tions. However, there are no gold standards for detection of respiratory viruses to which both conventional tests and real-time PCR can be compared.[3]

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REFERENCES

1. Lambert SB, Allen KM, Druce JD, et al. Community epidemiology of human metapneumovirus, human coronavirus NL63, and other respiratory viruses in healthy preschool-aged children using parent-collected specimens. *Pediatrics.* 2007;120(4). Available at: www.pediatrics.org/cgi/content/full/120/4/e929
2. Kleines M, Scheithauer S, Rackowitz A, Ritter K, Häusler M. High prevalence of human bocavirus detected in young children with severe acute lower respiratory tract disease by use of a standard PCR protocol and a novel real-time PCR protocol. *J Clin Microbiol.* 2007;45(3):1032–1034
3. van de Pol AC, van Loon AM, Wolfs TMF, et al. Increased detection of respiratory syncytial virus, influenza viruses, parainfluenza viruses, and adenoviruses with real-time PCR in samples from patients with respiratory symptoms. *J Clin Microbiol.* 2007;45(7):2260–2262

doi:10.1542/peds.2007-3356

In Reply.—

We thank Pilger and Cantarelli for their comments on our article. We agree that, as with all observational studies, ours had potential bias issues that may limit interpretability. The job for readers is to assess to what extent such biases invalidate the reported results.

The reference used to highlight potential issues with different specimen types was a study conducted on a variety of specimens from a relatively narrow population: children hospitalized with severe acute lower respiratory tract disease.[1] In our opinion, there is a lack of data in the published literature on the broad range of community-managed acute respiratory illnesses (ARIs). For this reason, one of the aims of our study was to assess the utility of the relatively noninvasive, parent-collected nose-throat swabs. Bronchoalveolar lavage and tracheal secretions are too invasive and not suitable for a study that examines mostly upper respiratory tract disease. We feel that in community-based studies, even less invasive tests may introduce more bias (because of underreporting of ARI episodes) than they prevent if they require a disruptive home visit for collection. Any underestimation of virus-specific rates caused by using nose-throat swabs is likely to be small; the proportion of ARIs in our study that tested positive for any virus (74%)[2] fell within the range of recent home-visit studies that used polymerase chain reaction (PCR) for diagnosis and nasopharyngeal aspirates (69%)[3] or nasal lavage (83%).[4]

ARIs that require specimen collection and impact diary completion were identified in our study by parents using a simple and sensitive symptom-based algorithm.[2] This method has been used in a phase III influenza vaccine-efficacy study[5] and by us in a pilot study.[6,7] Parents were not required to classify symptom severity but, rather, were asked to merely identify daily presence or absence. In a poststudy questionnaire (response rate: 78%), parents in our study were asked to nominate the most difficult study procedure: keeping the daily symptom diary was nominated by only 11% of respondents.

We agree that real-time PCR, used to identify human metapneumovirus and human coronavirus NL63 in our study, is likely to be more sensitive that the conventional PCR method used to identify other viruses, but false-positive results are likely to be uncommon with either method.[8] Therefore, the use of real-time PCR is unlikely to overestimate the presence of human metapneumovirus and human coronavirus NL63, but conventional PCR may lead to an underestimation of the role of the other viruses.

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REFERENCES

1. Kleines M, Scheithauer S, Rackowitz A, Ritter K, Häusler M. High prevalence of human bocavirus detected in young children with severe acute lower respiratory tract disease by use of a standard PCR protocol and a novel real-time PCR protocol. *J Clin Microbiol.* 2007;45(3):1032–1034
2. Lambert SB, Allen KM, Druce JD, et al. Community epidemiology of human metapneumovirus, human coronavirus NL63, and other respiratory viruses in healthy preschool-aged children using parent-collected specimens. *Pediatrics.* 2007;120(4). Available at: www.pediatrics.org/cgi/content/full/120/4/e929
3. Kusel MM, de Klerk NH, Holt PG, Kebadze T, Johnston SL, Sly PD. Role of respiratory viruses in acute upper and lower respiratory tract illness in the first year of life: a birth cohort study. *Pediatr Infect Dis J.* 2006;25(8):680–686
4. Legg JP, Warner JA, Johnston SL, Warner JO. Frequency of detection of picornaviruses and seven other respiratory pathogens in infants. *Pediatr Infect Dis J.* 2005;24(7):611–616
5. Belshe RB, Mendelman PM, Treanor J, et al. The efficacy of live attenuated, cold-adapted, trivalent, intranasal influenzavirus vaccine in children. *N Engl J Med.* 1998;338(20):1405–1412
6. Lambert S, O'Grady KA, Gabriel S, Carter R, Nolan T. The cost of seasonal respiratory illnesses in Australian children: the dominance of patient and family costs and implications for vaccine use. *Commun Dis Intell.* 2004;28(4):510–516

