

The Cost of Treating Individuals with Antibiotic Resistance

Antibiotic resistance is on the rise and leading to increasing costs of inpatient care. A recent national study reported on the additional health care costs for treating adult patients with antibiotic-resistant bacterial infections.¹ This study compared acutely hospitalized (excluding prison, nursing home, long-term care, and some similar facilities) patients with antibiotic-resistant infections to patients without antibiotic-resistant infections from 2002 to 2014. Researchers found that treating patients with antibiotic-resistant infections added \$1,383 per episode and \$2.2 billion total in increased annual hospital costs.

Implementing an antimicrobial stewardship program in hospitals and other health care facilities have shown an annual cost-savings of \$200,000 to \$400,000 compared to health care facilities who do not implement a program.²

However, the scope of antibiotic resistance and benefits of antibiotic stewardship applies beyond acute hospitalization. To combat antibiotic resistance, antibiotic stewardship programs also need to include collaborative outpatient setting efforts between providers and insurance companies. For example, in outpatient clinics, a CDC report estimates 30 percent of antibiotics prescribed are unnecessary.² Moreover, when antibiotics are indicated, this same report notes prescribers do not always use guideline-recommended, first-line antibiotics.²

New research by The Pew Charitable Trusts and the Centers for Disease Control and Prevention (CDC) similarly showed patients seen at urgent care centers for common respiratory conditions such as asthma, flu and the common cold were more likely to receive unnecessary antibiotics, compared with patients treated for the same illnesses at other immediate-care types of facilities.⁴ This research looked at antibiotic use in emergency departments, retail health clinics (located within businesses such as pharmacies and grocery stores) and urgent care centers, (typically stand-alone facilities where patients seek immediate and unscheduled care). All played a large role in providing unscheduled outpatient care in the U.S. Data showed about 46 percent of patients in urgent care centers who were diagnosed with one of the above respiratory conditions, for which antibiotics are neither recommended nor effective, received an antibiotic prescription compared with 25 percent and 14 percent in emergency departments and retail health clinics respectively.

To help support antibiotic stewardship quality improvement, Blue Cross and Blue Shield of Texas (BCBSTX) started an antimicrobial stewardship program in the third quarter of 2017 and continues to monitor and reach out to providers who prescribe antibiotics more than their peers and not according to CDC recommendations.

Using an approach similar to the collaborative Pew Charitable Trust and CDC study, BCBSTX uses the Healthcare Effectiveness and Data Information Set (HEDIS)[®] Quality Indicators described in the below table to identify providers who may not have followed the recommended treatment course when prescribing an antibiotic. Identified top-prescribing providers, adjusted by specialty and state, receive an outreach letter from BCBSTX notifying them of these patterns and encouraging them to consider better antibiotic stewardship based on CDC resources.

The program resulted in a 28 percent improvement in these prescribing behaviors among providers who received initial notifications and follow-ups. These program results help support broader antibiotic related quality performance measures, which are audited annually (see table), and compared to Quality Compass (QC) national average, benchmarking results.

The 2018 BCBSTX HEDIS/ Quality Rating System (QRS) results compared to 2017 QC national average:

Quality measure	TX MKP HMO	TX Medicaid STAR	TX Com HMO Houston	TX Com HMO Dallas	TX Com HMO ESW	QC National average-50th	QC National average-75th	QC National average-90th
Appropriate Treatment for Children With Upper Respiratory Infection (URI)*	77.38%	94.43%	79.21%	78.30%	85.86%	89.33%	92%	95%
Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis (AAB) **	22.00%	35.00%	19.55%	25.24%	22.56%	26.77%	31%	39%

*The measure is reported as an inverted rate [1 – (numerator/eligible population)]. A higher rate indicates appropriate treatment of children with URI (i.e., the proportion for whom antibiotics *were not* prescribed).

**The measure is reported as an inverted rate [1 – (numerator/eligible population)]. A higher rate indicates appropriate treatment of adults with acute bronchitis (i.e., the proportion for whom antibiotics *were not* prescribed).

MKP= Marketplace
Com= Commercial

¹Thorpe, K. E., Joski, P., & Johnston, K. J. (2018). Antibiotic-resistant infection treatment costs have doubled since 2002, now exceeding \$2 billion annually. *Health Affairs* 37 (2). doi: 10.1377/hlthaff.2017.1153

²Center for Disease Control Prevention. (2017). *Antibiotic Use in the United States, 2017: Progress and Opportunities*. Retrieved from <https://www.cdc.gov/antibiotic-use/stewardship-report/pdf/stewardship-report.pdf>

³National Committee for Quality Assurance (NCQA). HEDIS & Performance Measurement. Available at <http://www.ncqa.org/hedis-quality-measurement>

⁴Palms DL, Hicks LA, Bartoces M, Hersh AL, Zetts R, Hyun DY, Fleming-Dutra KE. Comparison of antibiotic prescribing in retail clinics, urgent care centers, emergency departments, and traditional ambulatory care settings. *JAMA Int Med*. 2018 Jul 16. doi: 10.1001/jamainternmed.2018.1632.

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