

Pertussis: Knowledge, Attitudes, and Practices (KAP) Among Georgia Pediatricians

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Abstract

Background: In 2010, 27,550 pertussis cases were reported nationally – the highest since 1959. GA reported one third the national rate, though the true rate is likely higher. To enhance surveillance, the GA Department of Public Health and the GA Chapter of the American Academy of Pediatrics surveyed pediatricians to assess their KAP about pertussis.

Methods: An online survey assessing physician KAP, perceived barriers to diagnosis, and practice characteristics was administered to members of the GA AAP. Frequencies and stratified analysis were conducted using SAS.

Results: Of the 115 respondents (10%), 71% believed clinical judgment alone was not sufficient for diagnosis. Only 66% were aware that immunity after infection is not life-long. 50% were aware that serology is not a reliable diagnostic method, while only 7% were aware that polymerase reaction (PCR) testing is not reliable nor is it commercially standardized (26%).

Pertussis testing was utilized by 85% with PCR most preferred. “Testers” were more likely to work in a busy practice (p=.048), more likely to report suspect cases (p=.003), and felt clinical judgment was inadequate for diagnosis (p=.002). “Testers” incorrectly perceived PCR as standardized and reliable, and both groups perceived length of time to obtain results and availability of supplies as barriers to culture, although these findings were not significant.

Conclusions: Outreach to pediatricians regarding timely reporting, use of laboratory testing, and interpretation of results is necessary. Improved collaboration between pediatricians and Public Health is needed to facilitate diagnosis and control of pertussis in Georgia.



Background

In 2010, 27,550 pertussis cases were reported in the United States, with 33 deaths – the highest reported number since 1959. Despite high vaccine coverage rates, reports of pertussis are on the rise. Although in 2010, only 247 pertussis cases were reported in GA – one third the national incidence rate (CDC, personal communication) the true rate of pertussis in GA is likely higher. In an effort to improve pertussis surveillance, the Georgia Department of Public Health (DPH) with the Georgia Chapter of the American Academy of Pediatrics (GA AAP) conducted a survey of pediatricians to assess their knowledge, attitudes and practices (KAP) about pertussis.

Objective

To identify aspects of pertussis diagnostic and treatment practices that may require further education with the goal of improving collaboration between Public Health practitioners and pediatricians in the control of pertussis in Georgia

Methods

- In late 2010, an online survey was made available to 1100 members of the GA Chapter of the AAP with email addresses on file
- 17 questions assessed pertussis KAP, perceived barriers to diagnosis, Tdap use, and practice characteristics
- Results were analyzed for respondents who accessed entire survey (missing responses were excluded)
- Respondents not in clinical practice were excluded from practice questions
- “Tester” and non-tester” categories were created based on consistent responses to two questions on use of pertussis laboratory testing
- Univariate frequency distributions were generated for each variable
- Bivariate associations were analyzed using Fischer’s Exact test. A two-tailed alpha level of 0.5 was considered significant

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Table 1. KAP Survey Correct Responses by Category

Questions	Correct Response	% Correct
General Knowledge		
Clinical judgment alone is sufficient for diagnosis of pertussis (n=114)	FALSE	71
Pertussis deaths could be greatly reduced if household contacts/caretakers of infants are vaccinated (n=114)	TRUE	96
Immunity after pertussis vaccination is lifelong (n=115)	FALSE	100
Immunity after pertussis infection is lifelong (n=115)	FALSE	66
Diagnostic testing		
Serology (IgM/IgG) is a reliable testing method to confirm a pertussis diagnosis (n=113)	FALSE	50
PCR is a reliable laboratory method to confirm a pertussis diagnosis (n=113)	FALSE	7
There is a standardized PCR test available for commercial laboratories (n=113)	FALSE	27
Public Health Reporting		
In GA pertussis is an immediately reportable notifiable disease (n=115)	TRUE	88
Do you notify the health department of a suspect pertussis case within 24 hours? (n=95) ^a	YES	32
Clinical Presentation		
5 month old infant with 2 DTaP vaccines, 1 week coryza, 3 days cough, no fever (n=115)	YES	25
10 year old patient with 5 DTaP presents with 3 week history of persistent cough (n=115)	YES	64
Tdap Policy		
Does your practice have a policy that offers Tdap booster at well child visits? (n=110) ^b	YES	90
Does your practice have a policy that offers Tdap booster at sports physical visits? (n=110) ^b	YES	87
^a excludes pediatricians who have not seen a suspect pertussis case, or are not currently in practice		
^b excludes pediatricians not currently in practice (2) and did not answer question (3)		

