

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY™

EDITORIAL

Severe Acute Respiratory Syndrome: Preparedness, Management, and Impact

MARK B. LOEB, MD, MSC

1017

ORIGINAL ARTICLES

Foundations of the Severe Acute Respiratory Syndrome Preparedness and Response Plan for Healthcare Facilities

ARJUN SRINIVASAN, MD; LAWRENCE C. McDONALD, MD, MPH; DANIEL JERNIGAN, MD, MPH; RITA HELFAND, MD, MPH; KATHLEEN GINSHEIMER, MD, MPH; JOHN JERNIGAN, MD, MPH; LINDA CHIARELLO, RN, CIC; RAYMOND CHINN, MD; UMESH PARASHAR, MD; LARRY ANDERSON, MD; DENISE CARDO, MD; SARS HEALTHCARE PREPAREDNESS AND RESPONSE PLAN TEAM 1020

Rapid Creation of a Temporary Isolation Ward for Patients With Severe Acute Respiratory Syndrome in Taiwan

CHANG-PHONG FUNG, MD, MSC; TSORNG-LIU HSIÉH, MD; KUANG-HUAN TAN, MD; CHIN-HUI LOH, MD, PhD; JUUN-SHENG WU, MD; CHIEN-CHUNG LI, MD; FENG-YEE CHANG, MD, PhD; L. K. SIU, PhD; MOH-YUN YEN, MD; LIH-SHINN WANG, MD, MSC; WING-WAI WONG, MD; WEI-FONG KAO, MD; JIA-HUI HSU, BS; TING-HSIANG LIN, PhD; FU-YUAN HUANG, MD; CHEN-HSEN LEE, MD 1026

A Tale of Two Cities: Community Psychobehavioral Surveillance and Related Impact on Outbreak Control in Hong Kong and Singapore During the Severe Acute Respiratory Syndrome Epidemic

GABRIEL M. LEUNG, MD, MPH; STELLA QUAH, PhD; LAI-MING HO, PhD; SAI-YIN HO, PhD; ANTHONY J. HEDLEY, MD, FFPH; HIN-PENG LEE, MD, FFPH; TAI-HING LAM, MD, MSC 1033

An Outbreak of Bacteremias Associated With *Mycobacterium mucogenicum* in a Hospital Water Supply

SUSAN KLINE, MD, MPH; SARAH CAMERON, MT; ANDREW STREIFEL, MPH; MITCHELL A. YAKRUS, MS, MPH; FRANK KAIRIS, MT; KEITH PEACOCK, BA; JOHN BESSER, MS; ROBERT C. COOKSEY, PhD 1042

Mycobacterium simiae Outbreak Associated With a Hospital Water Supply

NICHOLAS G. CONGER, MD; ROBERT J. O'CONNELL, MD; VALERIE L. LAUREL, MD; KENNETH N. OLIVIER, MD, MPH; EDWARD A. GRAVISS, PhD, MPH; NATALIE WILLIAMS-BOUYER, PhD; YANSHENG ZHANG, PhD; BARBARA A. BROWN-ELLIOTT, MS, MT(ASCP)SM; RICHARD J. WALLACE, JR., MD 1050

Screening and Treatment of Latent Tuberculosis Among Healthcare Workers at Low, Moderate, and High Risk for Tuberculosis Exposure: A Cost-Effectiveness Analysis

SHELLEY R. SALPETER, MD; EDWIN E. SALPETER, PhD 1056

Tuberculosis in Healthcare Workers Caring for a Congenitally Infected Infant

FRANÇOISE MOUCHET, MD; VALÉRIE HANSEN, MD; INGE VAN HERREWEGHE, MD; OLIVIER VANDENBERG, MD; RÉGINE VAN HESSE, RN; MICHÈLE GÉRARD, MD; MICHÈLE TOPPET, MD; MARYSE WANLIN, MD; VÉRONIQUE TOPPET, MD; GEORGES CASIMIR, MD; DOMINIQUE HAUMONT, MD; JACK LEVY, MD 1062

Risk of Tuberculous Infection Among Healthcare Workers in a Tertiary-Care Hospital in Ankara, Turkey

RAMAZAN KESKINER, MD; ÖNDER ERGÖNÜL, MD, MPH; ZIYA DEMIROGLU, MD; SEBNEM EREN, MD; NURCAN BAYKAM, MD; BASAK DOKUZOGUZ, MD 1067

Environmental Cultures and Hospital-Acquired Legionnaires' Disease: A 5-Year Prospective Study in 20 Hospitals in Catalonia, Spain

