building management system was set to activate 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 focused on checking that a raft of contractual obligations have been met. Second, this highlights the importance 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-delays 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. Current advice is that this includes design parameters, operational procedures and staff training needs. 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.

References


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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 in infection control 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 recapping summary or "conclusions". For the reader 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-oriented. "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. Other chapters in this section concern the role of healthcare workers, occupational aspects, behavioural changes, and the impact of bioterrorism preparedness on infection prevention and control.

The fifth section "Special Topics" is the most varied part of the book. It covers a wide range of topics, from communication and education, through legal aspects and infection control in special patient groups, to outbreak investigations and infection control in the community. The sixth section is devoted to process control and introduce the international standards for 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 laboratories are obliged to comply.

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"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 infectious diseases 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 are devoted 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 daily practices of steam sterilisation and provide guidance to the steriliser for disinfection in case of exposure to bioterroristic agents (anthrax, tularemia, botulism, plague). On the other hand it is a good introduction to the sterilising equipment, or technicians who are maintaining and using it. 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 departments. 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 text is written in simple English and text is supplemented with 200 coloured photographs, illustrations, graphs and tables. Important 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, it can be useful for 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.
Evaluation of Compliance of Isolation Practices in a High Complexity Teaching Hospital

Patricio Nercelles MD, Luisa Pércamo RN, Rosa Herrera RN
Department of Hospital Epidemiology
Carlos Van Buren Hospital and School of Medicine Valparaíso University Chile

Introduction
The concept of isolating people with communicable diseases is very old. In 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 minimize the spread of bodily fluids and healthcare personnel by protecting skin and mucous membranes from potentially infective materials. Centers from Disease Control published in 1970 the first isolation guidelines in individual patient 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 for a permanent program to minimize risks of nosocomial infections.

Table 1

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Individual room with negative pressure</th>
<th>Opportunity of the indication</th>
<th>Length of isolation</th>
<th>Writing indications</th>
<th>Indications by physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung TB</td>
<td>100%</td>
<td>78%</td>
<td>88%</td>
<td>63%</td>
<td>42%</td>
</tr>
<tr>
<td>Chickenpox</td>
<td>80%</td>
<td>90%</td>
<td>90%</td>
<td>30%</td>
<td>80%</td>
</tr>
<tr>
<td>Meningitis</td>
<td>94%</td>
<td>94%</td>
<td>91%</td>
<td>71%</td>
<td>51%</td>
</tr>
</tbody>
</table>

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 (93%) 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.

Evaluation del cumplimiento de prácticas de aislamiento en hospital de docente de alta complejidad

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Introducción
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. Las 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 especificidades sobre este tema, basado en siete categorías de aislamiento. Posteriormente hubo nuevas recomendaciones sobre prácticas de aislamiento, como una manera de adecuar las recomendaciones a los requerimientos específicos de las patologías infecciosas. Las más recientes recomendaciones se denominan Precauciones Estándar; las cuales deben aplicarse a todos los pacientes y de acuerdo a la vía de transmisión, se deben agrupar precauciones específicas. En la actualidad no hay consenso acerca de las mejores prácticas de aislamiento y en general todas han demostrado ser efectivas, el personal sigue las recomendaciones. Están pendientes estudios de eficacia. Ni hay muchas estudios de evaluación del cumplimiento de prácticas de aislamiento; 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 postgados, 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 actualizado 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 gottas.

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, Haemophilus influenzae y el resto probablemente virales), que correspondió al total de pacientes hospitalizados por esos diagnósticos en el periodo 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 infectiosas. 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 el mayor riesgo en meningitis meningocócica que en TBP, probablemente por la mayor mortalidad de la primera. Aun 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 aislamiento es difícil de evaluar, ya que este es solo posible por la observación directa del personal. En este estudio se seleccionaron patologías en las que las prácticas de aislamiento, pueden ser evaluadas por elementos estructurales y por revisión de documentos.

Diagnóstico | Sala individual con aislamiento de aire | Oportunidad de indicación | Duración | Indicaciones escritas | Indicaciones por médico
-------------|----------------------------------------|--------------------------|----------|----------------------|------------------------|
TBP 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.