Figure 1. Characteristics of Pediatric Practices* (n=115)

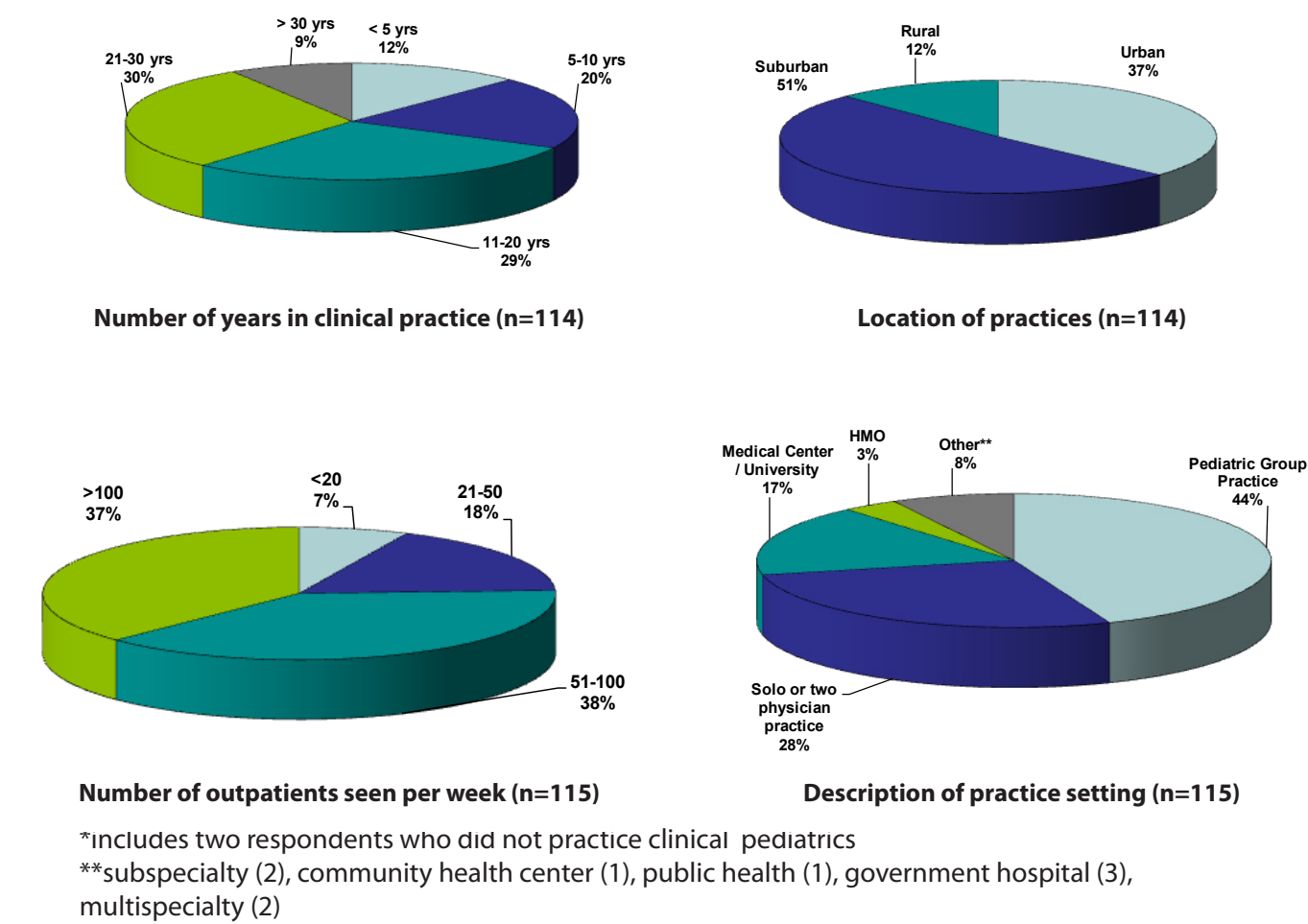
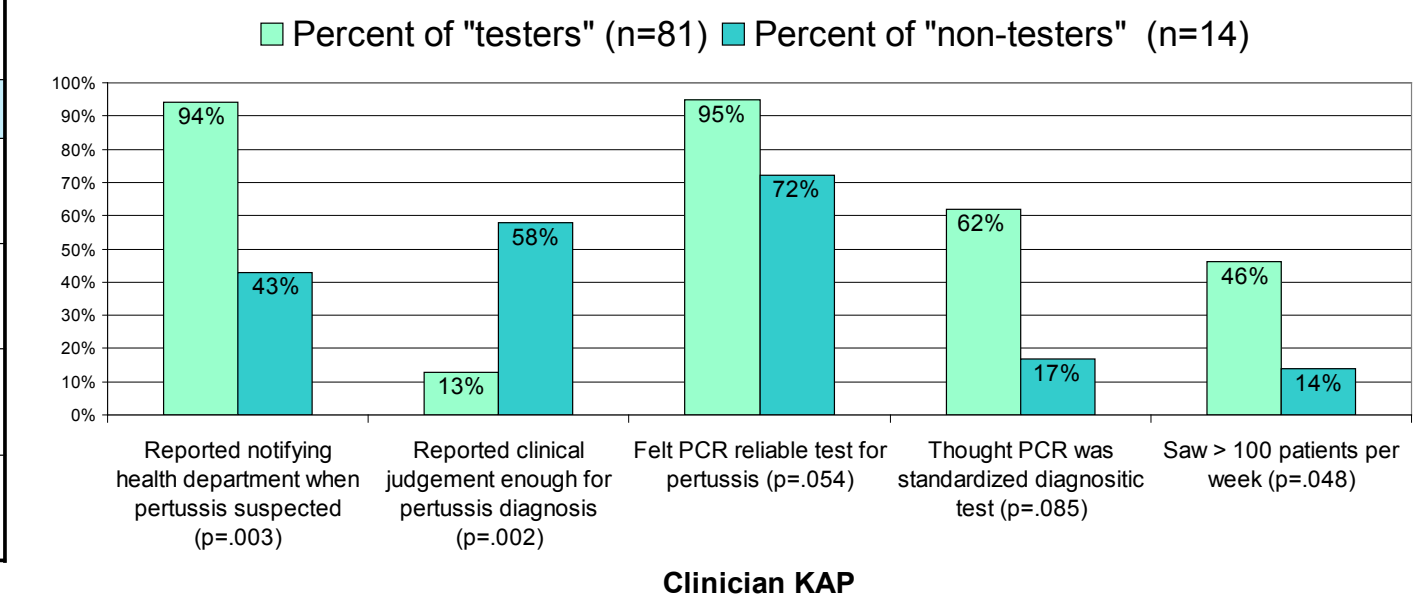