MIQUEL SABRIÀ, MD, PhD; JOSEP M. MÓDOL, MD; MARIAN GARCIA-NUÑEZ, BSC; ESTEBAN REYNAGA, MD; MARIA L. PEDRO-BOTET, MD, PhD; NIEVES SOPENA, MD, PhD; C. REY-JOLY, MD, PhD 1072

Periodically Changing Ventilator Circuits Is Not Necessary to Prevent Ventilator-Associated Pneumonia When a Heat and Moisture Exchanger Is Used

LEONARDO LORENTE, MD; MARÍA LECUONA, MD, PhD; RAMÓN GALVÁN, MD; MARÍA J. RAMOS, MD; MARÍA L. MORA, MD, PhD; ANTONIO SIERRA, MD, PhD 1077

SHEA POSITION PAPER

Tuberculosis Prevention and Control in Long-Term-Care Facilities for Older Adults

LAURI THRUPP, MD; SUZANNE BRADLEY, MD; PHILIP SMITH, MD; ANDREW SIMOR, MD; NELSON GANTZ, MD; KENT CROSSLEY, MD; MARK LOEB, MD; LARRY STRAUSBAUGH, MD; LINDSAY NICOLLE, MD; THE SHEA LONG-TERM-CARE COMMITTEE 1097



Preliminary Program

THE SOCIETY
FOR HEALTHCARE
EPIDEMIOLOGY
OF AMERICA

Los Angeles

April 9–12, 2005

15th Annual Scientific Meeting
The Century Plaza Hotel · Los Angeles, California
www.shea-online.org

CONTENTS

Continued from cover

ORIGINAL ARTICLES

An Outbreak of *Pseudomonas aeruginosa* Pneumonia and Bloodstream Infection Associated With Intermittent Otitis Externa in a Healthcare Worker

ANNE ZAWACKI, BSN, MPH; EDWARD O'ROURKE, MD; GAIL POTTER-BYNOE, BS, CIC; ANN MACONE, BS; STEPHAN HARBARTH, MD, MS; DONALD GOLDMANN, MD

1083

Impact of Ventilator-Associated Pneumonia on Resource Utilization and Patient Outcome

STÉPHANE HUGONNET, MD, MSc; PHILIPPE EGGIMANN, MD; FRANÇOIS BORST, MD; PATRICE MARICOT; JEAN-CLAUDE CHEVROLET, MD; DIDIER PITTET, MD, MS

1090

CONCISE COMMUNICATIONS

Limitations of Forehead Infrared Body Temperature Detection for Fever Screening for Severe Acute Respiratory Syndrome

CHUAN-CHUAN LIU, MS; RAY-E CHANG, PhD; WEN-CHENG CHANG, MS

1109

Factors Affecting Perceived Risk of Contracting Severe Acute Respiratory Syndrome Among Academic Physicians

SHERRY L. GRACE, PhD; KAREN HERSHENFIELD, BSc; EMMA ROBERTSON, PhD; DONNA E. STEWART, MD, FRCPC

1111

A Large-Volume Nebulizer Would Not Be an Infectious Source for Severe Acute Respiratory Syndrome

GWO-HWA WAN, PhD; YING-HUANG TSAI, MD; YAO-KUANG WU, MD; KUO-CHIEN TSAO, MSc

1113

Transmission of Tuberculosis Among Patients With Human Immunodeficiency Virus at a University Hospital in Brazil

MARIÁNGELA R. RESENDE, MD, PhD; MARIA CECÍLIA B. VILLARES, BS, PhD; MARCELO DE C. RAMOS, MD, PhD

1115

Booster Effect of Two-Step Tuberculin Skin Testing Among Hospital Employees From Areas With a High Prevalence of Tuberculosis

ABDULRAHMAN M. AL MAZROU, MBBS, FRCPC

1117

LETTERS TO THE EDITOR

***Legionella* Pneumonia: Experience in a Community Teaching Hospital**

OBI OKOYE, MD; MANHAL TANNOUS, MD; RAJA SHEKAR, MD, FACP; KEYVAN RAVAKHAH, MD, MBA, FACP

1014

Introduction of a Waterless Hand Gel Was Associated With a Reduced Rate of Ventilator-Associated Pneumonia in a Surgical Intensive Care Unit

