

Hospital-affiliated doctors found to prescribe fewer antibiotics through telehealth than third-party physicians

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A graphic of a patient using telemedicine considering antibiotics. Credit: Justine Ross, Michigan Medicine

During the COVID-19 pandemic, the demand for telemedicine boomed—increasing 63-fold among Medicare users alone from approximately 840,000 telehealth visits in 2019 to 52.7 million in 2020.

As more people flocked to [telemedicine](#), [health systems](#) and increasingly implemented direct-to-consumer telehealth to provide convenient, safe options for [acute care](#). But it was unknown how these services varied in quality of care.

A new study found that for [telemedicine visits](#) related to acute respiratory infection, contractor-supplied physicians prescribed antibiotics to patients nearly twice as often as [emergency physicians](#) employed by the hospital system.

"The vast majority of acute respiratory infections are viral and antibiotics just don't help," said Kathleen Li, M.D., M.S., lead author of the paper and emergency [physician](#) at Michigan Medicine. "On top of that, antibiotics have side effects for patients, including gastrointestinal issues and allergic reactions, and from a broad public health standpoint there is growing concern for [antibiotic resistance](#). Even if it doesn't harm that individual patient, it can eventually impact everyone's vulnerability to resistant strains."

Acute respiratory infection covers an array of conditions, including the common cold, flu and bronchitis. They are one of the most common reasons patients seek virtual care, making up around one-third of all direct-to-consumer telehealth visits.

The research team analyzed more than 250 on-demand telemedicine visits available to employees at a large academic health system from March 2018 to July 2019. The visits were either staffed by system-affiliated emergency physicians or mixed-specialty physicians employed by a third-party contractor.

Of all encounters related to [acute respiratory infection](#), contracted physicians prescribed antibiotics in 37% of visits, compared to 18% for hospital-affiliated clinicians. After adjusting for other factors, the

researchers predicted a 15% difference between the two groups.

"One reason third-party telemedicine providers in our study may have prescribed more antibiotics is if they were practicing more conservatively because they didn't have access to the patient's record for additional context and were basing treatment decisions all on one interaction with the patient," Li said.

While the affiliated physicians in this study demonstrated improved antibiotic stewardship, she says, the prescription rates are likely still too high.

In June of 2020, the American College of Emergency Physicians called antimicrobial resistance a "critical threat to the public health and health of patients in emergency departments throughout the United States and the world." The organization stressed the importance of avoiding antibiotics for nonresponsive conditions and educating patients and guardians about why a prescription may not be effective.

"This is not even an issue specific to telemedicine or emergency medicine: urgent cares, clinics and primary care providers have all historically overprescribed antibiotics," she said. "Societally, patients often expect something tangible like a prescription after paying for a visit to a doctor."

Determining whether an infection is viral or bacterial is not always straightforward, especially through a virtual visit. So, Li says, a lot of doctors may prescribe antibiotics to be "safe" or because they feel a need to satisfy the patient.

She cautioned that antibiotics are likely ineffective, however, because more than 90% of patients coming to providers with an acute cough have a condition caused by a virus.

The study took place before the COVID-19 pandemic and subsequent telehealth explosion. As more providers consider paying third party telemedicine companies to cover virtual urgent care services, Li's team has concerns it would further fragment care.

"In contrast, if telemedicine services are offered through the patient's usual context of care, the doctor providing the service would have access to all their past information and know how likely a patient will be able to follow up and they might be less inclined to prescribe [antibiotics](#) when they are not necessary," she said. "Going forward, I hope [health](#) system leaders factor in these quality-versus-cost tradeoffs in terms of continuity of care and antibiotic stewardship when deciding how to structure their telemedicine services."

The research was published in the *Journal of Telemedicine and Telecare*.

More information: Kathleen Y Li et al, Differences in antibiotic prescribing rates for telemedicine encounters for acute respiratory infections, *Journal of Telemedicine and Telecare* (2022). [DOI: 10.1177/1357633X221074503](#)

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