



# NTG Annual Transport Data. Oxford 2017.

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# Here's what we've got..

- Service characteristics
- Activity numbers, national & per team
- Benchmarks
- Diaphragmatic hernia one-off snapshot

# Method

- Email to transport service's medical and nursing leads requesting activity data from 1.1.17 to 30.6.17
- Brief additional information about each service.



# 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, but...

# Reorganisations & additions for 2018 data

- Newcastle
- Middlesbrough



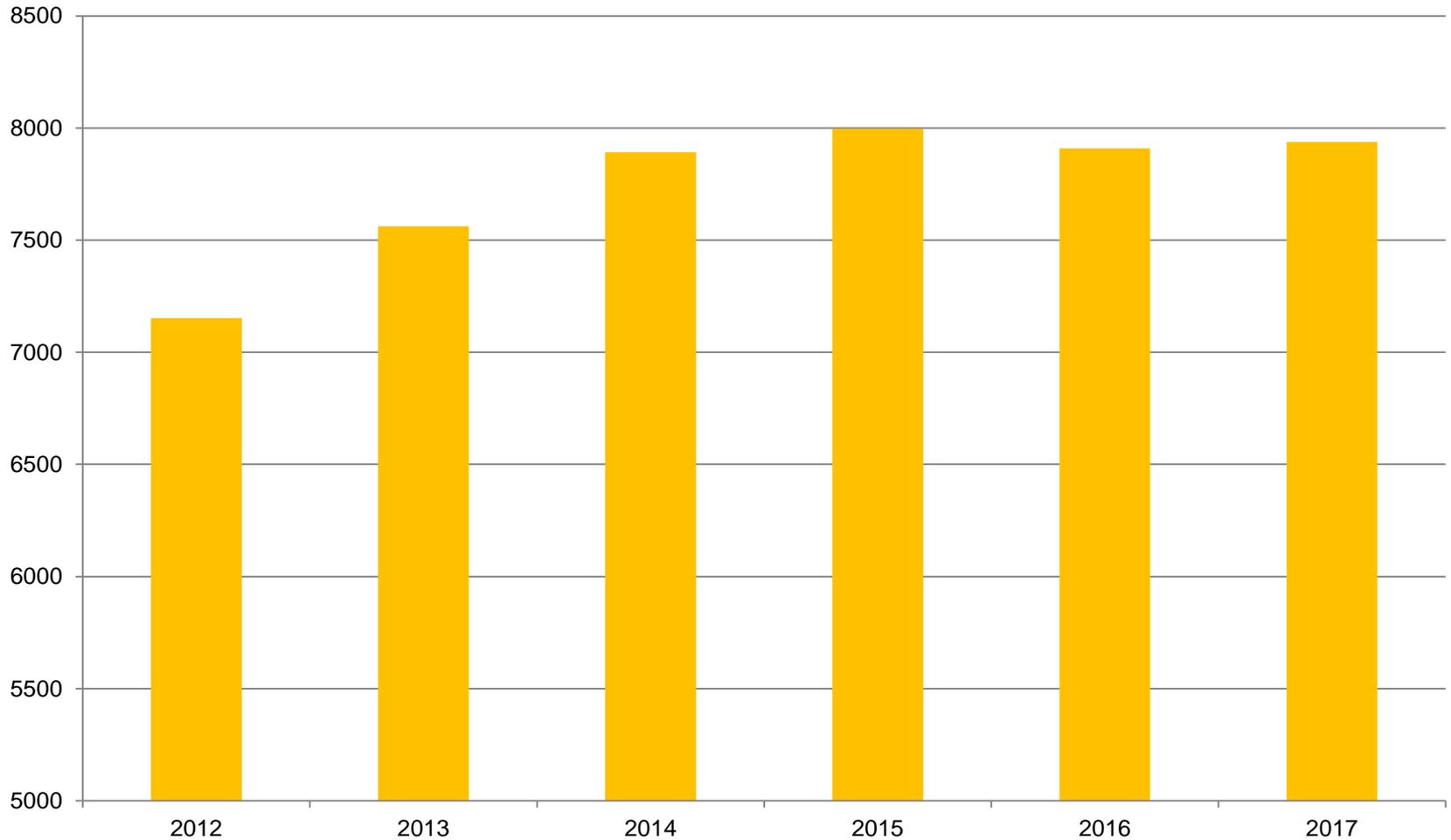
NNeTS

- Cheshire & Mersey
- Greater Manchester
- STARS, Cumbria



Connect NW

# UK summary data, Jan-Jun/year



# UK summary data

## Jan-Jun/year

	2012	2013	2014	2015	2016	2017
<b>Total transfers</b>	<b>7152</b>	<b>7562</b>	<b>7892</b>	<b>7997</b>	<b>7910</b>	<b>7938</b>
Ventilated	1889 (26%)	1961 (26%)	1949 (25%)	2155 (27%)	2000 (25%)	1913 (24%)
HFOV						
CPAP/ high-flow						
Cooling						
iNO						
Palliative						