LISA G. WINSTON, MD; SUE C. FELT, RN, MPH; WEI-HSIANG HUANG, BS; HENRY F. CHAMBERS, III, MD

1015

MEDICAL NEWS

EDITED BY GINA PUGLIESE, RN, MS; MARTIN S. FAVERO, PhD

1016, 1019, 1025, 1032, 1061, 1071, 1076, 1082, 1120

ANNUAL INDEX

1121

Full-text articles available online at ICHEJournal.com

THE PUBLICATION OF ADVERTISING IN THE JOURNAL DOES NOT CONSTITUTE ANY GUARANTEE OR ENDORSEMENT BY THE SOCIETY FOR HEALTHCARE EPIDEMIOLOGY OF AMERICA OR SLACK INCORPORATED OF THE ADVERTISED PRODUCT OR SERVICE OR OF CLAIMS MADE BY THE ADVERTISER. THE PUBLICATION OF ARTICLES AND OTHER EDITORIAL MATERIAL IN THE JOURNAL DOES NOT NECESSARILY REPRESENT THE POLICY RECOMMENDATIONS OR ENDORSEMENT BY THE SOCIETY.

PUBLISHER: Infection Control and Hospital Epidemiology (ISSN-0195-9417, Canadian GST#129780466) is published exclusively by SLACK Incorporated 12 times a year. Address: 6900 Grove Road, Thorofare, NJ 08086. Telephone: (856) 848-1000.

SHEA: 66 Canal Center Plaza, Suite 600, Alexandria, VA 22314; telephone, 703-299-0200; fax, 703-299-0204; e-mail address, info@shea-online.org.

COPYRIGHT 2004 The Society for Healthcare Epidemiology of America, Inc., and SLACK Incorporated. All rights reserved. No part of this publication may be reproduced without written permission from the publisher. Printed in the USA.

SUBSCRIPTIONS: Requests should be addressed to the publisher (except Japan). In Japan, contact Woodbell Incorporated, 4-22-11, Kitakasai, Edogawaku, Tokyo 134, Japan. Subscription rates in the United States and possessions: Individual: One year-\$149.00; Two years-\$253.00; Three years-\$335.00; Institutional: One year-\$279.00; Two years-\$474.00; Three years-\$628.00. Fellows: \$54.50 per year with proof of training status. Canada: add 7% Goods & Services tax; Overseas: add \$49.00 each year for delivery by air service. Single copies of current issues may be obtained for \$24.00.

INSTRUCTIONS TO AUTHORS: Authors may submit electronic versions of their manuscripts prepared in accordance with the 2001 revision of the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals." An electronic version is available at www.icmje.org. Submit to RapidReview.com. All submissions must be accompanied by copyright form(s) signed by all authors.

REPRINTS: All requests to reprint or use material published herein should be addressed to John Kain, SLACK Incorporated, 6900 Grove Road, Thorofare, NJ 08086. For reprint orders and prices, contact Rebecca Fogarty at (856) 848-1000. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by SLACK Incorporated, provided that the base fee of \$1.00 per copy, plus \$.20 per page is paid directly to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923; phone (978) 750-8400. This consent does not extend to other kinds of copying, such as for general distribution, resale, advertising and promotional purposes, or for creating new collective works.

CHANGE OF ADDRESS: Notice should be sent to the publisher 6 weeks in advance of effective date. Include old and new addresses with zip codes. The publisher cannot accept responsibility for undelivered copies. Periodicals postage paid at Thorofare, New Jersey 08086-9447 and at additional mailing offices. POSTMASTER: Send address changes to SLACK Incorporated, 6900 Grove Road, Thorofare, NJ 08086.

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY is listed in Index Medicus, Current Contents-Clinical Practice, Hospital Literature Index, Cumulative Index to Nursing & Allied Health Literature, Nursing Abstracts, Laboratory Performance Information Exchange System, and RNdex Top 100.

EDITORIAL OFFICE

SLACK Incorporated
6900 Grove Road
Thorofare, NJ 08086
(856) 848-1000; (856) 848-6091 (FAX)
E-mail: iche@slackinc.com

