INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY®

EDITORIAL	
Isolation Rooms for Tuberculosis Control	619
MARK NICAS, PHD, MPH, CIH; JOAN E. SPRINSON, MPH, CIH; SARAH E. ROYCE, MD, MPH; ROBERT J. HARRISON, MD, MPH; JANET M. MACHER, ScD, MPH	
ORIGINAL ARTICLES	
Evaluation of Rooms with Negative Pressure Ventilation Used for Respiratory	
Isolation in Seven Midwestern Hospitals	623
VICTORIA J. FRASER, MD; KRISTA JOHNSON; JONATHAN PRIMACK; MARILYN JONES, BSN; GERAL W.C. DUNAGAN	D MEDOFF;
A Case-Control Study of Nosocomial Ampicillin-Resistant Enterococcal	
Infection and Colonization at a University Hospital	629
DANIEL J. SEXTON, MD; LIZZIE J. HARRELL, PHD; JACKIE J. THORPE, MS, MT(ASCP); DEBRA L. HUNT, DRPH; L. BARTH RELLER, MD	
A Nosocomial Pseudo-Outbreak of Mycobacterium xenopi Due to a	
Contaminated Potable Water Supply: Lessons in Prevention	636
DAVID H. SNIADACK, MD; STEPHEN M. OSTROFF, MD; MICHAEL A. KARLIX, MS; RONALD W. SMIBENJAMIN SCHWARTZ, MD; MARY ANN SPRAUER, MD, MPH; VELLA A. SILCOX; ROBERT C. GOOD	
BRIEF REPORT	
State Regulation of Hospital Water Temperature	642
ADAM S. MANDEL; MARY ANN SPRAUER, MD, MPH; DAVID H. SNIADACK, MD; STEPHEN M. OSTR	OFF, MD
GLOBAL ASPECTS OF INFECTION CONTROL	
Global Aspects of Infection Control	646
MARY D. NETTLEMAN, MD, MS	
BEYOND INFECTION CONTROL:	
THE NEW HOSPITAL EPIDEMIOLOGY	
The Use of Statistical Process Control Charts in Hospital Epidemiology	649
JOHN A. SELLICK, JR., DO	
PRODUCT COMMENTARY	
Needleless and Needle Protection Devices: A Second Look at Efficacy	
and Selection ELIZABETH OWENS-SCHWAB, BSN; VICTORIA J. FRASER, MD	657
TOPICS IN CLINICAL MICROBIOLOGY	
Hantavirus: An Old Bug Learns New Tricks	661
JOHN T. SINNOT IV, MD; JOHN N. GREENE, MD; EVELYN KIM, BA; SANDRA GOMPF, MD	
LETTERS TO THE EDITOR	
Molecular Epidemiology and Legionnaire's Disease	616
M. SABRIA-LEAL; M.L. PEDRO-BOTET; L. RUIZ; G. GIMENEZ	0.4 7
Nosocomial Infection Control in Latin America MUSSARET ZAIDI, MD	617
	670
MEDICAL NEWS GINA PUGLIESE, RN, MS	670
	<i>(</i> 75
SHEA NEWS	675

lood Collection Needles

samples and blood collection "sharps" (lancets, needles, and blood collection sets and procedures of your facility.

medical attention in the event of any exposure to biologic samples (for example, the vies may transmit HBV (HEPATITIS), HIV (AIDS), or other infectious diseases. used needle protector, if the blood collection device provides one. Becton Dickinsol sedles, but the policies and procedures of your facility may differ and should always pollection "sharps" in biohazard containers approved for their disposal.

Nekinson VACUTAINER Systems Lakes, NJ 07417-1885 is a trademark of Becton Dickinson and Company.

Made in U.S.

RINGING AFETY O THE

As the world's leading manufacturer of sharps products, Becton Dickinson is committed to helping make today's healthcare workplace safer. Developing products that comply with current regulations and setting new safety standards is a large part of that commitment, but an equally important factor is promoting correct and conscientious usage of all sharps products. As a step toward accomplishing this goal, Becton Dickinson VACUTAINER Systems is now including special safety messages on VACUTAINER Brand Needle packaging as an extra reminder to "handle with care."

