RESEARCH ARTICLE

Barriers to Minimizing Respiratory Viral Testing in Bronchiolitis: Physician Perceptions on Testing Practices

Maria Z. Huang, MD,[a] Kyung E. Rhee, MD, MSc, MA,[b] Lauren Gist, MD, MPH,[c] Erin S. Fisher, MD, MHM[a]

ABSTRACT

OBJECTIVES: To assess pediatric providers' perceptions on viral testing and to determine barriers to minimizing respiratory viral testing (RVT) in bronchiolitis.

METHODS: A single-center, cross-sectional study was conducted and included 6 focus group discussions with pediatric providers. Questions were focused on identifying factors associated with obtaining RVT. Focus group discussions were transcribed verbatim and coded for emergent themes.

RESULTS: Clinicians report that they themselves do not typically obtain RVT in otherwise healthy patients with bronchiolitis. The most commonly cited reasons for not obtaining RVT is that it does not aid medical decision-making and that it is used as an educational opportunity for trainees. However, clinicians tend to obtain RVT when they are directed by another clinician, when they desire reassurance, when RVT is perceived as "doing something," and when there are knowledge gaps on institutional cohorting policies.

CONCLUSIONS: Clinician medical decision-making is influenced by multiple internal and external factors. Intended behaviors do not always correlate with actual actions because of these influences. Developing interventions in which some of these factors are addressed may help reduce unnecessary RVT among healthy patients with bronchiolitis and could be considered for broader application beyond this patient population.

[a]*Divisions of Pediatric Hospital Medicine,* [b]*Academic General Pediatrics, and* [c]*Developmental-Behavioral Pediatrics, Department of Pediatrics, School of Medicine, University of California, San Diego, San Diego, California*

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Address correspondence to Maria Z. Huang, MD, Division of Hospital Medicine, Rady Children's Hospital-San Diego, 3020 Children's Way, MC 5064, San Diego, CA 92123. E-mail: mzhuang@rchsd.org

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Bronchiolitis is a leading cause of hospitalization among infants and young children,[1,2] with ~120 000 children admitted to the hospital annually[3] and another 181 000 visiting the emergency department (ED).[4] The overuse of medical tests and treatments in this high-volume diagnosis contributes >$1.7 billion[5] to the >$750 billion in national health care expenditure waste annually.[6,7] Since 2006, American Academy of Pediatrics (AAP) clinical practice guidelines (CPGs) have recommended refraining from viral testing in otherwise healthy children.[8,9] Despite these recommendations, respiratory viral testing (RVT) rates remain elevated.[10,11]

Quality improvement efforts to increase adherence to national pediatric bronchiolitis management guidelines[9] and limit unnecessary tests and interventions have revealed reductions in the use of inhaled bronchodilators,[11–13] steroids,[12,13] and imaging.[12,13] However, despite the lack of evidence to reveal its utility in changing management, preventing coinfection, or predicting outcomes,[1,14–17] the frequency of RVT remains unchanged.[11] Using Pediatric Health Information System data, the authors of a recent study reported rates of 45%,[10] with even higher rates reported in a multicenter collaborative study.[11] These rates are at odds with recommendations by the AAP and others[9,11] who advocate against routine testing. They are also far from the benchmark goal proposed by Parikh et al[10] of testing in <1% of cases. Authors of some studies report that resources in the electronic medical record, such as diagnosis-specific order sets and decision support tools, have the potential to promote appropriate use of resources.[18,19] Despite implementation of these tools, the lack of success in reducing RVT in bronchiolitis suggests that process alone is inadequate to change workflow, habits, or behaviors.

Gill et al's[17] comprehensive overview on viral testing in pediatric respiratory illness presented presumed reasons clinicians give for obtaining RVT. These reasons include physician desires to minimize further evaluation, reduce further unnecessary medical interventions, facilitate appropriate medication initiation or discontinuation, and obtain prognostic information. However, to our knowledge, no studies have directly elicited clinician views on the driving factors for obtaining RVT in the setting of bronchiolitis. Our goal was to explore provider attitudes and perceptions about RVT in bronchiolitis for children who were hospitalized and previously healthy and describe motivators and barriers to refraining from testing. These results may be used to identify future areas for targeted intervention.

