

Perhaps because of the small numbers there was actually very little relationship shown with smoking in pregnancy—the strong relationships were instead with the 28 passive smokers in the home. If palivizumab was to be given to this group, the cost would be something over £56 000. I have unfortunately had to extrapolate from other data in the paper which would indicate that about 8 of the 16 hospital admissions (excluding the two who were given palivizumab anyway) would have been from smoking families. Assuming a halving of the hospital admission rate from treatment, this amounts to £56 000 to prevent four “admissions” (with a median length of stay of 0 days) while 24 babies would have received 120 needless injections. No savings are likely to accrue from this reduction as the effect on the total RSV workload would be miniscule.

Some might consider this a small price to pay, but one wonders whether £56 000 spent on providing smoking cessation groups to antenatal mothers and householders of premature babies could be a better use of resources.

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Competing interests: none declared.

## Reference

- 1 Broughton S, Roberts A, Fox G, *et al*. Prospective study of healthcare utilisation and respiratory morbidity due to RSV infection in prematurely born infants. *Thorax* 2005;**60**:1039–44.

## Authors' reply

We thank Dr Clifford for his letter regarding our paper published recently in *Thorax*.<sup>1</sup> He is particularly concerned about the cost effectiveness of palivizumab. However, our paper was not about the cost effectiveness of palivizumab but aimed to examine prospectively healthcare utilisation and respiratory morbidity due to RSV infection in prematurely born infants. Importantly, we demonstrated an effect not only on hospital admission but also on GP attendances and subsequent cough and wheeze.

In response to his specific comments:

- It is a pity Dr Clifford did not contact us directly as we would have been very pleased to have given him our raw data if he wished to undertake an appropriately designed cost effectiveness study, and contacting us would have revealed that the two infants who received palivizumab and had an RSV lower respiratory tract infection were not admitted to hospital.
- We take conflicts of interest statements very seriously.
- We cannot comment on the percentage of smokers in the non-consenters as it would be unethical to collect detailed data on parents who had refused to take part in the study.

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## Reference

- 1 Broughton S, Roberts A, Fox G, *et al*. Prospective study of healthcare utilisation and respiratory morbidity due to RSV infection in prematurely born infants. *Thorax* 2005;**60**:1039–44.

## RSV infection in prematurely born infants

I read with interest the article by Broughton *et al*<sup>1</sup> and wish to offer the following comments.

(1) The duration of oxygen therapy (in both table 1 and the text) ranges from 30 to 107 weeks, thus qualifying every baby in the cohort as having bronchopulmonary dysplasia (BPD). Even if this was in days, it would make every baby oxygen dependent 28 days after birth compared with 19% in other studies.<sup>2</sup>

(2) The rate of BPD in this cohort was 40%, which is much higher than has been reported for babies of similar gestation in recent years.<sup>2,3</sup> In view of this high rate of BPD and prolonged oxygen dependency, the studied cohort might have consisted of rather sick infants.

(3) Since discharge home on oxygen is mentioned as one of the explanatory variables, it would be helpful to know its frequency and significance in relation to the risk of hospital admission and RSV infection.

(4) It is not clear if the healthcare utilisation includes all events after discharge from the neonatal unit or only those after an RSV infection. The authors have elsewhere suggested that babies with lung function deficits at discharge from the neonatal unit are more likely to sustain symptomatic RSV infections.<sup>4</sup> If the healthcare utilisation includes all post-discharge events, then is it possible that the excessive healthcare utilisation of RSV infected infants is a manifestation of their underlying lung deficit rather than an effect of RSV?

(5) The authors suggest consideration of palivizumab for the two risk factors of RSV lower respiratory tract infections—maternal smoking during pregnancy and the presence of school aged siblings. However, palivizumab has been shown to be effective in “reducing hospitalisations from RSV” rather than “preventing RSV infection” itself,<sup>5</sup> and the validity of this extrapolation remains to be tested. Indeed, the indicator for healthcare utilisation (GP attendances) just reached significance among non-admitted RSV infected infants compared with infants with no LRTI, the use of reliever medications being comparable in all three groups. I am not sure that widening the indications for palivizumab to the suggested groups will prove to be cost effective.

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Competing interests: The author has previously questioned the cost effectiveness of palivizumab in relation to its recommended indications.

## References

- 1 Broughton S, Roberts A, Fox G, *et al*. Prospective study of healthcare utilisation and respiratory morbidity due to RSV infection in prematurely born infants. *Thorax* 2005;**60**:1039–44.
- 2 Manktelow BN, Draper ES, Annamalai S, *et al*. Factors affecting the incidence of chronic lung disease of prematurity in 1987, 1992, and 1997.

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- 3 Smith VC, Zupancic JA, McCormick MC, *et al*. Trends in severe bronchopulmonary dysplasia rates between 1994 and 2002. *J Pediatr* 2005;**146**:469–73.
- 4 Broughton S, Bhat R, Roberts A, *et al*. Diminished lung function, RSV infection, and respiratory morbidity in prematurely born infants. *Arch Dis Child* 2006;**91**:26–30.
- 5 Impact-RSV Study Group. Palivizumab, a humanized respiratory syncytial virus monoclonal antibody, reduces hospitalization from respiratory syncytial virus infection in high-risk infants. *Pediatrics* 1998;**102**:531–7.

## Authors' reply

We thank Dr Deshpande for his letter regarding our paper published recently in *Thorax*.<sup>1</sup> Dr Deshpande is concerned about the cost effectiveness of palivizumab and states this as a conflict of interest. We wish to emphasise that it was not an objective of our paper to assess the cost effectiveness of palivizumab but rather to assess any respiratory morbidity following RSV infection in prematurely born infants.

In response to his specific comments:

(1) We apologise for the fact that the duration of oxygen therapy was given in a confusing fashion as postmenstrual age (weeks), not as number of weeks since birth.

(2) The 40% rate of BPD at 36 weeks postmenstrual age is very similar to the 46% rate reported recently.<sup>2</sup>

(3) We have previously reported that discharge on home oxygen increases subsequent healthcare utilisation.<sup>3</sup>

(4) We have recently reported<sup>4</sup> that diminished lung function is a risk factor for RSV infection and subsequent respiratory morbidity, but in that paper we also found that RSV infection was an independent risk factor for days of cough and wheeze.

(5) We agree it is very important to find effective ways to stop antenatal women and householders of premature babies smoking. As our data show, current methods are clearly ineffective. From the results of all studies, hypotheses are generated and need to be tested—hence our comments regarding consideration of giving palivizumab to infants who have siblings and whose mothers smoked during pregnancy. We hope our comments will encourage researchers to undertake an appropriately designed study to test this.

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## References

- 1 Broughton S, Roberts A, Fox G, *et al*. Prospective study of healthcare utilisation and respiratory morbidity due to RSV infection in prematurely born infants. *Thorax* 2005;**60**:1039–44.
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