





## NTG Annual Transport Data 2021/22

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#### Method





- Email to transport services medical and nursing leads requesting activity data and service information from 1<sup>st</sup> April 2021 to 31<sup>st</sup> March 2022
  - Requests before 2019/2020 covered first 6 months of calendar year only



#### Number of Services, UK





- 2012 data from 22
- 2013 data from 21
- 2014 data from 19
- 2015 data from 19
- 2016 data from 18
- 2017 data from 18
- 2018 onwards data from 15

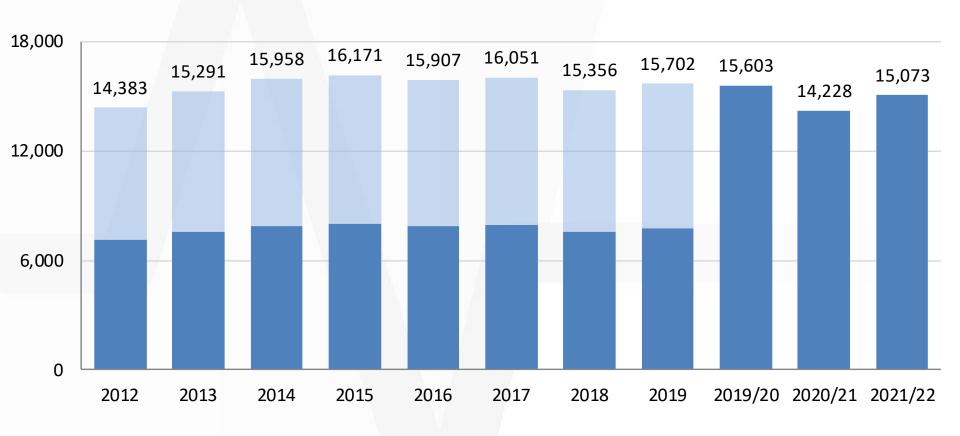




### All team annualised UK neonatal transport activity







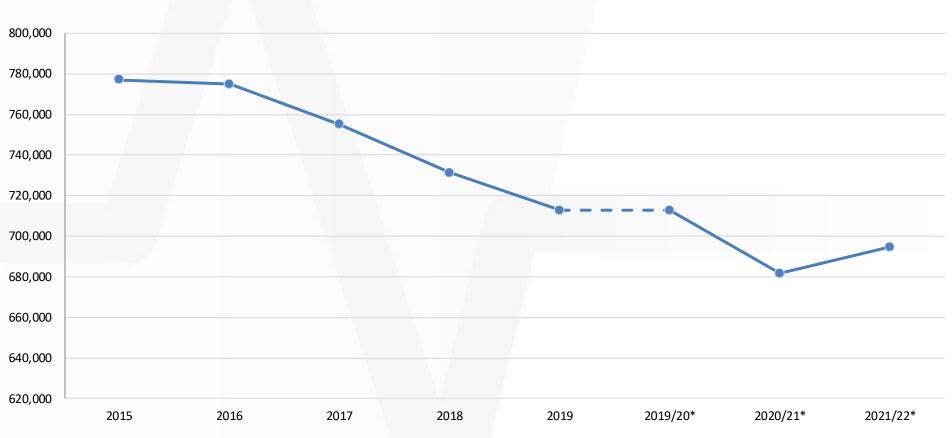
2019-20 onwards data 12-month collection period, prior to that 6 months used



#### Yearly birth rate





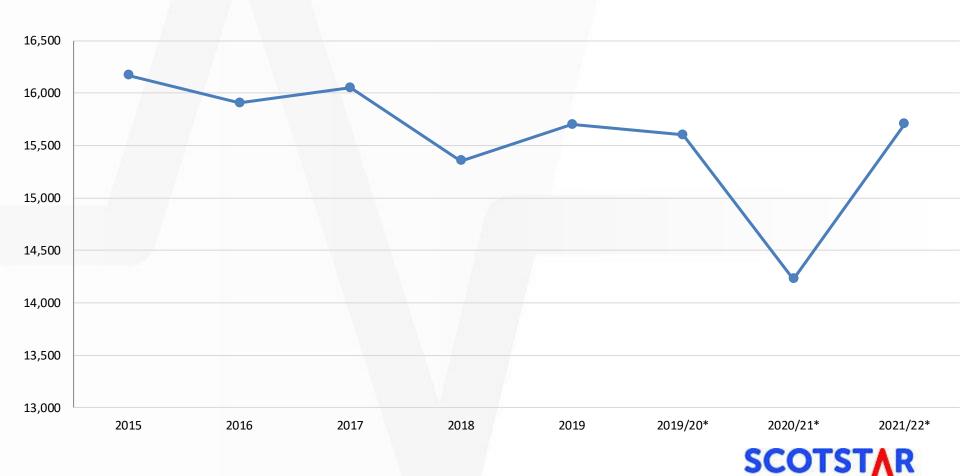


Birth data from relevant national bodies. The birth data is yearly so only for indication of possible change. 2019/20 using 2019 figures, 2021/22 using 2021 figures etc.



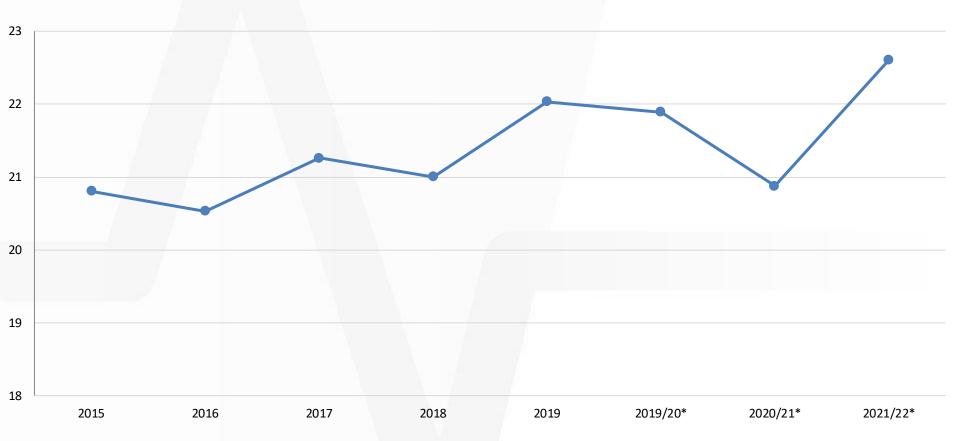
### UK neonatal transport activity Scottish Ambulance Service Service





## UK neonatal transport NTG transfers per 1,000 live births





Birth data from relevant national bodies. The birth data is yearly so only for indication of possible change. 2019/20 using 2019 figures, 2021/22 using 2021 figures etc.



### UK Summary Data Apr 2021 to Mar 2022





	2012	2013	2014	2015	2016	2017	2018	2019	2019/20	2020/21	2021/22
Total transfers	7152	7562	7892	7997	7910	7938	7594	7765	15603	14228	15073
Ventilated	1889	1961	1949	2155	2000	1913	1939	1868	3677	3217	3387
	(26.4%)	(25.9%)	(24.7%)	(26.9%)	(25.3%)	(24.1%)	(25.5%)	(24.1%)	(23.6%)	(22.6%)	(22.5%)
HFOV				16	16	39	48	54	102	112	98
				(0.7%)	(0.8%)	(2.04%)	(2.5%)	(2.9%)	(2.8%)	(3.5%)	(2.9%)
CPAP	847	906	811	790	737		621	529	1070	871	1029
	(11.8%)	(12%)	(10.3%)	(9.9%)	(9.3%)		(8.2%)	(6.8%)	(6.9%)	(6.1%)	(6.8%)
High-flow				452	496		674	766	1712	1663	1824
				(5.7%)	(6.3%)		(8.9%)	(9.9%)	(11%)	(11.7%)	(12.1%)
Cooling	247	288	249	274	288	245	255	281	541	502	496
	(3.5%)	(3.8%)	(3.2%)	(3.4%)	(3.6%)	(3.1%)	(3.4%)	(3.6%)	(3.5%)	(3.5%)	(3.3%)
iNO	99	111	117	138	148		154	157	293	298	292
	(1.4%)	(1.5%)	(1.5%)	(1.7%)	(1.9%)		(2%)	(2%)	(1.9%)	(2.1%)	(1.9%)
Palliative	22		19	19	33	33	20	24	62	56	53
	(0.3%)		(0.2%)	(0.2%)	(0.4%)	(0.4%)	(0.3%)	(0.3%)	(0.4%)	(0.4%)	(0.4%)



## UK Summary Data Apr 2021 to Mar 2022 Adjusted



Scottish

Ambulance

	Adjusted										
	2012	2013	2014	2015	2016	2017	2018	2019	2019/20	2020/21	2021/22
Total transfers	14383	15291	15958	16171	15907	16051	15356	15702	15603	14228	15073
Ventilated	3799	3965	3941	4358	4022	3868	3921	3777	3677	3217	3387
	(26.4%)	(25.9%)	(24.7%)	(26.9%)	(25.3%)	(24.1%)	(25.5%)	(24.1%)	(23.6%)	(22.6%)	(22.5%)
HFOV				32	32	79	97	109	102	112	98
				(0.7%)	(0.8%)	(2.04%)	(2.5%)	(2.9%)	(2.8%)	(3.5%)	(2.9%)
CPAP	1703	1832	1640	1597	1482		1256	1070	1070	871	1029
	(11.8%)	(12%)	(10.3%)	(9.9%)	(9.3%)		(8.2%)	(6.8%)	(6.9%)	(6.1%)	(6.8%)
High-flow				904	992		1348	1532	1712	541	541
				(5.7%)	(6.3%)		(8.9%)	(9.9%)	(11.0%)	(3.8%)	(3.6%)
Cooling	497	582	504	554	579	495	516	568	541	502	496
	(3.5%)	(3.8%)	(3.2%)	(3.4%)	(3.6%)	(3.1%)	(3.4%)	(3.6%)	(3.5%)	(3.5%)	(3.3%)
iNO	198	222	234	276	296		308	314	293	62	62
	(1.4%)	(1.5%)	(1.5%)	(1.7%)	(1.9%)		(2%)	(2%)	(1.9%)	(0.4%)	(0.4%)
Palliative	44		38	38	66	67	40	49	62	56	53
	(0.3%)		(0.2%)	(0.2%)	(0.4%)	(0.4%)	(0.3%)	(0.3%)	(0.4%)	(0.4%)	(0.4%)



### UK Summary Data Apr 2021 to Mar 2022





	2012-2019 Ave	2019/20	2020/21	2021/22
Total transfers	7,726	15,603	14,228	15,073
Ventilated	1,959	3,677	3,217	3,387
	(25.4%)	(23.6%)	(22.6%)	(22.5%)
HFOV	35	102	112	98
	(1.8%)	(2.8%)	(3.5%)	(2.9%)
CPAP	749	1,070	871	1,029
	(9.7%)	(6.9%)	(6.1%)	(6.8%)
High-flow	597	1,712	1,663	1,824
	(7.7%)	(11%)	(11.7%)	(12.1%)
Cooling	266	541	502	496
	(3.4%)	(3.5%)	(3.5%)	(3.3%)
iNO	132	293	298	292
	(1.7%)	(1.9%)	(2.1%)	(1.9%)
Palliative	24	62	56	53
	(0.3%)	(0.4%)	(0.4%)	(0.4%)



## UK Summary Data Apr 2021 to Mar 2022 Adjusted



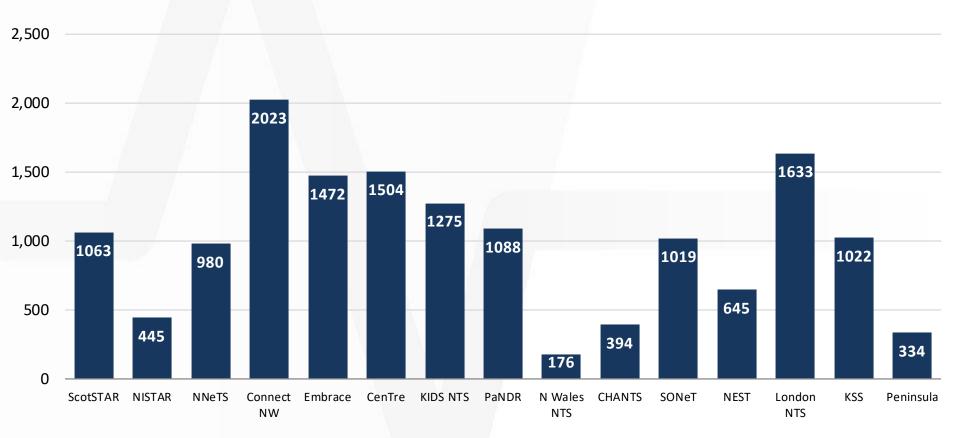
	Adjusted 2012-2019 Ave	2019/20	2020/21	2021/22
Total transfers	15,623	15,603	14,228	15,073
Ventilated	3,962	3,677	3,217	3,387
	(25.4%)	(23.6%)	(22.6%)	(22.5%)
HFOV	70	102	112	98
	(1.8%)	(2.8%)	(3.5%)	(2.9%)
CPAP	1,514	1,070	871	1,029
	(9.7%)	(6.9%)	(6.1%)	(6.8%)
High-flow	1,194	1,712	541	541
	(7.7%)	(11.0%)	(3.8%)	(3.6%)
Cooling	538	541	502	496
	(3.4%)	(3.5%)	(3.5%)	(3.3%)
iNO	264	293	62	62
	(1.7%)	(1.9%)	(0.4%)	(0.4%)
Palliative	49	62	56	53
	(0.3%)	(0.4%)	(0.4%)	(0.4%)



### Total Transfers/team Apr 2021 to Mar 2022





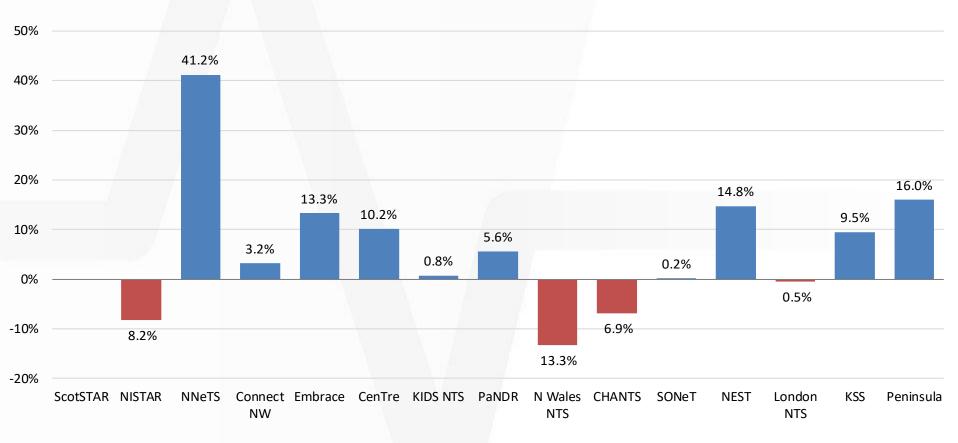




### Changes in activity by team, 2021/22 v 2021/22





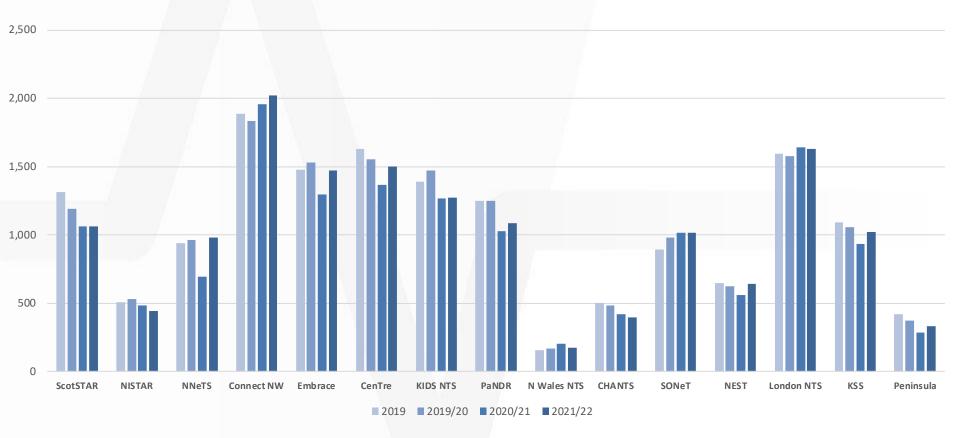




### Trends in transfer number by team, 2019 to 2021/22







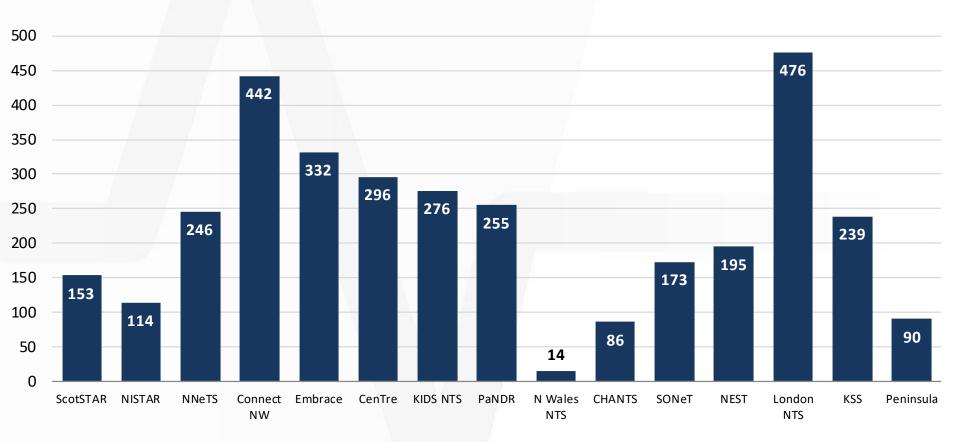
2019-20 onwards data 12-month collection period, prior to that 6 months used, adjusted for comparison