Figure 2. Notable differences between “testers” and “non-testers” for pertussis (n=95)^a



Results

Participant Characteristics (Figure 1)

- 115 respondents participated (10% response rate)
- Most had been in practice more than 10 years, saw more than 50 patients per week and practiced in a suburban setting as part of a group

Knowledge, Attitudes, and Practices (Table 1)

- Most clinicians agreed that clinical judgement alone was not sufficient to diagnose pertussis
- Only half were aware that serology is not a reliable testing method for pertussis diagnosis
- Few clinicians were aware that PCR testing is not a reliable method for confirming diagnosis and not standardized among commercial laboratories
- Although clinicians were aware that suspect pertussis is an immediately reportable disease many delayed reporting until laboratory results were obtained (up to 7 days)
- Many did not consider pertussis in the differential diagnosis of a child who was up to date with vaccinations but presented with pertussis-like symptoms
- Most had policies in place to administer Tdap boosters to eligible children who came in to clinic

Testing Practices (Figure 2)

- Most clinicians (“testers” - 85%) utilized diagnostic testing, and PCR was most frequently used (50%)
- “Testers” were significantly more likely to report suspect pertussis cases to public health, believe that clinical judgement alone was not enough for diagnosis, and work in busy practices
- Both groups perceived length of time to obtain culture results as a barrier to its use
- “Non-testers” perceived procedure and supplies needed for PCR testing as barriers to its use

Conclusions

- Outreach to pediatricians regarding timely reporting, use of laboratory testing, and interpretation of results is necessary
- Perceived barriers to testing may reflect the shortcomings of diagnostic tests for pertussis that are currently available
- Improved collaboration between pediatricians and Public Health is needed to facilitate diagnosis and control of pertussis in Georgia