# UK summary data

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Ventilated	1889 (26%)	1961 (26%)	1949 (25%)	2155 (27%)	2000 (25%)	1913 (24%)
HFOV	-	-	-	16 (<1%)	16 (<1%)	39 (2%)
CPAP/ high-flow	847 (12%)	906 (12%)	819 (10%)	790 (10%) 452 (6%)	737 (9%) 496 (6%)	
Cooling	247 (3%)	288 (4%)	249 (3%)	274 (3%)	288 (4%)	245 (3%)
iNO	99 (1%)	111 (1%)	117 (1%)	138 (2%)	145 (2%)	
Palliative	22 (<1%)		19 (<1%)	19	33	33

# HFO

HFOV - 2 teams in 2015  
- 5 teams in 2016  
- 6 teams in 2017

## **HFO-capable teams (number of transfers on HFO, 2017)**

ScotSTAR	5
Cheshire/Mersey	2
GMNeTS	10
NEST	0
SONET	2
London NTS	20

# UK summary data, Jan-Jun 2012-17, three year rolling totals

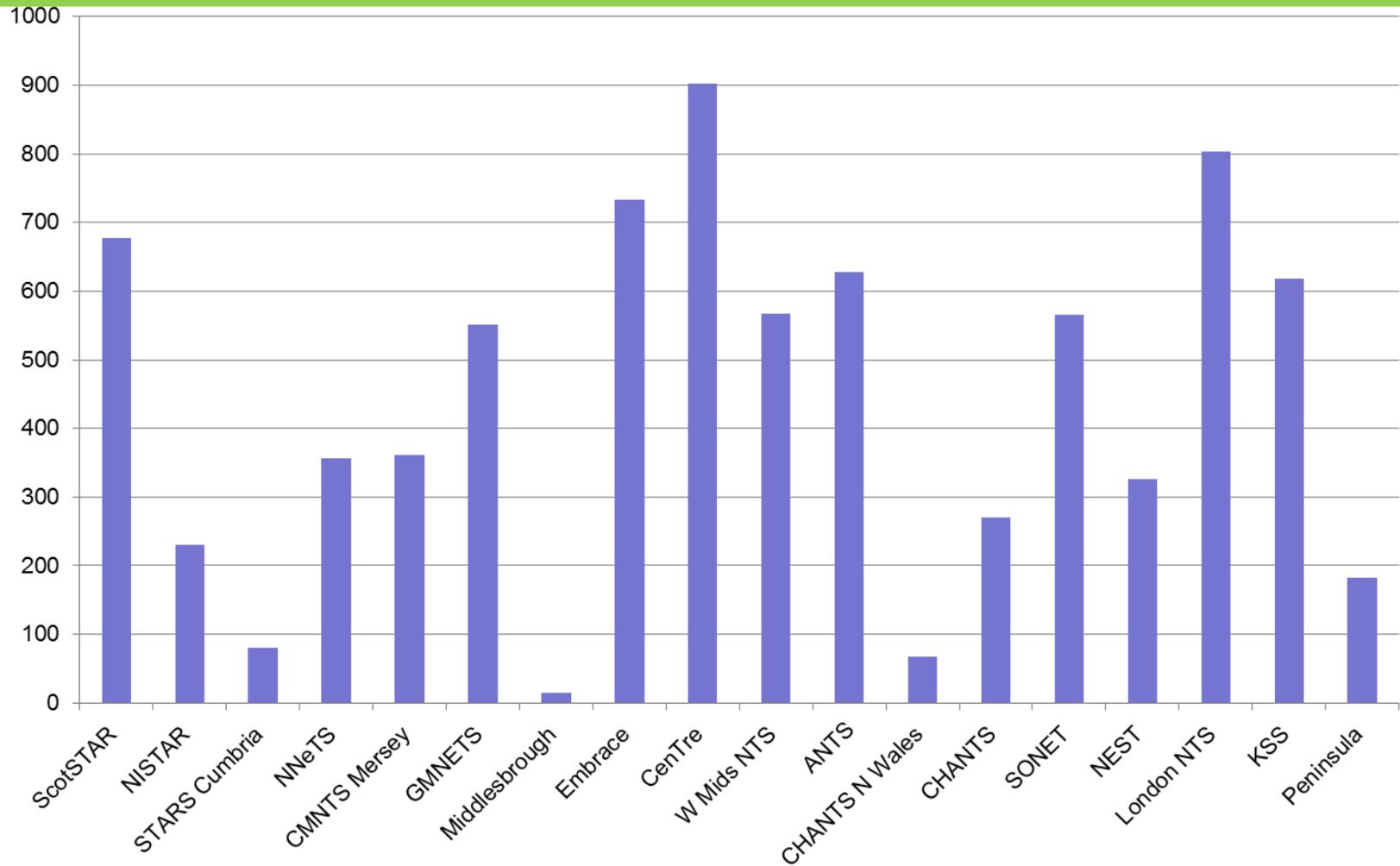
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	2012/13/14	2013/14/15	2014/15/16	2015/16/17
<b>Total transfers</b>	<b>22606</b>	<b>23451</b>	<b>23799</b>	<b>23845</b>
Ventilated	5799* (26%)	6065 (26%)	6104 (26%)	6068* (25%)
Cooling	784 (3.5%)	811 (3.5%)	811 (3.4%)	807 (3.4%)
iNO	327 (1.4%)	366 (1.6%)	400 (1.7%)	

