



The first BOOST study\* rekindled international interest in the question "Which oxygen saturation range should we target in preterm babies?"



**BOOST II is one of 6 studies aiming to recruit 6,000 babies up to 27<sup>6</sup> weeks gestation worldwide, to decide if a target SpO<sub>2</sub> of 85-89% or 91-95% is safer.**

\* Askie et al. *New England Journal of Medicine*, 2003: 349 : 959-67

*Thank you all for your efforts and feedback*

The first patient was recruited in March 2006. There has been a steep learning curve!

- Staff at 4 pilot sites have worked hard to complete SpO<sub>2</sub> Charts and meet the targets.
- Other sites are busy conducting in-services and preparing to start recruitment.

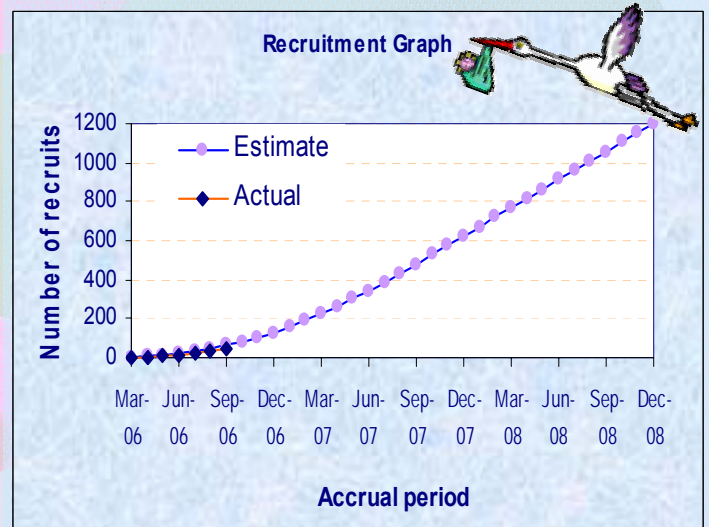


## Recruitment and SpO<sub>2</sub> targets so far ...

Site	No of Babies	% time in SpO <sub>2</sub> range when in supplementary O <sub>2</sub> * (based on available data)		
		Hyperoxic range 96 – 100%	Target range 88 – 92%	Clinical range 85 – 95%
John Hunter, Newcastle	1	7	46	72
King Edward Memorial, Perth	14	22	34	53
Royal Women's, Melbourne	9	being analysed	being analysed	being analysed
Westmead	16	16	41	61
Totals and % time in ranges	40	20	36	56
<i>Ochsner Clinic New Orleans for reference only - not in BOOST II</i>	10	9%	-	70%

### Why it's important to meet the SpO<sub>2</sub> targets

- Within the **clinical range of 85-95%**, half the study oximeters read about 3% higher and half about 3% lower than true SpO<sub>2</sub>. Outside that range, all study oximeters read true.
- Within the **target range of 88-92%**, half the babies get 85-89% and half get 91-95%.
- Maximising time within these ranges is crucial.
- High and low study oximeters read exactly the same outside the clinical range of 85-95%.
- So, the more time spent above 95% or below 85%, the less power the study will have to find any differences in outcome.



BOOST chocolate bars will be sent out to centres with the most successful targeting or who have achieved the most improvement



## What can the hourly SpO<sub>2</sub> chart tell us?

The Masimo Oximeter has a histogram showing % time spent in different ranges in the last hour (NB changing this time period wipes stored trend data, see below).

This can give caregivers specific feedback to help them target the desired ranges more accurately. It also clearly documents babies who 'swing' markedly, and need more attention.

In this chart, there was no hyperoxia for the first 3 hours shown. After a request to maintain SpO<sub>2</sub> above 92% to prevent gut hypoxia, the daily chart showed continuous hyperoxia.


After stopping supplementary oxygen completely, the baby remained significantly hyperoxic, illustrating the fact that hyperoxia can be unavoidable in infants with normal lungs in room air.

Time	Was oxygen given for ≥30 mins in last hour (Y/N)	Commonest value of FIO <sub>2</sub> in last hour (%)	% time spent in each SpO <sub>2</sub> range					Upper Alarm Limit setting	Problems or comments	Nurse's name (Block capitals)	
			in last hour -instructions overleaf								
			97-100	93-96	88-92	84-87	1-83				
19:00	Y	28	0	10	56	30	4	94			
20:00	Y	32	0	1	50	41	8	94			
21:00	Y	29	0	3	32	40	25	94			
<b>Daily recordings</b>			<b>Changed to Daily Charting</b>								
21.06.06 12MD	Y	37	100	0	0	0	0	99			
22.06.06 12 MD	N	21	28	32	25	15	0	--			
23.06.06 12 MD	N	21	40	32	20	8	0	--			

### Oximeter Tips to remember



**Never clear trend data. To avoid clearing trend data please note:**

- **DO NOT** change set trend viewing period (e.g. from 1 hour to 2 hours), as this will clear trend data
- **NEVER** press the 'dustbin'  in the display as this will clear any trend data
- **DO NOT** reset time or date as this will clear trend data

### Protocol Amendment

The University of Sydney Central Ethics Committee of has approved a protocol amendment. The Summary of Changes and Protocol Version 2 will be sent out for submission to local ethics committees. There are three changes.

1. Study Oximeter Monitoring will stop at 36 weeks corrected gestational age  
*(So SpO<sub>2</sub> targets can be relaxed in mature babies)*
2. Cognitive and neuromotor function - assessed with Bayley III instead of Bayley II *(This may be shorter)*
3. The Parent Information and Consent Form is shorter, but still has all the essential information.  
*(Some parents found the old one too long)*



**IF YOU HAVE ANY QUESTIONS OR CONCERNS CONTACT US AT:**  
NHMRC Clinical Trials Centre  
Tel: 61 2 9562 5000  
Fax: 61 2 9565 1863

email: [boost2@ctc.usyd.edu.au](mailto:boost2@ctc.usyd.edu.au)

**Principal Investigator:** William Tarnow-Mordi  
**Project Manager:** Alpana Ghadge  
**Data Manager:** Melinda Thompson (part-time)  
**Clinical Trials Assistant:** Medhia Survery (part-time)