DTC Use Discouragement Is Unrealistic Despite Real Concerns About Antibiotics

The Ray et al study\(^1\) of DTC company antibiotic prescribing compared with urgent care and pediatricians’ offices for ARI brought up a legitimate concern about overprescribing antibiotics over telehealth. There were several limitations to this study, eloquently outlined by Jeffrey S. Gerber;\(^2\) which included looking at filled prescriptions, data from only 1 company, unknown sociodemographic factors, and total telehealth visits being a small percentage of overall visits. Regardless, the authors and the commentator are absolutely right; concern about antibiotic prescribing is legitimate. As we deal with the ever-growing threat of antibiotic resistant strains of bacteria, we, as physicians, have had to backtrack and undo the damage created by overprescribing antibiotics, both scientifically as well as culturally.

The study does, however, bring into question the use of DTC telehealth by parents, which is differentiated by pediatrician office run telehealth offered to existing patients. The American Academy of Pediatrics (AAP) has discouraged use of these types of private companies for pediatrics and the ATA also has concern of using them for children under 2 years of age. The concerns are that current telehealth practice patterns almost never warrant antibiotic prescription for ARI due to lack of ear exam, radiograph, or strep test. Some DTC companies don’t have pediatrician staffing, and patients are lost to follow-up which is detrimental to long-term care.

Some of these concerns have easier solutions than others as telehealth has grown considerably over the last 5 years; there are more physicians working in the space allowing for the right physician seeing the right age group. There’s a recognition that staffing should be similar to other physician practices that include quality assurance, antibiotic stewardship, compliance, and recredentialing. All of that can improve antibiotic prescribing patterns.

However, dictating that parents should be discouraged from using DTC is unrealistic. Most of those who have used the service are likely to use it again. Also, it might be an issue of access, which is not limited to having insurance but includes transportation, parents’ ability to take time off work, amount of copay, and access to a clinic. Under these circumstances, the alternative to a telehealth visit may be no medical encounter and no care. Ideally all patients could see their own doctor but that is not always feasible based on financial and social constraints. DTC, however, does need to create steps for better quality care for pediatrics until all patients can get the care they need when they need it.

Local telehealth options by pediatricians are going to be the adjunct to primary care in the future. In the meantime, other means of care provided by DTC companies are rapidly spreading and filling gaps. Simply asking parents not to use it won’t be a long-term solution to a very real concern about the quality of virtual health care. We have a real responsibility to work within the confines of our current climate which currently includes telehealth and is unlikely to trek backward.

Aditi U. Joshi
Medical Director; JeffConnect (Telehealth)
Thomas Jefferson University Hospital
E-mail: aditi.joshi@jefferson.edu

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RE: Antibiotic Prescribing During Pediatric Direct-to-Consumer Telemedicine Visits

We read with great interest the excellent study by Ray and colleagues\(^1\) and insightful accompanying editorial by Gerber\(^2\) addressing the topic of antibiotic use during telemedicine visits. As noted, this is a rapidly growing sector of health care delivery for not only children but for patients of all ages. This was a study of antibiotic prescribing practices for acute respiratory infections (ARIs) in a large population of commercially insured children encompassing telemedicine, urgent care, and PCP encounters. The authors found that children were more likely to receive antibiotics and when prescribed, less likely to receive guideline-recommended antibiotics in telemedicine visits compared with the other settings. This suggests that antibiotic overuse may be greater in this setting than in the others, supporting concerns about lower quality of care raised by the AAP.

We share concerns with these authors and the AAP about ensuring that the quality of care delivered outside of more traditional clinical settings remains high, especially when outside of the child’s medical home. Intermountain Healthcare (IH) is a large integrated health care delivery system in Utah with 23 acute care hospitals and over 170 clinics. Of the 170 clinics, 32 are InstaCare Clinics, providing urgent care services to all ages, and 6 are KidsCare Clinics, providing urgent care services to children ≤ 18 years of age. In addition, since 2016, IH has operated a direct-to-consumer telemedicine platform providing synchronous urgent care services known as Connect Care staffed...
by Advanced Practice Practitioners. The purpose is to provide improved access to care for low acuity conditions (eg, ARIs) while offloading traditional urgent care sites. At IH, we have a comprehensive antimicrobial stewardship program led by one of the authors of this letter (ES) that encompasses inpatient and outpatient settings. Although baseline prescribing rates in our region of the US are lower than national averages, we nonetheless have identified outpatient stewardship, specifically in urgent care and telemedicine encounters, as an important priority for the development and implementation of novel interventions.

