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Editor’s Note

A Simple Approach to Reducing Inappropriate Use of Central Venous Catheters

Central venous catheters are commonly used in hospitalized patients. Many are not indicated, evidence of benefit is scant, and all put patients at risk for thrombosis and infection. In this issue, McDonald and Lee describe a simple intervention—making inpatient teams aware that a patient has a central venous catheter and the probable indication for the catheter—that appears to have resulted in a major reduction in the prevalence of inappropriate use of central venous catheters. While we applaud this effort, additional evidence is needed, as this intervention took place at 1 hospital and there was no concurrent control group. But we hope the study will stimulate additional research, preferably randomized clinical trials, to document the efficacy of interventions to reduce the use of inappropriate central venous catheters.

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Antibiotic Prescribing for Acute Respiratory Infections in Direct-to-Consumer Telemedicine Visits

Direct-to-consumer (DTC) telemedicine companies provide consumers with around-the-clock access to care for common nonemergent conditions through telephone and live video visits via personal computers and mobile phone apps. Approximately 1 million DTC telemedicine visits between patients and physicians serving these companies, without an established relationship, were delivered in 2014. DTC telemedicine is often more convenient and less expensive than in-person visits. However, concerns about the quality of these services have been expressed: lack of a physician-patient relationship and access to medical records; limitations of the physical examination; and barriers to testing could lead to overuse of antibiotics.

There have been few evaluations of DTC telemedicine quality. Using health plan claims, we compared antibiotic prescribing rates for acute respiratory infection (ARI) between Teladoc, a large DTC telemedicine company, and physician offices.

Methods | In April 2012, the California Public Employees’ Retirement System first offered Teladoc as a covered benefit. We limited the study population to members aged 18 to 64 years, who were continuously enrolled from April 2012 to October 2013 who had 1 or more ARI visits. This study was approved by the institutional review board for RAND Corporation.

We identified ARI visits using International Classification of Diseases, Ninth Revision diagnosis codes based on prior methods. We eliminated follow-up visits at any site within 21 days and visits with competing diagnoses that may have required antibiotics. We identified any oral antibiotic prescription within 3 days of the visit and defined broad-spectrum antibiotics as macrolides and fluoroquinolones.

We compared antibiotic and broad-spectrum antibiotic prescribing rates for Teladoc and physician offices. In multivariate models, we adjusted for sex, age, chronic illness (using the Charlson Comorbidity Index), site of care, and ARI diagnoses. Using the predictive margin method, we report predicted prescribing rates, adjusting for covariates.

Results | Teladoc users were less likely to be 51 years of age or older or have 1 or more chronic illnesses (Table 1). In both un-
of broad-spectrum antibiotics may be driven by the tendency for physicians serving DTC companies to practice conservatively, with limited diagnostic information. DTC companies can work to lower rates through targeted quality-improvement initiatives to change physician behavior (eg, timely feedback), as well as direct education to patients to influence demand.

Our study had several limitations. Differences in patients and the complexity of conditions seen across settings may not be accounted fully in multivariate models. Furthermore, there is subjectivity in assigning individual ARI diagnoses, and in some cases, the diagnosis may be selected to align with the chosen treatment.

Use of DTC telemedicine is increasing rapidly despite lack of research about whether it is offering care of comparable quality. Our research suggests overuse of broad-spectrum antibiotics for ARI visits. Studies such as this can inform the coverage decisions of insurers and employers and ongoing policy debates in the United States about the appropriateness of different models of telemedicine.

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5. Ateev Mehrotra, MD, MPH. Antibiotic prescribing comparing Teladoc and physician offices. (Unadjusted)