#### Ventilated Transfers/team Apr 2021 to Mar 2022







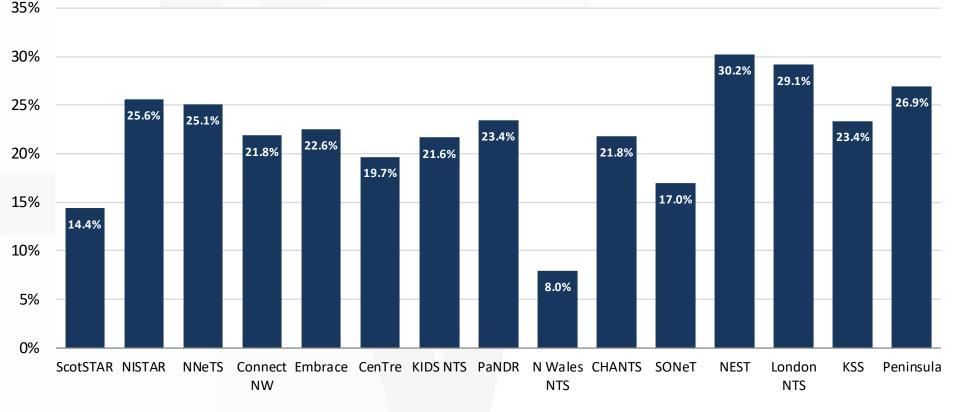


# Ventilated Transfers as a







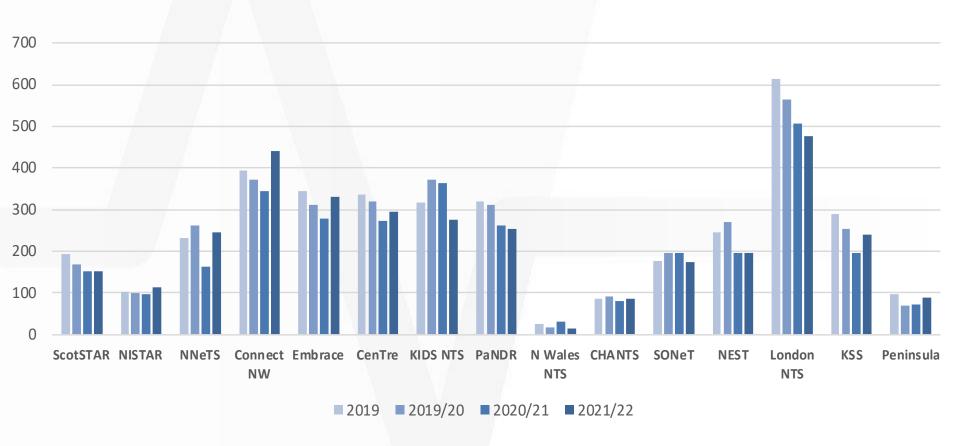




### Trends in numbers of ventilated transfer by team 2019 to 2021/22





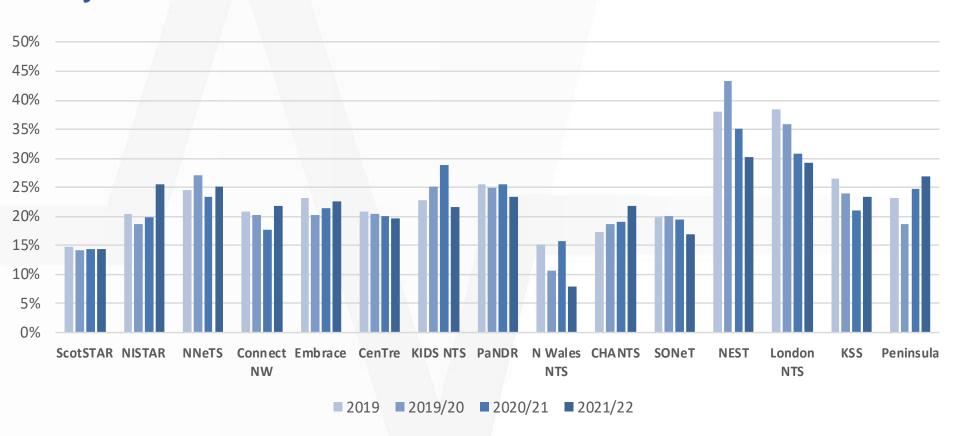




# Ventilated transfers as percentage of total transfers, by team 2019 to 2021/22





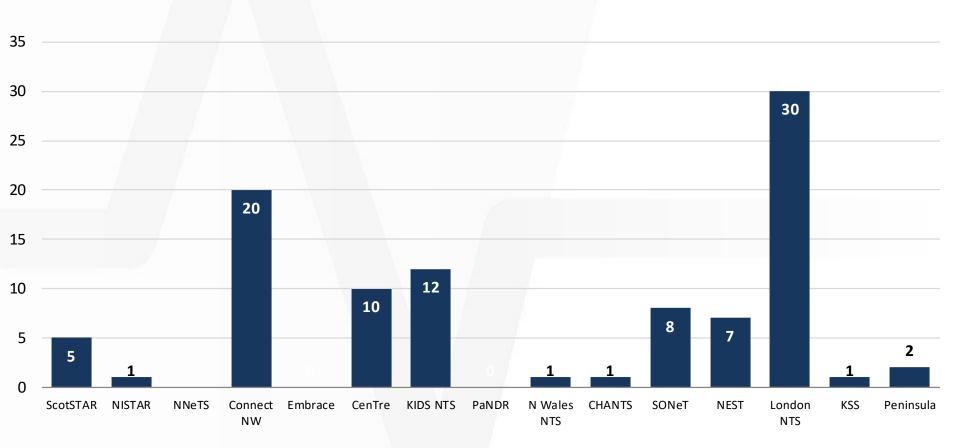




#### HFOV Transfers/team Apr 2021 to Mar 2022





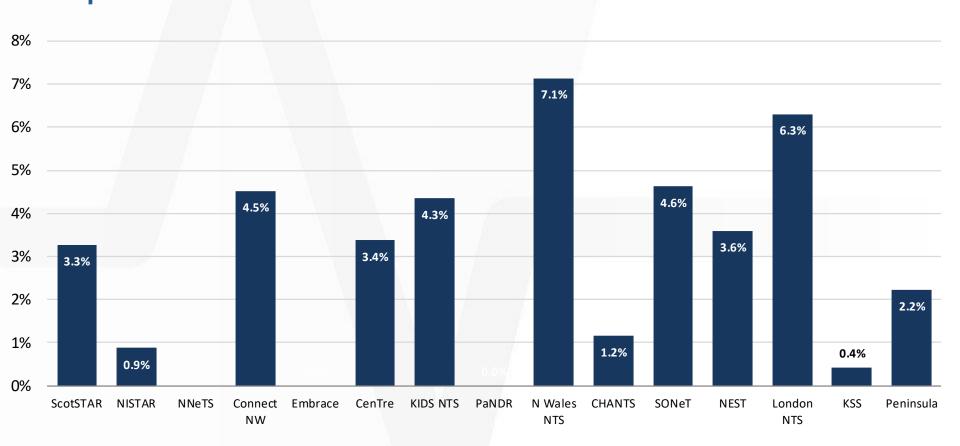




# HFOV Transfers as a percentage of ventilated transfers, by team Apr 2021 to Mar 2022



Scottish Ambulance

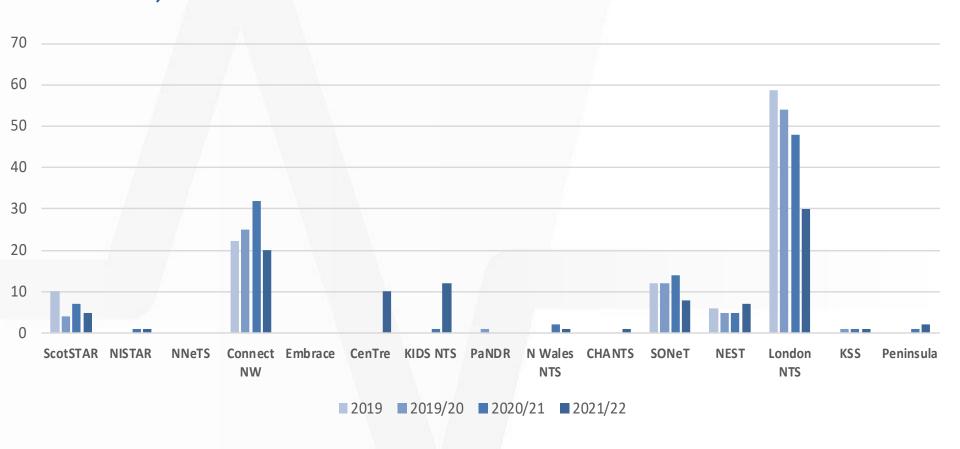




### Trends in numbers on HFOV by team, 2019 to 2021/22

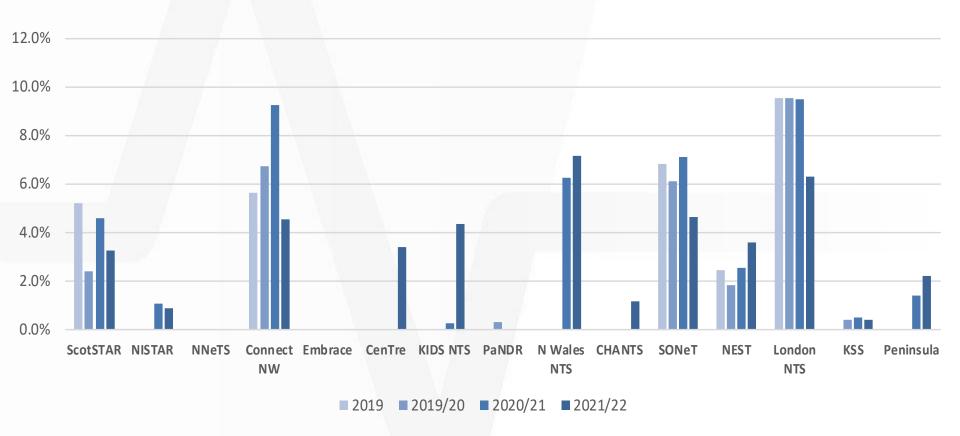








## Trends in HFOV transfers as a percentage of ventilated transfers by team 2019 to 2021/22

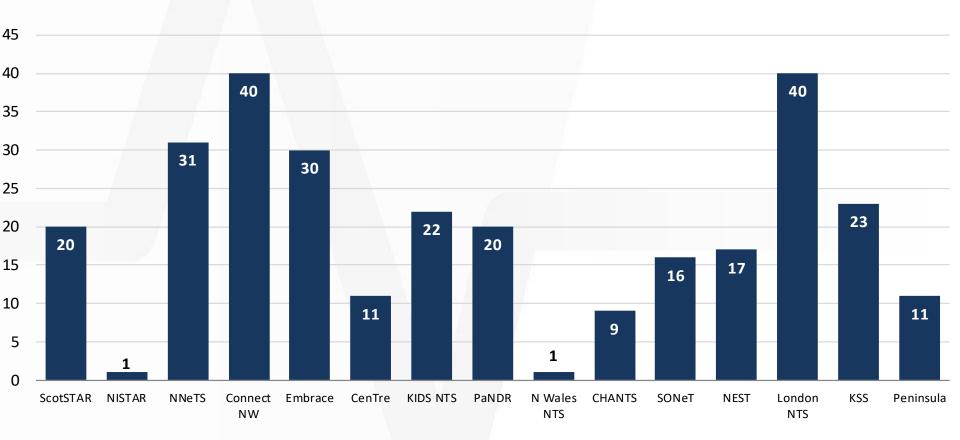




#### Nitric Oxide Transfers/team Apr 2021 to Mar 2022





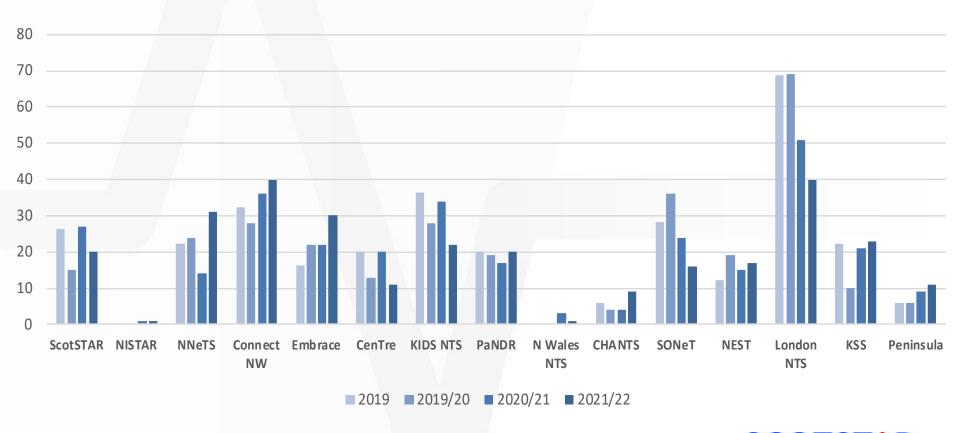




### Trends in numbers on Nitric Oxide by team, 2019 to 2021/22

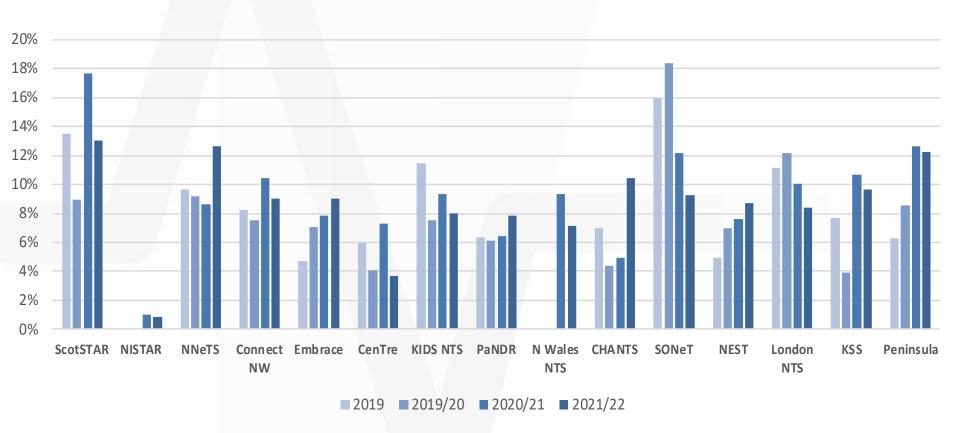








## Trends in Nitric Oxide transfers as a percentage of ventilated transfers by team 2019 to 2021/22

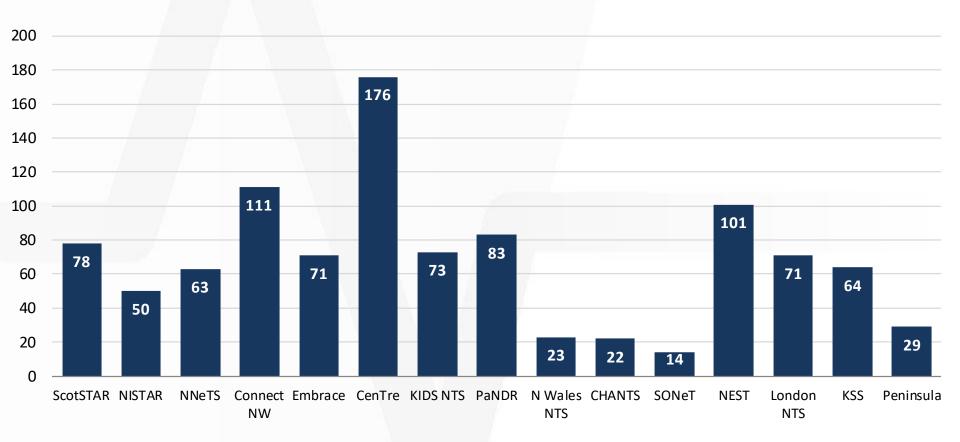




#### CPAP Transfers/team Apr 2021 to Mar 2022





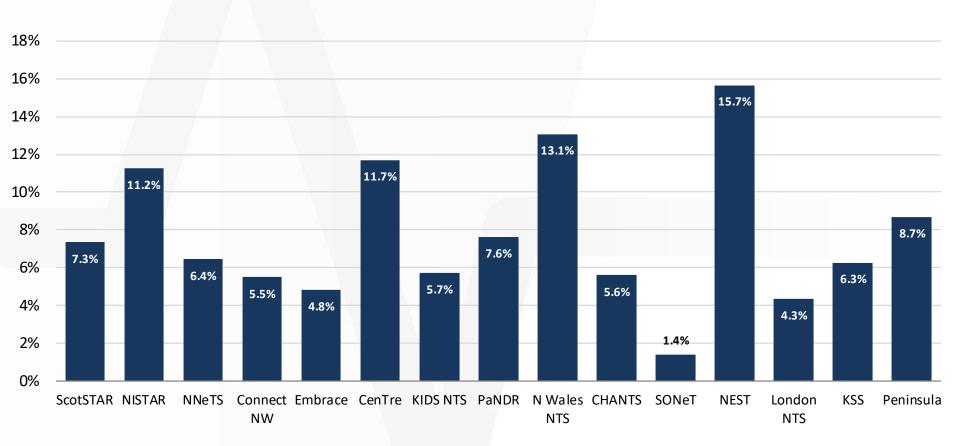




## CPAP Transfers as a percentage of total transfers, by team Apr 2021 to Mar 2022





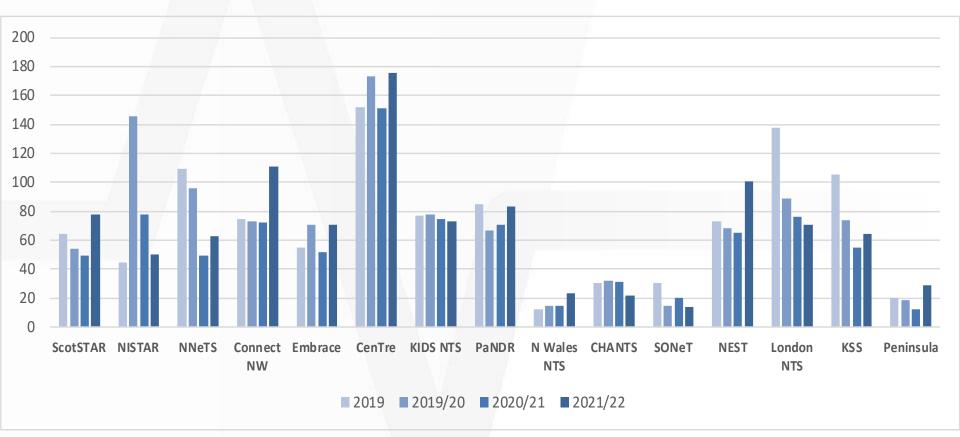




### Trends in numbers on CPAP by team, 2019 to 2021/22





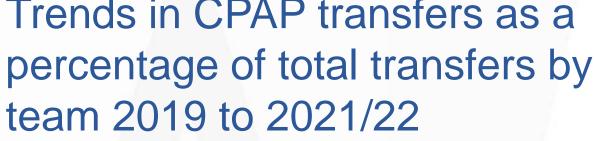


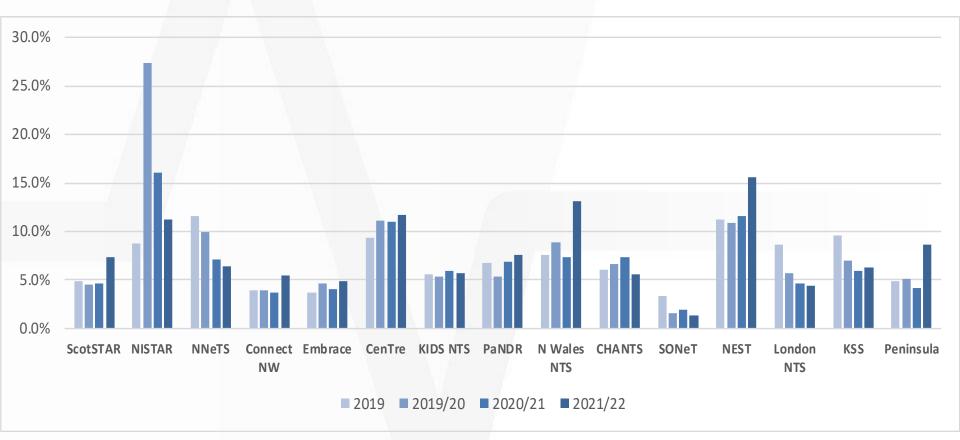


## Trends in CPAP transfers as a







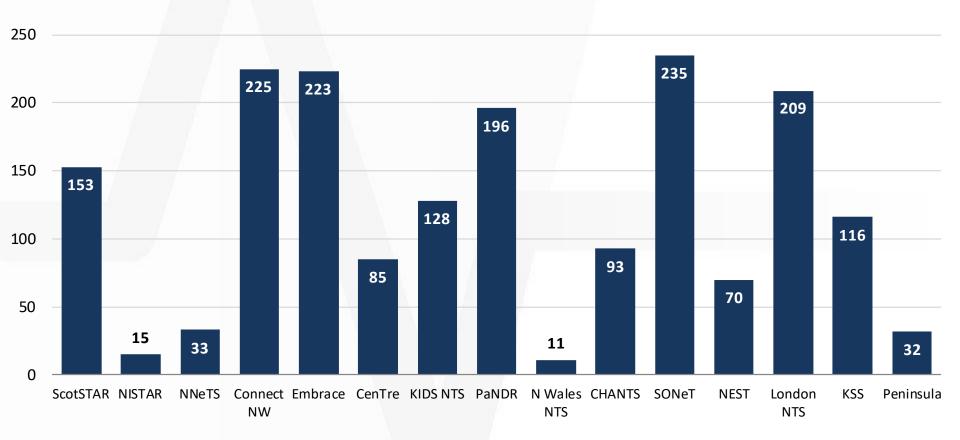




#### High-flow Transfers/team Apr 2021 to Mar 2022





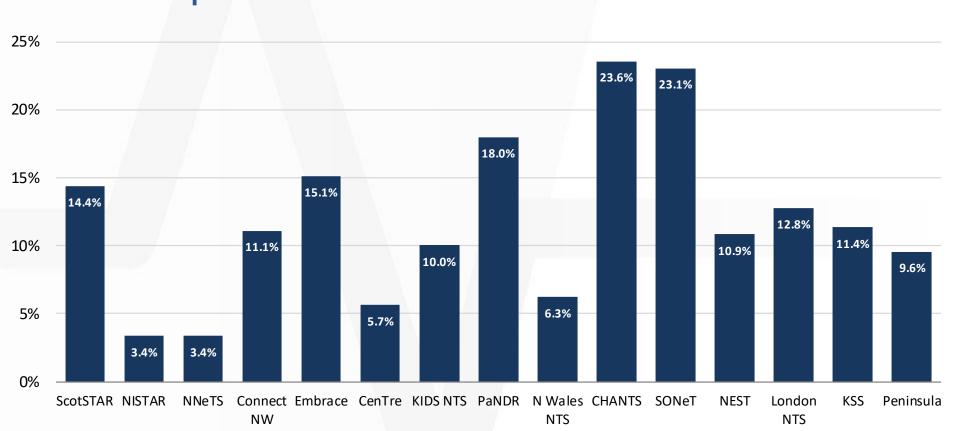




# High-flow Transfers as a percentage of total transfers, by team Apr 2021 to Mar 2022





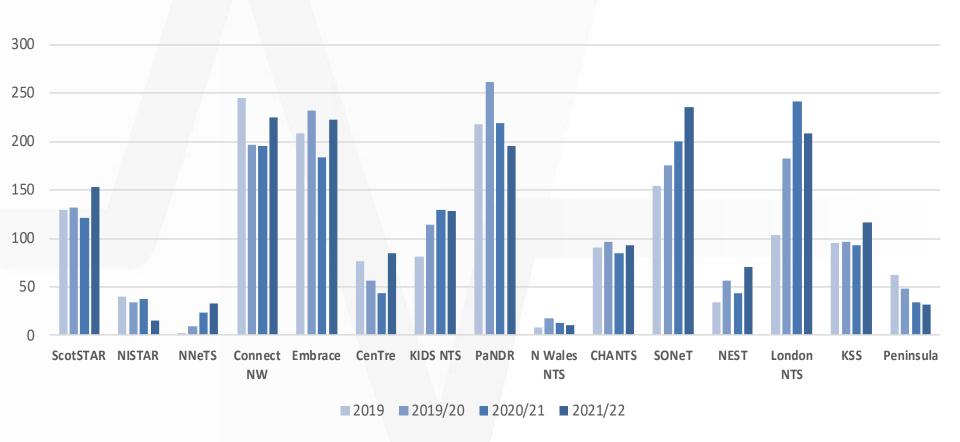




