The management of acute wheeze- what do paediatric trainees do?

Background:
Current guidelines of acute management of wheeze in children are open to interpretation (Keeley:2018). Individual clinician preference and many 'local guidelines' influence the initial management by the frontline paediatric trainees. We hypothesised that there is greater variation in practice with acute preschool wheeze than the school age children with acute asthma.

Methods
Online survey of paediatric trainees in West Midlands using three clinical scenarios of children of different ages presenting with acute wheeze. Trainees were asked to select the most appropriate management plan out of giving inhalers, nebulisers or 'back to back therapy'. Following reassessment trainees were then asked for the next line of treatment

Results
82 responses from ST1-ST8 trainees between March and July 2019. 85% were managing at least one child with wheeze every day.66% of respondents had a minimum of 3 years of paediatric experience.
In a pre-school child with wheeze and saturations of 94%, 77% of trainees gave 10 puffs of salbutamol as initial treatment. 34% would give 2 further bronchodilators 'back to back' after initial improvement.
In both cases of older children with asthma, half of trainees gave a nebuliser an initial therapy despite the oxygen saturations >92% at presentation.
20% of respondents understand the term 'back to back' to mean an interval of between 15 and 30minutes.
97% of trainees give written wheeze information to families with 87.5% opting for 3 day salbutamol weaning plan at discharge.

Conclusions
Contrary to our hypothesis, the survey demonstrates that there is more consistency in the initial management of preschool wheeze compared to older children with asthma.
This may reflect the service pressures to decide about admitting or discharging the child rather than an uncertainty about clinical situation.
In older children where clinical assessment is more predictable , surprisingly, half of the trainees administered nebulised bronchodilators despite normal oxygen saturations. .
Older children may have had inhalers for a period of time (not acknowledged in current BTS guidelines) prompting trainees to take a different approach.
Discharging children with a Salbutamol weaning plan is unique to the UK practice (Levy:2018) which needs to be addressed by prospective studies