

PREFACE

Since publication of the first manual 11 years ago, considerable progress has been made globally in understanding the basic principles of infection prevention as well as acceptance and use of evidence-based infection prevention practices. Key concepts and practices that are now more widely accepted in many countries include:

- Recognition of the dual role of infection prevention not only in reducing the risk of disease transmission to clients and patients but also protecting healthcare workers at all levels—from physicians and nurses to cleaning and housekeeping staff.
- Role of handwashing in preventing disease transmission and, where clean water is not readily available, the use of inexpensive, easy-to-make, alcohol-based antiseptic handrubs.
- Importance of first decontaminating all soiled instruments, needles and syringes and other items with dilute (0.5%) bleach solution if cleaning (washing and rinsing) is done by hand.
- Need for thorough cleaning of soiled instruments, gloves and other items if final processing, either by high-level disinfection (HLD) or sterilization, is to be effective.
- Use of HLD by boiling or steaming as cost-effective, readily available and acceptable alternative to sterilization (autoclaving or dry heat) for most surgical procedures.
- Multiple uses of dilute chlorine solutions made from inexpensive, commercial bleach (sodium hypochlorite) products for:
 - decontamination (0.5%) of soiled surgical instruments as well as cleaning large surfaces (examination tables),
 - HLD (0.1%) of surgical instruments and other items, and
 - preparation of safe drinking water (0.001%).
- Use of the “no touch” surgical technique when performing procedures, such as IUD insertion and removal or vacuum aspiration for incomplete abortion, thereby allowing examination gloves to be safely substituted for sterile surgical gloves, which are expensive and often difficult to obtain.

Because of the demand for infection prevention guidelines for use at district hospitals, not just ambulatory family planning services, this manual contains many new chapters and has been completely rewritten to take advantage of the wealth of new information and practical interventions. The content, however, is not all encompassing, nor is it encyclopedic. The intent is to provide the user a quick reference to what

the essentials are without having to consult other sources. In addition, the manual has been designed to provide the information and recommendations in a simple, easily understandable format so that users can find what they want, when they want it.

The infection prevention principles and scientific information, on which this manual is based, are universally applicable. In selecting the material, the emphasis has been on choosing those practices and procedures that are doable even in the poorest settings. Ones designed to minimize cost and the need for expensive technology or fragile equipment while at the same time assuring a high degree of safety. As such, this manual is not intended to be a major resource for infection prevention programs in affluent settings. In fact, some of the practices recommended may be at odds with established norms; for example, the need for decontamination as the first step in processing soiled instruments and other items in order to make them safer for cleaning staff to handle; or an even larger issue—the reuse of disposable (single use) items.

Because of the severe cost constraints faced by hospital managers in the poorest countries, the manual is geared to prevention, especially preventing postoperative obstetrical and general surgical infections, as well as those resulting from the use of invasive medical devices. Infection surveillance and control, both important elements of infection control programs, are only briefly touched on because sound surveillance systems are lacking in most countries and resources to treat hospital-acquired (nosocomial) infections or antibiotic-resistant infections, even when identified, rarely are available.¹

HOW TO USE THE MANUAL

A key purpose of the manual is to enable hospital administrators, clinic managers and healthcare professionals working in limited resource settings to develop their own uniform infection prevention policies and service delivery guidelines. It is recognized, however, that the strategies, priorities and proven methods of infection risk reduction described in this manual will need to be adapted to reflect the existing conditions in each country. Only through this process can much needed changes be implemented and patient care in hospitals and clinics improved.