### Trends in numbers on High-flow by team, 2019 to 2021/22







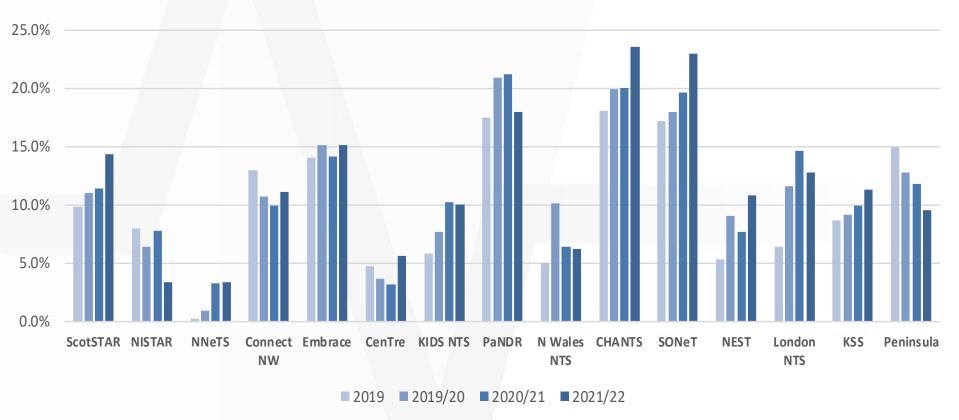


## Trends in High-flow transfers as







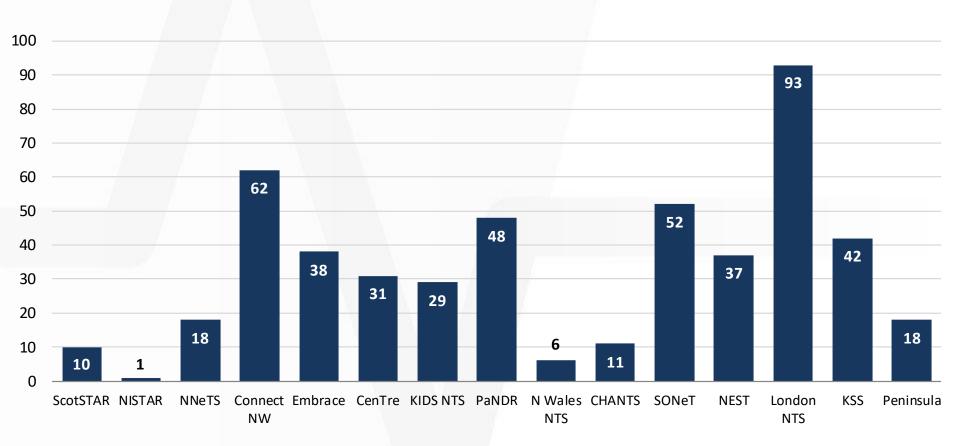




#### Cooling Transfers/team Apr 2021 to Mar 2022





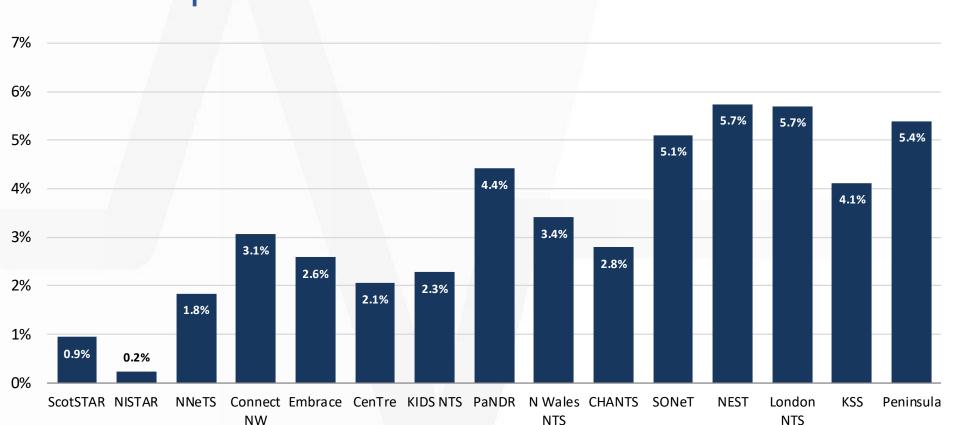




# Cooling Transfers as a percentage of total transfers, by team Apr 2021 to Mar 2022





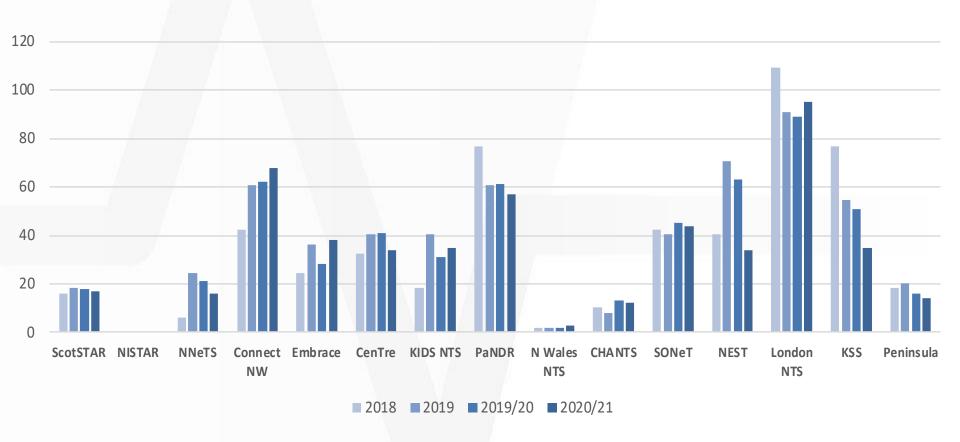




### Trends in numbers on Cooling by team, 2019 to 2021/22





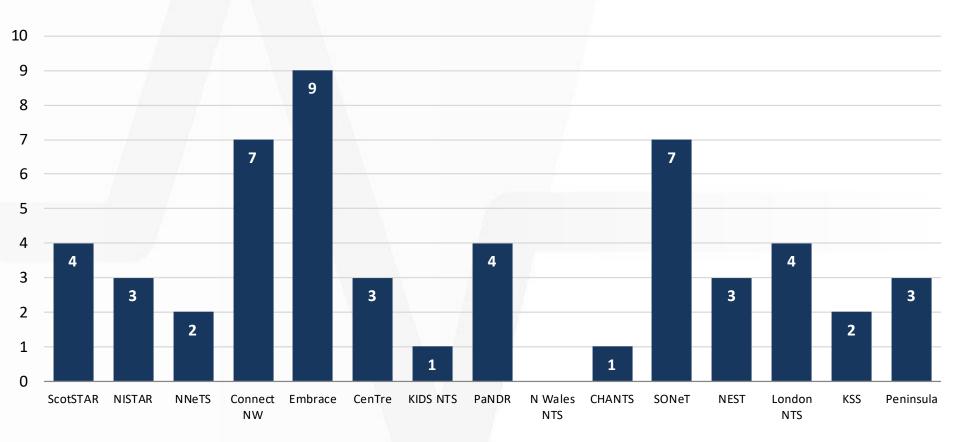




### Transfers for Palliative care by team Apr 2021 to Mar 2022









# Transfers for Palliative care as a percentage of total transfers, by team Apr 2021 to Mar 2022

CenTre

Embrace

KIDS NTS

**PaNDR** 

N Wales

NTS

**CHANTS** 

**SONeT** 

**NEST** 

London

NTS

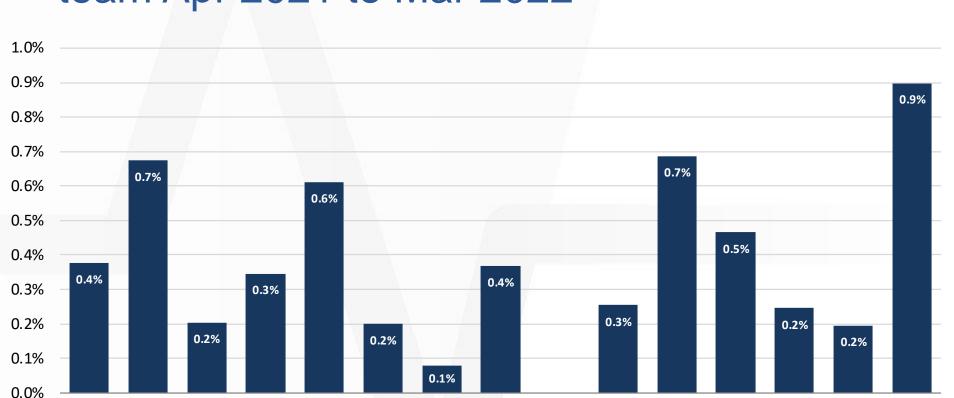
ScotSTAR NISTAR

**NNeTS** 

NW









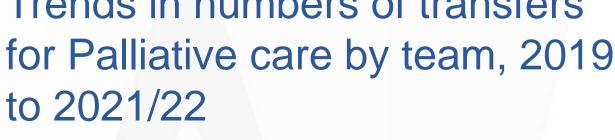
KSS

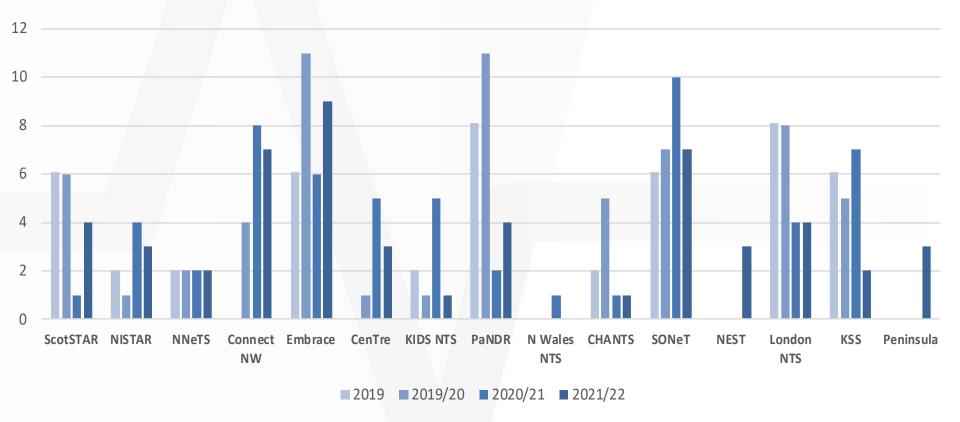
Peninsula

## Trends in numbers of transfers









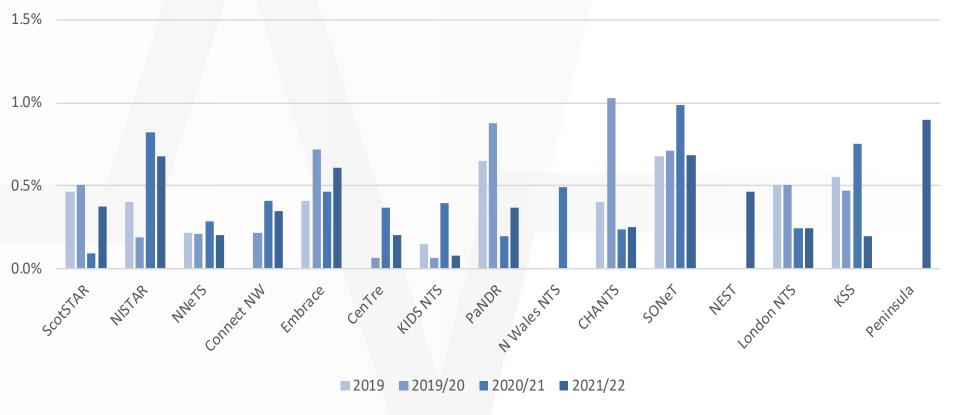


# Trends in Palliative transfers as







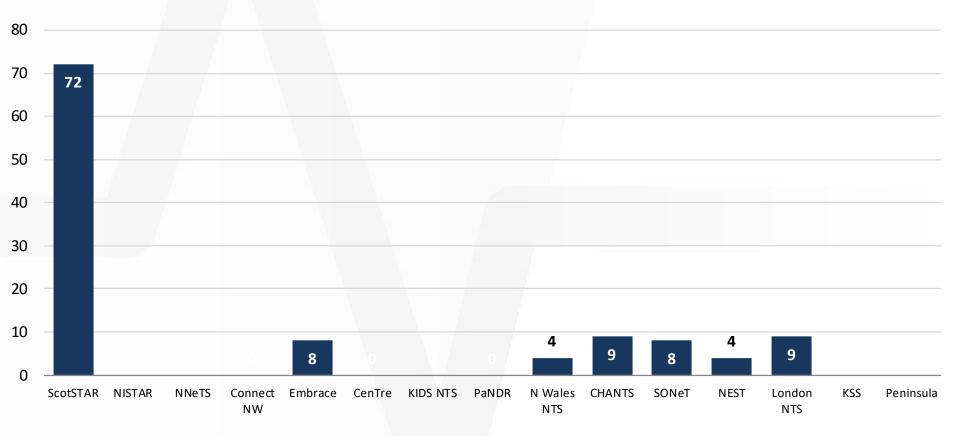




#### Air Transfers/team Apr 2021 to Mar 2022





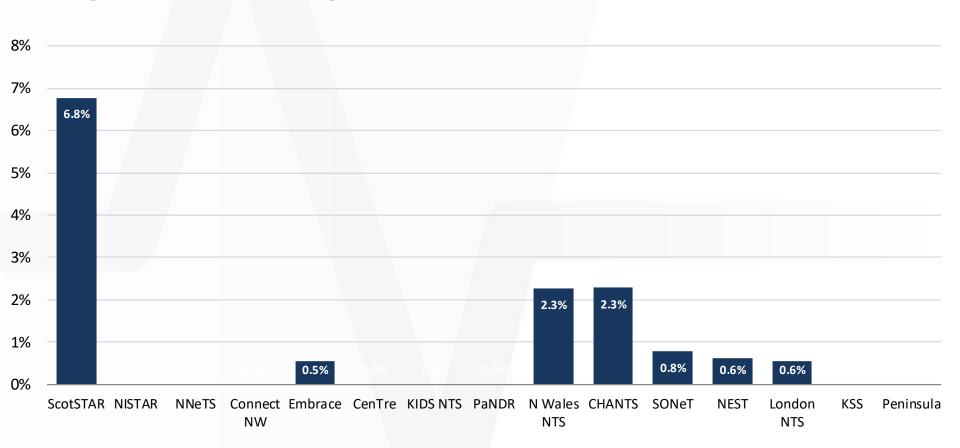




# Air Transfers as a percentage of total transfers, by team Apr 2021 to Mar 2022





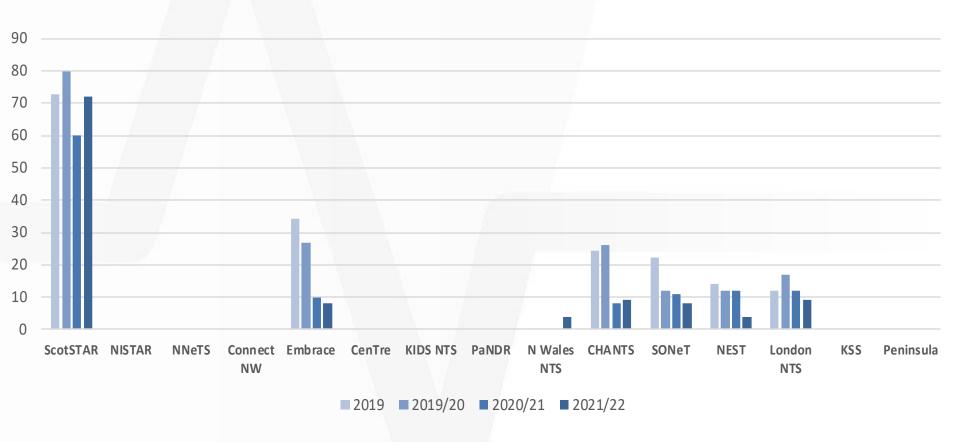




### Trends in numbers of Air transfers by team, 2019 to 2021/22



Scottish Ambulance Service



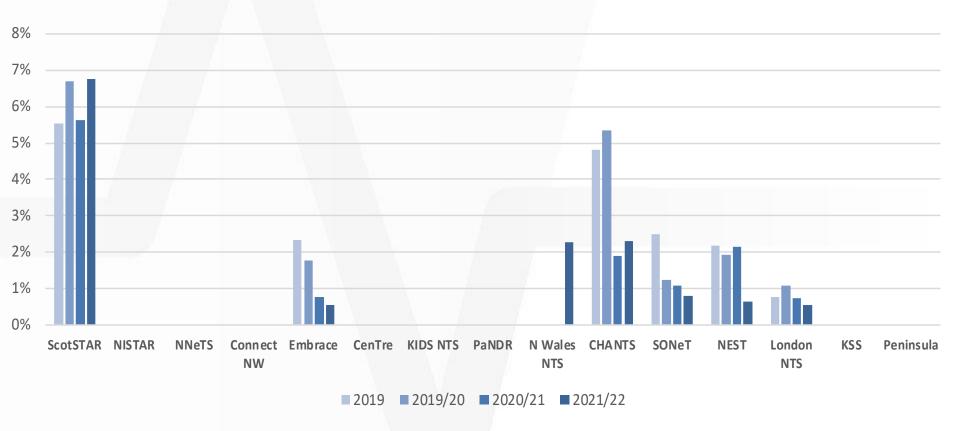


## Trends in Air transfers as a











### Premature Newborn Infant Workload





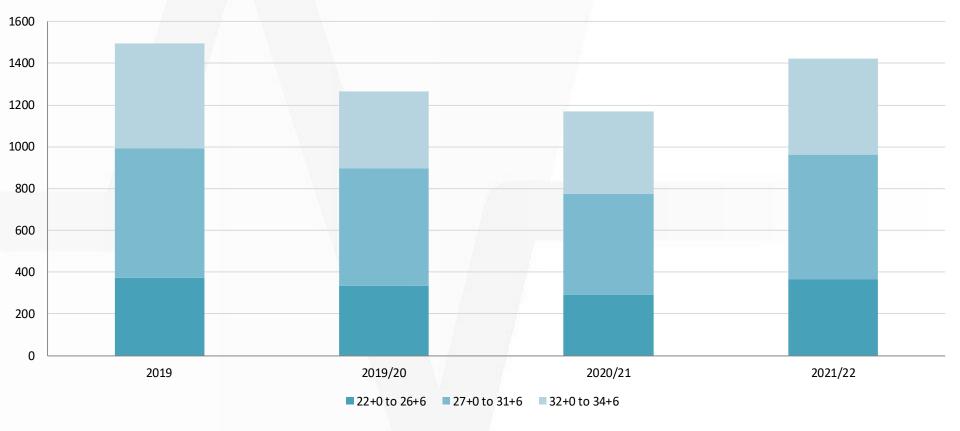
#### Data on

- Transfers on the first 3 days of birth
  - 22<sup>+0</sup> weeks to 26<sup>+6</sup> weeks (from 2019/20)
  - 27<sup>+0</sup> weeks to 31<sup>+6</sup> weeks
  - 32<sup>+0</sup> weeks to 36<sup>+6</sup> weeks
- Operational reason for transfer
  - Uplift
  - Capacity
  - Repatriation



