

Supplementary Table 1: Consumption of resources for respiratory support in survivors to discharge home

	1991-92 n=227		1997 n=152		2005 n=170		2016-17 n=217 (reference)
	median (IQR)	Adj [^] diff. medians (95% CI) p value	median (IQR)	Adj [^] diff. medians (95% CI) p value	median (IQR)	Adj [^] diff. medians (95% CI) p value	median (IQR)
All respiratory support ^{&} (days)	30 (17-45)	-35 (-40, -30) p<0.001	48 (31-63)	-24 (-29, -19) p<0.001	44 (25-73)	-19 (-24, -14) p<0.001	70 (51-88)
Invasive ventilation [#] (days)	21 (8-34)	11 (8, 14) p<0.001	19 (8-32)	5 (1, 8) p=0.01	10 (3-26)	2 (-2, 5) p=0.33	9 (1-30)
Non-invasive ventilation [§] (days)	5 (0-12)	-45 (-49, -41) p<0.001	24 (14-36)	-29 (-33, -25) p<0.001	32 (17-42)	-20 (-24, -16) p<0.001	53 (39-66)
nCPAP (days)	5 (0-12)	-19 (-23, -16) p<0.001	24 (14-36)	-2 (-6, 2) p=0.25	32 (17-42)	6 (3, 10) p=0.001	28 (15-40)
HFNC (days)	-	-	-	-	-	-	23 (15-33)

Supplemental oxygen (days)	62 (34-96) n=226	-7 (-18, 3) p=0.17	47 (12-88)	-17 (-29, -6) p=0.003	67 (20-114) n=167	-9 (-21, 2) p=0.10	84 (44-121) n=184
Primary hospital admission (days)	94 (78-112)	-7 (-12, -3) p=0.002	101 (81-110)	-8 (-13, -3) p=0.003	106 (88-134)	3 (-2, 8) p=0.19	108 (85-133)

Diff. medians = Difference in medians; IQR = interquartile range; nCPAP = nasal continuous positive airway pressure; HFNC = high flow nasal cannulae.

^Adjusted for inborn status (i.e. birth in a tertiary perinatal centre), gestation at birth, sex, birthweight z-score.

&Includes positive pressure ventilation via endotracheal tube, high frequency oscillatory ventilation, nCPAP and HFNC.

#Includes positive pressure ventilation via endotracheal tube, high frequency oscillatory ventilation.

§Includes nCPAP and HFNC.

2016-17 cohort as a reference for all comparisons.

Supplementary Table 2: Duration of respiratory support, oxygen therapy, and hospitalisation in those who received intensive care (23 – 27 weeks only)

	1991-92 n=330		1997 n=188		2005 n=226		2016-17 n=250 (reference)
	median (IQR)	Adj [^] diff. medians (95% CI) p value	median (IQR)	Adj [^] diff. medians (95% CI) p value	median (IQR)	Adj [^] diff. medians (95% CI) p value	median (IQR)
All respiratory support ^{&} (days)	23 (4-41)	-36 (-41, -30) p<0.001	42 (21-61)	-24 (-30, -18) p<0.001	38 (16-69)	-23 (-29, -17) p<0.001	66 (43-88) n=247
Invasive ventilation [#] (days)	16 (3-31)	8 (4, 12) p<0.001	15 (5-30)	4 (-1, 8) p=0.11	10 (2-27)	2 (-3, 6) p=0.40	9 (1-29) n=247
Non-invasive ventilation [§] (days)	2 (0-9)	-48 (-52, -44) p<0.001	21 (8-36)	-29 (-34, -25) p<0.001	26 (6-41)	-24 (-28, -20) p<0.001	51 (33-64) n=247
nCPAP (days)	2 (0-9)	-23 (-27, -19) p<0.001	21 (8-36)	-4 (-9, 0.3) p=0.07	26 (6-41)	0.5 (-4, 5) p=0.81	25 (9-39) n=247
HFNC (days)	-	-	-	-	-	-	21 (11-31) n=247
Supplemental oxygen (days)	44 (5-86) n=327	-19 (-33, -5) p=0.01	47 (12-88) n=184	-23 (-39, -7) p=0.01	57 (13-108) n=214	-16 (-31, -1) p=0.04	74 (30-120) n=203

Primary hospital admission* (days)	83 (21-104)	-13 (-20, -6) p<0.001	93 (69-112)	-9 (-16, -1) p=0.03	97 (72-128)	-1 (-9, 6) p=0.72	100 (78-128) n=249
------------------------------------	-------------	--------------------------	-------------	------------------------	-------------	----------------------	-----------------------

Diff. medians = Difference in medians; IQR = interquartile range; nCPAP = nasal continuous positive airway pressure; HFNC = high flow nasal cannulae.

^Adjusted for inborn status (i.e. birth in a tertiary perinatal centre), gestation at birth, sex, birthweight z-score.

&Includes positive pressure ventilation via endotracheal tube, high frequency oscillatory ventilation, nCPAP and HFNC.