METHODS

A qualitative study in which focus group methodology was used was conducted from June 2016 to September 2016 among clinicians who worked at a freestanding children's hospital in California with a catchment of >800 000 children and 17 000 annual admissions. Annual admissions for bronchiolitis ranged from 350 to 500 (2014–2017 data), with 95% admitted to the nonintensive care setting. Our institution implemented a bronchiolitis clinical pathway in 2006 with guidance to not perform RVT except for the following reasons: to document respiratory syncytial virus (RSV) prophylaxis failure, if the results would prompt the discontinuation of antibiotics in a neonate with fever, or in cases of severe distress or respiratory failure. RVT options included polymerase chain reaction–based rapid RSV, rapid influenza, and a panel that included the following viruses: adenovirus, influenza A-H1, influenza A-H3, influenza A-H1N1, influenza B, RSV A, RSV B, parainfluenza 1, parainfluenza 2, parainfluenza 3, human metapneumovirus, and rhinovirus. RVT has not been required for patient placement (cohorting) for nearly 10 years. RVT rates have varied over the past several years, have ranged from 22% to 53%, and have revealed no consistent trend.

Recruitment e-mails were targeted at those who were most likely to provide direct care to children >2 months of age admitted to the hospital with bronchiolitis and who had the authority to order RVT. These groups included pediatric resident physicians, hospitalist nurse practitioners, pediatric hospitalists, and ED physicians. Recruitment for hospitalists started in June, and recruitment for ED physicians and residents started in July. Recruitment e-mails reached ~120 providers. Interns (postgraduate year 1) were excluded because of an assumption that they may lack familiarity with and awareness of CPGs for bronchiolitis at the beginning of the academic year or may possibly feel uncomfortable with revealing true personal practices with more experienced residents; in addition, their orders are supervised by their senior resident, and thus, an RVT order that is not canceled would imply agreement with the order. All providers who responded to the e-mails were allowed to participate. Focus group participants were assembled on the basis of their practice group so as to minimize the effect of differences in clinical practice culture that could bias subject responses. Resident physicians were placed in 1 of 2 resident-only groups, and pediatric hospitalists and hospitalist nurse practitioners were placed in 1 of 2 groups. ED physicians were divided into those who were pediatric emergency medicine–trained and those who were not. This study was approved by the institutional review board.

Of the different qualitative methods available, we chose focus group methodology in which the researcher functions as a facilitator of the discussion between participants rather than between the researcher and the participants as is done with structured interviews.[20] A focus group guide, including probing questions, was developed, reviewed, revised, and agreed on by the study team. The format, order, and question structure of the guide was informed by research team members with qualitative research experience and published best practices.[21] The question content was informed by published literature.[15,17] The focus group guide can be found in Table 1.

Focus groups were scheduled when ≥4 recruited individuals confirmed their attendance for a session. Out of respect for our participants who were clinicians with restricted schedules, we scheduled each focus group to allow for up to 60 minutes of discussion; however, groups were concluded early if participants did not have further comments. Before the start of each

TABLE 1 Clinician Focus Group Discussion Guide

What influences your decision in obtaining RVT in a child with suspected bronchiolitis?
• Does it change medical management (antimicrobial agents, imaging, and expected LOS)?
• Does parental pressure or PCP pressure influence your decision?
• Does discomfort in the testing process influence your decision?
• Do results change your comfort with or confidence in the diagnosis?
• Does performing RVT provide you with a sense of doing something versus doing nothing?
• Do you obtain RVT out of curiosity or to identify a pathogen?
• Is it used as a teaching tool?
• Is it used for health care system expectations (patient placement, cohorting, infection control practices, and admission decisions)?
What do you think are the benefits of obtaining RVT?
What do you think are the risks or disadvantages of obtaining RVT?
If you decide not to obtain RVT, are there challenges to that decision?
How do you think decisions made by your division, group, and/or team regarding RVT influence your decision to test or not to test?
Do you know of any guidelines or hospital policies pertaining to RVT in bronchiolitis?
• Do you think nursing staff, the infection control team, or others outside of your group have specific policies regarding RVT?