#### Premature infants transferred on the first 3 days of life for **Uplift of care** 2019 to 2021/22

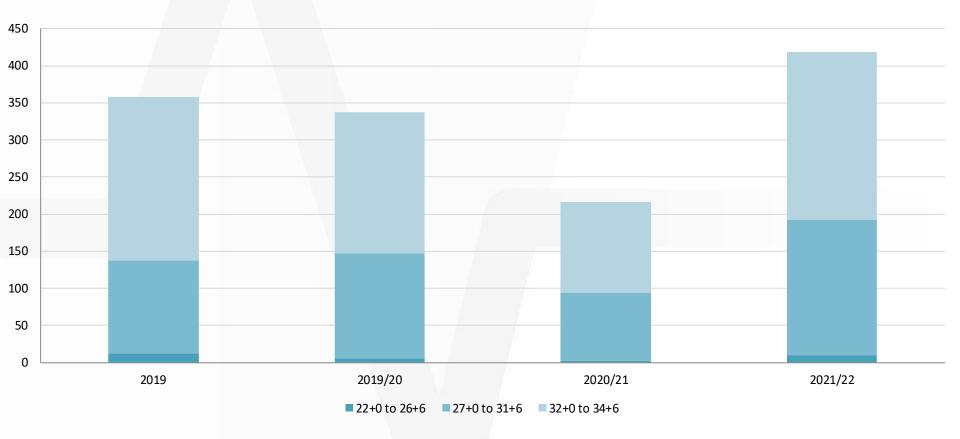






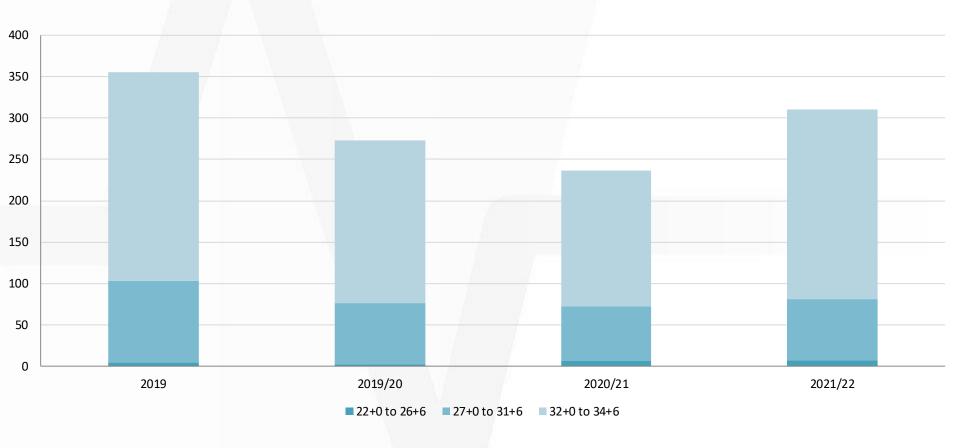
### Premature infants transferred on the first 3 days of life for **Capacity** 2019 to 2021/22





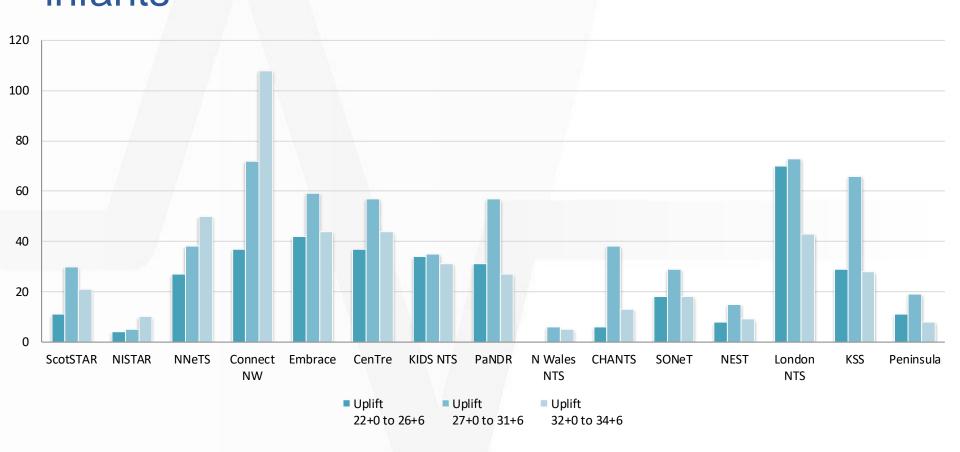


### Premature infants transferred on the first 3 days of life for **Repatriation** 2019 to 2021/22



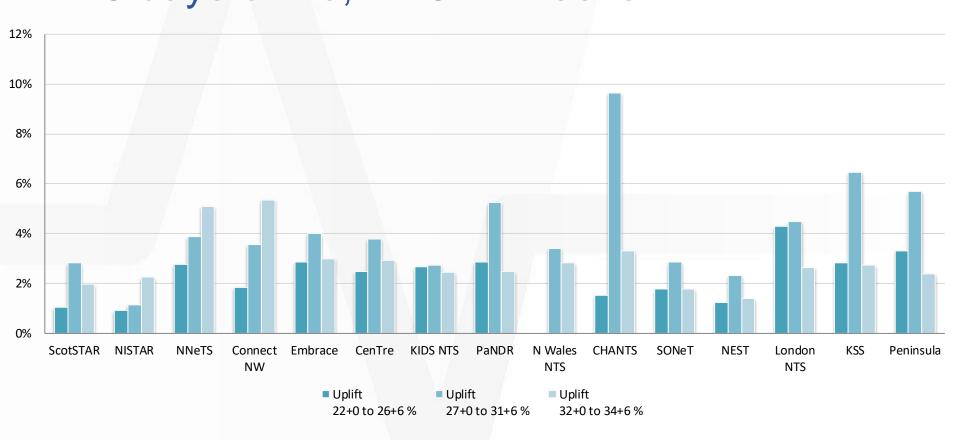


# 2021/22 Uplift transfers by team and gestation, 1st 3 days of life, 22-31+6 week infants





# 2021/22 Uplift transfers by Team and gestation as a percentage of total transfers 1st 3 days of life, 22-31+6 weeks

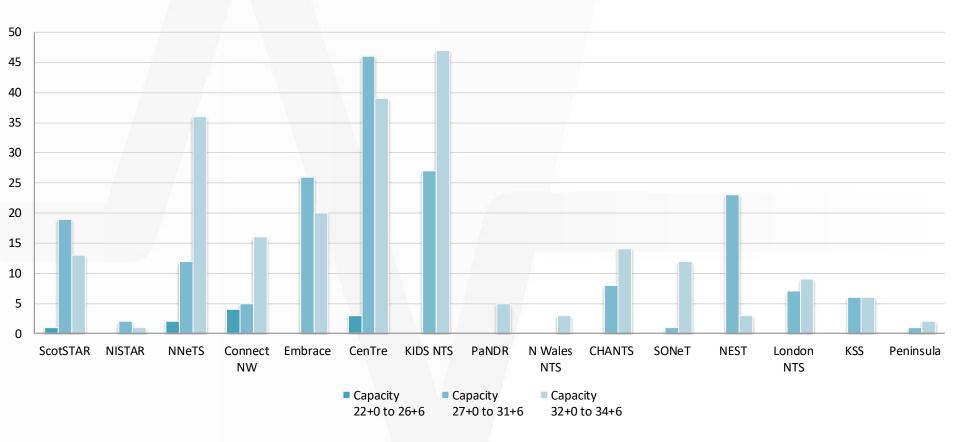




### 2021/22 Capacity transfers by team, 1st 3 days of life, 22-34+6 week infants





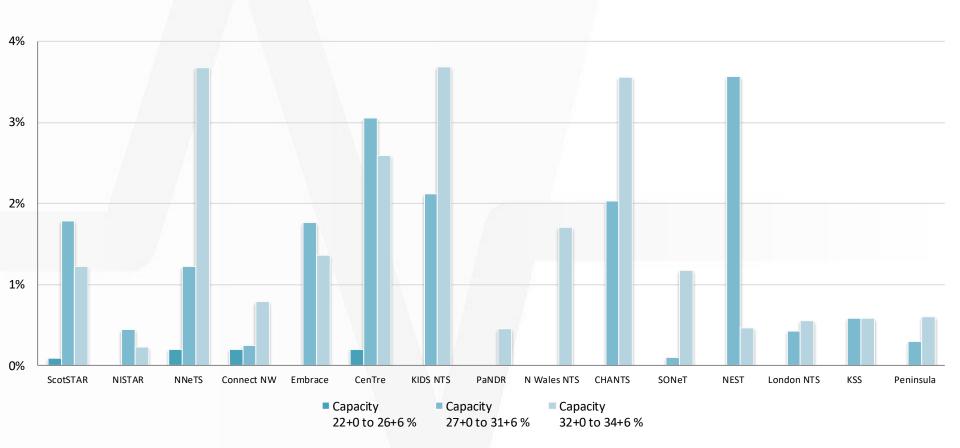




### 2021/22 Capacity transfers by Team as a percentage of total transfers 1st 3 days of life, 22-34+6 weeks

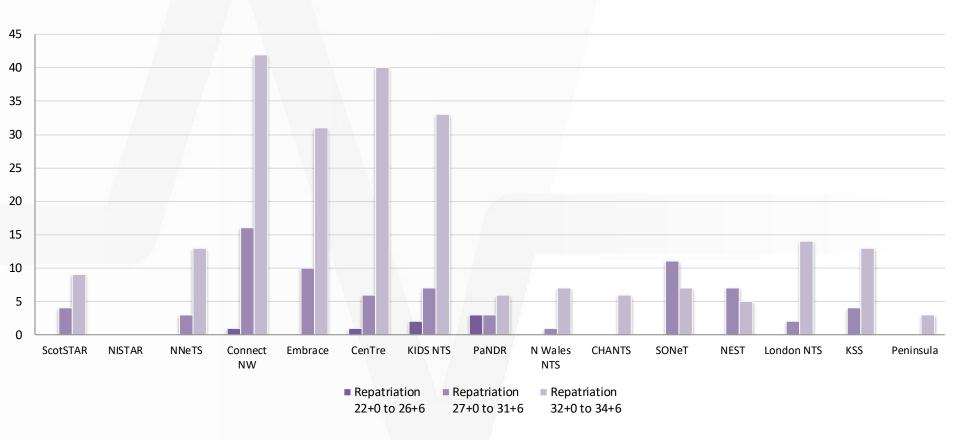








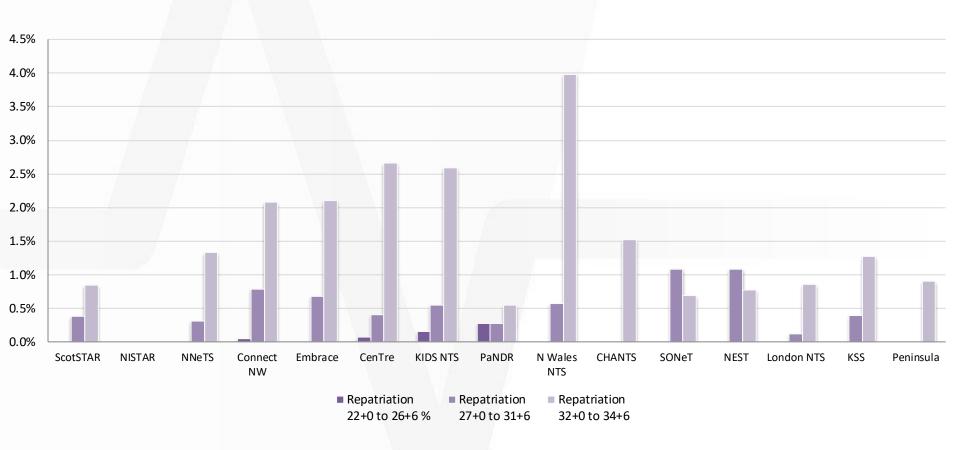
### 2021/22 Repatriation transfers by team and gesation, 1st 3 days of life, 22-34+6 week infants





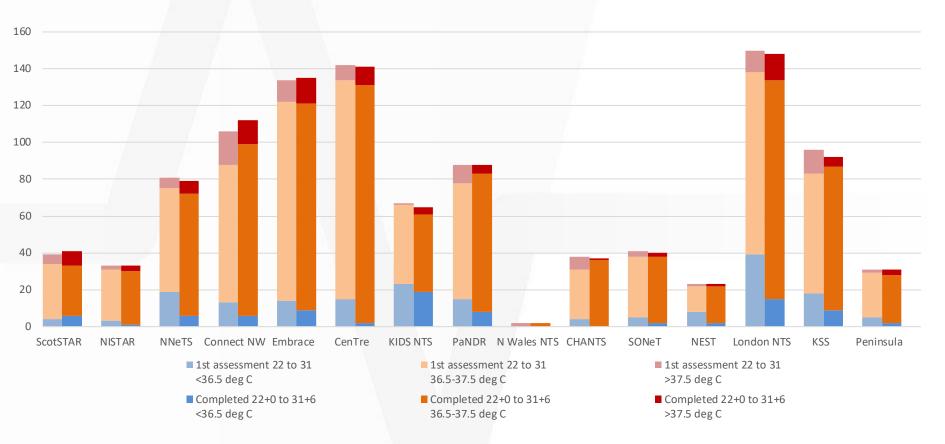
## 2021/22 Repatriation transfers by Team and gestation as a percentage of total transfers 1st 3 days of life, 22-34+6 weeks







## 1.3 Newborn Infants 22 to 31<sup>+6</sup> weeks Service Service



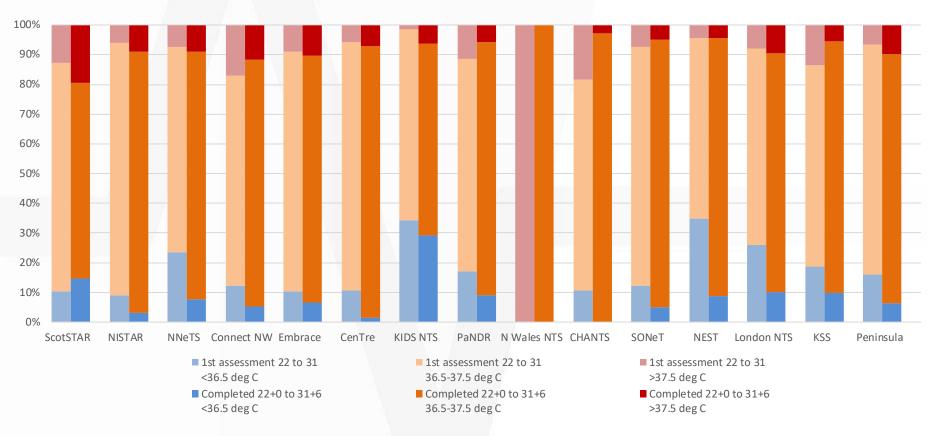


#### 1.3 Newborn Infants 22 to 31<sup>+6</sup> weeks



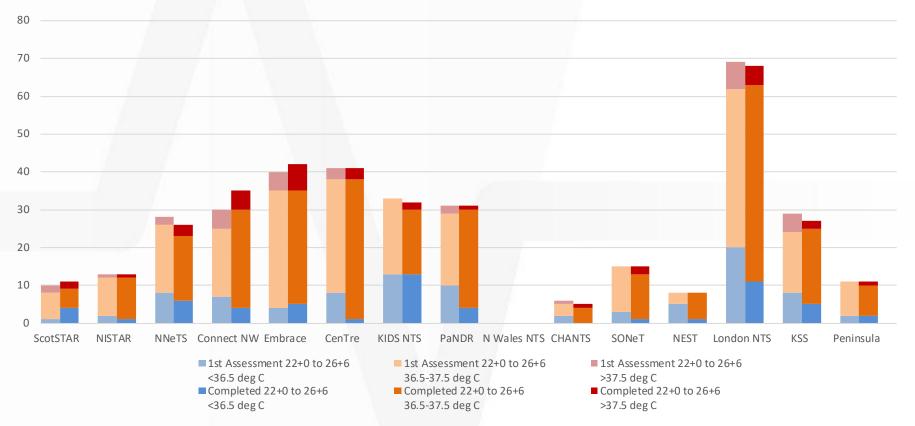


### Temperatures on arrival and completion of transfer as 100% Apr 2021 to Mar 2022





## 1.3 Newborn Infants 22 to 26<sup>+6</sup> weeks Service Service



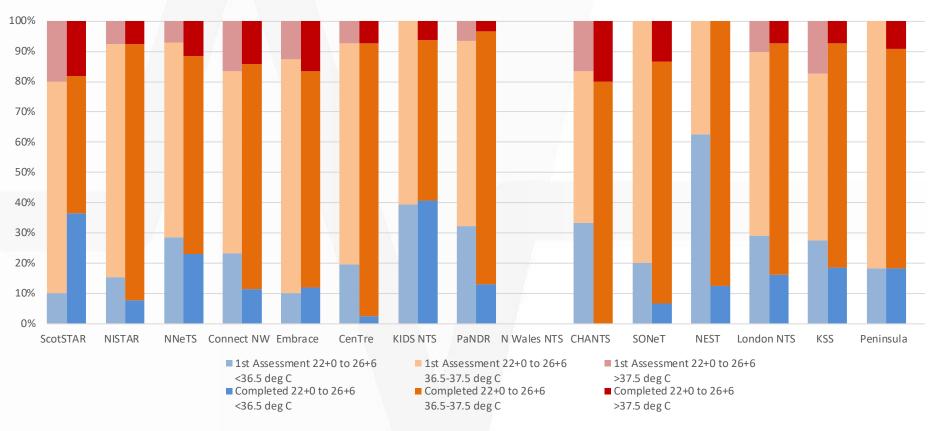


#### 1.3 Newborn Infants 22 to 26<sup>+6</sup> weeks Temperatures on arrival and completion



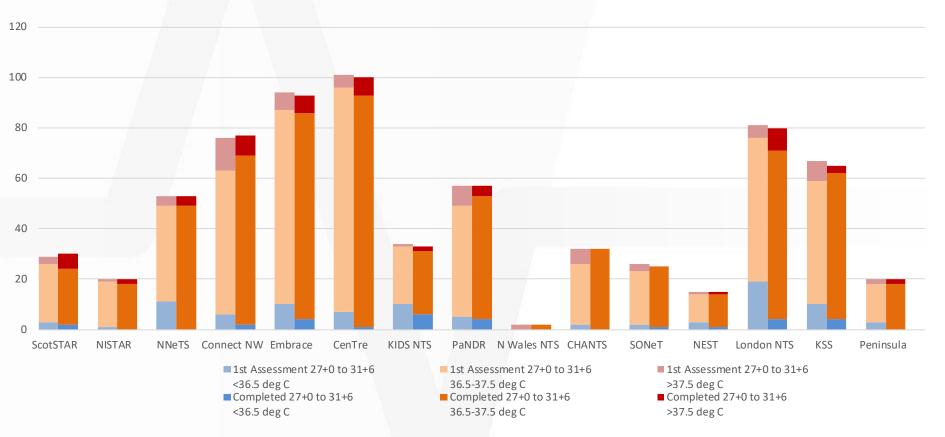


### Temperatures on arrival and completion of transfer as 100% Apr 2021 to Mar 2022





## 1.3 Newborn Infants 27 to 32<sup>+6</sup> weeks Service Service



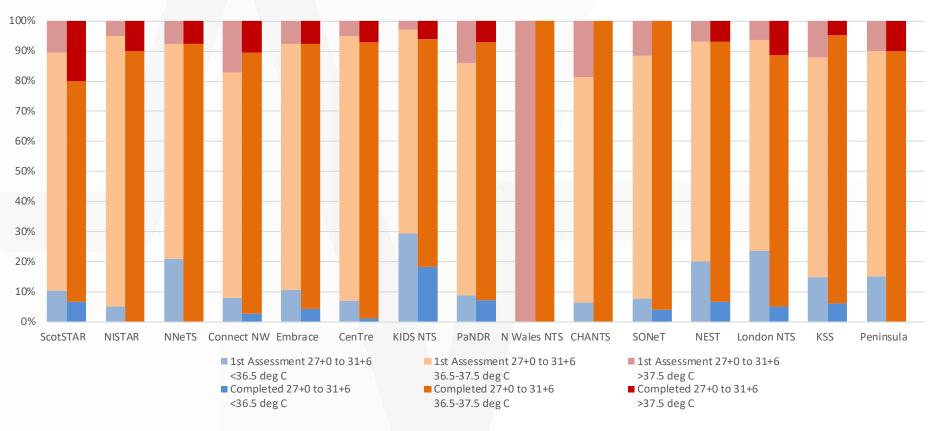


#### 1.3 Newborn Infants 27 to 32<sup>+6</sup> weeks Temperatures on arrival and completion



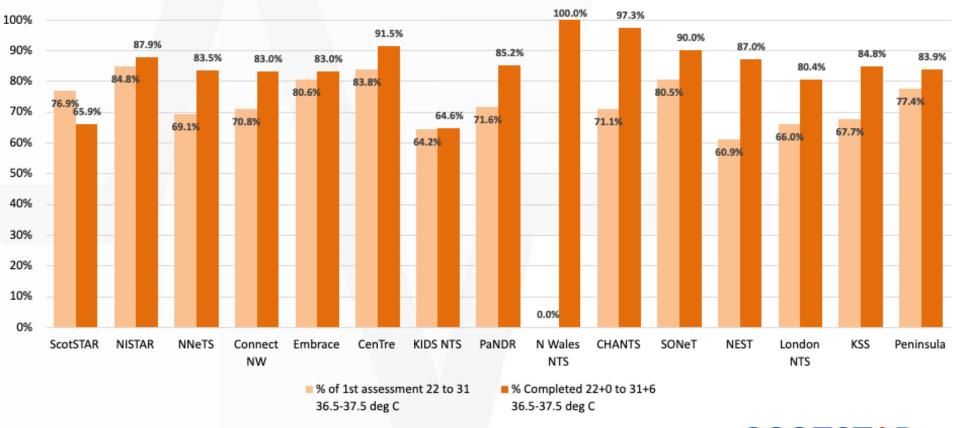


### Temperatures on arrival and completion of transfer as 100% Apr 2021 to Mar 2022





### 1.3 Summary- Normothermia (36.5-37.5 °C) at first assessment then on completion of transfer 22-31+6 weeks Apr 2021 to Mar 2022









