

Conclusion. Our findings suggest that antibiotic exposure in the first year of life increases the risk of being diagnosed with asthma later in childhood. This is congruent with similar findings at the individual level in a prospective cohort of Canadian children that also points to a pathway through altered gut microbiota.

Disclosures. All authors: No reported disclosures.

1147. Improving Accessibility and Antibiotic Prescribing with an Enhanced Digital Antibigram

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Session: 139. Antibiotic Stewardship (Pediatric): Implementation in Hospitals
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Background. Institutional antibiograms play a key role in antimicrobial stewardship and may provide a venue for clinical decision support. Our institution recently transitioned our paper antibiogram to an enhanced digital antibiogram with antibiotic recommendations for common pediatric infections. The objectives of this study were (1) to improve the accessibility of our institutional antibiogram through a digital platform and (2) to improve trainee confidence when selecting empiric antibiotics by integrating clinical decision support.

Methods. The digital antibiogram was developed and evaluated at a tertiary children's hospital. The tool was developed iteratively over one year by our innovation and digital health accelerator with recommendations for empiric antibiotic selection provided by experts in pediatric infectious diseases (see Figure 1 for example). Usability pilot testing was performed with a group of ordering providers and the tool was released internally in October 2018. A paired pre- and post- implementation survey evaluated residents' perceptions of the accessibility of the paper vs. digital antibiogram and their confidence when selecting empiric antibiotics. Data were analyzed by Fisher exact test.

Results. During the 3 months after release, the digital antibiogram was accessed 1014 times with similar proportions of views for susceptibility data, dosing, and empiric antibiotic recommendations. Of the 31 pediatric residents who responded to both pre- and post- implementation surveys, only 59% had access to a copy of the paper antibiogram. Following release of the digital antibiogram, residents referred to antibiotic susceptibilities more frequently ($P < 0.05$, Figure 2) and were more frequently more confident when selecting the correct antibiotic dose ($P < 0.01$, Figure 3). See Figure 4 for dosing recommendation example.

Conclusion. Providing antibiotic susceptibility and dosing recommendations digitally improved accessibility and resident confidence during antibiotic prescribing. Our digital tool provides a successful platform for displaying the antibiotic data and recommendations that enable appropriate antibiotic use.

Figure 1. Empiric Antibiotic Recommendations for Orbital Cellulitis

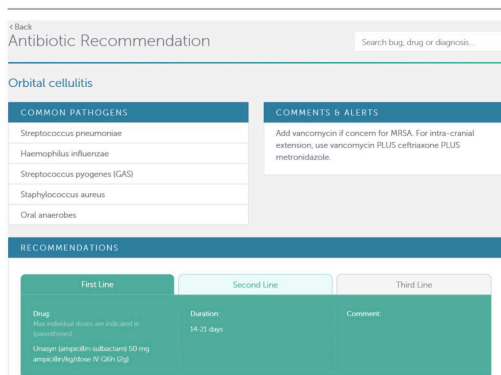


Figure 2.

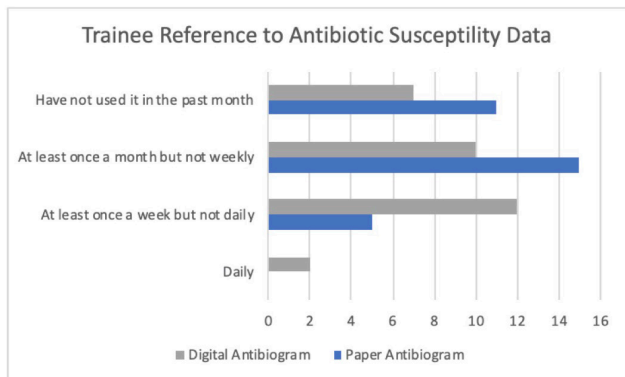


Figure 3.

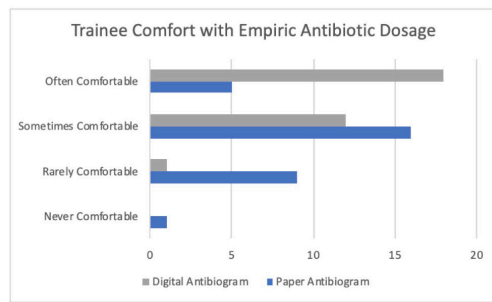
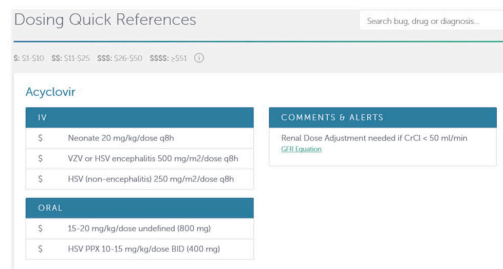


Figure 4. Dosing Recommendations for Acyclovir



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1148. Antimicrobial Stewardship Program at a Long-term Care Hospital for Severely Handicapped Children and Adults

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Background. Although antimicrobial stewardship program (ASP) is also recommended for a long-term care facility (LTCF), research on ASP in LTCFs is still limited. Our study was conducted at an LTCF offering chronic medical care for pediatric and adult patients with extensive medical needs since childhood. Our aim of this study was to evaluate the impacts of ASP in an LTCF.

Methods. A quasi-experimental study was conducted at Tokyo Metropolitan Fuchu Ryoiku Medical Center (250 beds) in Japan. The pre- and post-intervention periods were from April 2013 to March 2017 and April 2017 to March 2019, respectively. Periodic educational interventions were conducted throughout study period. ASP in post-intervention period consisted of mandatory consultation with infectious diseases service at an outside children's hospital for prescription of restricted drugs. Fluoroquinolones, cefepimes, carbapenems and vancomycin were listed as restricted drugs. Intravenous and oral antimicrobial use was calculated by day of therapy (DOT) per 1,000 patient-days. Interrupted time series analysis was used for level and trend change for pre- and post-intervention periods.

Results. Oral agents comprised 89% of the total antimicrobial use. Oral antimicrobials were decreased by 39% in post-intervention with significant level change ($P < 0.01$) and without trend change ($P = 0.61$) (Figure 1). Among oral antimicrobials, macrolides, fluoroquinolones and third-generation cephalosporins were decreased by 72% in post-intervention with significant level change ($P < 0.01$) and without trend change ($P = 0.42$) (Figure 2). Intravenous antimicrobials were decreased by 40% without level change ($P = 0.15$) and trend change ($P = 0.65$) (Figure 3).

Conclusion. Combining education and mandatory consultation with infectious diseases service for restricted drug enhanced in decreasing total oral antimicrobials at a LTCF.