A recent analysis of antibiotic use for ARIs in our Connect Care system suggests that our system may be performing differently than that reported by Ray et al. From Aug 2017 through July 2018, we identified a total of 3967 telemedicine encounters for children ≤18 years of age (25% of all telemedicine encounters), including 1609 for ARIs. In our system, antibiotic prescribing during telemedicine encounters for ARIs was lower than in traditional urgent care settings. Antibiotics were prescribed for ARIs during 27% of telemedicine encounters, compared with 38% of KidsCare encounters and 48% of InstaCare encounters. The top diagnoses associated with antibiotic prescriptions included sinusitis and pharyngitis. No antibiotics were prescribed for otalgia or any other ear related diagnoses codes including otitis media. Amoxicillin, penicillin, or amoxicillin/clavulanate were prescribed in 75% of the encounters that received an antibiotic for a respiratory encounter.

We acknowledge that the appropriateness of these telemedicine prescriptions remains uncertain and that the case mix of patients may differ from those reported in the study by Ray. Additionally, as noted by Gerber, the appropriateness of almost any ARI antibiotic prescription initiated via telemedicine is potentially dubious because most diagnoses require either a physical examination (eg, pneumonia, otitis media) or a test to be performed (pharyngitis caused by group A Streptococcus [GAS]). In our system, GAS testing can be facilitated by Connect Care by using our network of outpatient laboratories and our community pharmacies to dispense antibiotics if tests are positive. However, it remains possible that for some of these patients, testing may not have been indicated by a physical examination and the test may represent carriage rather than true infection. In addition, acute otitis media is not diagnosed or treated via Connect Care. Rather, these patients are referred to traditional outpatient settings without incurring an additional fee. We feel that our findings and experience provide an important complement to the study reported by Ray et al. We believe that pediatric telemedicine is likely here to stay. When used in the context of an integrated care delivery system with a shared EMR and robust attention to the Core Elements of Antibiotic Stewardship, direct-to-consumer telemedicine can provide convenient and high-quality care for children.

We agree with the letter writers on the importance of bringing antibiotic stewardship best practices into DTC telemedicine. Many antibiotic stewardship methods used in traditional care settings, such as continuing education, providing individual audit and feedback to clinicians, requiring justification of inappropriate antibiotic use, and strengthening clinician shared decision-making skills, are likely to be effective within telemedicine models as in traditional practices. Indeed, some DTC telemedicine companies have reported improved antibiotic stewardship through such methods, and Hersh and colleagues report a comprehensive antimicrobial stewardship program as a key context of their findings.

In addition to these general antibiotic stewardship strategies, another key component of prudent antibiotic stewardship within telemedicine will be identification and referral of clinical scenarios that require in-person diagnostic evaluation, consistent with the concerns noted in the editorial by Gerber. Some of these scenarios may be prevalent enough to warrant advice to seek in...

**Authors’ Response**

We appreciate the letters from Joshi and from Hersh and colleagues in response to our study. We are in general agreement with the points raised regarding the momentum behind direct to consumer (DTC) telemedicine. Our prior analysis identified rapid increase in DTC telemedicine use over the last 5 years. We anticipate that this trend will continue, and for this reason, we believe that this is a crucial time for identifying and promoting best practices in DTC telemedicine, including antibiotic stewardship.

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person care before even initiating the telemedicine encounter (for example, ear pain in the absence of tele-otoscopy). Other cases requiring in-person evaluation may become apparent during the course of a telemedicine encounter. Acknowledging and planning for these circumstances will also be crucial for high-quality antibiotic stewardship in a telemedicine program. Practically, this may mean developing strategies to facilitate timely follow-up in-person care and avoid additional fees to families, as Hersh and colleagues note. Also important will be avoiding any explicit or implicit incentives that might discourage clinicians from referring to in-person setting when clinically warranted. Setting appropriate expectations with families may be useful as well, including general guidance about clinical scenarios for which telemedicine may be more or less appropriate, and about the possibility that a telemedicine encounter may need to be followed by an in-person visit if clinically warranted.

Finally, the letters underscore the importance of attention to the variation in key features across DTC telemedicine models which may result in variation in the quality of care. Indeed, when standardized patients sought care through virtual visits, guideline concordant treatment of viral pharyngitis and acute rhinosinusitis scenarios varied significantly across 8 companies. Factors potentially influencing such company-level variation could include clinician training and experience (including pediatric-specific training); continuity with usual care (including informational, management, and relationship continuity); understanding of local contexts of care and referral options; use of peripheral devices (facilitating tele-otoscopic images or tele-stethoscope sounds); and company commitment to continuous improvement in general and antibiotic stewardship specifically. Through careful antibiotic stewardship efforts and transparent data reporting across a range of models and outcomes, we will continue to refine our understanding of best practices for pediatric telemedicine.

Kristin N. Ray
Assistant Professor of Pediatrics, University of Pittsburgh School of Medicine

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