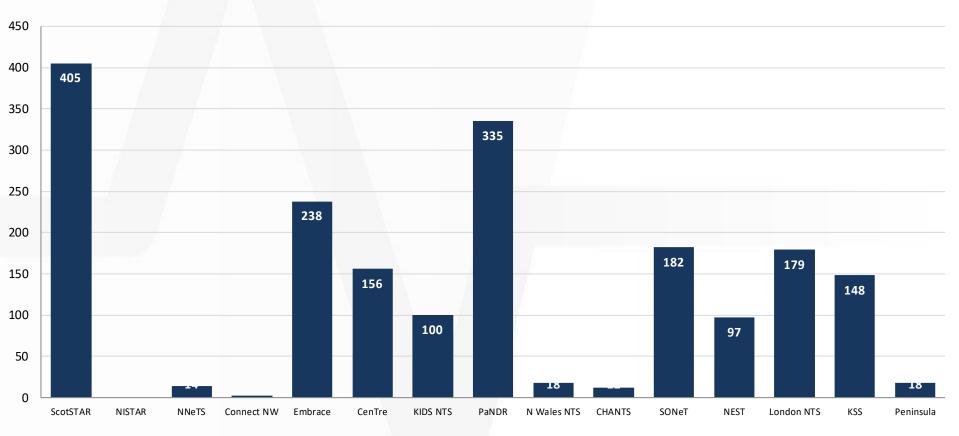
#### Parents travelling with their baby



### Number of parents travelling with their baby by teamApr 2021 to Mar 2022







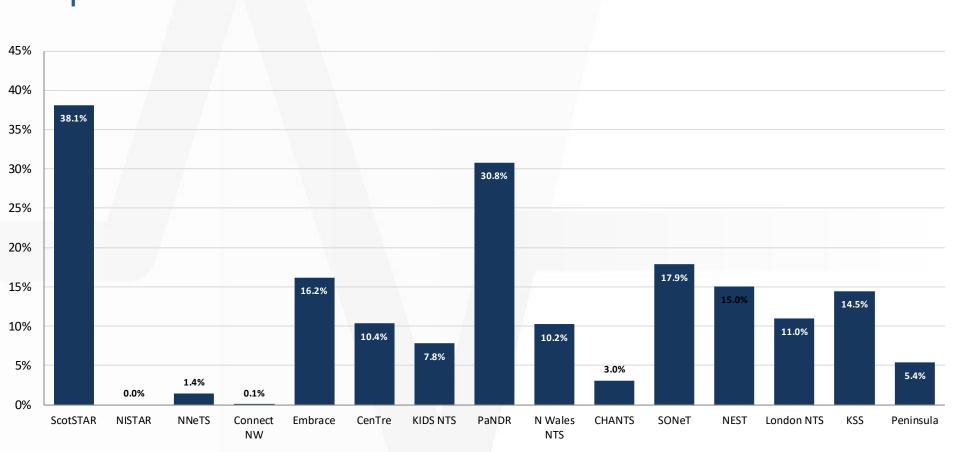






Scottish

Ambulance Service

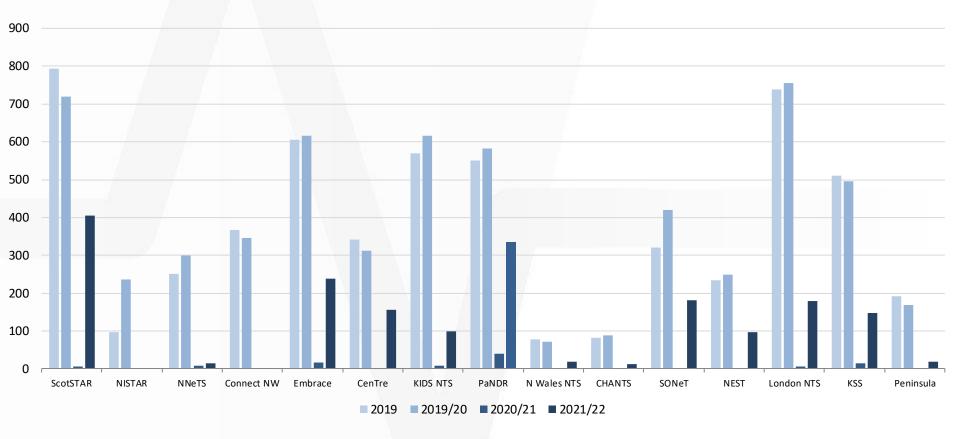




### Trends in numbers of parents travelling with their baby





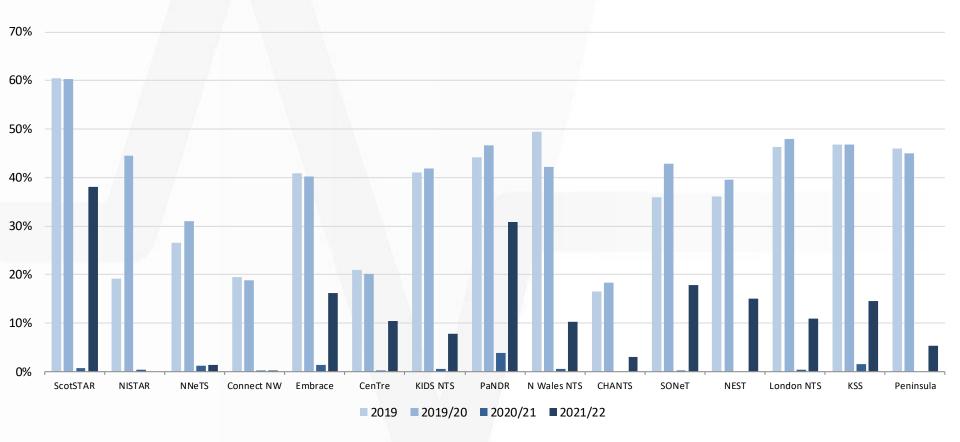




#### Trends in percentages of total transfers where parents travelled with their baby

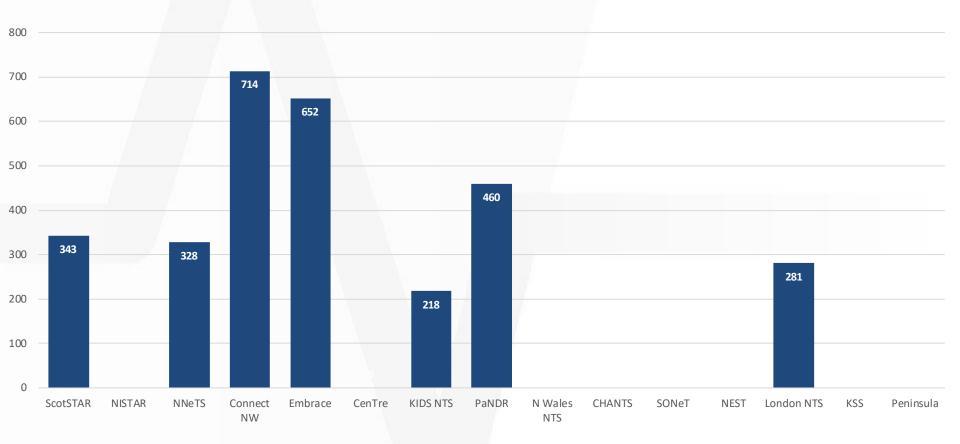






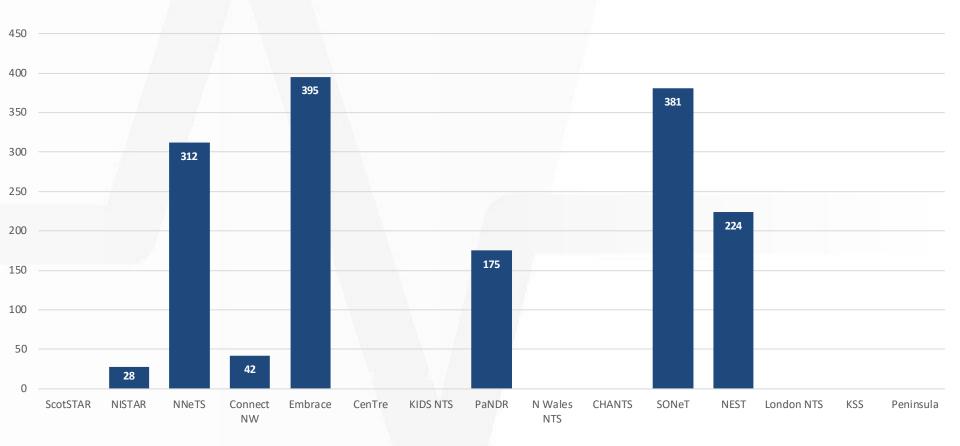


## In Utero Transfer Coordination Workload 2021/22: Number of IUTs coordinated by teams offering this service





### Advice Calls Workload 2021/22: Number of advice calls taken by teams offering this service

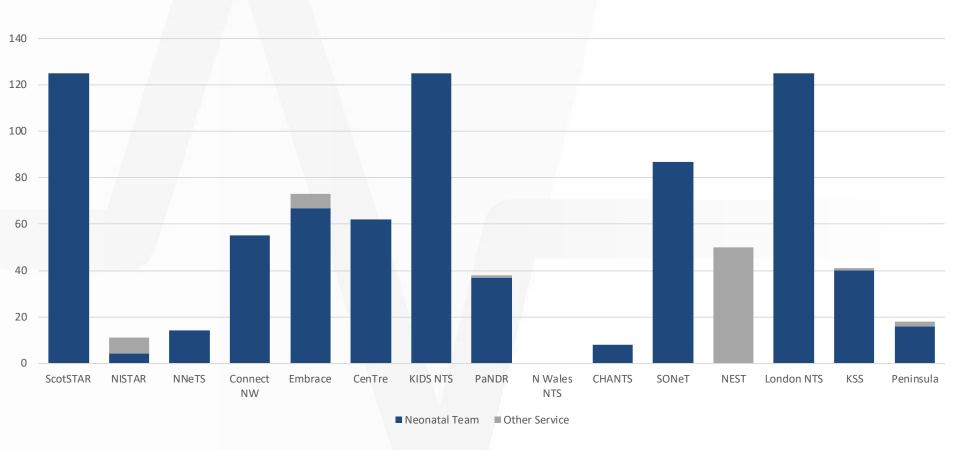








### Numbers of Babies transferred for assessment of Bilious Vomiting by team 2021/22





### Prolonged Transfers-numbers of transfers by team where the baby was in transit for 3 hours or more 2021/22

17

CenTre

KIDS NTS

Embrace

NW

ScotSTAR

NISTAR

**NNeTS** 



10

SONeT

**NEST** 

London NTS





16

**PaNDR** 

N Wales

NTS

CHANTS

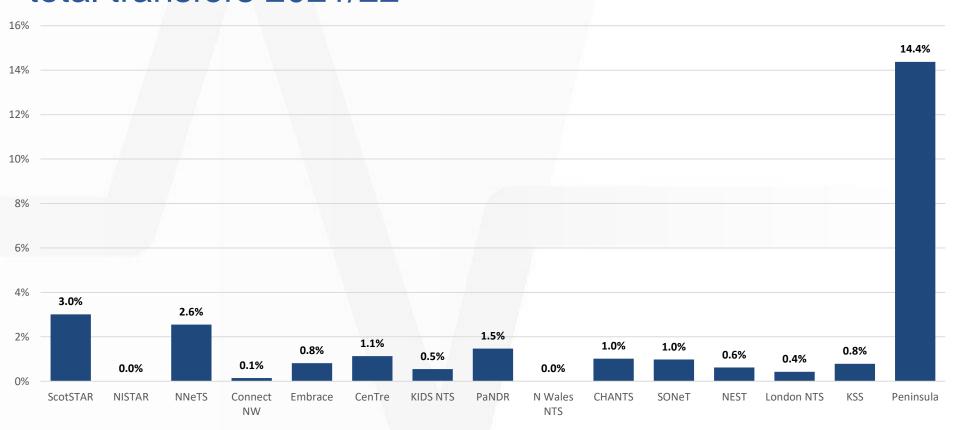


Peninsula





### Prolonged Transfers (where the baby is in transit for 3 hours or more) as a percentage of total transfers 2021/22





#### Response Standards





#### Data on

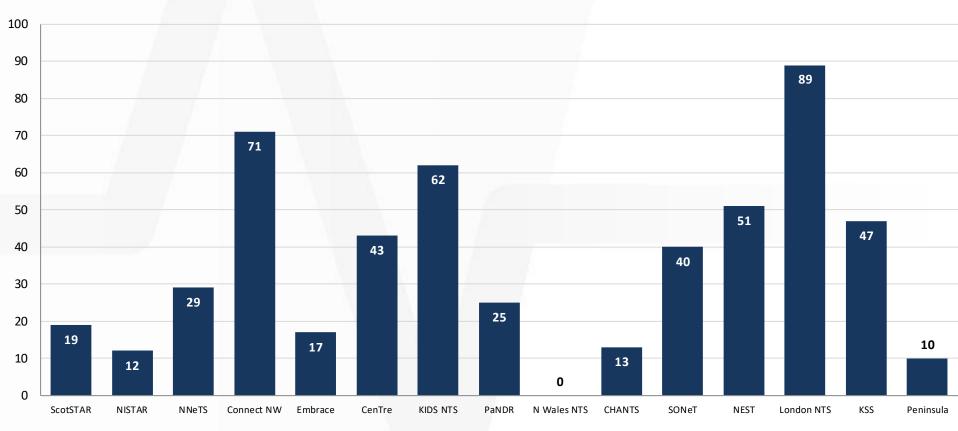
- Immediate dispatch (% mobile/60 mins)
- Referral response time (for ICU/uplift)
- Uplift transfers performed (%)