LOS, length of stay; PCP, primary care provider.

focus group, clinicians participated in the informed consent process and completed a brief demographics survey. Focus groups were audio recorded for transcription purposes. Physician researchers trained in qualitative methods facilitated the focus groups. A nonhospitalist physician (K.E.R.) facilitated the focus groups with pediatric hospitalists. A hospital medicine fellow (M.Z.H.) facilitated the focus groups with the ED physicians and residents. The primary facilitator was assisted by a second facilitator, who observed body language, noted group responses, and asked probing questions if the primary facilitator or participants did not elaborate on specific answers. The groups were requested to focus on decision-making used in uncomplicated cases of bronchiolitis. Although participants did discuss cases involving infants <2 months of age, patients with complex chronic illness, patients with an unknown disease diagnosis, and patients with a complicated or prolonged course of illness in which use of testing may be influenced by different factors, the reasons for using RVT in these populations were beyond the objective of our study. If a discussion was diverted and concentrated on nonbronchiolitis cases, the facilitator redirected physicians to cases of uncomplicated bronchiolitis. Frequently, participants redirected themselves. Comments on these more complicated cases were not featured in this article.

All focus groups were conducted in English, and the discussions were transcribed verbatim by 1 investigator (M.Z.H.). Transcripts were uploaded into qualitative data analysis software ATLAS.ti (for Macintosh) version 1.6.0 (Scientific Software Development GmbH, Berlin, Germany) and used to organize codes. Transcripts were initially reviewed by 1 investigator (M.Z.H.), and a subset of available transcripts were reviewed by a second investigator (L.G.) independently. During the initial review, preliminary code definitions were created. The investigators then met to discuss additions and modifications to the codes as well as to come to an agreement on the first iteration of the codebook. After more focus group discussions and transcriptions were completed, the 2 investigators continued to code the transcripts independently. They met at 3 separate intervals to compare coding application, discuss new codes and definitions that revealed themselves, and reach consensus on coding differences. After each interval, transcripts were reviewed again and recoded with the revised codebook. After consensus was reached on the final coding framework, the authors met to organize codes into themes. Emerging themes were identified via an inductive thematic analysis.[22] We used a primarily inductive approach, but a deductive component was included because of existing known reasons from the literature that providers give for ordering RVT.[15,17] The authors met throughout the analysis to examine the suggested themes, provide further suggestions, and revise the themes as new concepts emerged. Demographic information was analyzed by using descriptive statistics.

RESULTS

Six focus group discussions were conducted, each consisting of 4 to 7 participants. A total of 34 providers participated; sample characteristics are presented in Table 2. Medical practice experience among the providers ranged from second year of residency to >20 years postresidency training. All focus groups were easily able to explore the questions from the focus group guide and did not have further additions to each discussion beyond 60 minutes. We reached thematic saturation after the fourth focus group. However, we continued gathering data through the sixth group to evaluate for potential emerging themes.

The majority of providers stated that they do not obtain RVT in otherwise healthy children with suspected bronchiolitis. However, there were several conditions under which they believed other providers would obtain RVT.

Major Reasons for Not Obtaining RVT

Providers overwhelmingly stated that it was not their personal practice or the personal practice of those in their specific clinician group type (resident, emergency medicine attending, or hospitalist) to advocate for obtaining RVT in otherwise healthy children >2 months of age with bronchiolitis. Reasons provided to support this practice included the following: RVT does not change overall management, the decision to not test can be used as an educational opportunity to teach trainees about clinical diagnosis and management as well as to discuss high-value care, the high cost of testing, and the risks to patients. Representative comments are noted in Table 3.