Conclusión
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 lo tuvieron en observación escrita y tipo de aislamiento. Es crucial para el personal conocer las recomendaciones y en función a las indicaciones de aislamiento de responsabilidad de enfermería. La falta de cumplimiento de algunas prácticas puede relacionarse con la percepción de riesgo en la vía de transmisión, así como con la percepción del personal de que las prácticas de aislamiento son útiles.
Hospitals Policy for Methicillin-resistant Staphylococcus aureus

WP (Dutch Working party Infection Prevention)

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### Table of Contents

**Introduction and definitions**
- Risk categories
- Summary 1, Patients in each risk category
- Summary 2, Staff in each risk category
- Measures for patients
- Bacteriological examination
- Measures for cat. 1 and 2 pat. (proven MRSA carriers and high carrier risk)
- Measures for category 3 patients (moderately increased risk)
- Measures for category 4 patients (no increased risk)
- Measures for patients unexpectedly colonised with MRSA
- Transfer of patients
- Measures for outpatients’ clinic and accident & emergency department

**4 Treatment of MRSA-positive patients**
- Treatment of carriers
- Treating patients with infections
- Discharge of a patient colonised with MRSA
- Measures for the staff

**5 Discontinuing isolation measures**
- Discharge of a patient colonised with MRSA

**6 Bacteriological examination**
- Staff who have had protected contact with MRSA carriers.
- Patients from another Dutch hospital or nursing home, from a foreign hospital, or 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 unspecified MRSA carrier.
- Patients after being treated for carrying MRSA, whose control culture results are not known.
- A panel of experts should also be formed 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 continuing. In the institution in question at the 4. Policy for Methicillin-resistant Staphylococcus aureus For the time being, MRSA still occurs occasionally 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, infection is made between colonisation and infection. Colonisation occurs when microorganisms grow after contamination. An infection occurs when the host experiences an (infectious) reaction with the same 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 be limited to patients with infections. The current MRSA policy in the Netherlands has been pursued with that, care should be taken to ensure that this guideline in no way limits the feasibility of the measures to be taken. The measures described in this guideline need to be taken to prevent the spread of MRSA in the hospital and in the community.

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, the most compatible to the institution in question at the 4. Policy for Methicillin-resistant Staphylococcus aureus For the time being, MRSA still occurs occasionally 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.

**Policy for Methicillin-Resistant Staphylococcus Aureus Introduction and definitions**

Methicillin-resistant Staphylococcus aureus (MRSA) was first reported in 1961, less than 1 year after the introduction of methicillin [1][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 the 1970s. 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 avidity of Staphylococcus aureus to methicillin is caused by the presence of the mec A gene. The presence of this gene makes some 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 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 and control 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 a significant problem. Most of the strains are insensitive or have reduced sensitivity to glycopeptides, there is a very real danger of development of even greater resistance [5, 6]. These MRSA strains are difficult to treat in combination with MRSA infections. MRSA is just as sensitive as methicillin-sensitive Staphylococcus aureus. Some MRSA strains spread more rapidly in hospitals than in 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 forestall 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 quickly as possible. The measures to be taken in the 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 continuing. In the institution in question at the 4. Policy for Methicillin-resistant Staphylococcus aureus For the time being, MRSA still occurs occasionally 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.

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3 Measures for Outpatients’ Clinic & Accident & Emergency Department

The people with such diseases play an important role by taking screening cultures before referring the patient to an outpatient’s department. The hospital will then have to make arrangements with the general practitioners who have prescribed the test. 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 next day or as soon 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 Screening cultures

Treatering 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 following areas: 3 times a day for 5 days. The application should then be discontinued and control cultures taken after 48-96 hours. 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 envened in case of no evidence of selectin of resistant strains. Policy for Methicillin-resistant Staphylococcus aureus 13

4.3 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. It would be irresponsible to apply antibiotics for more than 5 days envened in case of no evidence of selectin of resistant strains. Policy for Methicillin-resistant Staphylococcus aureus 13

4.4 Unsuccessful carrier treatment

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

4.2.2 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 a category 1 staff.

4.3 MRSA 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 outpatient’s clinic.

5 Discharge of a Patient Colonised with MRSA

The general practitioner and other care providers such as ambulance staff must be informed. In case of doubt, the attending physician must inform the general practitioner. Data exchange is necessary in order to be able to pursue the MRSA policy successfully. Therefore, the attending physician and the infection prevention department must inform the patients concerned before the patient is discharged to a nursing home, psychiatric institution or other hospital [9]. The patient’s case history must be documented in the patient’s medical history. History, should mention that the patient is or has been colonized 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 VWP guidelines Isolation and Cleaning and disinfection of rooms, furniture and objects [10, 12].

7 Measures for Staff

7.1 Bacteriological examination

Bacteriological examination can be divided into screening cultures and control cultures. In case of infections, the physician or preferably the shift commences, samples should be cultured from the nose, throat, perianal and any skin lesions such as eczema. In general it cannot be certain whether cultures taken by the staff members himself/herself are taken correctly.