### Immediate dispatch transfers/team Apr 2021 to Mar 2022





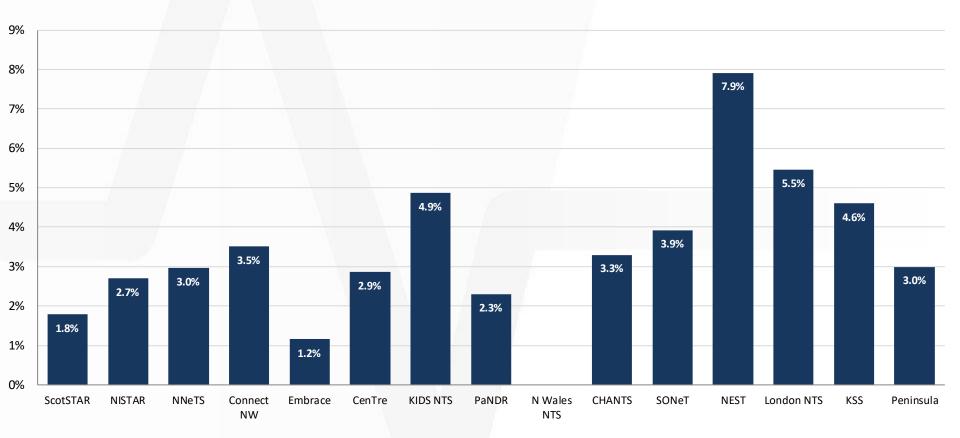




## Immediate dispatch transfers by team as a percentage of total transfer 2019-20









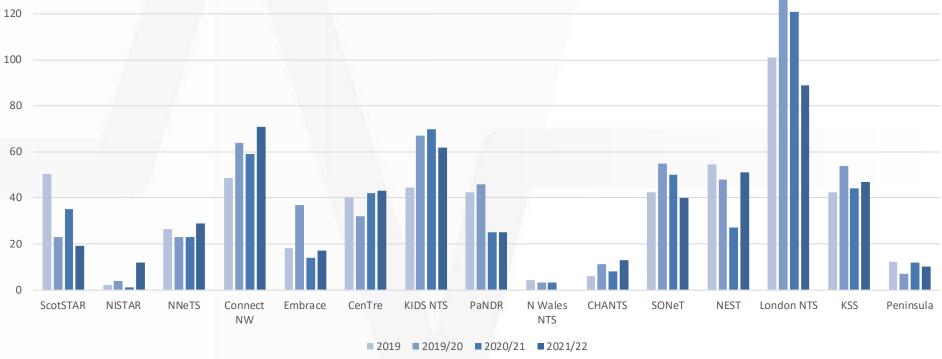
## Trends in numbers of immediate

140









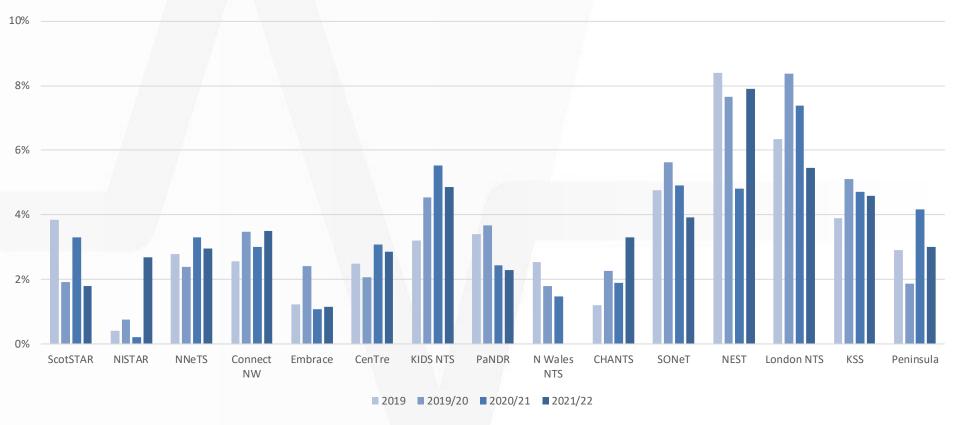


## Immediate dispatch transfers as a







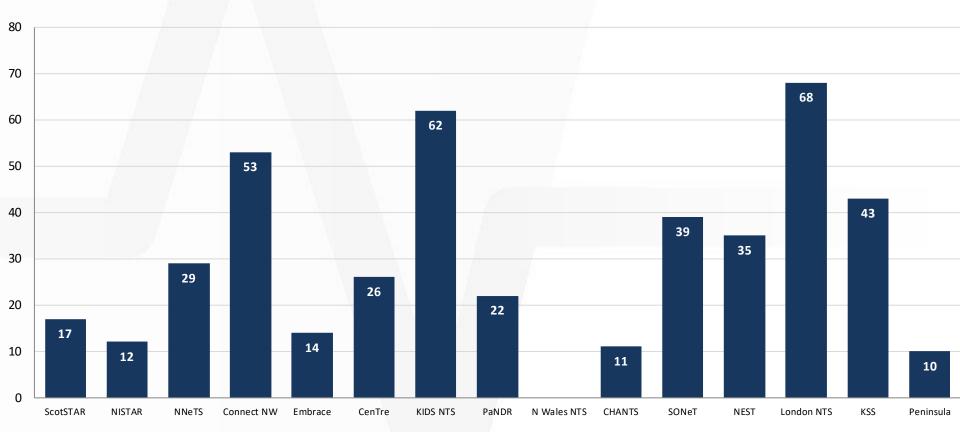


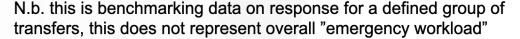


# Immediate dispatch transfers dispatched within 60 minutes by team Apr 2021 to Mar 2022





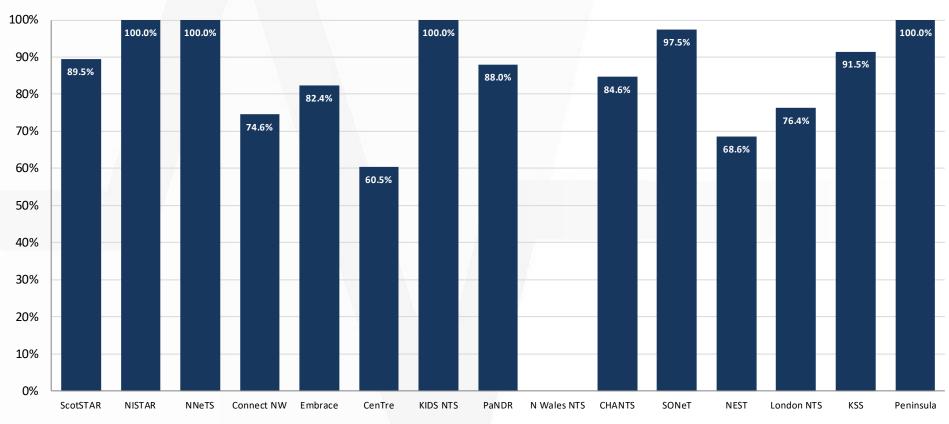






# Percentage of Immediate Dispatch transfers dispatched within 60 minutes by team Apr 2021 to Mar 2022



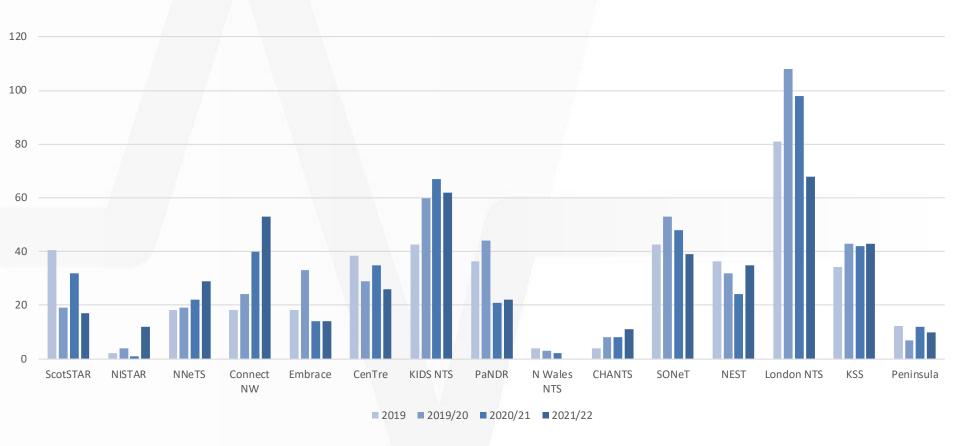




# Number of Immediate Dispatch transfers dispatched within 60 minutes by team, 2019 to 2021/22







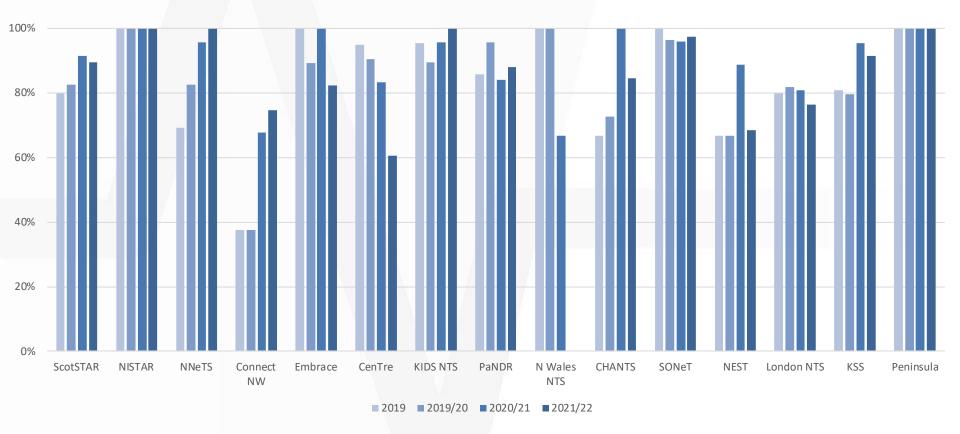


# Trends in percentage of Immediate Dispatch transfers dispatched within 60 minutes by team, 2019 to 2021/22



Scottish

Ambulance Service





#### Team Area Uplift Transfers





#### Data on

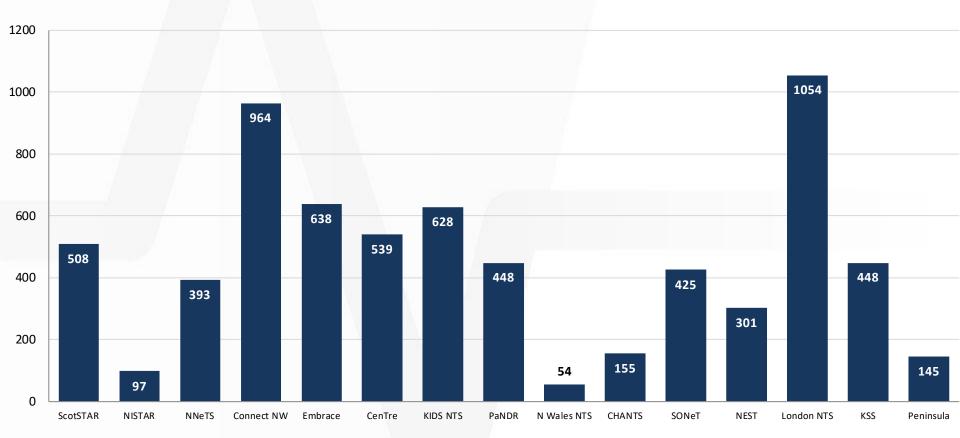
- Dedicated Neonatal Team Transfers in Area
- Uplift Transfers
- 95% of uplift transfers within area by dedicated team



### Numbers of Uplift transfers in dedicated area 2021/22





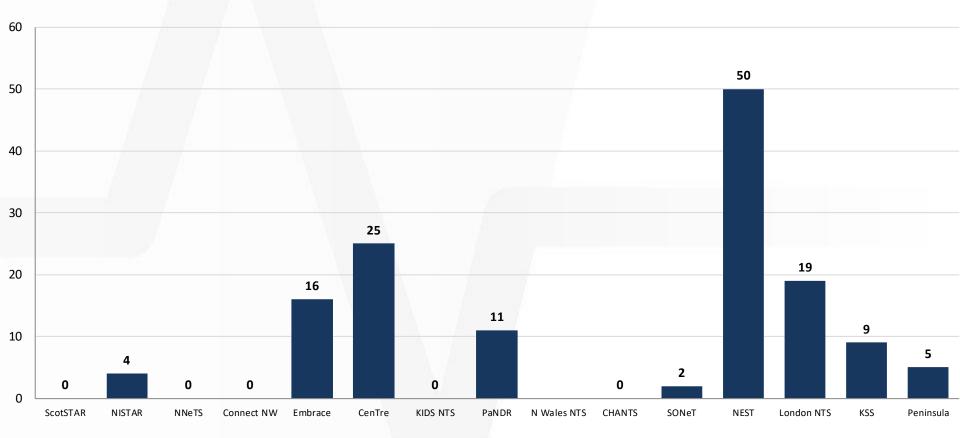




### Numbers of Uplift transfers conducted by other teams in dedicated area



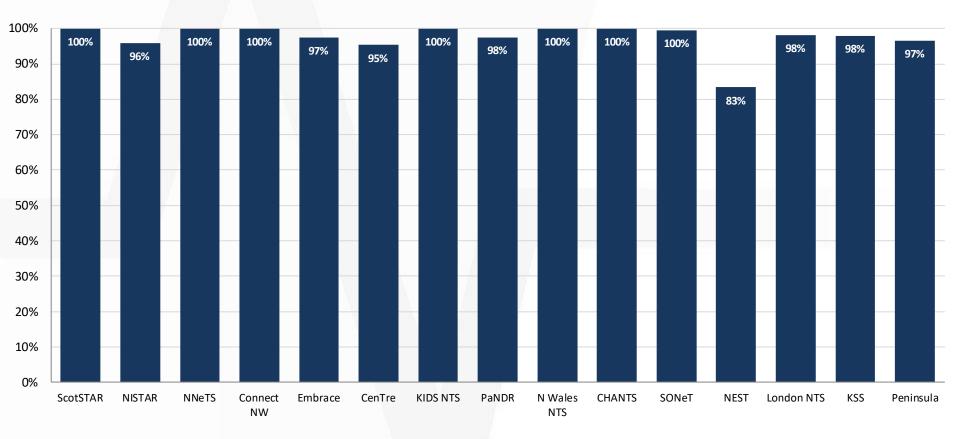






# Uplift transfers by Dedicated team in own area as a percentage of total uplift transfers





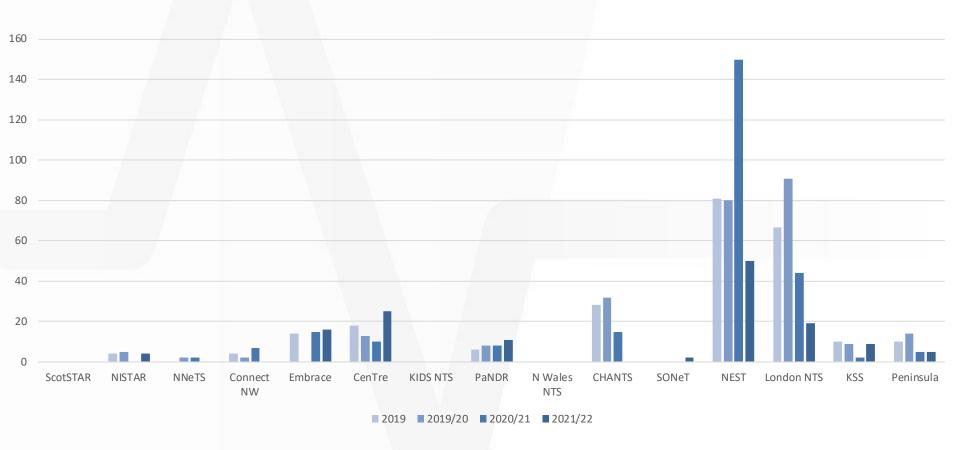


### Number of Uplift transfers by other team in dedicated area 2019 to 2021/22



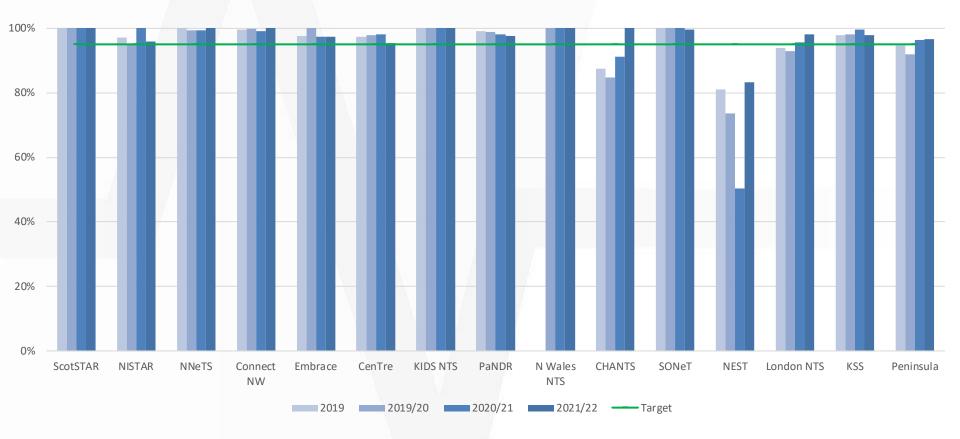
Scottish

Ambulance Service





## Trends in Uplift transfers by Dedicated service scottant team in own area, as a percentage of uplift transfers 2019 to 2021/22

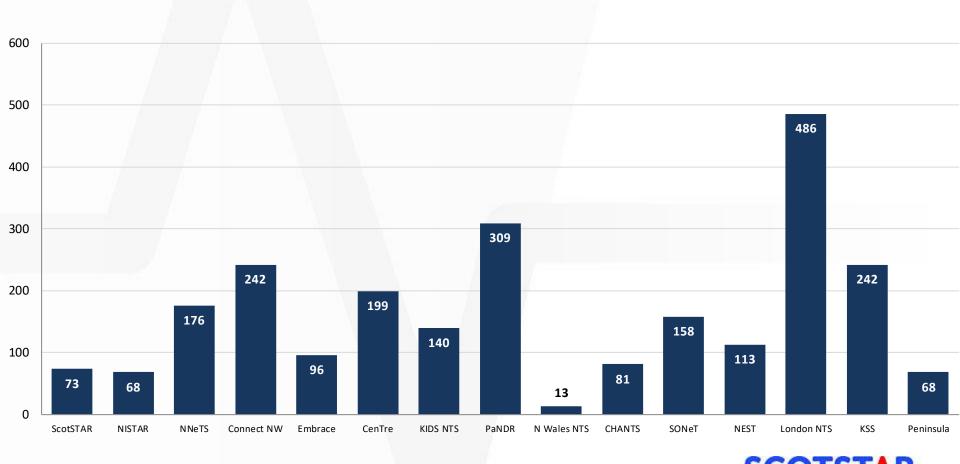




### Number of Intensive Care Uplift Transfers 2021/22



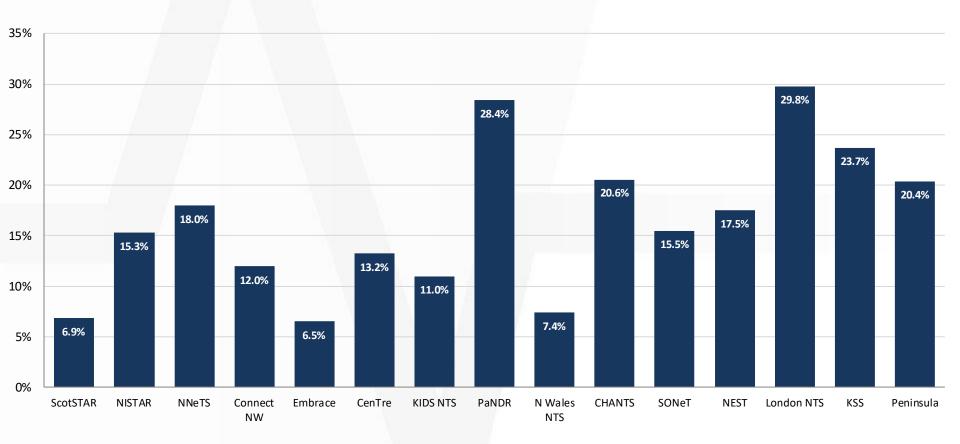




### Intensive care Uplift Transfers as a Percentage of total transfers 2021/22





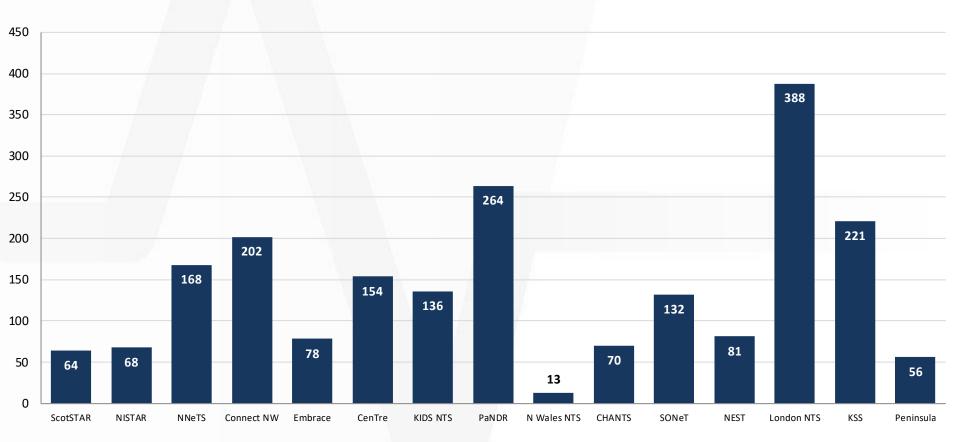




### Team arrived with the patient within 3.5 hours of the start of the referring call (Intensive care; uplift), numbers, 2021/22





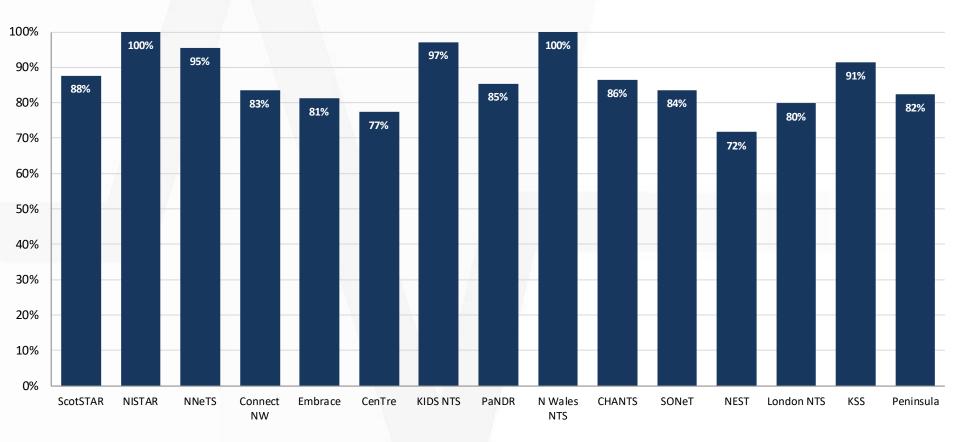




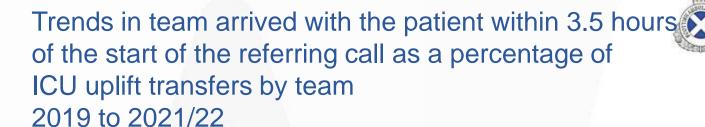
### Team arrived with the patient within 3.5 hours of the start of the referring call (Intensive care; uplift) as a percentage of ICU uplift transfers 2021/22









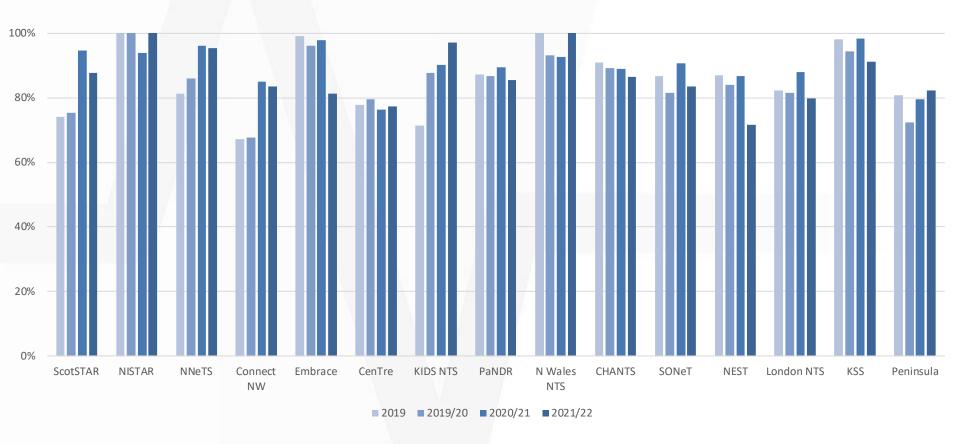




Scottish

Ambulance Service





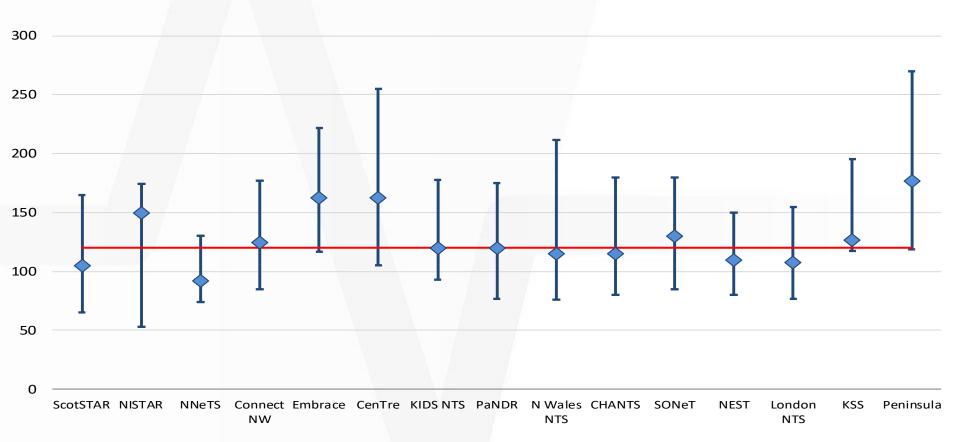


#### Stabilising time (minutes), 2021/22





Median (25<sup>th</sup> & 75<sup>th</sup> centiles), uplift/ICU transfers, first 3 days of life, level 1 and 2 units