Promoting adherence to recommended needlestick injuries important way to pre ivent dangerous historic specimens-and we and exposure to haz ardous biologic specimens-and we at Becton Dickinson **VACUTAINER** Systems take this responsibility; seriously.

contact your Becton I Sales Representative.

For detailed informat ion on all of our safety products DickinsonVACUTAINER Systems





Becton Dickinson VACUTAINER Systems, Franklin Lakes, New Jersey 07417 PRECISIONGLIDE and VACUTAINER are registered trademarks of Becton Dickinsori and Company. © 1993

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY

CONTENTS

EDITORIAL	
Isolation Rooms for Tuberculosis Control	619
MARK NICAS, PhD, MPH, CIH; JOAN E. SPRINSON, MPH, CIH; SARAH E. ROYCE, MD, ROBERT J. HARRISON, MD, MPH; JANET M. MACHER, ScD, MPH ORIGINAL ARTICLES	МРН
Evaluation of Rooms with Negative Pressure Ventilation Used for Respiratory Isolation in	
Seven Midwestern Hospitals	623
VICTORIA J. FRASER, MD; KRISTA JOHNSON; JONATHAN PRIMACK, MARILYN JONES, BSN; GERALD MEDOFF; W.C. DUNAGAN	
A Case-Control Study of Nosocomial Ampicillin-Resistant Enterococcal Infection and Colonization at a University Hospital	629
DANIEL J. SEXTON, MD; STEPHEN M. OSTROFF, MD; MICHAEL A. KARLIX, MS; DEBRA L. HUNT, DrPH; L. BARTH RELLER, MD	
A Nosocomial Pseudo-Outbreak of <i>Mycobacterium xenopi</i> Due to a Contaminated Potable Water Supply: Lessons in Prevention	636
DAVID H. SNIADACK, MD; STEPHEN M. OSTROFF, MD; MICHAEL A. KARLIX, MS; RONALD W. SMITHWICK; BENJAMIN SCHWARTZ, MD; MARY ANN SPRAUER, MD, MPH; VELLA A. SILCOX; ROBERT C. GOOD, PhD BRIEF REPORT	
State Regulation of Hospital Water Temperature	642
ADAM S, MANDEL; MARY ANN SPRAUER, MD, MPH; DAVID H. SNIADACK, MD; STEPHEN M. OSTROFF, MD	
GLOBAL ASPECTS OF INFECTION CONTROL	0.40
Global Aspects of Infection Control	646
MARY D. NETTLEMAN, MD, MS BEYOND INFECTION CONTROL: THE NEW HOSPITAL EPIDEMIOLOGY	
The Use of Statistical Process Control Charts in Hospital Epidemiology	649
JOHN A. SELLICK, JR., DO TOPICS IN CLINICAL MICROBIOLOGY	
Hantavirus: An Old Bug Learns New Tricks	661
JOHN T. SINNOTT IV, MD; JOHN N. GREENE, MD; EVELYN KIM, BA; SANDRA GOMPF, MD $\mathbf{DEPARTMENTS}$	
Letters to the Editor	616
Product Commentary	657
Calendar	666
Book Review	668
Medical News	670
SHEA News	675

THE PUBLICATION OF ADVERTISING IN THE JOURNAL DOES NOT CONSTITUTE ANY GUARANTEE OR ENDORSEMENT BY THE SOCIETY FOR HOSPITAL 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-0899823X. Canadian GST#129780466) is published exclusively by SLACK Incorporated 12 times a year. Address: 6900 Grove Rd., Thorofare. NJ 08086. Telephone: (609) 848-1000.

COPYRIGHT 1993 The Society for Hospital Epidemiology of America. Inc., and SIACK 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-\$80.00; Two years-\$115.00; Three years-\$145.00; Institutional: One year-\$90.00; Two years-\$130.00; Three years-\$170.00. Fellows: \$20 per year with proof of training status. Canada: \$18.00 additional each year plus 7% for Canadian Goods & Services tax: all other countries: \$36.00 additional each year Single copies of current issues may be obtained for \$15.00, United States and possessions: \$20.00 all other countries.