#Includes positive pressure ventilation via endotracheal tube, high frequency oscillatory ventilation.

§Includes nCPAP and HFNC.

*Until discharge home.

2016-17 cohort as a reference for all comparisons.

Supplementary Table 3: Survival to discharge home, treatments, and morbidities of those receiving intensive care (23-27 weeks only)

	1991-92 n=330		1997 n=188		2005 n=226		2016-17 n=250 (reference)
	n (%)	OR (95% CI) p value	n (%)	OR (95% CI) p value	n (%)	OR (95% CI) p value	n (%)
Survival to discharge home	227 (68.8)	0.24 (0.15, 0.39) p<0.001	151 (80.3)	0.61 (0.35, 1.06) p=0.08	169 (74.8)	0.41 (0.25, 0.68) p=0.001	217 (86.8)
Surfactant	150 (45.5)	0.19 (0.12, 0.28) p<0.001	161 (85.6)	1.26 (0.75, 2.12) p=0.38	202 (89.4)	1.94 (1.13, 3.35) p=0.02	202/247 (81.8)
IVH 3 or 4	44 (13.3)	1.46 (0.85, 2.52) p=0.17	19 (10.1)	1.01 (0.53, 1.94) p=0.97	33 (14.6)	1.56 (0.87, 2.77) p=0.13	27/249 (10.8)
cPVL	21 (6.4)	5.50 (1.63, 18.6) p=0.01	11 (5.9)	5.14 (1.37, 19.3) p=0.02	6 (2.7)	2.25 (0.55, 9.22) p=0.26	3 (1.2)
NEC	30/330 (9.1)	0.57 (0.34, 0.97) p=0.04	12 (6.4)	0.36 (0.18, 0.73) p=0.004	32 (14.2)	0.93 (0.55, 1.58) p=0.80	37 (14.8)
ROP received treatment ^{&}	13/329 (4.0)	0.48 (0.22, 1.03) p=0.06	11/185 (5.9)	0.52 (0.23, 1.18) p=0.12	10/217 (4.6)	0.41 (0.18, 0.96) p=0.04	25/249 (10.0)
BPD (Oxygen at 36 weeks) [#]	116/237 (49.0)	1.21 (0.80, 1.81) p=0.37	67/152 (44.1)	0.75 (0.47, 1.22) p=0.25	105/181 (58.0)	1.64 (1.07, 2.51) p=0.02	108/220 (49.1)

Postnatal corticosteroids	108 (32.7)	1.21 (0.83, 1.76) p=0.33	80 (42.6)	1.51 (0.98, 2.34) p=0.06	54 (23.9)	0.65 (0.42, 1.01) p=0.06	77 (30.8)
Surgery	77 (23.3)	0.95 (0.64, 1.42) p=0.81	52 (27.7)	1.06 (0.68, 1.68) p=0.79	70 (31.0)	1.36 (0.89, 2.08) p=0.15	62 (24.8)

OR = odds ratio; IVH 3 or 4 = intraventricular haemorrhage grade 3 or 4; cPVL = cystic periventricular leukomalacia; NEC = necrotising enterocolitis Bell Stage 2 or worse; ROP = retinopathy of prematurity; BPD = bronchopulmonary dysplasia.

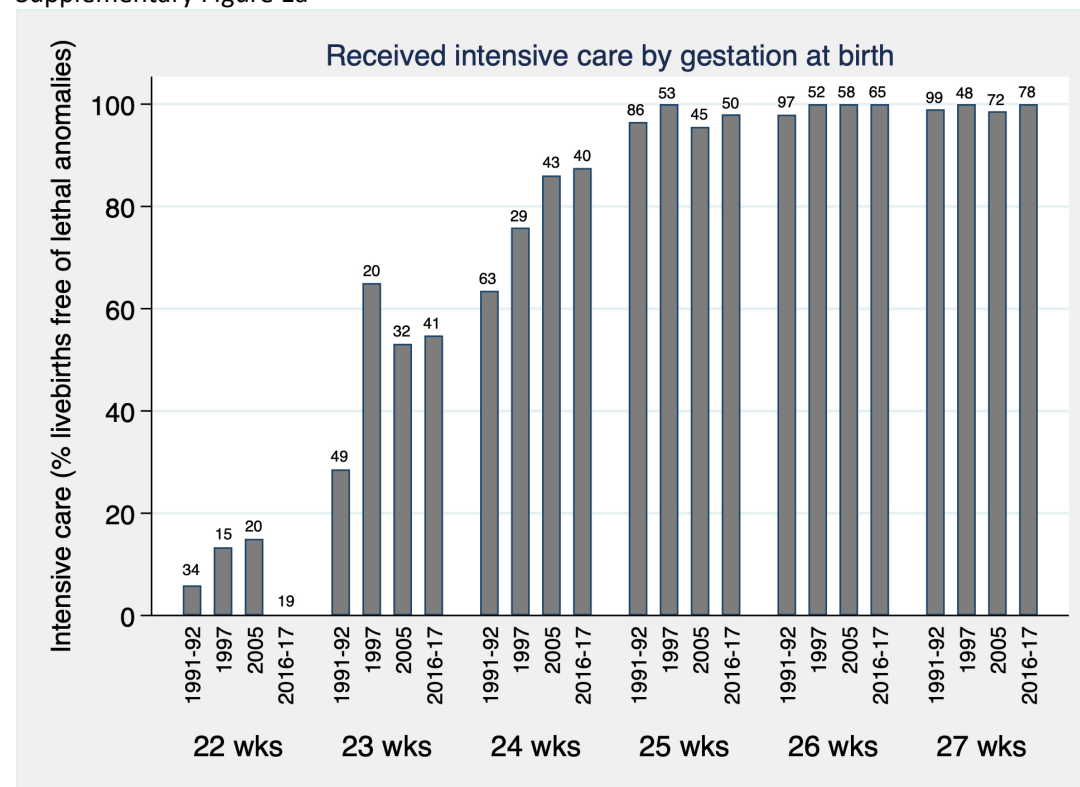
^Adjusted for inborn status (i.e. birth in a tertiary perinatal centre), gestation at birth, sex, birthweight z-score.

