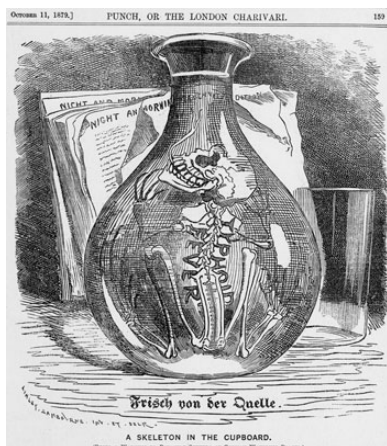


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On the cover: *Skeleton in bottle of water*. 1879. (British: published in *Punch* magazine, October 11, 1879) The Bridgeman Art Library, New York. Reproduced with permission.

In the last quarter of the 19th century, London witnessed a remarkable decline of the epidemics for which the city was so infamous in the first half of that century. While typhoid and cholera would still evade elimination, no longer were they the public health dangers they once posed.

Two significant advances played major roles in this transformation: the adoption of gas-powered buses and the linking of indoor toilets to public sewer systems.

By the late 1800s, 11 000 hansom cabs and several thousand horse-drawn buses generated over 500 tons of manure daily, providing an enormous breeding ground for flies capable of spreading typhoid. Petrol-based buses and delivery vehicles vanquished the threat of disease from the "street mud" overnight.

Water closets introduced in the mid-1800s were originally connected to the backyard cesspools, a practice that led to overflow due to the large volume of flushing water. Connecting the WC to a public sewer system led to the elimination of enteric epidemics in neighborhoods that could afford such improvements.

Despite these breakthroughs, pockets of disease remained, as evidenced by the warning depicted on the cover: an admonition to the patrons of a London pub frequented by German-speakers, that typhoid still lurked in the water supply.

(Mary & Michael Grizzard, Cover Art Editors)

## i News

## iii In the Literature

## IDSA GUIDELINE

### 853 Official American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America Clinical Practice Guidelines: Treatment of Drug-Susceptible Tuberculosis

Payam Nahid, Susan E. Dorman, Narges Alipanah, Pennan M. Barry, Jan L. Brozek, Adithya Cattamanchi, Lelia H. Chaisson, Richard E. Chaisson, Charles L. Daley, Malgosia Grzemska, Julie M. Higashi, Christine S. Ho, Philip C. Hopewell, Salmaan A. Keshavjee, Christian Lienhardt, Richard Menzies, Cynthia Merrifield, Masahiro Narita, Rick O'Brien, Charles A. Peloquin, Ann Raftery, Jussi Saukkonen, H. Simon Schaaf, Giovanni Sotgiu, Jeffrey R. Starke, Giovanni Battista Migliori, and Andrew Vernon

## ARTICLES AND COMMENTARIES

### 868 Synergy, Salary, and Satisfaction: Benefits of Training in Critical Care Medicine and Infectious Diseases Gleaned From a National Pilot Survey of Dually Trained Physicians

Sameer S. Kadri, Chanu Rhee, Gabriela Magda, Jeffrey R. Strich, Rongman Cai, Junfeng Sun, Brooke K. Decker, and Naomi P. O'Grady

A survey of physicians trained in critical care medicine (CCM) and infectious diseases (ID) suggested this combination is synergistic and satisfying. However, most respondents had to train in individual specialties at separate institutions. Avenues for CCM-ID training should be considered.

### 876 Editorial Commentary: Infectious Diseases/Critical Care Medicine: Time to Embrace a New Subspecialty of Infectious Disease

Wendy S. Armstrong

### 878 Transmission of *Balamuthia mandrillaris* by Organ Transplantation

Eileen C. Farnon, Kenneth E. Kokko, Philip J. Budge, Chukwuma Mbaeyi, Emily C. Lutterloh, Yvonne Qvarnstrom, Alexandre J. da Silva, Wun-Ju Shieh, Sharon L. Roy, Christopher D. Paddock, Rama Sriram, Sherif R. Zaki, Govinda S. Visvesvara, and Matthew J. Kuehner; for the Balamuthia Transplant Investigation Teams

We describe the first recognized clusters of transplant-transmitted *Balamuthia mandrillaris*. We describe the detection of this rare cause of encephalitis in each cluster, the clinical management and public health response, and recommendations to detect and defer potential donors with encephalitis.

### 889 Spread of Carbapenem-Resistant *Enterobacteriaceae* Among Illinois Healthcare Facilities: The Role of Patient Sharing

Michael J. Ray, Michael Y. Lin, Robert A. Weinstein, and William E. Trick

We used social network analysis to demonstrate that Illinois healthcare facilities with the greatest network centrality were more likely to report higher carbapenem-resistant *Enterobacteriaceae* rates and should be considered as sites for augmented infection control interventions.