7. Lambert SB, O'Grady KF, Gabriel SH, Nolan TM. Respiratory illness during winter: a cohort study of urban children from temperate Australia. *J Paediatr Child Health.* 2005;41(3):125–129
8. Ratcliff RM, Chang G, Kok T, Sloots TP. Molecular diagnosis of medical viruses. *Curr Issues Mol Biol.* 2007;9(2):87–102

doi:10.1542/peds.2007-3386

Perianal Abscesses

To the Editor.—

Christison-Lagay et al[1] reported that the combination of antibiotics and medical management of perianal abscesses in the first year of life was as effective in clearing the abscess as surgical drainage and was less likely to result in fistula in ano. Of 140 infants in their study, 94% were male. As Abbott noted,[2] the study was limited by the fact that treatment was not randomized; larger abscesses might have been more likely to have been surgically drained. Certainly, however, the results make the important point that antibiotics should be used to manage this condition regardless of whether the abscess is drained.

An additional point can be made: Infants with perianal abscess might have chronic granulomatous disease (CGD). In reviews of detailed case reports[3–5] and in cases reported to the CGD registry,[6] 15% to 18% of patients with CGD had at least 1 perianal abscess. This infection is 1 of the few that is significantly more common in boys with the X-linked form of CGD than in children with the autosomal form.[6] Approximately 75% of CGD cases reported in large studies from the United States and Japan have been boys with proven X-linked disease,[7] and this form usually presents with infection in year 1.[3,4]

These findings, of course, do not argue that most infants with perianal abscess have CGD, but they do raise the distinct possibility that some may. Isolation from the abscess of *Serratia* or *Burkholderia* species further increases that possibility. Although presentation of CGD in year 1 is the rule,[3,4] the mean age at diagnosis is 3 to 7.4 years.[7] Thus, CGD is too often diagnosed after the child has suffered preventable infections. A perianal abscess should at least raise suspicion that this defect of phagocyte killing might underlie the problem.

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REFERENCES

1. Christison-Lagay ER, Hall JF, Wales PW, et al. Nonoperative management of perianal abscess in infants is associated with decreased risk for fistula formation. *Pediatrics.* 2007;120(3). Available at: www.pediatrics.org/cgi/content/full/120/3/e548
2. Abbott MB. Surgeons say no to surgery for perianal abscesses in infants. *Pediatrics.* 2007;120(3):646
3. Johnston RB Jr, Baehner RL. Chronic granulomatous disease: correlation between pathogenesis and clinical findings. *Pediatrics.* 1971;48(5):730–739
4. Johnston RB Jr, Newman SL. Chronic granulomatous disease. *Pediatr Clin North Am.* 1977;24(2):365–376
5. Barton LL, Moussa SL, Villar RG, Hulett RL. Gastrointestinal complications of chronic granulomatous disease: case report and literature review. *Clin Pediatr (Phila).* 1998;37(4):231–236
6. Winkelstein JA, Marino MC, Johnston RB Jr, et al. Chronic granulomatous disease: report on a national registry of 368 patients. *Medicine (Baltimore).* 2000;79(3):155–169
7. Johnston RB Jr. Clinical aspects of chronic granulomatous disease. *Curr Opin Hematol.* 2001;8(1):17–22

doi:10.1542/peds.2007-3276

In Reply.—

Several operations routinely performed in the recent past have become nearly obsolete, appropriately supplanted by medical management. For example, the trauma splenectomy, exploration for traumatic liver hemorrhage, and laparotomy for perforated appendicitis have been relegated to the annals of surgical management not because of results of randomized trials but because of advances in nonoperative paradigms and careful review of outcomes data over the last 2 decades.

We reported that nonoperative management of uncomplicated perianal abscesses in otherwise healthy infants also results in better outcomes. The purpose of our article was not to define the cause of perianal abscesses in infants, which is likely to be multifactorial, but to call attention to the observed difference in outcome between infants managed by drainage as opposed to those managed nonoperatively, because the operative approach yielded a statistically significant progression to fistula in ano. Although the size of the abscess was not reported in the article, we have observed that this measurement anecdotally did not influence the surgeons' approach in either of the 2 institutions in this study.

We agree with Drs Barton and Johnston that chronic granulomatous disease should be considered in the differential diagnosis for infants who present with perianal abscess. However, a workup for this uncommon disease in every well-appearing patient with an uncomplicated perianal abscess is unrealistic and, in the vast majority of cases, unnecessary. We believe that testing for chronic granulomatous disease should be limited to patients who present with recurrent perianal abscesses accompanied by other symptoms. It is interesting to note that 6 patients who were identified in our study were immunocompromised. Notably, all 6 of the immunocompromised patients in our study were treated nonoperatively, and none of them became septic or developed a fistula in ano.

We support a randomized control trial, which may provide definitive evidence for the best treatment para-

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Pediatrics 2008;121;446
DOI: 10.1542/peds.2007-3386

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Pediatrics 2008;121;446
DOI: 10.1542/peds.2007-3386