> *If it's not going to change management, it's super-expensive, and it [hurts] for the kids, there's no benefit.*
>
> Resident 6

Major Reasons for Obtaining RVT

Key themes emerged from clinician responses (outlined in Table 4) and are summarized in decreasing frequency here.

TABLE 2 Focus Group Participant Demographics, $n = 34$

	n (%)
Primary area of practice	
Pediatric hospitalist	11 (32)
Pediatric ED	11 (32)
Pediatric residency training	12 (35)
In residency	12 (35)
Years of practice postresidency	
0–3	7 (21)
4–5	5 (15)
6–10	2 (6)
11–15	2 (6)
16–20	5 (15)
>20	1 (3)
Fellowship trained	
Yes	13 (38)
No	21 (62)
Have children	
Yes	16 (47)
No	18 (53)
Sex	
Male	10 (29)
Female	24 (71)

RVT Is Obtained by or Directed by "Other" Clinicians

Although nearly all participants recognized that RVT is not required for the clinical diagnosis or management of bronchiolitis and that they themselves were unlikely to initiate testing, they stated that they were often asked by other clinicians to order the test or that it had already been performed by another clinician.

> *Most of us here…don't actually order [RVT]. [It's most commonly] ordered overnight by the residents or…by [the] ER.*
>
> Hospitalist 4

> *If you're going to ask what influences my decision to test, it's the inpatient [physician] asking for it.*
>
> ED physician 5

When asked whether the request came from trainees or attending physicians, the participants responded that all levels of providers were making the request. Some trainees stated that they challenged attending physicians when asked to order RVT for patients when there was no clear benefit. ED attending physicians also stated that when an accepting inpatient attending requested RVT, they typically did not challenge the request. Less frequently, physicians reported being asked about obtaining testing from nonphysician providers, such as nurses, but they rarely felt pressured into obtaining testing by these providers.

> *I don't find that nurses or RTs [respiratory therapists] and other staff members, infection control, etc in any way challenge us whether we test or not, which is nice.*
>
> Hospitalist 11

RVT Provides Reassurance or Validation of a Diagnosis, Assuages Provider Self-doubt

Most clinicians discussed that the lack of training may contribute to one's comfort level with a clinical diagnosis. Participants suggested that pediatric interns and adult-trained emergency medicine physicians may have lower comfort levels with young children with bronchiolitis and therefore obtain RVT to reassure themselves of the diagnosis.

> *It does provide some reassurance, so I definitely think that is a legitimate reason to point you more towards using it.*
>
> Resident 5

Ordering RVT Is Easy and Provides the Perception of "Doing Something"

Some providers reported that the lack of hard-stop barriers or consequences to testing makes ordering RVT easy. Clinicians perceived testing as doing something. Despite managing patients with supplemental oxygen, nasal suctioning, and intravenous fluids, some providers did not feel they were providing enough to the patient.

> *Sometimes I do want to order that test just to do something because I'm not doing anything but oxygen and hydration otherwise.*
>
> Resident 12

RVT Could Change Medical Management

Another reason cited for obtaining RVT was the potential for the result to change medical decision-making, namely the potential to discontinue an antibiotic that was already started or to diagnose and manage influenza.

However, most clinicians linked these motivations to children with complex or chronic medical conditions or to infants in the <2-month-old age group with fever. These reasons were quickly refuted by clinicians for patients who were otherwise healthy. Clinicians stated that the course of illness and physical examination were more likely to help them decide whether a bacterial infection was present or had evolved and whether they suspected and would treat influenza. Many also stated their lack of trust in the test and queried whether a test result would lead to cognitive bias and therefore be counterproductive to medical management.

> *Most of my viral testing is done in a different population of kids: children that are very sick and it's not clear that they have a virus. You know they might just have fevers for a prolonged period or they're really medically complex. Those are the kids I'd generally get testing for. And the bronchiolitics, even the ones where you're not totally sure, I try to avoid it unless it's really necessary.*
>
> Hospitalist 7

Uncertainty Regarding Institutional Policies on Cohorting

Many physicians, even the most experienced, expressed uncertainty regarding whether RVT was required for inpatient cohorting.

