

# Outcome analysis of a practice change of post-dates induction from 42<sup>+0</sup> to 41<sup>+0</sup> at The James Cook University Hospital (JCUH)



Ruth Capon<sup>(1,2)</sup>,  
Nicholas Allen<sup>(1)</sup>,  
Helen Simpson<sup>(1)</sup>

1. The James Cook University Hospital  
2. Newcastle Medical School

South Tees Hospitals **NHS**  
NHS Foundation Trust



## Introduction

- Stillbirth is a complication of post-dates pregnancy
- There is a national drive to reduce the stillbirth rate
- In 2013 four still births occurred after 41 weeks in our unit
- Literature suggests earlier induction (IOL) lowers stillbirth rates without increasing caesarean section rate<sup>1</sup>
- A practice change was proposed to bring forward IOL from 42 to 41 weeks
- Unit IOL rate prior to the change was 28% (inc. SROM)
- Ongoing audit was planned to assess the impact of the change

## Method

- A retrospective audit of all women delivering at JCUH at  $\geq 41$  weeks
- Jan 2013 to Dec 2015
- 2891 cases were analysed: 1.5yrs pre-change (n=1410)  
1.5yrs post-change (n=1481)
- Primary outcome measures: stillbirth rate, neonatal unit admissions and meconium aspiration
- Secondary outcome measures: mode of delivery, postpartum haemorrhage, shoulder dystocia and cord ApH
- Statistical analysis: Fisher's exact test with two-tailed P value.

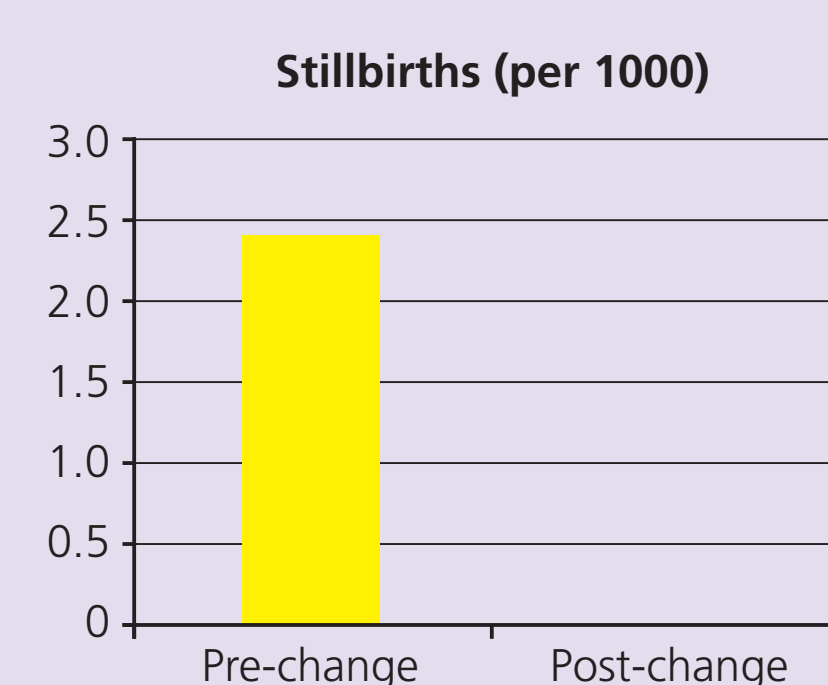
## Results

- Induction rate for women 41 weeks and over: **33.5% → 80.9%**
- 4.7% chose to wait beyond 41 weeks for spontaneous labour  
Of these 40.7% laboured spontaneously

