B. burgdorferi–infected *I. scapularis* now includes northern Cook and Lake counties. More importantly, the high percentage of *B. burgdorferi*–infected ticks in this region confirms a newly recognized significant risk of Lyme disease in suburban areas adjacent to Chicago (population ≈7 million). Recently, the Infectious Diseases Society of America recommended that clinicians consider prescribing a single prophylactic dose of doxycycline (200 mg) when patients have received tick bites in areas where the percentage of *B. burgdorferi*–infected *I. scapularis* exceeds 20% (*6*,*7*). The high percentage of infected adult ticks identified in this survey highlights the need for physicians in the Chicago area to become familiar with this recommendation, especially considering the high likelihood that nymphal *I. scapularis* ticks are similarly infected (*1*). Moreover, confirmation of the increasing risk of contracting Lyme disease near metropolitan Chicago should provide impetus for more comprehensive studies to completely define the risk of this potentially serious illness.

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Dean A. Jobe,*
Jeffrey A. Nelson,†
Michael D. Adam,‡
and Stephen A. Martin, Jr.§

*Gundersen Lutheran Medical Center, La Crosse, Wisconsin, USA; †North Park University, Chicago, Illinois, USA; ‡Lake County Health Department and Community Health Center, Waukegan, Illinois, USA; and §Cook County Department of Public Health, Oak Park, Illinois, USA

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Address for correspondence: Jeffrey A. Nelson, 3225 W. Foster Ave, Chicago, IL 60625, USA; email: andersonnelson@yahoo.com

Oral Versus IV Treatment for Catheter-related Bloodstream Infections

To the Editor: I read with interest the article by Halton and Graves on the economics of catheter-related blood stream infections (*1*). The most important determinants of infection in a temporary central venous catheter (CVC) are location and duration (*2*). Also important are aseptic CVC insertion and maintenance. Reducing the economic effects of CVCs is important, but I believe clinicians should use oral antimicrobial agents more often in place of intravenous (IV) antimicrobial therapy.

The economic and clinical benefits of using oral versus intravenous antimicrobial therapy are considerable. Oral therapy has important advantages over intravenous therapy administered via CVCs. Clinical advantages of oral antimicrobial therapy include the elimination of phlebitis CVC line infections. At equivalent doses, acquisition costs of oral agents are less than intravenous counterparts. Healthcare institutions charge IV administration fees per antimicrobial intravenous dose. Administrative cost for intravenous antimicrobial agents is US $10/dose. Intravenous antimicrobial administration costs are eliminated when drugs are administered orally. In hospitalized patients, oral antimicrobial therapy results in a decreased hospital length of stay with its attendant economic implications.

Oral therapy for serious systemic infections should be with high bioavailability drugs, i.e., ≥90%, which results in essentially the same serum/tissue levels as if when administered by IV. Because all parenteral antimicrobial agents do not have an oral formulation, clinicians should select an equivalent oral agent with the same spectrum as its parenteral counterpart

to treat most serious systemic infections (*3*). Currently, oral antimicrobial agents are available to treat infections formerly only treatable with intravenous drugs, e.g., vancomycin-resistant enterococci, methicillin-resistant *Staphylococcal aureus*, and *Pseudomonas aeruginosa* (*4*,*5*).

Whenever possible, clinicians should opt for oral therapy instead of IV therapy. Oral antimicrobial therapy is not an initial option in critically ill patients requiring intravenous therapy and in those who are unable to absorb oral drugs. Fortunately, most patients are candidates for oral therapy or intravenous to oral switch therapy.

Substantial savings can be realized by using oral antimicrobial therapy initially or as soon as possible after initial IV therapy. The take-home message is, with the exception of critically ill patients and those unable to absorb oral drugs, clinicians should consider oral therapy before resorting too quickly to IV antimicrobial agents via CVC. Nosocomial (CVC) infections are important from a clinical and economic perspective. Clinicians should consider oral antimicrobial agents more frequently instead of having CVC lines placed for IV drug administration. Currently, oral agents are available to treat nearly all pathogens, even those formerly only treatable with intravenous antimicrobial drugs.

Burke A. Cunha*†

*Winthrop-University Hospital, Mineola, New York, USA; and †State University of New York School of Medicine, Stony Brook, New York, USA

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Address for correspondence: Burke A. Cunha, Winthrop-University Hospital, Infectious Disease Division, Mineola, NY 11501, USA

In Response: In his letter Cunha suggests that oral antimicrobial drug therapy is safer and less expensive than intravenous therapy via central venous catheters (CVCs) (*1*). CVCs are often used in critically ill patients to deliver antimicrobial drug therapy, but they expose patients to a risk of catheter-related bloodstream infection (CRBSI). Our current knowledge about the cost-effectiveness of allocating resources toward interventions that prevent CRBSI in patients requiring a CVC has already been reviewed (*2*). If antimicrobial drug therapy can be delivered orally for some patient groups, instead of through a CVC, then the costs and benefits of this alternate strategy should be evaluated.

Like any decision that involves the reallocation of resources toward a different clinical practice, this decision should not be based on instinct but subjected to a rigorous economic appraisal using a cost-effectiveness framework. The decision requires consideration of all relevant alternative modes of delivery, as identified with the help of clinical experts. Depending on the clinical context, options may include delivery via CVCs or peripheral lines, use of intravenous to oral switch therapy, or oral administration with a variety of dosing schedules.

To identify the most efficient mode of antimicrobial drug delivery, all relevant costs and benefits of each option should be specified and each mode of delivery compared in terms of a common outcome (e.g., the incremental cost per quality-adjusted life year). Financial costs or cost-savings are important, but not the sole consideration for a decision maker (*3*). Having identified the "best" option given our current understanding of the problem, we must then incorporate the residual uncertainty surrounding this choice into the evaluation, explore the level of confidence in the decision, and identify what future research is needed (*4*).

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Kate Halton*† and Nicholas Graves*†

*Princess Alexandra Hospital, Brisbane, Queensland, Australia; and †Queensland University of Technology, Brisbane, Queensland, Australia

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Address for correspondence: Kate Halton, Institute of Health and Biomedical Innovation, Queensland University of Technology, Kelvin Grove, Queensland 4059, Australia; email: k.halton@qut.edu.au