> *At least from what I've been told, you need it for cohorting [when assigning inpatient beds].*
>
> ED physician 5

Parental Desire to Have a Viral Label

Parental desire for a viral name for their child's illness was occasionally mentioned as a reason to obtain RVT. Most clinicians felt confident in explaining their reasoning

TABLE 3 Major Reasons Described by Providers for Not Obtaining RVT

Themes	Representative Quotes
Medical management	
RVT does not change medical management	• "I just find a lot of the time it doesn't really help me with my clinical decision-making" (hospitalist 4). • "The test may be negative, and it still wouldn't change what we do because we'd just assume it was a different virus that we don't know the name of" (hospitalist 7).
Educational	
The decision not to test is used as an educational opportunity for trainees	• "We like to educate them not to obtain the screen unless it's going to change their management" (hospitalist 11). • "I see the decision used as teaching tool often. We've made this clinical diagnosis; this is not likely to change what we're doing" (resident 12).
Cost	
RVT is expensive	• "Cost is 1 thing I definitely take into mind when I'm thinking about obtaining RVT. I'd say that it's inhibitive" (hospitalist 5). • "The respiratory viral panel's not without its costs. It's an expensive test" (ED physician 5).
Patient risks	
Obtaining the specimen can be uncomfortable	• "It's not really beneficial to the patient and…to have your nose swabbed…it's not really comfortable" (hospitalist 4).
Test results can lead to premature closure on a diagnosis	• "One risk of the test is—let's say it comes back positive—we tend to sort of narrow down our differential diagnoses based off of our testing, and I can imagine some cases where having a positive test may lead you down the wrong direction" (ED physician 8).
Negative results could decrease families' trust in providers	• "It's only going to test for those handful of things, and if it's negative, then you have parents' trust issues" (hospitalist 1).

for not obtaining testing and did not consider parental pressure as a major barrier to CPG-appropriate care. However, some physicians reported obtaining RVT to appease adamant parents.

> *I think some families like to know, especially the higher education families who just want to know answers. They're sick of hearing it's just another virus and they can't understand why some viruses land kids in a hospital and some viruses just give a run-of-the-mill cold.*
>
> Resident 8

> *Parents will sometimes challenge you…the majority of the time, just explaining the procedure of the test, that it really doesn't change anything I'm going to do, is enough to compel them not to pursue it any further.*
>
> ED physician 9

DISCUSSION

The goal of this project was to identify motivators for obtaining RVT in otherwise healthy children with bronchiolitis. Although most providers supported the idea that RVT was not necessary in bronchiolitis diagnosis or management, they still obtained RVT in certain circumstances and cited a desire for reassurance and to do something. It was also stated that testing occurred because other colleagues were requesting it and because of uncertainty regarding cohorting policies. It is interesting to note that although providers stated that they did not obtain RVT in otherwise healthy children, 22% to 53% of these patients had RVT ordered during hospitalization. In this project, we identified a mismatch between providers' stated personal RVT ordering practices and site RVT frequency. Importantly, ordering RVT was linked not only to perceived family or colleague pressures but also to perceived inaction when there is lack of testing.

