Provider Education and Rapid Antigen Detection Test Use in Private and Academic Pediatric Clinics

Steven Dahl
Children's Mercy Hospital, smdahl@cmh.edu

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Title:
Provider Education and Rapid Antigen Detection Test Use in Private and Academic Pediatric Clinics

Authors and Affiliations:
Dahl S¹, Hurley E², Lee B², Newland J³, Bradley-Ewing A², Donis-Miranda E², Pina K², Mackenzie A², Goggin K², Myers A¹.

¹Division of Pediatric Infectious Diseases, Children’s Mercy Kansas City, Kansas City, Missouri.
²Division of Health Services and Outcomes Research, Children’s Mercy Kansas City, Kansas City, Missouri.
³Division of Pediatric Infectious Diseases, Washington University School of Medicine, St Louis, Missouri.

Background:
Rapid antigen detection testing (RADT) is needed to differentiate Group A Streptococcal (GAS) pharyngitis from viral pharyngitis. Guidelines do not recommend RADT in patients with viral symptoms or in children < 3yo without GAS exposure. Reduction in unnecessary RADT use may impact inappropriate antibiotic use by decreasing prescriptions in children likely colonized with GAS. We examined the impact of guideline concordant education of appropriate RADT and antibiotic use in pharyngitis on providers’ (physician & APRN) use of RADT in an academic and private pediatric primary care clinic.

Methods:
Retrospective chart review of 1085 healthy children, age 1-5yo, seen in clinics between 9/2015-3/2019 (355 pre & 730 post education; 211 academic & 874 private). Education occurred in 3/2017. Cases selected had either complaint of sore throat, RADT, or diagnosis of GAS pharyngitis or pharyngitis. Data collected included presence of viral symptoms (e.g. cough, rhinorrhea, etc), RADT/GAS culture results, diagnosis, and prescribed antibiotics. RADT was deemed unnecessary for all children < 3yo without GAS exposure, in patients with ≥ 2 viral symptoms, or in patients ≥ 3yo without pharyngitis.

Results:
Overall RADT use decreased from pre to post intervention (72.1% vs 23.4% of patients, p= < 0.0001). Unnecessary RADT use decreased overall (50.4% vs 16.2%, p= < 0.0001), in all clinics (private: 56.2% vs 16.0%, p= < 0.0001; academic: 38.1% vs 17.4%, p= 0.0012), and with all providers (physician: 41.6% vs 18.3%, p= < 0.0001; APRN: 58.8% vs 14.1%, p= < 0.0001). Unnecessary RADT use decreased for children < 3yo (28.1% vs 7.4%, p= < 0.0001) and ≥ 2 viral symptoms (65.7% vs 16.5%, p= < 0.0001).

Conclusions:
Unnecessary RADT use decreased in the post-education period overall (34%), in children < 3yo (21%), and in patients with ≥ 2 viral symptoms (49%). Reductions were also seen in both academic (21%) and private (40%) clinics as well as with both physicians (23%) and ARPNs (45%). Limitations include lack of a control group and sample size variance by clinic. We observed positive trends in RADT reduction following provider education in private and academic settings, however further research including control and optimal sample size is needed to confirm any direct impact.