Content and Organization

The material in this manual is divided into four parts. In the first part, **FUNDAMENTALS OF INFECTION PREVENTION**, basic principles and the recommended practices of modern infection prevention programs

¹ In 1997 a second manual dealing with the special infection prevention needs of developing countries became available. In addition to providing new insights on improving infection prevention, it also contains much needed practical guidance on the role of infection surveillance and control efforts when resources are limited. Moreover, it provides a broader framework, one that includes the control and treatment of antibiotic-resistant nosocomial infections. Readers are encouraged to consult this manual for additional information on these topics. (Lynch P et al. 1997. *Infection Prevention with Limited Resources: A Handbook for Infection Committees*. ETNA Communications: Chicago.)

are described. The emphasis is on providing the scientific data supporting their use and appropriateness in situations where resources and manpower are limited. Also, several new chapters have been added based on the new Standard Precautions, which must be used when caring for **all** clients and patients attending healthcare facilities. Introduced in 1996 by CDC, Standard Precautions are the first level of the revised isolation guidelines that replace the older Universal Precautions and Body Substance Isolation Precautions. Moreover, because the most serious and frequent site for accidental injuries and exposure to bloodborne pathogens is the operating room, a separate chapter and appendix detailing safety practices, tips on how to design safer operations and a full set of safety checklists for making the operating room safer have been added.

The second part, **PROCESSING INSTRUMENTS, GLOVES AND OTHER ITEMS**, has been expanded in order to incorporate additional, but essential information, needed by healthcare staff working in district hospitals. When combined with data from several new or updated appendices, which contain more detailed supplemental “how to” information, health workers now have the information they need to solve many of the instrument and equipment problems and reprocessing issues not previously addressed.

IMPLEMENTING INFECTION PREVENTION IN HEALTHCARE FACILITIES, the third part, focuses on coordinating and managing the special infection prevention needs and services at district-level hospitals, where the volume and type of health services offered are greater than in the ambulatory setting. In hospitals, housekeeping services and traffic flow systems and activity patterns are more diverse and complex as well. Moreover, the risk of exposure to bloodborne pathogens and other life-threatening infections is not confined just to operating and recovery rooms and patient care areas. Staff working in routine chemistry, clinical pathology and bacteriology laboratories as well as those providing blood bank and transfusions services need to be aware of the risks and how to prevent accidental injuries and exposures. Therefore, guidelines and recommended preventive practices for these staff have been included. Finally, in dealing with the overall management of infection prevention programs, the role of the infection prevention committee or working group is critical for handling routine problems, developing workable guidelines and protocols, actively supporting their use and modeling the appropriate preventive behaviors. Representatives from all parts of the healthcare facility who are interested in making the workplace safer should be encouraged to serve this vitally important function.

The final part, **NOSOCOMIAL INFECTIONS** is all new. The magnitude of the HIV/AIDS crisis globally, coupled with re-emergence of tuberculosis, especially multidrug resistant strains, has changed the way healthcare is provided. Hospitals now need practical, symptom-based isolation guidelines to prevent patients and health workers at all levels

from being inadvertently exposed to these serious infectious diseases as well as others transmitted by the airborne, droplet and contact routes. Therefore, specific information and detailed guidance is provided on how to implement and use the second level of the CDC isolation guidelines, Transmission Precautions for Hospitalized Patients. Also included is practical guidance designed to help prevent the most common and serious nosocomial infections in hospitalized patients—urinary tract infections, diarrhea and pneumonia—as well as infections following surgery, maternal and newborn infections and those associated with the use of an ever-increasing number of intravascular devices. Because safely managing food and water in hospitals is important in preventing the spread of infections, these topics are also covered. Finally, because outbreaks of serious infections do occur, guidelines are included for how to investigate them as well as how to monitor infection prevention program activities most cost-effectively.

Using the Manual

It is anticipated this manual will serve as an international reference guide for use in limited resource settings. Moreover, we hope that health educators and trainers, public health and medical officials, and hospital managers as well as lay groups will find the information, practices and processes relevant and easy to use in adapting or developing their own infection prevention policies, guidelines, norms, education and training materials and healthcare monitoring tools. The content also may be used in different ways including:

- as a text for preservice education, group-based training or on-the-job learning programs; or
- as content for developing teaching, job or behavior change aids.

For each of these uses, the content may be produced and distributed in a variety of formats (paper-based, CD-ROM or via Internet). Finally, to facilitate the manual's adaptation and use, each chapter has a set of learning objectives, is fully referenced and is page numbered by chapter. Thus, each chapter can be reprinted as a stand-alone document for use as a handout when giving presentations.