



Supplementary figure 1: dataset exclusions presented as a flow chart

<p>Baseline characteristics</p>	<p>Gestational age was determined using the variables "GestationWeeks" and "GestationDays"</p> <p>Birth weight was determined using the variable "Birthweight"</p> <p>Female sex was determined using the variable "Gender"</p> <p>Any antenatal steroid given was determined using the variable "Antenatal steroids given" and "Steroids antenatal courses"</p> <p>Surfactant given was determined using the variable "Surfactant given at resuscitation" and "Day surfactant given"</p> <p>Surfactant given was determined using the variable "Surfactant given at resuscitation" and "Day surfactant given"</p>
<p>Exposures</p>	<p>Resuscitation methods were determined using the variable "MethodsOfResuscitation"</p>
<p>Outcomes</p>	<p>BPD was determined using the variables "Respiratory support", "AddedO2", "Ventilation mode", "NonInvasiveRespiratoryS" and "Daydateanon"</p> <p>- Death before discharge was determined using the variables "Dateofdeath" and "Deathagemin"</p> <p>Composite Outcome was determined by BPD or death at 36 weeks' gestation</p> <p>- IVH (Grade 3 or 4) was determined using data from cranial ultrasound variable "rightivh" and "leftivh" (looking for grade 3 and 4) and searching for 'ivh grade 3' and 'ivh grade 4'</p> <p>- Pneumothorax was determined using "chestdrain"</p> <p>Invasive ventilation was determined by using variables "ventilationmode" and "respiratorysupport"</p> <p>Number of days of invasive ventilation was determined using variables "ventilationmode" and "respiratorysupport" and "dayoflife"</p>

	Number of non-invasive ventilation days was determined using variables “respiratorysupport” and “noninvasiverespiratorysupport” and “dayoflife”
Highest form of respiratory support	Derived as most significant support on a graded basis, whereby 1=MV, 2=CPAP, 3=HFNC, 4=O2, 5=None

Supplementary table 1: variables derived from NNRD and classification of highest form of respiratory support

Supplementary Table 2. Characteristics of infants born at <30 weeks' gestation in England and Wales (2016 to 2021) - those who received CPAP as the highest respiratory support in the delivery room and either NIV or MV as their highest respiratory support in the first week of life.

	CPAP-NI	CPAP-MV
	n = 2871	n = 2738
GA (weeks, median (IQR))	28+6 (28+0-29+3)	28+3 (27+3-29+1)
Birth weight (grams, median (IQR))	1139 (960-1387)	1055 (860-1260)
Birth weight z-score (mean (+/- SD))	-0.94 (0.957)	-0.2 (1.03)
Female sex n (%)	1386 (48.3)	1166 (42.6)
Any antenatal steroids n (%)	2752 (95.9)	2541 (92.8)
GA<25 weeks	n = 8	n = 70
GA (weeks, median (IQR))	24+4 (24+1-24+5)	24+2 (23+5-24+4)
Birth weight (grams, median (IQR))	647.5 (600.5-731.5)	620 (545-695)
Birth weight z-score (mean (+/- SD))	-0.47 (0.66)	-0.3 (0.77)
Female sex n (%)	6 (75)	28 (40)
Any antenatal steroids n (%)	8 (100)	63 (90)
GA<28 weeks	n = 625	n = 955
GA (weeks, median (IQR))	27+1 (26+4-27+4)	27+0 (26+1-27+3)
Birth weight (grams, median (IQR))	944 (825-1059)	895 (755-1020)
Birth weight z-score (mean (+/- SD))	-0.11 (0.88)	0.26 (0.93)
Female sex n (%)	303 (48.5)	409 (42.8)
Any antenatal steroids n (%)	593 (94.9)	886 (92.8)
GA 28 or more weeks	n = 2246	n = 1783
GA (weeks, median (IQR))	29+1 (28+5-29+4)	29+0 (28+3-29+3)
Birth weight (grams, median (IQR))	1200 (1030-1350)	1175 (975-1345)
Birth weight z-score (mean (+/- SD))	-0.89 (0.98)	-0.18 (1.07)
Female sex n (%)	1083 (48.2)	757 (42.5)
Any antenatal steroids n (%)	2159 (96.1)	1655 (92.8)