Barriers to evidence-based medical decision-making range from internal factors (such as lack of agreement, awareness, or ability to align personal practice to CPGs) to system barriers (ie, practice-site culture or norms and organizational resources) or hospital-wide objectives.[18,23,24] There are a few but growing number of studies that are focused directly on the internal human factors related to medical decision-making.[25,26] Not surprisingly, when examining human decision-making processes, the authors of these studies demonstrate that intention and actual behavior do not always correlate. Sheeran[27] suggests that this inconsistency is influenced by whether the action is an isolated or single action versus an overall goal and whether an individual has control over the behavior. Intentions are more likely to predict behavior in isolated actions than in larger goals.[27] In caring for a child who is hospitalized with bronchiolitis, there are many factors contributing to a successful hospitalization. A clinician is likely to view a successful hospitalization as an overall goal. Therefore, the decision to obtain or not to obtain RVT would be just 1 action in a series of decisions and actions a clinician makes to achieve a successful hospitalization. As such, a provider's intentions for a single action (in this case, not to order RVT) may not necessarily be actualized. A conceptual model that includes shared decision-making with families to explicitly define a successful hospitalization could potentially be created. Directing care away from RVT would include using outcomes data as well as discussing value and harm with providers and families.

Providers' feelings that their decision-making was dictated by others, (ie, by other providers and by families) reveals the idea of "constrained autonomy,"[28] in which one perceives his or her volition to be restricted by external influences. Clinicians in our study sometimes refrained from directly challenging each other when there were disagreements on obtaining RVT, preferring to avoid potential conflict. The handoffs that

TABLE 4 Major Reasons Described by Providers for Obtaining RVT

Themes	Representative Quotes
RVT is obtained by or directed by other clinicians	• "[I]f it's the hospitalist asking, or 1 of the units asking for this test, I just do it. I don't fight back" (ED physician 3). • "[T]he biggest area where this gets ordered is either in the ER or by trainees on the floor" (hospitalist 1). • "I think a lot of times when I talk to the outside emergency departments, they're mostly adult providers. And so they always have some kind of uncertainty as to what is actually going on. So I find that they feel justified in getting that test" (hospitalist 8). • "…attendings. They just like to know" (resident 8).
RVT provides reassurance or validation of a diagnosis and assuages provider self-doubt	• "A typical benefit I see is just validating what you see clinically" (ED physician 2). • "I guess it's a reassurance more than anything" (resident 12). • "Outside EDs…have immediate gratification on the answer, and then when they call to admit the patient, they've got the diagnosis" (hospitalist 11).
Ordering RVT is easy and provides the perception of doing something	• "I remember when I was early in training…this child has X, Y, Z. Let's order, this, this, this, and this. It's very easy to do because you can" (ED physician 10). • "I think it's very difficult to not send a test that you know that you can to find out what's wrong with the patient. …There's a test available for the illness, why not use it?" (hospitalist 11). • "Sometimes it's not as well thought out—won't change anything—but [there's] a lot of self-anxiety… [and] doing something is better than doing nothing" (resident 7).
RVT could change medical management[a]	• "I guess a lot of people tend to order the viral panel, saying, 'It makes myself feel better that I can withdraw all the antibacterial therapies'" (resident 8). • "People will empirically slap on antibiotics and when they get that viral testing, it kind of reassures them that maybe they can stop the antibiotics or stop them sooner" (hospitalist 10). • "If there is suspicion for influenza, [you] would be more likely to test because if you document influenza, you'd be more likely to treat" (resident 10).
Uncertainty regarding institutional policies on cohorting	• "If the resident isn't the one requesting it, it might be the charge nurse who's telling us they need it for cohorting. But I don't know. Maybe it's an urban legend. Maybe they actually don't need it" (ED physician 5). • "The contact precautions thing, I don't think we actually know super well, but some of the policies it sounds like people interpret differently" (resident 9). • "Do you actually use it for cohorting…?" (ED physician 7).
Parental desire to have a viral label	• "Most of the time, if you explain to them [parents] why it's not being done, they're fine with not having it done if it doesn't change anything" (resident 11). • "I feel like I can explain to them why we're not doing it and usually talk them out of wanting it once they understand that it's painful and it's not going to change the management" (hospitalist 11). • "If a parent really wants it…I don't think it's a battle worth fighting. I would just order it in that case, which does happen on occasion" (hospitalist 11).

ED, emergency department.