EDITOR

Barry M. Farr, MD, MSc

DEPUTY EDITORS

David P. Calfee, MD, MS

William R. Jarvis, MD

ASSISTANT EDITOR

Preeti N. Malani, MD, MSJ

SENIOR ASSOCIATE EDITORS

C. Glen Mayhall, MD

Gina Pugliese, RN, MS

William Schaffner, MD

ASSOCIATE EDITORS

Donald A. Goldmann, MD

Didier Pittet, MD, MS

Andreas Widmer, MD, MS

SECTION EDITORS**Beyond Infection Control:****The New Hospital Epidemiology**

Wing Hong Seto, MD

Hong Kong

Disinfection and Sterilization

William A. Rutala, PhD, MPH

Chapel Hill, North Carolina

From the Laboratory

Marcus Zervos, MD

Royal Oak, Michigan

Infections in Immunocompromised Patients

Kent Sepkowitz, MD

New York City, New York

Information Management

John A. Sellick, DO

Amherst, New York

Issues in Surgery

James T. Lee, MD, PhD

St. Paul, Minnesota

Medical News

Gina Pugliese, RN, MS

Chicago, Illinois

Martin S. Favero, PhD

Irvine, California

Practical Healthcare Epidemiology

Loreen A. Herwaldt, MD

Iowa City, Iowa

Statistics for Hospital Epidemiology

David Birnbaum, PhD, MPH

Sidney, British Columbia, Canada

Topics in Long-Term Care

Phillip W. Smith, MD

Omaha, Nebraska

Topics in Occupational Medicine

David Weber, MD, MPH

Chapel Hill, North Carolina

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY[®]

EDITORIAL ADVISORY BOARD

- | | |
|---------------------------------|------------------------------------|
| J. Wesley Alexander, MD | Cincinnati, Ohio |
| Miriam Alter, PhD | Atlanta, Georgia |
| Hilary Babcock, MD | St. Louis, Missouri |
| Elise M. Beltrami, MD, MPH | Decatur, Georgia |
| Richard E. Besser, MD | Atlanta, Georgia |
| Marc J. M. Bonten, MD, PhD | Utrecht, The Netherlands |
| John M. Boyce, MD | New Haven, Connecticut |
| Christian Brun-Buisson, MD | Creteil, France |
| John P. Burke, MD | Salt Lake City, Utah |
| Yehuda Carmeli, MD, MPH | Tel Aviv, Israel |
| Carol Chenoweth, MD | Ann Arbor, Michigan |
| Sara E. Cosgrove, MD, MS | Baltimore, Maryland |
| Donald E. Craven, MD | Burlington, Massachusetts |
| Erika D'Agata, MD, MPH | Boston, Massachusetts |
| Franz Daschner, MD | Freiburg, Germany |
| Patch Dellinger, MD | Seattle, Washington |
| Charles E. Edmiston, Jr., PhD | Milwaukee, Wisconsin |
| Theodore C. Eickhoff, MD | Denver, Colorado |
| Jean Yves Fagon, MD, MPH | Paris, France |
| Mark Farrington, MA, FRCPath | Cambridge, England, United Kingdom |
| Victoria J. Fraser, MD | St. Louis, Missouri |
| Richard A. Garibaldi, MD | Farmington, Connecticut |
| Petra Gastmeier, MD | Hanover, Germany |
| Dale N. Gerding, MD | Hines, Illinois |
| Stephan Harbarth, MD, MS | Geneva, Switzerland |
| Anthony D. Harris, MD, MPH | Baltimore, Maryland |
| David K. Henderson, MD | Bethesda, Maryland |
| Peter N.R. Heseltine, MD | San Juan, California |
| Karen Hoffmann, RN, CIC, MS | Chapel Hill, North Carolina |
| Janine Jagger, MPH, PhD | Charlottesville, Virginia |
| John A. Jernigan, MD, MS | Atlanta, Georgia |
| Jacob L. Kool, MD, PhD | Fort Collins, Colorado |
| Ebbing Lautenbach, MD, MPH | Philadelphia, Pennsylvania |
| Allison McGeer, MD | Toronto, Ontario, Canada |
| John E. McGowan, Jr., MD | Atlanta, Georgia |
| Leonard A. Mermel, DO, ScM | Providence, Rhode Island |
| Robert R. Muder, MD | Pittsburgh, Pennsylvania |
| Carlene A. Muto, MD, MS | Pittsburgh, Pennsylvania |
| Joseph M. Mylotte, MD, CIC | Buffalo, New York |
| Lindsay Nicolle, MD | Winnipeg, Manitoba, Canada |
| Juhani Ojajarvi, MD | Helsinki, Finland |
| Michael T. Osterholm, PhD, MPH | Minneapolis, Minnesota |
| David L. Paterson, MBBS, FRACP | Pittsburgh, Pennsylvania |
| Jan Evans Patterson, MD | San Antonio, Texas |
| Sindy M. Paul, MD | Yardley, Pennsylvania |
| David A. Pegues, MD | Los Angeles, California |
| Michael A. Pfaller, MD | Iowa City, Iowa |
| Samuel Ponce de Leon, MD, MSc | Mexico City, Mexico |
| Isaam Raad, MD | Houston, Texas |
| Jordi Rello, MD, PhD | Tarragona, Spain |
| Manfred L. Rotter, MD, DipBact | Vienna, Austria |
| Henning Rüden, MD | Berlin, Germany |
| Lisa Saiman, MD, MPH | New York, New York |
| Syed A. Sattar, PhD | Ottawa, Ontario, Canada |
| William E. Scheckler, MD | Madison, Wisconsin |
| Lynne M. Sehulster, PhD | Atlanta, Georgia |
| Andrew E. Simor, MD | Toronto, Ontario, Canada |
| Denis W. Spelman, FRACP | Melbourne, Victoria, Australia |
| V. Susan Springthorpe, BSc, MSc | Ottawa, Ontario, Canada |
| Jeffrey R. Starke, MD | Houston, Texas |
| Janet E. Stout, PhD | Pittsburgh, Pennsylvania |
| Clyde Thornsberry, PhD | Franklin, Tennessee |
| Jerome Tokars, MD, MPH | Atlanta, Georgia |
| Timothy R. Townsend, MD | Baltimore, Maryland |
| Antoni Trilla, MD, PhD | Barcelona, Spain |
| Robert A. Weinstein, MD | Chicago, Illinois |
| Sergio B. Wey, MD | São Paulo, Brazil |

