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

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Title:

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

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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.

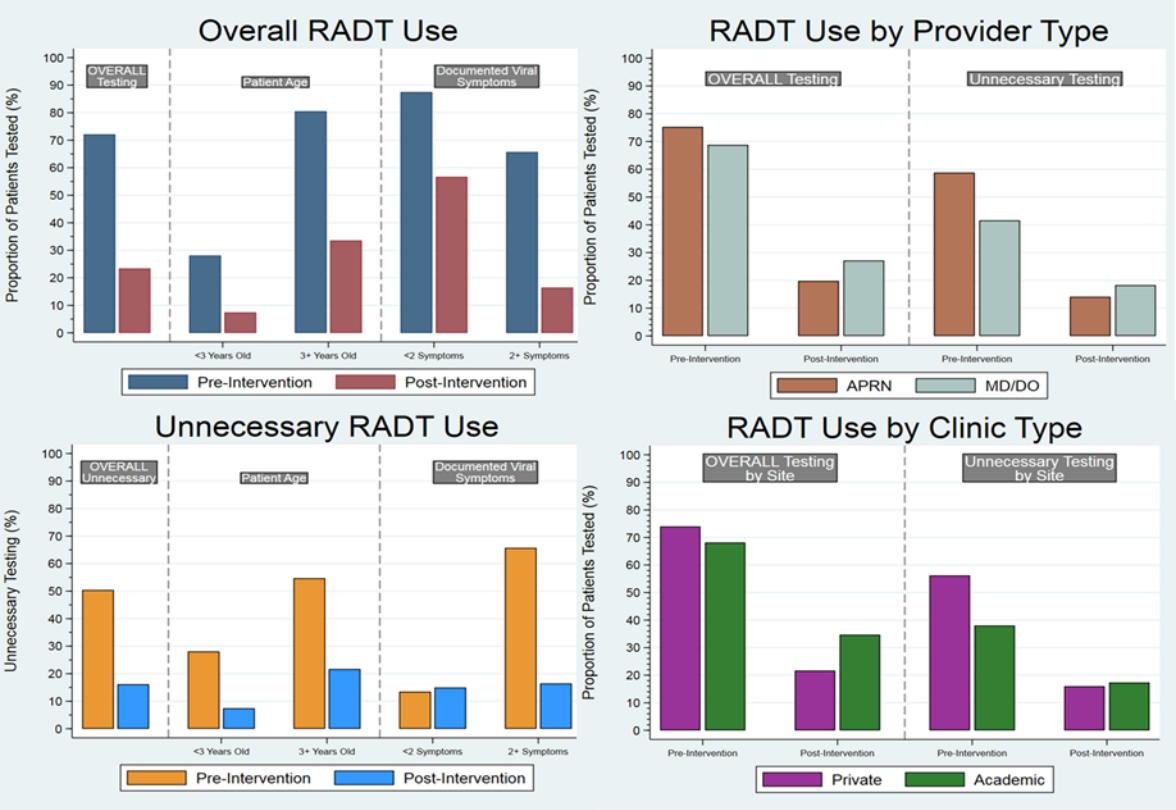
Results:

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.

Figure 1


Overall RADT Use
OVERALL Testing
Patient Age
Documented Viral Symptoms
Proportion of Patients Tested (%)
<3 Years Old
3+ Years Old
<2 Symptoms
2+ Symptoms
Pre-Intervention
Post-Intervention
RADT Use by Provider Type
OVERALL Testing
Unnecessary Testing
Proportion of Patients Tested (%)
Pre-Intervention
Post-Intervention
APRN
MD/DO
Unnecessary RADT Use
OVERALL Unnecessary
Patient Age
Documented Viral Symptoms
Unnecessary Testing (%)
Pre-Intervention
Post-Intervention
RADT Use by Clinic Type
OVERALL Testing by Site
Unnecessary Testing by Site
Proportion of Patients Tested (%)
Private
Academic