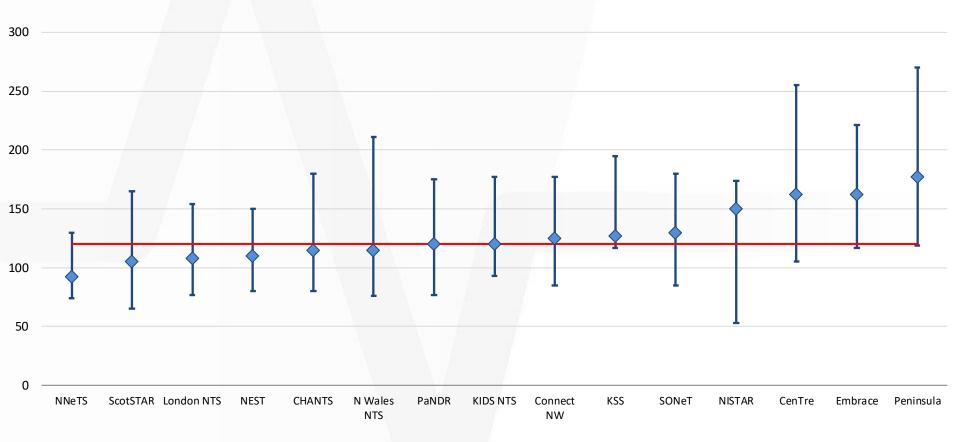


#### Stabilising time (minutes), 2021/22





Median (25<sup>th</sup> & 75<sup>th</sup> centiles), uplift/ICU transfers first 3 days of life, level 1 and 2 units- ranked









## Under and over ventilation



# Number of infants who are ventilated in transit by team Apr 2021 to Mar 2022

50

ScotSTAR

**NISTAR** 

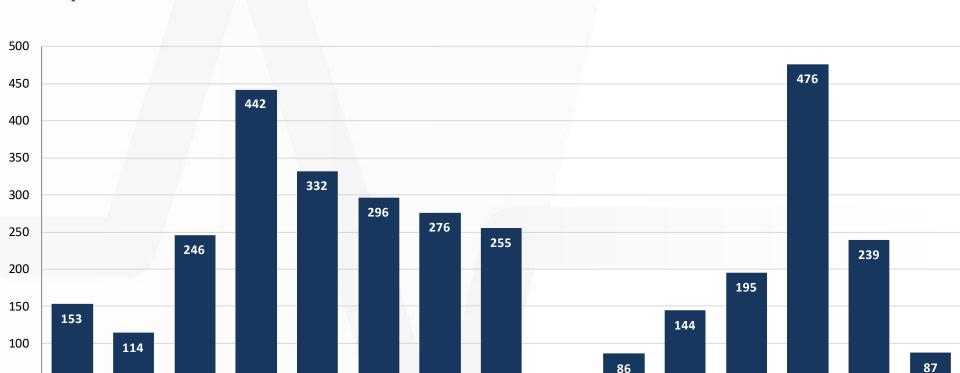
**NNeTS** 

Connect NW

Embrace







CenTre

KIDS NTS

**PaNDR** 

N Wales NTS

CHANTS

**SONeT** 

**NEST** 



KSS

Peninsula

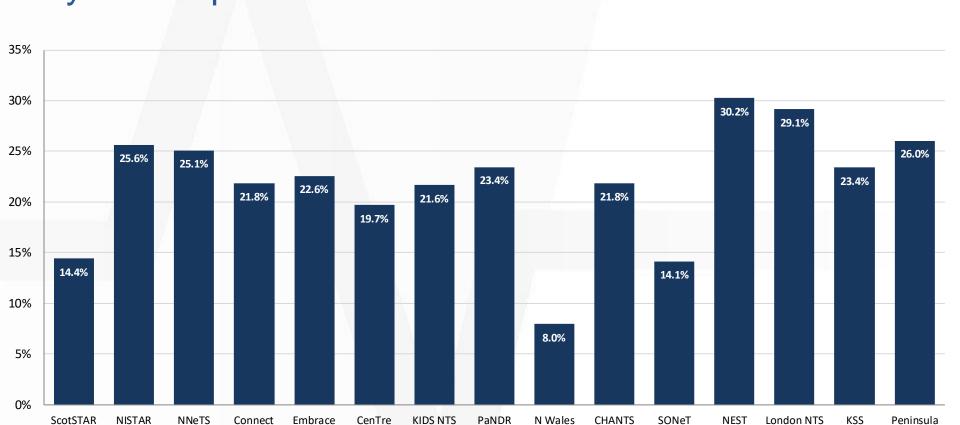
London NTS

# Infants who are ventilated in transit as a percentage of total transfers, by team Apr 2021 to Mar 2022

NW







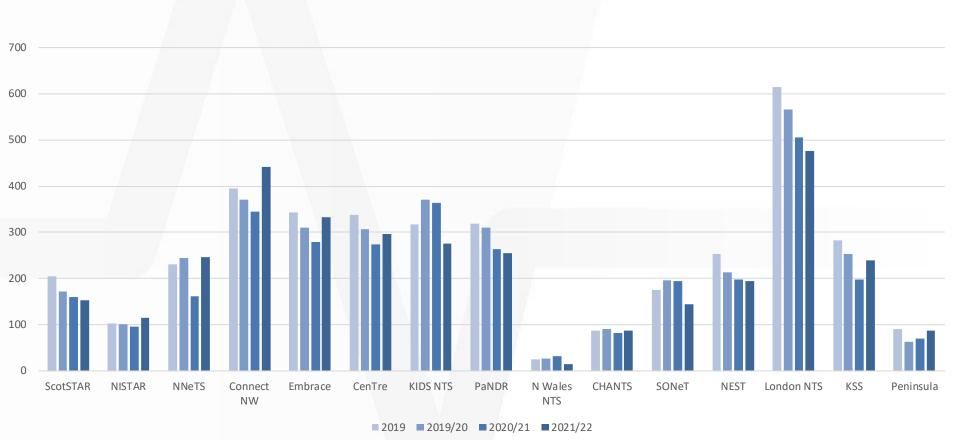
NTS



## Trends in numbers of infants ventilated in transit by team, 2019 to 2021/22







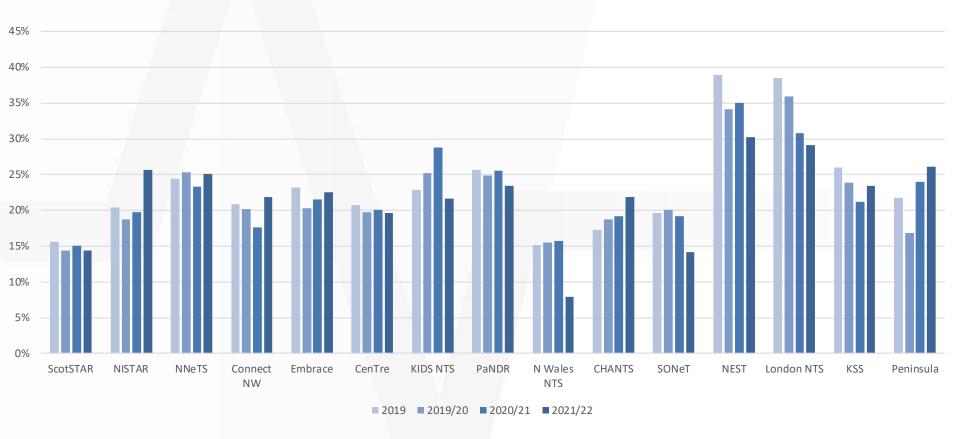


## Trends in infants ventilated in transit



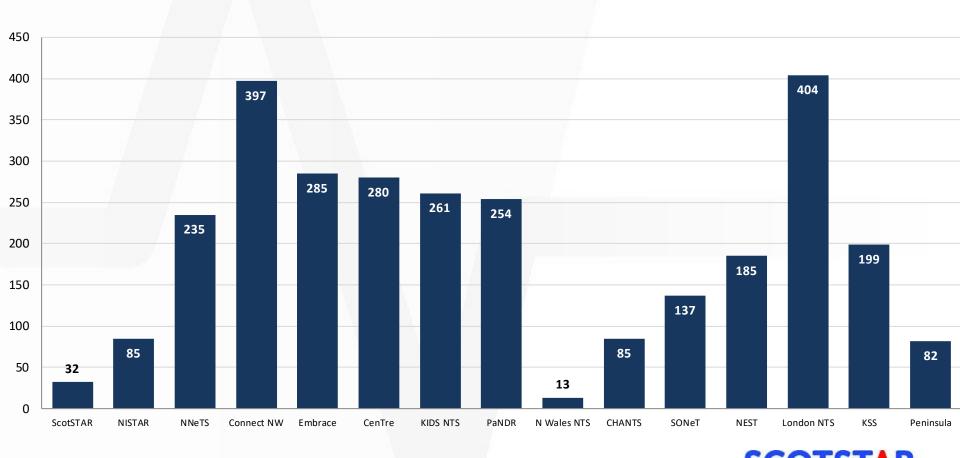




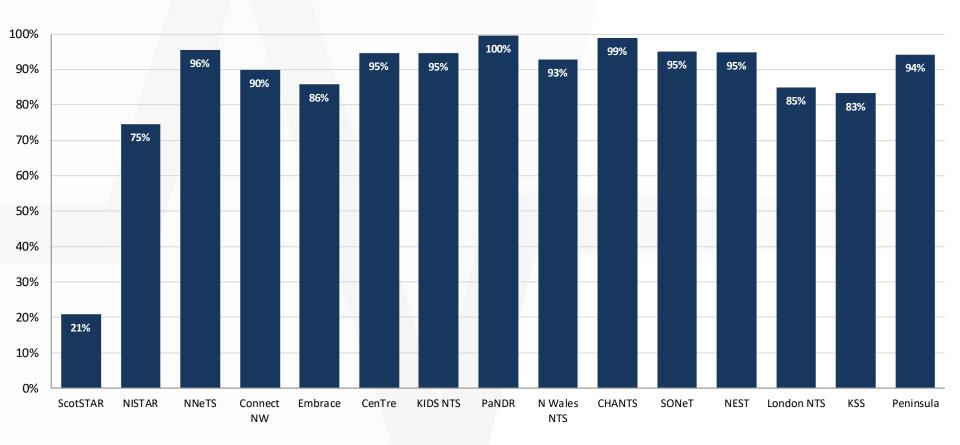




# Number of infants ventilated in transfer with a pCO<sub>2</sub> recorded on completion of the transfer by team Apr 2021 to Mar 2022

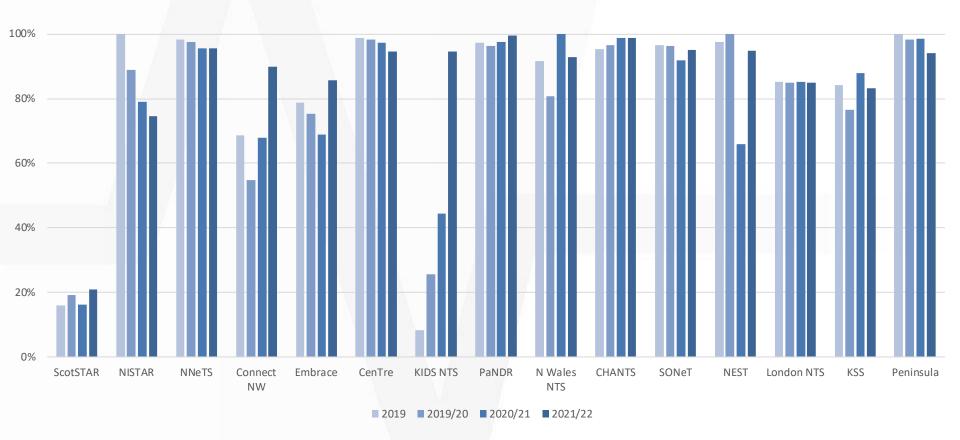


# Ventilated patients with a pCO<sub>2</sub> recorded on completion of transfer, as a percentage of ventilated transfers by team Apr 2021 to Mar 2022



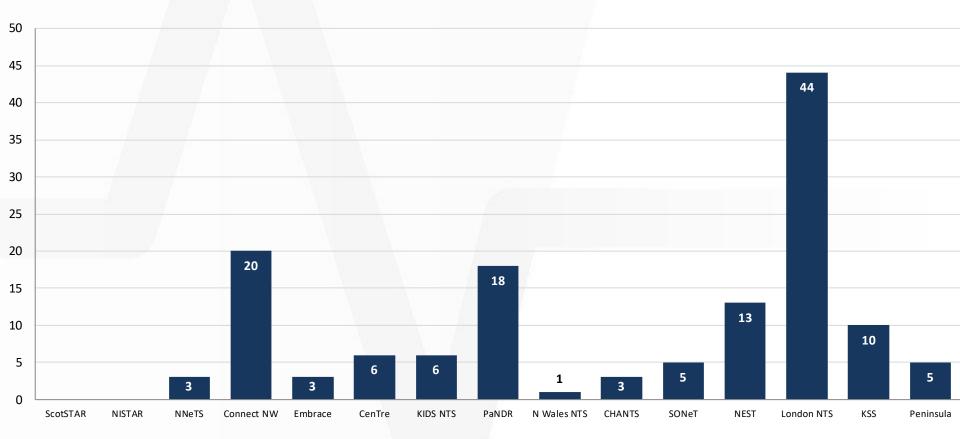


# Trends in percentages of ventilated infants with a pCO<sub>2</sub> recorded on completion of the transfer, by team, 2019 to 2021/22





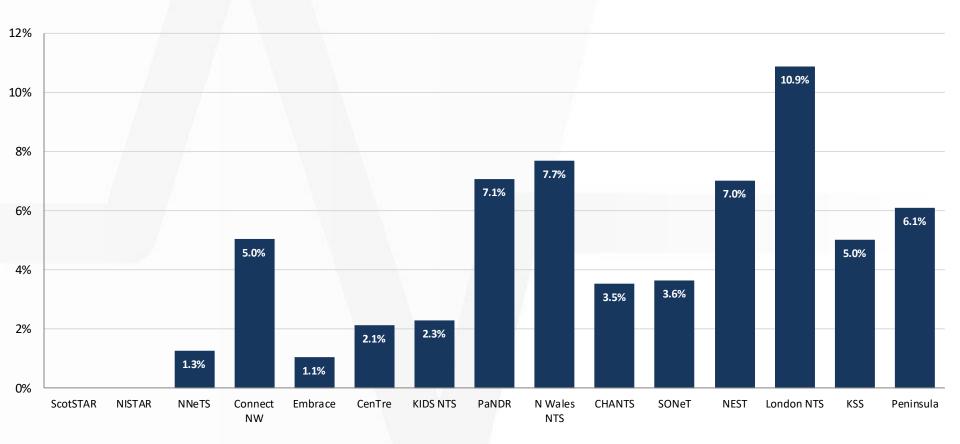
# Numbers of ventilated patients with a pCO2 <4 kPa on completion of transfer, by team Apr 2020 to Mar 2021



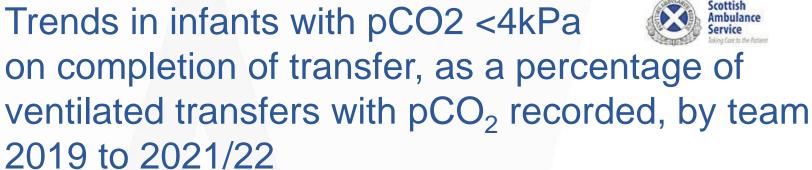


## pCO2 <4 on completion of transfer as a percentage of ventilated transfers by team, 2021/22

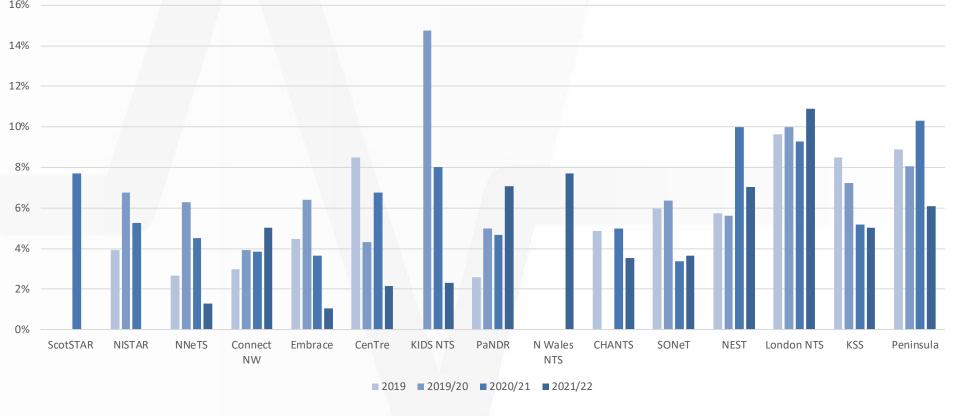












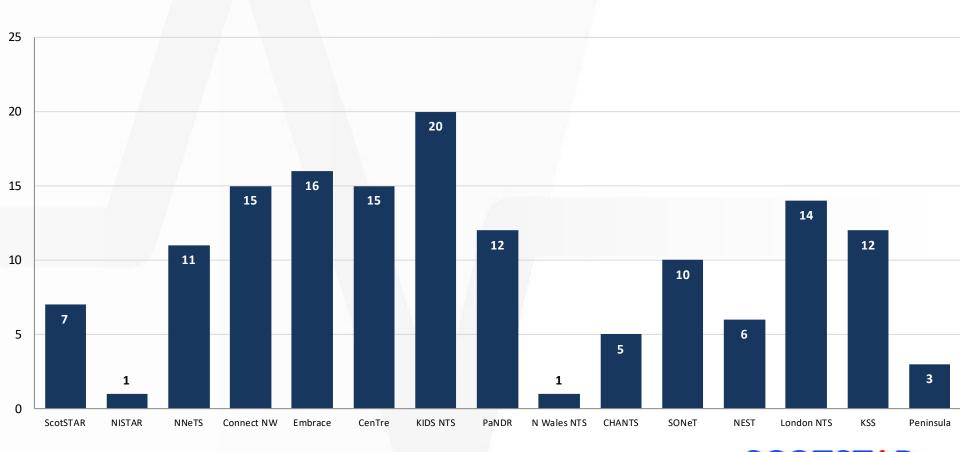


## Numbers where $pCO_2 > 7$ kPa and pH <7.2 on completion of transfer by team 2021/22

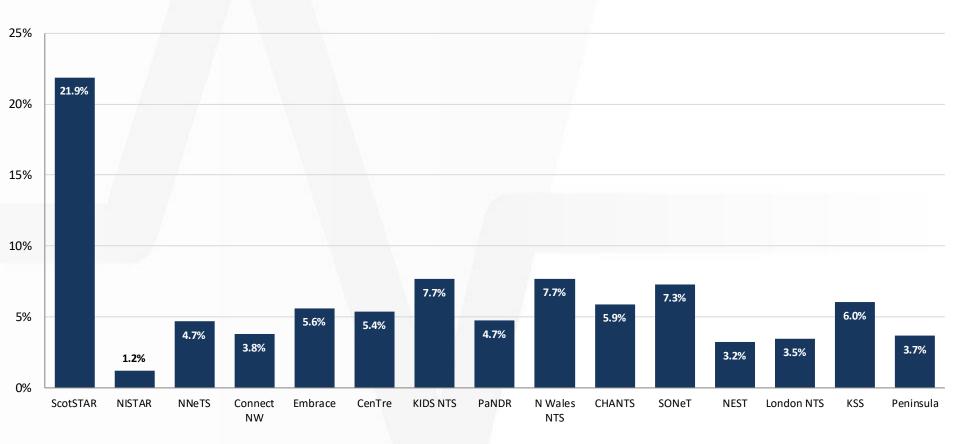


Scottish

Ambulance



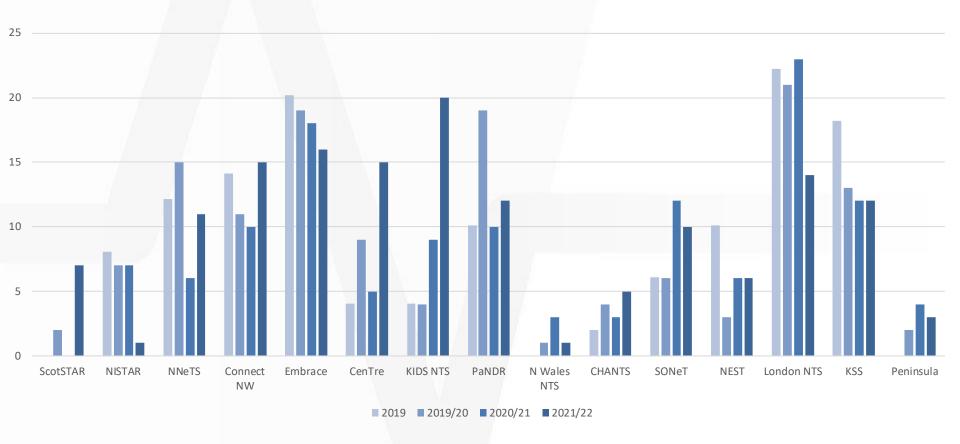
# pCO<sub>2</sub> >7 kPa and pH <7.2 on completion of transfer as a percentage of ventilated transfers with pCO<sub>2</sub> recorded by team 2021/22