REPRINTS: All requests to reprint or use material published herein should be addressed to Lester Robeson, SLACK Incorporated. 6900 Grove Rd., Thorofare, NJ 08086. For reprint orders and prices, contact Lester Robeson at (609) 84X-1000. Authorization to photocopy items for internal or personal use. or thr internal or personal use of specific clients, is granted by SLACK Incorporated, provided that the base fee of \$1.00 per copy, plus \$15 per page is paid directly to Copyright Clearance Center, 27 Congress St., Salem, MA01970. This consent does not extend to other kinds of copying, such as for general distribution, resale, advertising and promotional purposes, or for crating new collective works.

CHANGE OF ADDRESS: Notice should be sent to the publisher six weeks in advance of effective date. Include old and new addresses with zip codes. The publisher cannot accept responsibility for undelivered copies. Second-class postage is paid at Thorofare, New Jersey 08086, and additional entry points Postmaster. Send address changes to SLACK Incorporated, 6900 Grove Rd., Thorofare. NJ 08086.

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

EDITORIAL OFFICES

Vanderbilt University School of Medicine A-1131 Medical Center North Nashville, TN 37232-2637 (615) 343-1095; (615) 343-1882 (FAX)

Email: iche@mcmail.vanderbilt.edu

Michael D. Decker, MD, MPH

MANAGING EDITOR

Susan Cantrell

STATISTICAL EDITOR

Beverly G. Mellen, PhD

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

Bryan P. Simmons, MD Stephen B. Kritchevsky, PhD Memphis, Tennessee Wing Hong Seto, MD

Hong Kong

Disinfection and Sterilization

William A. Rutala, PhD, MPH

Chapel Hill, North Carolina

Emerging Infectious Diseases Larry J. Strausbaugh, MD

Portland, Oregon Robert W. Pinner, MD

Atlanta, Georgia

From the Laboratory

Marcus Zervos, MD Royal Oak, Michigan Fred C. Tenover. PhD

Atlanta, Georgia Information Management

John A. Sellick, DO Buffalo, New York

The International Perspective

Mary D. Nettleman, MD, MS

Richmond, Virginia

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

SHEA News Murray D. Batt, MD

Clarksburg, West Virginia

Statistics for Hospital Epidemiology

David Birnbaum, PhD, MPH

Sidney, British Columbia, Canada

Topics in Long-Term Care Philip W. Smith, MD

Omaha, Nebraska

Publisher

John C. Carter

Editorial Director Jennifer Kilpatrick

Production Editor

Shirley P. Strunk, ELS

Topics in Occupational Medicine

Vice President/Group Publisher Richard N. Roash

David Weber, MD, MPH Chapel Hill, North Carolina

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY®

EDITORIAL ADVISORY BOARD

Jacques F. Acar, MD

J. Wesley Alexander, MD

Paris, France Cincinnati, Ohio

Paul Arnow, MD

Chicago, Illinois Birmingham, United Kingdom

Boston, Massachusetts

Charlottesville, Virginia

Milwaukee, Wisconsin

Manhasset, New York

Denver, Colorado

St. Louis, Missouri

Beer Sheva, Israel

Atlanta, Georgia

Black Butte, Oregon

Nashville, Tennessee

Bethesda, Maryland

San Diego, California

Nashville, Tennessee

Nashville, Tennessee

Nashville. Tennessee

Brussels, Belgium

Madison, Wisconsin

Bethesda, Maryland

Atlanta, Georgia

Brussels, Belgium

Buffalo, New York

San Antonio, Texas

Iowa City, Iowa

Houston, Texas

Vienna, Austria

Jerusalem, Israel

Trenton, New Jersey

Mexico City, Mexico

Madison, Wisconsin New York City, New York

Prahran Victoria, Australia

New York, New York

Brentwood Tennessee Minsk, Republic of Belarus

Toronto, Ontario, Canada

Montreal, Quebec, Canada

Pittsburgh, Pennsylvania

Minneapolis, Minnesota

Winnepeg, Manitoba, Canada Helsinki, Finland

Munich, Federal Republic of Germany

Bronx, New York

Atlanta, Georgia

Taipei, Taiwan

Charlottesville, Virginia

Farmington, Connecticut

Los Angeles, California Chapel Hill, North Carolina

Freiburg, Federal Republic of Germany

Shreveport, Louisiana

Graham A.J. Ayliffe, MD Neil L. Barg, MD

Yakima, Washington Atlanta, Georgia

Elizabeth Ann Bolyard, RN, MPH, CIC

John M. Boyce, MD Providence, Rhode Island Professor Dr. Ilja Braveny Munich, Federal Republic of Germany

