Does the use of high flow nasal cannula (HFNC) oxygen therapy safely improve outcomes in infants with bronchiolitis?

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Bronchiolitis
- Common (1/3 of children)
- Viral lower respiratory tract infection
- Typically < 1 year of age
- 2 - 3% hospital admission (30000 / year)
  - 2 - 6% PICU admission

HFNC
- Heated, humidified gas
- Improved O₂ delivery to terminal airways
- Dead space washout
- Reduced inspiratory resistance
- Increased lung compliance

NICE bronchiolitis guidelinesª:
Acknowledge the widespread use of HFNC oxygen therapy but give no recommendation for its use in the management of bronchiolitis

Literature Review
(Medline / Embase / Bibliography review)

4 Randomised Control Trials
6 observational studies

Outcomes
| HFNC therapy reduced intubation rates²,³ + escalation of care⁴,⁵ | Cost implications are considerable but remediable¹,⁵ | No adverse incidents reported in any study⁴-⁹ | Outcome of PARIS study (large, multi-centre RCT) awaited¹⁰ |

Economics

Safety

Future

Limitations
- Blinding impossible
- Small sample sizes
- Performance bias common
- High risk babies often excluded
- Some interventions not generalisable

References
2. McKiernan et al, 2010
3. Bermudez et al, 2017
7. Campana et al, 2014
8. Davison et al, 2017
9. Miles et al, 2017
10. Franklin et al, 2015