SLACK Incorporated, 6900 Grove Road, Thorofare, New Jersey 08086. (856) 848-1000

**Executive Vice President**

Richard N. Roash

Vice President, Publishing Operations

John C. Carter

Editorial Director

Jennifer Kilpatrick

Executive Editor

Shirley P. Strunk, ELS

Associate Editor

Jaime Underwood

Circulation Manager

Lester J. Robeson, CCCC

Production Director

Christine Malin

Vice President, U.S. Advertising

Wayne McCourt

Director of Association Services

Kathy Huntley

Advertising Sales Representative

Scotty Turner

Advertising Sales Administrator

Joanne Patterson

Sales Director, Classified/Recruitment

Kristy Irwin

Classified/Recruitment Sales

Elizabeth Roash

Director of Reprint Sales

John Kain

Improved Skin Quality - Reduced Risk of Infection

...AND MORE THAN JUST OUR WORD TO BACK IT UP



The Program of Solutions includes a regimen of hand hygiene products designed to improve skin quality, increase compliance, and lower infection rates. The Program of Solutions also includes a compliance measurement system and a financial model to measure the benefits of increased compliance.

Clinical data on file.

STERIS®



Applied Infection Control

1.800.548.4873 ■ www.steris.com

You're *passionate*

about everything you do.

You'll be right at home.

■ Infection Control Practitioner

Full-time. Responsible for developing, coordinating and maintaining IC Program. Requires BSMT with current MT (ASCP) and/or CLS (NCA) certifications or BSN with NC licensure. Must have excellent computer and statistical process control skills. Prefer 3 years of acute care clinical experience, 1 year of administrative experience, courses in Epidemiology and IC certification.

At Craven Regional Medical Center in beautiful New Bern, NC, we share your commitment to being the very best. That's why we've brought together some of the most dedicated people in healthcare. And why our facilities are absolutely state-of-the-art. Take a closer look. Then discover how you can build your career with the people of Craven.

We offer medical/dental/life/disability insurance, tax-sheltered annuity, pension plan, educational assistance, paid time off, employee health program, and a location that's just 35 miles from the Atlantic Coast.

Please apply online at www.cravenhealthcare.org. Please reference Dept. #ICHE1201. We are an equal opportunity employer.

Craven
HEALTH CARE
CRAVEN REGIONAL MEDICAL CENTER

www.cravenhealthcare.org

INFECTION CONTROL COORDINATOR

Part-Time

Washington Hospital Healthcare System is a 337-bed, not-for-profit, state-of-the-art acute-care general hospital. We provide a full range of medical services to the growing communities of Fremont, Union City, Newark, and parts of South Hayward. We currently have a great opportunity in Fremont, CA (located just north of Silicon Valley in California) for an experienced professional to join our team.

To qualify, you must be a graduate of an accredited school of nursing (BSN desired) or collegiate program in an allied science. California license, RN or other healthcare professional, certification in Infection Control desired. 3-5 years experience in an acute care environment with at least 1 year infection control experience. Familiarity with regulatory requirements, aseptic techniques & healthcare trends essential.