7.2 Screening cultures

The extensiveiveness of the investigation among staff depends on the findings at the skin.

If the patient was only in the department for a short period of time, an irrigation investigation may be chosen. This investigation is then only indicated for the staff members that had the closest contact with a patient colonized with Methicillin-resistant Staphylococcus aureus. The physician or preferably the shift commences (category 4).

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 continue working. However, control cultures should still be taken on the 10th, 15th and 20th day. Therefore, control cultures should be taken on the 10th, 15th and 20th day. The skin and hair should be disinfected by washing with povidoneiodine shampoo or a chlorhexidine soap solution every day for 5 days. The application should then be discontinued and control cultures taken after 48-96 hours. 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 envened in case of no evidence of selectin of resistant strains. Policy for Methicillin-resistant Staphylococcus aureus 13

7.3.2 Staff with MRSA, without skin defects

Staff members diagnosed with MRSA who have no skin defects may not work for 2 days. Treatment should be initiated immediately on the first day. The staff member may not resume working until all 3 sets of control cultures remain negative.

7.4 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 must then be formulated by the infection control committee. This policy should be put together as recommended by the infection control 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 organizing cohort nursing and putting together a set group of nurses, for example nurses already colonised or infected with MRSA,

• reporting to the Board of Directors and the Health Care Inspectorate,

• communication inside and outside the team's 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

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

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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, demographic changes, 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. Donaldson, Chair of the World Alliance for Patient Safety, 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 illis (times change, and we change with them). 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 networking. 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 ("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 Cimioni, Patricia Stone, Carla Alvarado, Elaine Larson)

A symposium borne by four excellent speakers from New York, Wisconsin and New Jersey focused on healthcare-associated infections (HAI), an indicator for patient safety, Endavours 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) are avoidable (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 "stiffening-sensitive" just like many other adverse outcomes should. Both outcomes 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 (!) 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 data collection and data collection from the higher order of nosocomial ICUs 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. Nevertheless, bad working conditions have a tremendous impact on patient safety and nosocomial infections, and furthermore, the turnover of nurses that often follows from non-satisfying 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 changing environmental challenges, the aging population, healthcare financing, terrorism, globalization, and medical technology when preparing for tomorrow. Osterholm gave a talk on how infection control professionals can support public health efforts to collect health information 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 healthcare-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, infection and immunisation safety, clinical procedures safety and water sanitation 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 hand-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 healthcare 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

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 workers 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 20th 2004. Parallel with the workshops for nurses, lead by Ina Boerma and Wienieke Boldewijn group lectures were given by Willem Nugteren to the doctors concerning Surgical Site Infections (SSI) and communication about network between doctors and nurses during patient care. Good assistance was offered by a poster, composed by Paul Caesar (Infection Control Practitioners, Limburg) 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 Turiani Hospital
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 bed sores and how to care them;
- 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
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;
- 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 and planning of the 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 airborne diseases, sexual transmitted diseases, HIV, Tuberculosis, Malaria;
- information about unconscious patients;
- what is needed to improve practice;
- Travel outside the country to exchange ideas to see what they are doing in other countries (like you coming here);
- More Workshops in order to improve our knowledge.

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 space to encourage the learner in his/her 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 action to acting according to the protocols and procedures such as wound care existing;
- Increased awareness of the risk factors related to the transmission of microorganisms to the environment to the patient (e.g. wet and or dry) 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. Spread wound care procedures
2. Patient studies: designing of nursing standards and individual plans for each patient,
3. Communication and teamwork, concern 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 for patients.

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.

The Society for Healthcare Epidemiology of America (SHEA)

Leonard A. Mermel, DO, SM 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 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, 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 (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 SHEA’s activities; and a forum for discussion of SHEA’s activities.

SHEA values its collaborations with other organisations and agencies.

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 topics in healthcare epidemiology. For four days, an international faculty teaches the program sessions to more than 1,000 healthcare professionals. The 16th Annual Scientific Meeting of SHEA will 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 of 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 Infectious Diseases Society of America (IDSA), also uphold its mission to provide exceptional educational, training, and mentorship 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 to extend its reach to all those involved in monitoring infections in healthcare settings. SHEA thanks the ICF for the opportunity to explain its organization to the International Journal of Infection Control (IJIC) audience.
Successful Meetings at APIC 2005 in Baltimore

Gertie van Knippenberg-Goedebeke, 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 of Professionals in Infection Control and Epidemiology (APIC) conference 2005 in Baltimore. Pola Brenner, Gertie van Knippenberg-Goedebeke 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 SUS 750 in donations for the Scholarship Fund and a $1100 grant to publish Basic Concepts in Primary Care 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-Goedebeke 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 were seen as important as common solutions. The Netherlands has 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 strict infection control measures for certain patients, for example those with unknown respiratory illnesses and suspected avian flu cases.