## Trends in numbers where $CO_2 > 7$ kPa solution and pH <7.2 on completion of transfer by team 2019 to 2021/22

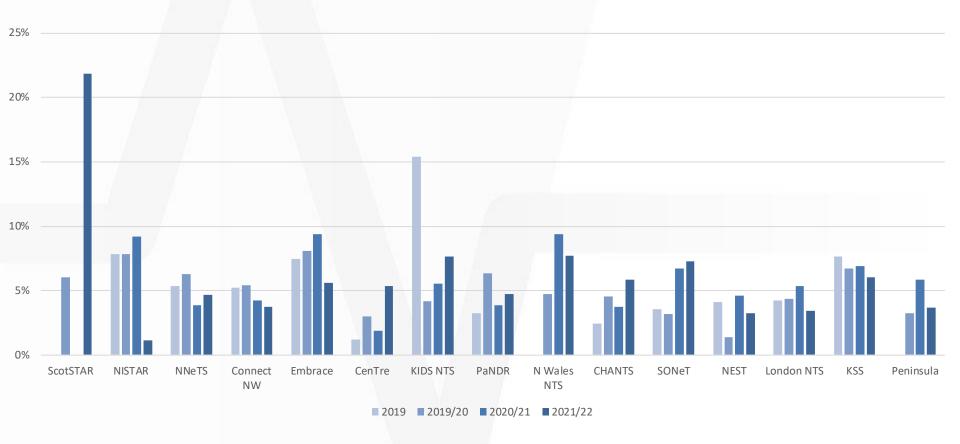






# Trends In pCO<sub>2</sub> >7 kPa and pH <7.2 on completion of transfer as a percentage of ventilated transfers by team 2019 to 2021/22

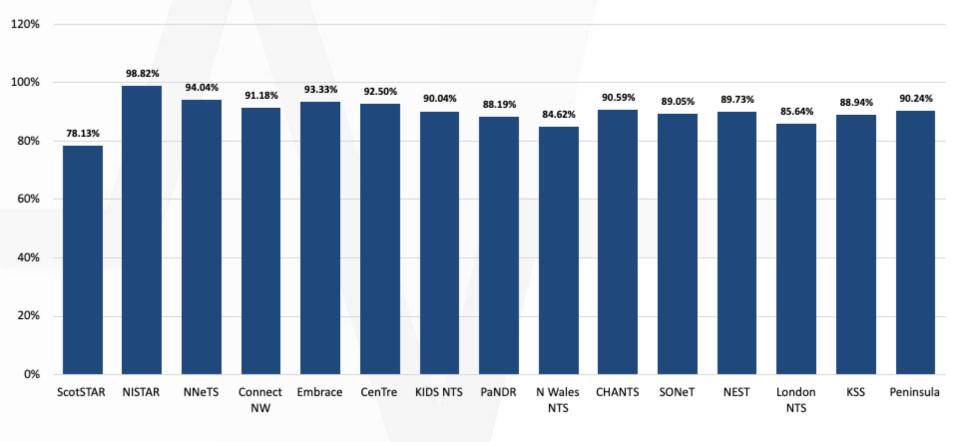








"Normocapnia" on completion of transfer rates in ventilated patients with a pCO2 recorded on completion of transfer, by team Apr 2021 to Mar 2022









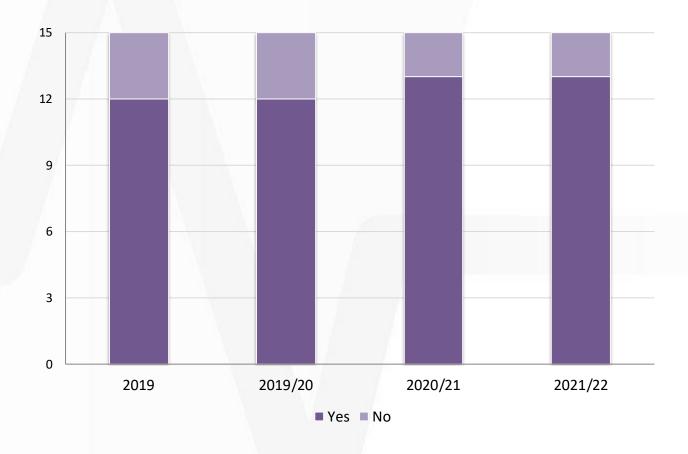
### Team characteristics



### Service Characteristics 2021/22 24 hour service





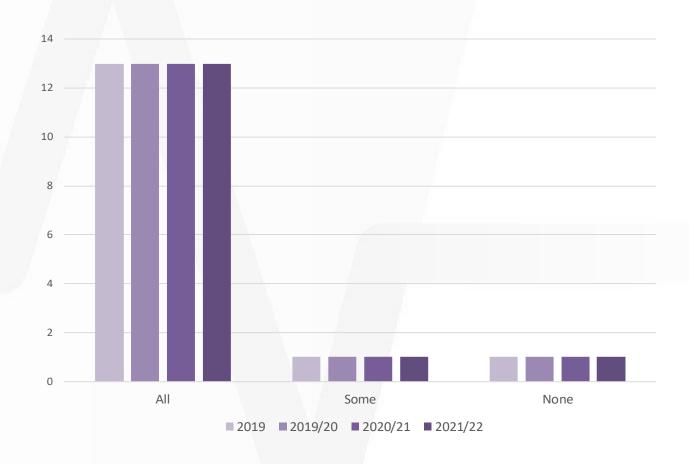




#### Service Characteristics 2021/22 Dedicated Vehicles





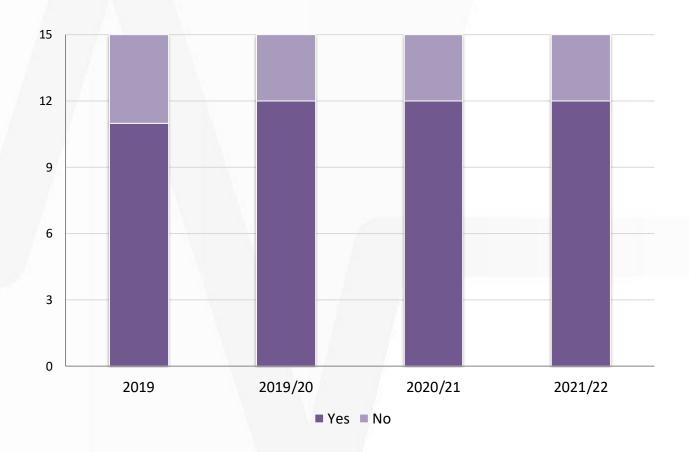




### Service Characteristics 2021/22 Cot bureau run by the team







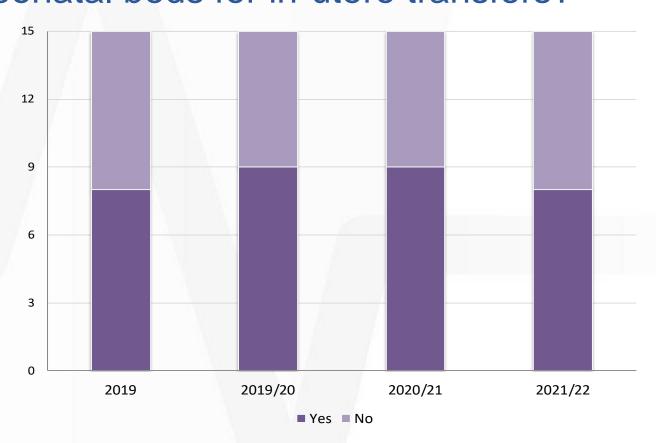


#### Service Characteristics 2021/22





### Do you offer support for locating appropriate maternal and neonatal beds for in-utero transfers?

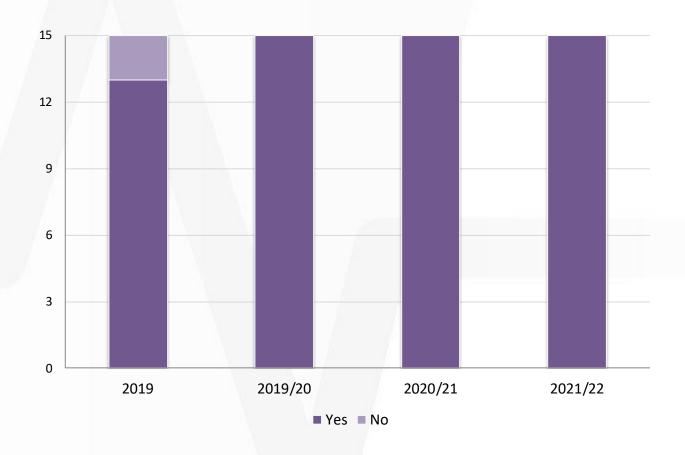




### Service Characteristics 2021/22 Conference Calling



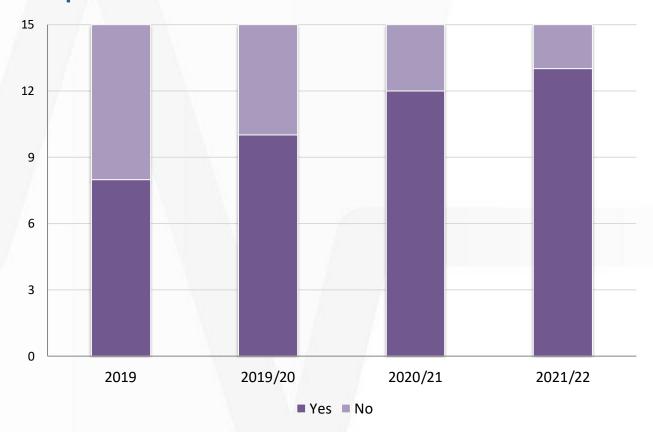






# Service Characteristics 2021/22 Local network "wrong place of delivery\*" review system in place





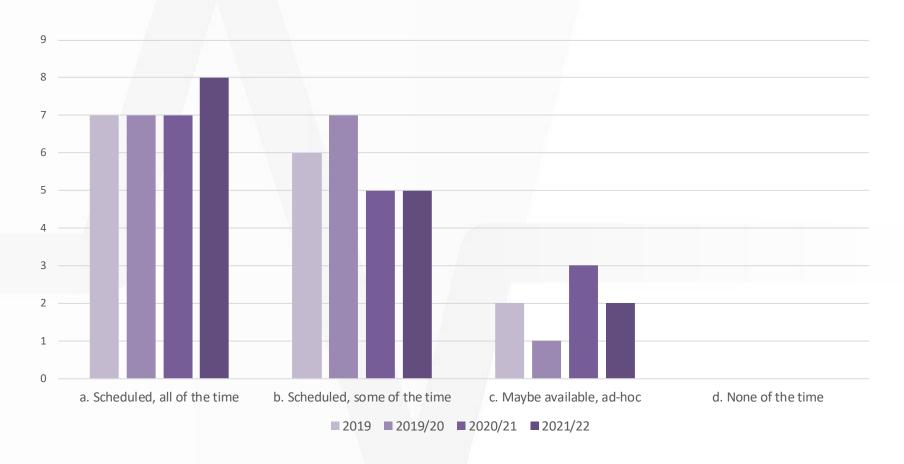
le delivery at <27 weeks outside a NICU centre</li>



### Service Characteristics 2021/22 Consultants







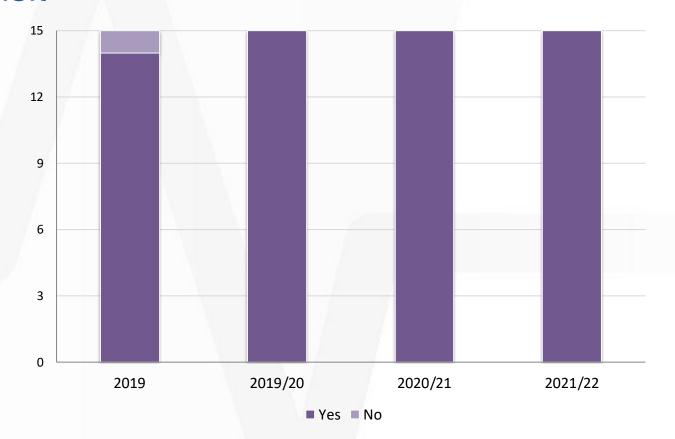


# Service Characteristics 2021/22 Provide servo-controlled active cooling in transit



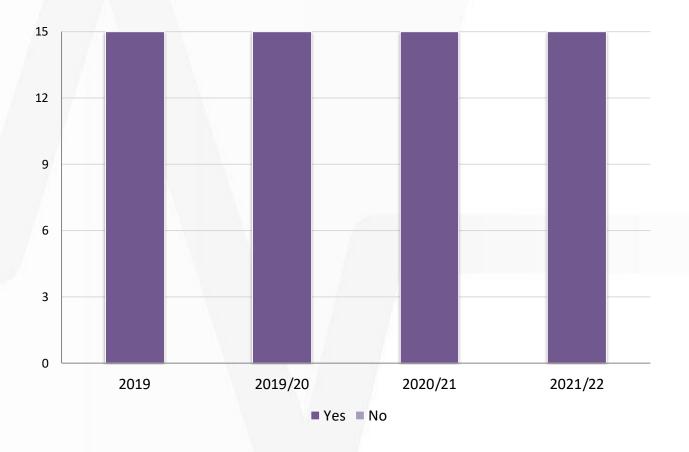
Scottish

Ambulance





## Service Characteristics 2021/22 Are you able to offer inhaled nitric oxide in transit?

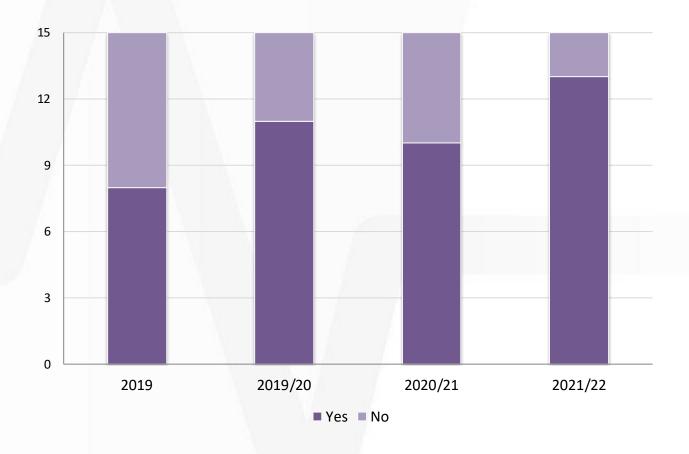




#### Service Characteristics 2021/22 HFO offered in Transit

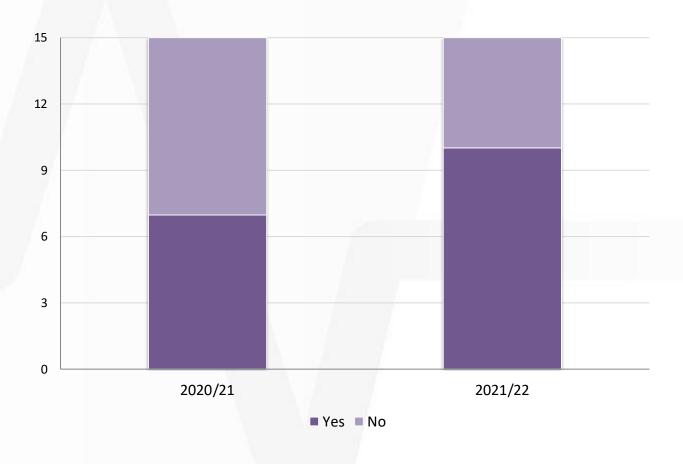








## Service Characteristics 2021/22 Do you use a transcutaneous CO<sub>2</sub> monitor in transit?



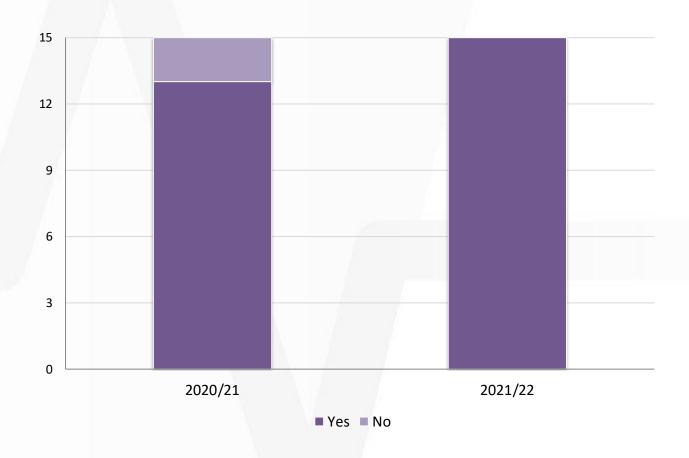


## Service Characteristics 2021/22 Do you use ET CO<sub>2</sub> monitoring in transit?



Scottish

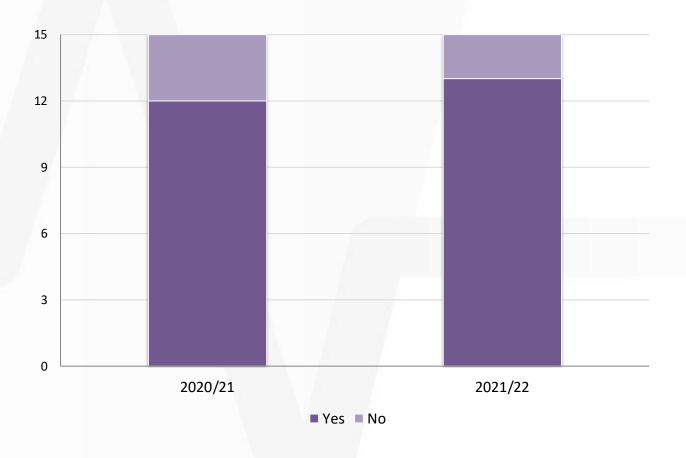
Ambulance Service





DRAFT NOT FOR PUBLICATION OR

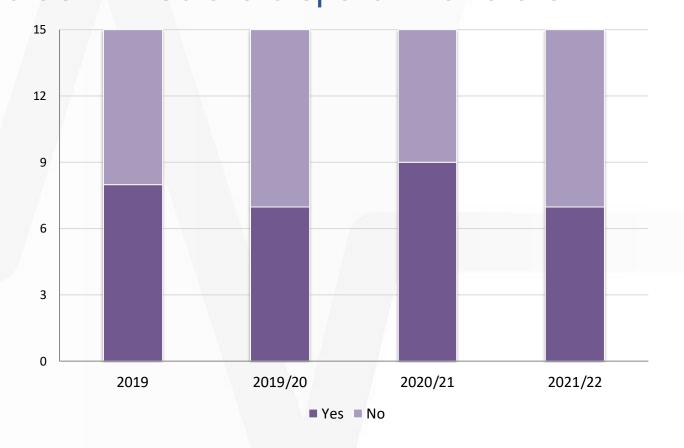
## Service Characteristics 2021/22 Do you offer Volume Guarantee Ventilation in transit?





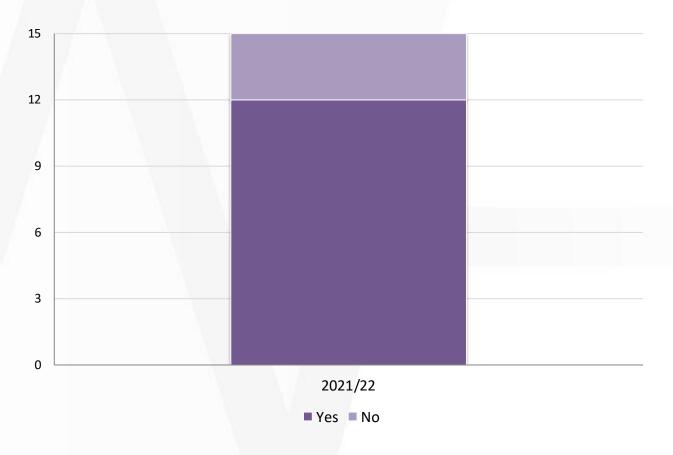
### Service Characteristics 2021/22 Infants referred with bile-stained vomiting/aspirates treated as immediate dispatch transfers?







# Service Characteristics 2021/22 Do you have a system in place for collecting parental feedback?





#### Conclusions/Trends 2021/22





- Patterns of activity and ways of working are showing signs of returning to normality after a period of unprecedented upheaval
- There is evidence of good quality improvement work being done- maybe as a result of this data?
- There are still many intriguing variations in patterns and numbers across the UK neonatal transport services
  - These are deserving of more detailed analysis and/or local and national QI work



### **Thanks**





- To all of the data collectors, analysers and submitters from all of the teams
- A huge thank you to Colin Devon, ScotSTAR data analyst who brings all of this together