&Laser or cryotherapy (1991-92, 1997, and 2005); Bevacizumab injections and/or laser therapy (2016-17).

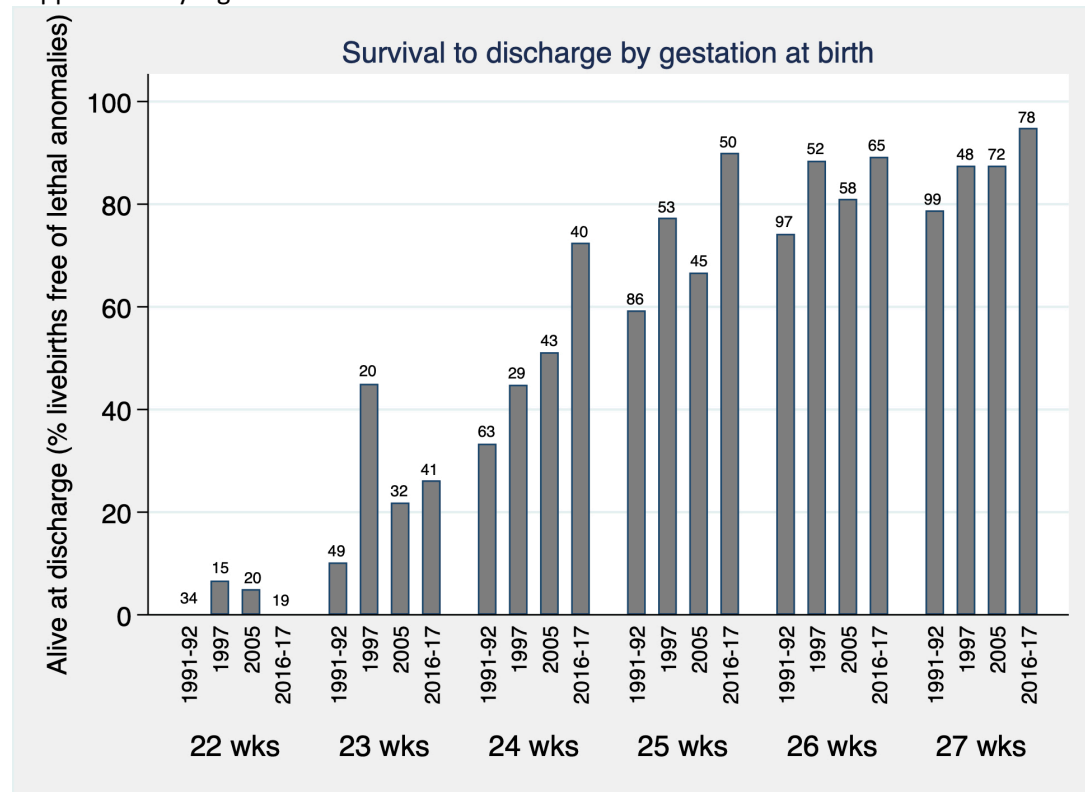
#Denominator – alive at 36 weeks' postmenstrual age 2016-17 cohort as a reference for all comparisons.

Supplementary Figure 1 Proportions of infants receiving intensive care among all livebirths free of lethal anomalies (Supplementary Figure 1a), those alive at discharge as a percentage of livebirths free of lethal anomalies (Supplementary Figure 1b) and as a percentage of those offered intensive care (Supplementary Figure 1c) in gestational age groups across the four eras. Denominators provided above each bar. Absolute numbers <5 not provided as per the policy of the Consultative Council on Obstetric and Paediatric Mortality and Morbidity (CCOPMM) in Victoria, from where some of the data were sourced.

Supplementary Figure 1a



Supplementary Figure 1b



Supplementary Figure 1c