[a] Medical management reasons for RVT were later refuted during the focus group discussions (see text).

occur between different clinicians, fear that a clinical diagnosis needs a positive test result to be viewed as legitimate, and desire to avoid potential conflict could contribute to acting counter to one's initial intention. The perception that some other provider is directing RVT also conveys the concept of "tribalism" in medicine,[29] in which providers can find comfort in attributing unnecessary testing to someone else instead of scrutinizing their own practice.

In addition, some clinicians identified internal influences, such as fears or knowledge gaps, as reasons for ordering RVT. These clinicians felt reassured if an RVT result supported their diagnosis and believed they were doing something for their patients. It is not completely clear why purposeful inaction results in the discomforting feeling of providing inadequate care. Certainly, American health care and its payment models have been predicated on doing more rather than less.[30] Despite recent focus on high-value care and cost consciousness in a system that historically has not discouraged testing, ordering RVT may still feel easy, may help relieve provider anxiety, and may provide a sense of doing something.

A conceptual model in which proactive engagement in discussions between providers is used in a purposeful way before ordering testing may help to curb testing. If testing is truly desired, an electronic ordering system could be used to request further information regarding the directing or ordering clinician so that we can better identify who is truly directing testing. From there, further studies could be undertaken to determine if there are specific groups or individuals who may benefit from targeted education. Clinical decision support tools within a bronchiolitis clinical pathway (or directly in an order set) could also aid with education and normalize preferred practices.

To our knowledge, there are no studies on the positive or negative cognitive consequences of obtaining RVT or of its results. Unlike the use of bronchodilators or steroids, for which there are studies to support their ineffectiveness in managing bronchiolitis,[31,32] the impact of RVT in bronchiolitis, outside of its financial cost, is

largely unknown. Unnecessary testing of any kind, including RVT, can have deleterious impacts on individual and system levels. For the child and family, obtaining a sample for testing (the nasal swab or wash for RVT) can be uncomfortable and distressing. A negative test result may lead to parental frustration or anxiety; a positive test result may lead to premature closure on a diagnosis. At the systems level, unnecessary testing can promote the continued habitual behavior of overuse[19] as well as lead to further testing that may also be unnecessary.

Although the AAP CPG recommends not obtaining RVT in otherwise healthy children with bronchiolitis, the potential unquantifiable benefit in doing so could contribute to clinicians continuing to obtain it. For example, knowing what virus is causing the illness may provide the clinician with the perception that he or she will be better able to prognosticate a child's duration or severity of illness and therefore have positive effects on the families' trust and engagement during hospitalization. Having a virus name attached to a bronchiolitis diagnosis may aid with parental anxiety and enhance the provider-family relationship. Future studies on parental perceptions of RVT in bronchiolitis could help to inform pediatricians on the families' needs during diagnosis and hospitalization.

Although this study provides insight into current behaviors regarding RVT, there were several limitations. This study was conducted at a single academic institution with 3 practice group types and may not be generalizable. It is possible that interns who have the ability to order RVT would have offered different perspectives. Responses were provided by a convenience sample of those individuals who were willing, able, and interested in participating. The low response rate of invitees may be a limitation because other ideas or themes held by nonparticipants may not have been captured. The focus groups were facilitated by researchers who may have been known to the participants, and this may have influenced the responses. The focus group guide was not piloted; however, the participants did not require reframing or clarification of the questions, suggesting that the questions were easily understood.

CONCLUSIONS

Although providers reported that they do not need RVT results to diagnose and manage bronchiolitis, there were many reasons why they continued to do so. These reasons included feelings of constrained autonomy, need for reassurance or validation, and personal knowledge gaps on institutional policies. Addressing the gap between intention and behavior in medical decision-making is important for targeting interventions at reducing unnecessary testing, not only in the setting of bronchiolitis but also perhaps for other diagnoses as well. With our results, we suggest that there may be a role for more collaborative communication between providers when making clinical decisions, for more targeted clinical decision support tools, and for more formalized education on system polices. Future studies are needed to help clarify whether these interventions could change practice and whether there are any benefits to RVT (to both families and providers) that would warrant their ordering.

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