### 894 Editorial Commentary: Network Models, Patient Transfers, and Infection Control

Philip M. Polgreen and Alberto M. Segre

**896 A Clinical Decision Tree to Predict Whether a Bacteremic Patient Is Infected With an Extended-Spectrum  $\beta$ -Lactamase-Producing Organism**

Katherine E. Goodman, Justin Lessler, Sara E. Cosgrove, Anthony D. Harris, Ebbing Lautenbach, Jennifer H. Han, Aaron M. Milstone, Colin J. Massey, and Pranita D. Tamma; for the Antibacterial Resistance Leadership Group

We developed a decision tree to predict the likelihood that a patient with bacteremia is infected with an extended-spectrum  $\beta$ -lactamase-producing organism. Evaluating 1288 bacteremic patients, our decision tree's positive and negative predictive values were 90.8% and 91.9%, respectively.

**904 Impact of Reported Beta-Lactam Allergy on Inpatient Outcomes: A Multicenter Prospective Cohort Study**

Derek R. MacFadden, Anthony LaDelfa, Jessica Leen, Wayne L. Gold, Nick Daneman, Elizabeth Weber, Ibrahim Al-Busaidi, Dan Petrescu, Ilana Saltzman, Megan Devlin, Nisha Andany, and Jerome A. Leis

Patients who did not receive preferred beta-lactam therapy due to reported beta-lactam allergy had an increased number of adverse events compared with patients without reported history of beta-lactam allergy.

**911 Editorial Commentary: Fortune Favors the Bold: Give a Beta-Lactam!**

Kimberly G. Blumenthal and Erica S. Shenoy

**914 Borrelial Lymphocytoma in Adult Patients**

Vera Maraspin, Mirijam Nahtigal Klevišar, Eva Ružić-Sabljić, Lara Lusa, and Franc Strle

Borrelial lymphocytoma in adults is rare, predominantly located on the breast, often associated with erythema migrans, and usually caused by *Borrelia afzelii*. Fourteen-day antibiotic treatment, as used for erythema migrans, is effective.

**922 Evaluation of the C6 Lyme Enzyme Immunoassay for the Diagnosis of Lyme Disease in Children and Adolescents**

Susan C. Lipsett, John A. Branda, Alexander J. McAdam, Louis Vernacchio, Caroline D. Gordon, Catherine R. Gordon, and Lise E. Nigrovic

In children and adolescents undergoing evaluation for Lyme disease, the C6 enzyme immunoassay had similar sensitivity but lower specificity than standard 2-tiered testing. This assay could be used to guide initial management decisions, but supplemental immunoblot should still be performed.

**929 Incidence, Risk Factors, and Morbidity of Acquired Postnatal Cytomegalovirus Infection Among Preterm Infants Fed Maternal Milk in a Highly Seropositive Population**

Fábia Pereira Martins-Cellini, Aparecida Yulie Yamamoto, Débora Manzione Passos, Suely Dornellas do Nascimento, Edinéia Vaciloto Lima, Célia Mara Di Giovanni, Ellen Regina Sevilla Quadrado, Roberta Barta, Davi Casale Aragon, Seila Israel do Prado, Maria Fernanda Branco de Almeida, and Marisa Márcia Mussi-Pinhata

Preterm infants born to mothers with high cytomegalovirus (CMV) seroprevalence are as frequently infected as those born to mothers with lower seroprevalence. CMV infection contributes to an uneven clinical course, severe stages of retinopathy of prematurity (ROP), and even death.

**937 Predominance of *Lactobacillus* spp. Among Patients Who Do Not Acquire Multidrug-Resistant Organisms**

Rafael Araos, Albert K. Tai, Graham M. Snyder, Martin J. Blaser, and Erika M. C. D'Agata

Among hospitalized subjects exposed to antimicrobials, a high abundance of *Lactobacillus* spp. characterized the fecal microbiome of patients who did not acquire multidrug-resistant organisms during their hospitalization, consistent with a protective role for *Lactobacillus* spp.

## REVIEW ARTICLES

**944 Diagnostic Accuracy of Probe to Bone to Detect Osteomyelitis in the Diabetic Foot: A Systematic Review**

Kenrick Lam, Suzanne A. V. van Asten, Tea Nguyen, Javier La Fontaine, and Lawrence A. Lavery

We aimed to identify the diagnostic accuracy of the probe-to-bone test to diagnose diabetic foot osteomyelitis through a meta-analysis of the published literature. Our findings support the use of probe to bone as outlined by current guidelines.

**949 Editorial Commentary: Probe-to-Bone Test for Detecting Diabetic Foot Osteomyelitis: Rapid, Safe, and Accurate—but for Which Patients?**

Eric Senneville

## BRIEF REPORTS

**951 Middle East Respiratory Syndrome Coronavirus Infection During Pregnancy: A Report of 5 Cases From Saudi Arabia**

Abdullah Assiri, Glen R. Abedi, Malak Al Masri, Abdulaziz Bin Saeed, Susan I. Gerber, and John T. Watson

**954 High Rates of Nonsusceptibility to Ceftazidime-avibactam and Identification of New Delhi Metallo- $\beta$ -lactamase Production in *Enterobacteriaceae* Bloodstream Infections at a Major Cancer Center**

Samuel L. Aitken, Jeffrey J. Tarrand, Lalitagauri M. Deshpande, Frank P. Tverdek, Anne L. Jones, Samuel A. Shelburne, Randall A. Prince, Micah M. Bhatti, Kenneth V. I. Rolston, Ronald N. Jones, Mariana Castanheira, and Roy F. Chemaly

## PHOTO QUIZ

**959 A Nontraumatic Surprise Neck Mass**

(Answer on pages 991–2.)