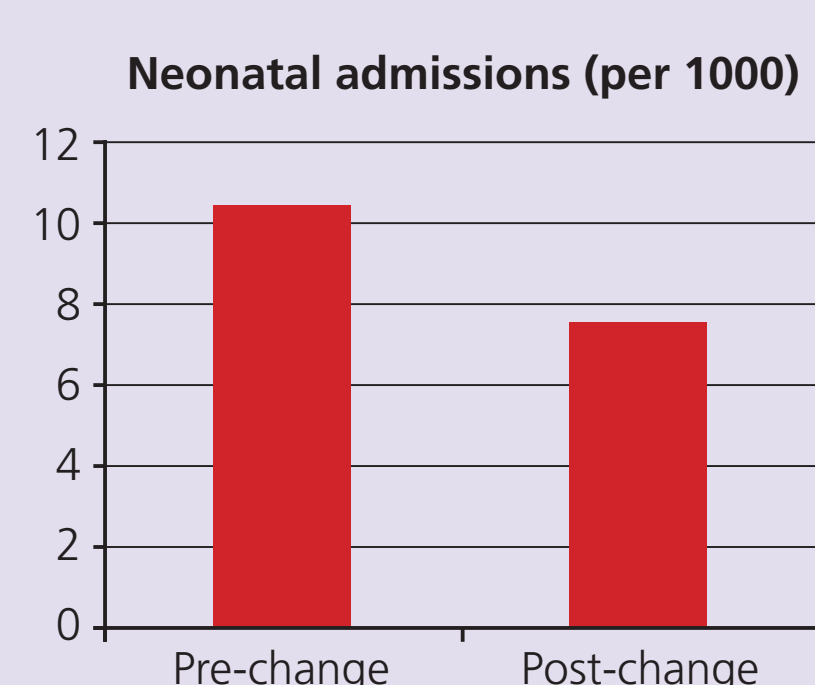
Outcome	Pre-change		Post-change		P*
	n	Incidence / 1000	n	Incidence / 1000	
Stillbirths	6	2.40	0	0	0.0134*
Neonatal admissions	15	10.6	11	7.43	0.4322
Meconium aspiration	6	2.80	1	0.68	0.0638
Total deliveries	1410		1481		

- Statistically significant decrease in the still birth rate

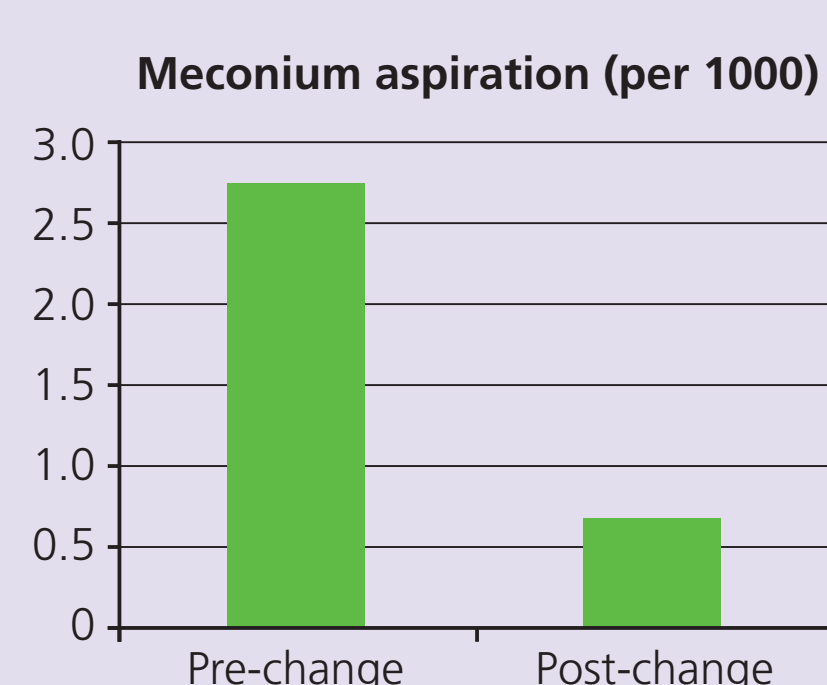
Outcome	Odds ratio (95% CI)	Relative risk (95% CI)
Stillbirth	0.0729 (0.0041-1.2958)	0.0732 (0.0041-1.2989)



