

Prescribing Antibiotics for Acute Respiratory Infections

Practice Doesn't Always Make Perfect

A pediatric heart surgeon who treats 150 children each year is likely to provide better care than one who treats only 25. The link between volume and quality for surgeons and high-risk specialists is well established: The more experience physicians have with a specific procedure or diagnosis, the better their decisionmaking skills, and the better their performance. But what about physicians who treat more routine issues, such as acute respiratory infections (ARIs), for which procedure- or diagnosis-specific expertise may be less relevant to a patient's outcome? How does the volume of their practice affect the quality of their care?

To answer this question, RAND researchers analyzed a year's worth of data on outpatient visits to primary care physicians for ARIs at a large integrated health system in the northeastern United States. The research team grouped physicians according to the volume of patients they treated and then calculated, as a measure of quality, how often and how appropriately each group prescribed antibiotics for ARIs.

The study found that high volume does not translate to high quality in the treatment of ARIs:

- Physicians who treat a higher volume of patients with ARIs are more likely to diagnose a condition that calls for antibiotics than to diagnose one that does not.
- Higher-volume physicians are more likely to prescribe antibiotics for ARIs, whether or not they are indicated.
- When antibiotics are indicated, higher-volume physicians are less likely to prescribe the antibiotic recommended by national guidelines as the first-line treatment for a specific condition.
- Higher-volume physicians are more likely to prescribe an antibiotic for an ARI that attacks a broader range of bacteria than may be necessary.

Rather than adding substantively to primary care physicians' expertise, additional volume may simply be a burden, giving physicians less time to make good decisions. Because primary care physicians account for most ARI visits, understanding how volume affects the quality of their care could inform interventions to reduce the negative public health consequences associated with the inappropriate or unnecessary use of antibiotics—including the increasing threat of antibiotic-resistant germs.

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