

# Children's Hospital Colorado combats antibiotic resistance with 'handshake stewardship'

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*Staphylococcus aureus* - Antibiotics Test plate. Credit: CDC

Recent research from Children's Hospital Colorado (Children's Colorado) has shown the effectiveness of a unique type of antimicrobial stewardship program in the fight against antibiotic (antiviral, antifungal and antibacterial) resistance. The research examined the impact a strategy known as "handshake stewardship" could have on the use of antibiotics in a freestanding children's hospital. This strategy was characterized by:

- A lack of the restriction and pre-authorization commonly found in antimicrobial stewardship programs
- A daily pharmacist-physician review of every inpatient antibiotic prescription, including dosages, type of medication and type of infection
- Daily rounding on inpatient floors by a pharmacist-physician team to monitor [antibiotic usage](#) and give advice in-person to every unit in the hospital that is using [antibiotics](#)

The program was dubbed "handshake stewardship" because of the personal contact, trust and sealing of deals associated with handshakes.

Led by Sarah Parker, MD, pediatric infectious diseases physician and medical director of the Antimicrobial Stewardship Program at Children's Colorado, the research retrospectively measured antibiotic use hospitalwide and by unit before, during and after the implementation of the handshake stewardship program to determine the effectiveness of such an approach. All antibiotics prescribed to inpatients between October 2010 and September 2014 were included in the review. The study found that [handshake](#) stewardship led to a 10.3 percent decrease in antibacterial use hospitalwide, a 12.1 percent decrease in antifungal use, and a 16.4 percent decrease in antiviral use, for an overall decrease in antimicrobial use of 10.9 percent hospitalwide. The study results were published in *The Pediatric Infectious Disease Journal*.

"Very few hospitals have a medical doctor involved in the day-to-day running of this kind of program," Dr. Parker says. "And very few programs review every single antibiotic prescription. However, the risks associated with antibiotics require that we find an effective way to limit their use. Not only do 30 percent of children who take antibiotics experience a side effect such as diarrhea, but antibiotics can also kill good bacteria in the body, which can lead to more serious illnesses down the line. And perhaps most compelling, according to the CDC, more than 23,000 deaths and \$20 billion in indirect health care costs are attributed to resistant bacteria in the United States each year."

"This type of stewardship also helps ensure the appropriate use of antibiotics - that is, that they are only used when needed, and that they are given at the right dosage for the right duration of time," continues Parker. "Ultimately, this leads to better patient outcomes."

Provided by Children's Hospital Colorado

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