- Non statistically significant decrease in neonatal admissions



- Non statistically significant decrease in meconium aspiration

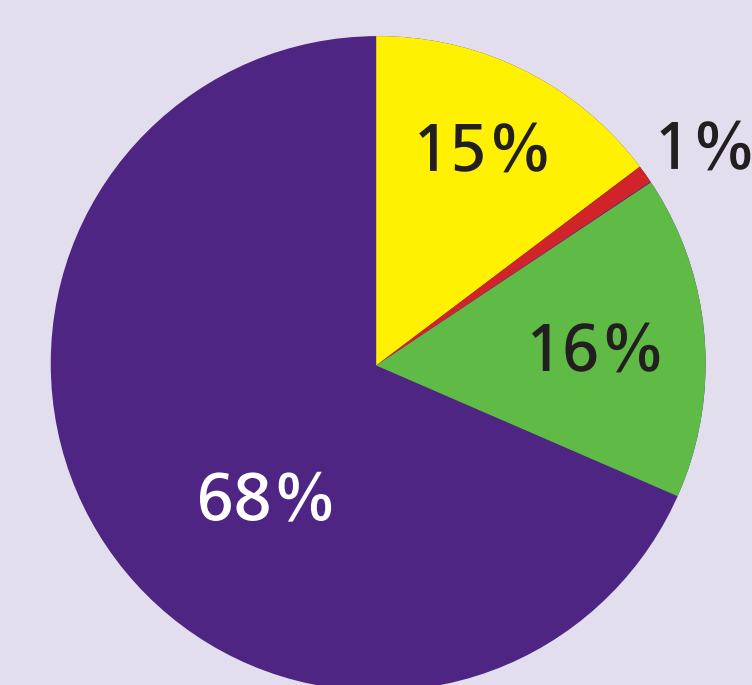


- Non-statistically significant decrease in Arterial cord pH <7.0: **0.35% → 0.2%**  
(Cord pH performed: Op Vag Del for abnormal CTG, SVD with abnormal CTG, class I & 2 LSCS)

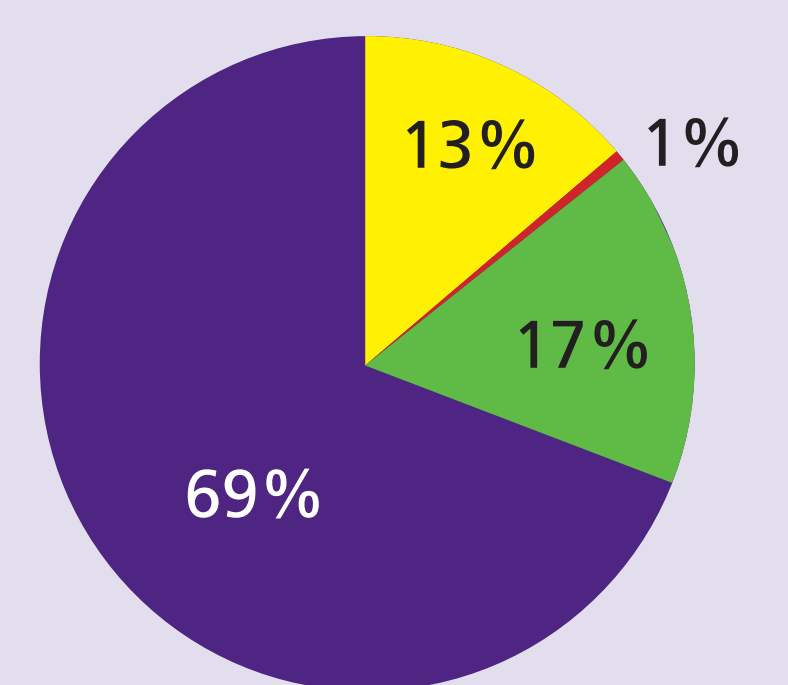
Outcome	Pre-change		Post-change		P*
	n	%	n	%	
Emergency Caesarean (LSCS)	212	15.0%	199	13.4%	0.2210
Instrumental deliveries (Op vag del)	223	15.8%	246	16.6%	0.5790
Total deliveries	1410		1481		

- Non-statistically significant decrease in total LSCS rate: **15.8% → 14%**

Mode of delivery pre-change



Mode of delivery post-change



- Units overall LSCS rate decreased: **21.8% → 20.9%**

Decrease greatest in multiparous (with no previous LSCS)

- Non-statistically significant increase in the Op Vag Del rate: **15.8% → 16.6%**

Units overall Op Vag Del rate decreased: 13.5% to 10.9%

- Non-statistically significant decrease in Postpartum haemorrhage (PPH) of > 1.5l : **1.5% → 1.1%**

- No change in shoulder dystocia with Op Vag Del: **2.7% → 2.8%**  
(data is not available on the incidence of shoulder dystocia after SVD)

## Discussion

- This change has demonstrated that IOL at 41wks reduces still birth rates, meconium aspiration and NNU admissions
- With no increase in the LSCS rate for either primips or multips
- A small increase in operative vaginal delivery was observed
- There was no increase in the risk of PPH or shoulder dystocia
- There has been an increase in labour ward workload which is not addressed in this audit
  - The unit delivered 5087 women in 2015
  - The IOL rate increased to 44%
  - 40.5% of inductions are for postdates

- On average 15 women per week are induced for postdates
- In this time frame IOL for growth restriction has increased, with the introduction of customised growth charts
- This policy has changed how we work
- We are now working to make induction a more 'normal' process

## Recommendations

- Continue to offer induction for post-dates pregnancy at 41 weeks
- Other units may wish to consider this strategy to reduce stillbirth
- Planning for the increased work load is essential

Reference:  
<sup>1</sup> Stock SJ et al. Outcomes of elective induction of labour compared with expectant management: population based study. BMJ 2012; 344e2838