## INVITED ARTICLES

- 960** **ANTIMICROBIAL RESISTANCE**  
**Clinical Management of an Increasing Threat: Outpatient Urinary Tract Infections Due to Multidrug-Resistant Uropathogens**  
Emily Walker, Alessandra Lyman, Kalpana Gupta, Monica V. Mahoney, Graham M. Snyder, and Elizabeth B. Hirsch

The appropriate management of outpatient urinary tract infections is increasingly hampered by the issue of multidrug resistance. This review provides a framework for assessing the risk for resistance and for choosing an agent that is likely to be active based on existing data.

## HIV/AIDS

- 966** **Qualifications, Demographics, Satisfaction, and Future Capacity of the HIV Care Provider Workforce in the United States, 2013–2014**  
John Weiser, Linda Beer, Brady T. West, Christopher C. Duke, Garrett W. Gremel, and Jacek Skarbinski
- Projected growth of the HIV care provider workforce by 2019 will not accommodate the increase in HIV-infected persons requiring care. Ryan White Program–funded facilities may face provider attrition. Dissatisfaction with salary/reimbursement is substantial, and black and Hispanic providers are underrepresented.
- 976** **Durable Viral Suppression and Transmission Risk Potential Among Persons With Diagnosed HIV Infection: United States, 2012–2013**  
Nicole Crepaz, Tian Tang, Gary Marks, Michael J. Mugavero, Lorena Espinoza, and H. Irene Hall

Using national human immunodeficiency virus (HIV) surveillance data from 17 jurisdictions, 38% of HIV-diagnosed persons in care did not sustain viral suppression in 2012–2013, spending 60% and 30% of observation time with viral load above 200 and 10 000 copies/mL.

- 984** **Inflammatory Biomarkers and Mortality Risk Among HIV-Suppressed Men: A Multisite Prospective Cohort Study**  
Nikolas I. Wada, Jay H. Bream, Otoniel Martínez-Maza, Bernard Macatangay, Shannon R. Galvin, Joseph B. Margolick, and Lisa P. Jacobson

Serum concentrations of multiple inflammatory biomarkers strongly predict long-term mortality risk in human immunodeficiency virus–infected men receiving antiretroviral therapy with confirmed viral suppression. Results indicate several underlying inflammatory factors, 2 of which independently predict mortality risk.

## CORRESPONDENCE

- 993** **Gender Differences in Statin Prescription Rate Among Patients Living With HIV and Hepatitis C Virus**  
Sadeer G. Al-Kindi, David A. Zidar, Grace A. McComsey, and Chris T. Longenecker
- 994** **Treatment of Hepatitis C Virus in HIV-Coinfected Individuals in Real-world Clinical Settings: Results From 2 Large HIV Care Clinics**  
Sarah E. Rowan, Maya Rogers, Joshua Bayer, Lisa Smith, Edward M. Gardner, Steven Johnson, and Jacob Langness
- 995** **Do We Need More Than 6 Weeks of Antimicrobial Treatment for Vertebral Osteomyelitis?**  
Louis Bernard, Adrien Lemaigen, Idir Ghout, Frédérique Bouchand, Marie-Charlotte Hallouin-Bernard, and Aurélien Dinh

- 995** **Reply to Bernard et al**  
Ki-Ho Park, Oh-Hyun Cho, Sang-Ho Choi, In-Gyue Bae, and Mi Suk Lee

## BOOK REVIEWS

- 997** **Adventures of a Female Medical Detective: In Pursuit of Smallpox and AIDS**  
Anne J. Blaschke

## ELECTRONIC ARTICLES

- e147** **Official American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America Clinical Practice Guidelines: Treatment of Drug-Susceptible Tuberculosis**  
Payam Nahid, Susan E. Dorman, Narges Alipanah, Pennan M. Barry, Jan L. Brozek, Adithya Cattamanchi, Lelia H. Chaisson, Richard E. Chaisson, Charles L. Daley, Malgosia Grzemska, Julie M. Higashi, Christine S. Ho, Philip C. Hopewell, Salmaan A. Keshavjee, Christian Lienhardt, Richard Menzies, Cynthia Merrifield, Masahiro Narita, Rick O'Brien, Charles A. Peloquin, Ann Raftery, Jussi Saukkonen, H. Simon Schaaf, Giovanni Sotgiu, Jeffrey R. Starke, Giovanni Battista Migliori, and Andrew Vernon

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