Charles Bryan, MD

Columbia, South Carolina Creteil, France Christian Brun-Buisson, MD

Donald E. Craven, MD

Sue Crow, MSN, RN, CIC

Franz Daschner, MD

Leigh G. Donowitz, MD

Charles E. Edmiston, Jr., PhD Theodore C. Eickhoff, MD

Bruce Farber, MD

Victoria J. Fraser, MD

Peter C. Fuchs, MD, PhD

Richard A. Garibaldi, MD

Velvl Greene, PhD, MPH

Robert Gaynes, MD

David W. Gregory, MD

David K. Henderson, MD

Peter N.R. Heseltine, MD Karen Hoffmann, RN, CIC, MS

Marguerite McMillan Jackson, RN, PhD

Janine Jagger, MPH, PhD

William R. Jarvis, MD Douglas S. Kernodle, MD

Robert H. Latham, MD

Lewis B. Lefkowitz, MD Hsieh-Shong Leu, MD, MSc

Jack Levy, MD

Victor Lorian, MD Dennis G. Maki, MD

Professor Dr. Walter Marget

William J. Martone, MD

Allison McGeer, MD John E. McGowan, Jr., MD

Jonathan L. Meakins, MD, DSc

Raf Mertens, MD

Robert R. Muder, MD

Joseph M. Mylotte, MD, CIC

Lindsay Nicolle, MD Juhani Ojajärvi, MD

Michael T. Osterholm, PhD, MPH

Jan Evans Patterson, MD

Sindy M. Paul, MD Michael A. Pfaller, MD

Samuel Ponce de Leon, MD, MSc

Isaam Raad, MD Manfred L. Rotter, MD, DipBact

Theodore Sacks, MD

William E. Scheckler, MD

Kent Sepkowitz, MD

Denis Spelman, MD Michael L. Tapper, MD

Clyde Thornsberry, PhD Professor Leonid P. Titov

Timothy R. Townsend, MD

Antoni Trilla, MD, PhD

Professor Wang Shu-Qun

J. John Weems, Jr., MD Robert A. Weinstein, MD

Professor Dr. W. Weuffen Sergio B. Wey, MD

Barcelona, Spain Beijing, People's Republic of China Greenville, South Carolina

Millwood, Virginia

Chicago, Illinois

Greifswald, Federal Republic of Germany

São Paulo, Brazil Evanston Illinois

Rebecca Wurtz, MD SLACK Incorporated 6900 Grove Road Thorofare, New Jersey 08086 (609) 848-1000

Assistant Editor Eileen C. Anderer

Circulation Manager Lester J. Robeson, CCCP

Production Director

Production Coordinator Joanne Patterson

Publishing Director/ Advertising Wayne McCourt

Pharmaceutical Group Sales Director Michael LoPresti

Advertising Sales Representative

Classified/Recruitment Sales Manager

Michele Burch



SURGICAL SCRUE

9% Bacterial Reduction Second Contact USA

both disinfects and conditions in less time than any prior technology available to healthcare personnel.

> Results of Time Kill tests demonstrate that Techni-Care eliminates gram negative and gram positive bacteria at 99.99% in 30 second contact.

Outstanding Bactericidal Activity without skin irritation

Techni-Care's active ingredient, chloroxylenol (PCMX) at 3%, eliminates bacteria, while a host of skin conditioning agents work synergistically to condition and soften the skin. Exceptionally mild, Techni-Care's dermal conditioning ingredients, include cocamidopropyl PG-Dimonium Chloride Phosphate, Aloe Vera Gel, Collagen and Propylene Glycol.

Techni-Care has rated a "minimal irritation" in the Draize Dermal irritation test. Specially blended formulation for dermal conditioning, as well as for bacterial reduction. Techni-Care Surgical Scrub is soothing to dermal tissue while phospolipids promote natural turgor.



1-800-325-9681