Gertie van Knippenberg-Goedebeke, 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.
2004/2005 Report

1 Establishment

EMRNIC has been established in Mid 2004 after Portadown (Belfast) meeting, where the IFC board decided to start regional activities and prof. Osansa Rasslan ( fascism) 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 (Osansa Rasslan & Essam A. Mohsen), Saudi Arabia (Ziad Memishi), Kuwait (Fatiba El Mousas), Sudan (Walek Abd AIni.

4 Gul Cooperation Countries support

Direct contact has been established with Dr Tawfik Khjoa (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/KHIS, 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 UAE (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 Unit 3 in Cairo, to study ways of cooperation and to draft the 1st announcement of the regional congress. The IFC has nominated Prof. Osansa 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.

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.

This is the second year of the Oxoid Infection Control Team of the Year Awards. In 2004 the Arab Centre for continued Professional Development (ACCPD) was assigned the responsibility of the Eastern Mediterranean region networking initiative.

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 IFC Board member

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 establishing an infection control team.

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 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 (BHI), collaborated with the antibiotic pharmacist and surgeons at DRI and BHI 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.

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; Zin 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 reduction in 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 a 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 hospital’s 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 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

The team demonstrated a co-ordinated approach to microbiological procedures within the laboratories at Doncaster Royal Infirmary (DRI) and at Bassetlaw Hospital (BHI), collaborated with the antibiotic pharmacist and surgeons at DRI and BHI 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 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.

2004/2005 Report

Oxoid Infection Control Team of the Year 2004/2005

This is the second year of the Oxoid Infection Control Team of the Year Awards. In 2004 the Arab Centre for continued Professional Development (ACCPD) was assigned the responsibility of the Eastern Mediterranean region networking initiative.
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**

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


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.

Implementation

It is essential that practices and procedures required for sterile supply are done well; at least as important is that the equipment is in good working order. That is why courses were planned for operators and 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, sterilisation, 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, main key staff of all the largest regional hospitals were invited. They were all 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 RM&E (Referral Maintenance Units) in the country.

In the prioritising of budgets it is essential to consider the importance of a well working CSSD, upon which so many departments are depending.

China Speech

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

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

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. So I went to China, to the two project leaders of the Dutch Network for Prevention of Nosocomial Infections through Surveillance (PROIES) and at one friend of Gertje, 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 2 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 Military University, Changsha). This meeting was the 58th consecutive 6-day training course for doctors in infection control within the network for Infection Surveillance, Management & Training Centre of the Chinese Ministry of Health. It was attended by approximately 130 participants.

In my presentation I shared my experiences with the surveillance of HAI in the Netherlands within our surveillance network, PROIES. The surveillance methods of our network have been described previously in this journal (Wilts J.C, Boer A.D.S. a. Surgical site infections (SSI) surveillance in the Netherlands. Bulletin of the International Federation of Infection Control 2003; 16: 2-6). We discussed the setup of an infection control network as well as the importance of post-discharge 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 Europe (http://helics.univ-lyon1.fr).

In the Netherlands the organisation of a national network is feasible because there are only 108 hospitals in our country. Since the start of PROIES 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.
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/ifc/ifc.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


Infection Prevention in Healthcare Environments on HealthExecTV

This programme is permanently available online: http://www.healthexec.tv

The Sharps Injury Prevention Center: video, poster):

Educational products about personal protective equipment (slides, posters):

Educational products for PPE and Influenza and TB

Antimicrobial Resistance:

A new NIH-funded Center for Interdisciplinary Research on Antimicrobial Resistance:


1. Marburg Haemorrhagic Fever Outbreak - Angola 2005:

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5141a5.htm

For information regarding viral haemorrhagic fevers go to:

http://www.cdc.gov/ncidod/dhf/vhf/index.html

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 frontieres (doctors without borders):

www.msf.org

Center for International Disaster Information:

www.cidi.org


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

http://www.who.int/mediacentre/health/diseases/cyanobac teria/en

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/nicid/hip


A new NIH-funded Center for Interdisciplinary Research on Antimicrobial Resistance:


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</table>