We recognize our staff with competitive pay and an excellent benefits package. We also offer extras like on-site child care and we're conveniently located near BART and ACE. Forward your resume to:

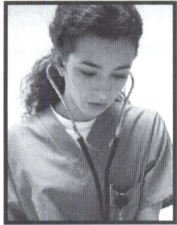
Washington Hospital Healthcare System
Personnel Services
Attn: Job# ICHE1101-ICC
2000 Mowry Avenue, Fremont, CA 94538
FAX: (510) 745-6470; Email: careers@whhs.com



Washington Hospital Healthcare System

www.whhs.com

We are proud to be an Equal Opportunity Employer.



"IF IT TAKES EMPLOYEES OF ALL TYPES TO RUN A HOSPITAL, SHOULDN'T EMPLOYEES OF ALL TYPES BE GIVEN THE RESPECT THEY DESERVE?"

YES

At Alvarado Hospital Medical Center, we know that it takes more than doctors to run a hospital and give patients the kind of personalized care they expect. That's why we've based our care philosophy on the notion that everyone – from nurses, to allied health professionals, to administrative professionals – deserves respect.

Discover the fulfilling career you've always wanted, and benefit from a friendly, supportive environment at Alvarado Hospital Medical Center. Come to beautiful **San Diego, California** for outstanding nursing opportunities in Infection Control.

The **Infection Control Practitioner** directs the hospital-wide Infection Control program, manages employee health programs, and reviews all nosocomial infections in collaboration with the Infection Control Committee.

We offer competitive wages and excellent benefits, including matching 401(k) and free HMO coverage for your entire family.

Contact Erik Swanson at
877-229-7145
fax: 619-287-1913
erik.swanson@tenethealth.com

 **ALVARADO HOSPITAL MEDICAL CENTER**
Tenet California

alvaradohospital.com

WE HEAR YOU.

CopyRight! Compliance Made Easy



With the Internet and e-mail, all it takes is a few clicks to copy and distribute information from journals and other copyrighted materials. But are these conveniences making it harder for you to ensure compliance with copyright law? If so there's a simple solution: Copyright Clearance Center.

With licensing solutions from Copyright Clearance Center, your company can:

- Lawfully copy and share print and digital content in-house and externally, in the U.S. and abroad.
- Quickly and easily obtain rights to use content from the world's largest selection of leading industry print and online publications.

Let us help you solve your compliance needs. Call 978-750-8400 to speak with a licensing consultant or e-mail licensing@copyright.com. See how easy compliance can be.

www.copyright.com



COPYRIGHT CLEARANCE CENTER

5-way infection control in one complete system

Only the Bardex® I.C. Complete Care™ Infection Control Foley Catheter* System including Bacti-Guard®* silver alloy coating^{1,2,3} offers complete infection control to address the 5 risk areas during catheterization.

1 Reduce risks while catheter is indwelling^{1,2,3}

2 Minimizes infection risk at the catheter-tubing junction

3 Repels bacteria and yeasts during drainage

4 Protects against retrograde bacterial migration at the outlet

Now with the new Bard EZ-Lok™ Sampling Port

5 Resists pathogen colonization at collection

1. Maki DG, Tambyah PA. Engineering out the risk of infection with urinary catheters. *Emerg Infect Dis.* 2001;7:342-347.

2. Karchmer TB, Giannetta ET, Muto CA, Strain BA, Farr BM. A randomized crossover study of silver-coated urinary catheters in hospitalized patients. *Arch Int Med.* 2000;160:3294-3298.

3. Saint S, Veenstra DL, Sullivan SD, Chenoweth C, Fendrick AM. The potential clinical and economic benefits of silver alloy urinary catheters in preventing urinary tract infection. *Arch Int Med.* 2000;160:2670-2675.

Please consult product label and insert for any indications, contraindications, hazards, warnings, cautions and directions for use. *The Foley catheters included in the Bardex I.C. Complete Care System contain Bacti-Guard® silver alloy coating, which is licensed from Adhesive Technology (International) Licensing, B.V. Bard and Bardex are registered trademarks of C.R. Bard, Inc., or an affiliate. The I.C. logo and Complete Care are trademarks of C.R. Bard, Inc., or an affiliate. Bacti-Guard is a registered trademark of Adhesive Technology (International) Licensing, B.V. ©2004 C.R. Bard, Inc. All Rights Reserved.

www.bardmedical.com

BARDEX