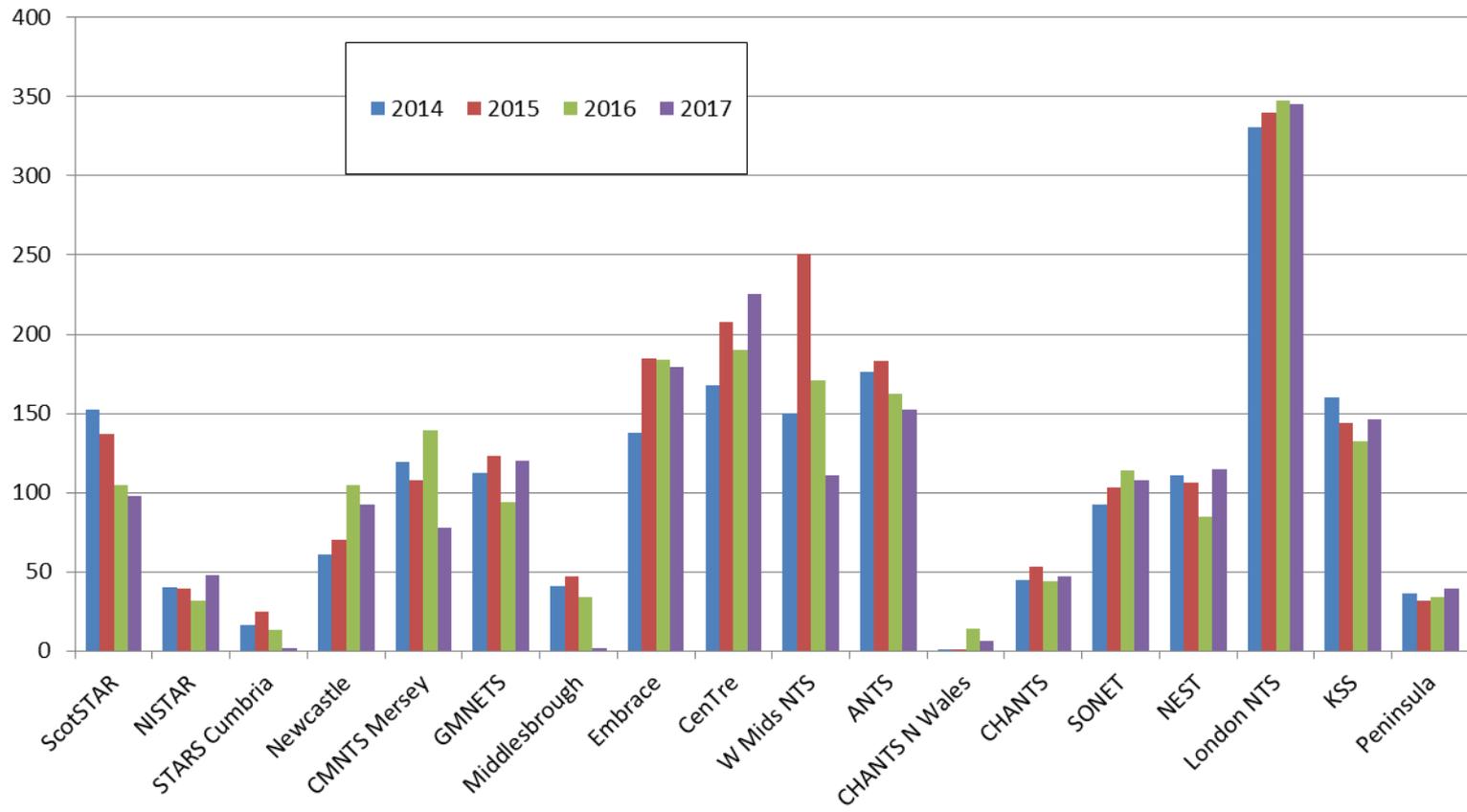
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\*\* +5%

# Total Transfers/team, Jan – June 2017



# Number of ventilated transfers, Jan-Jun 2014-2017.

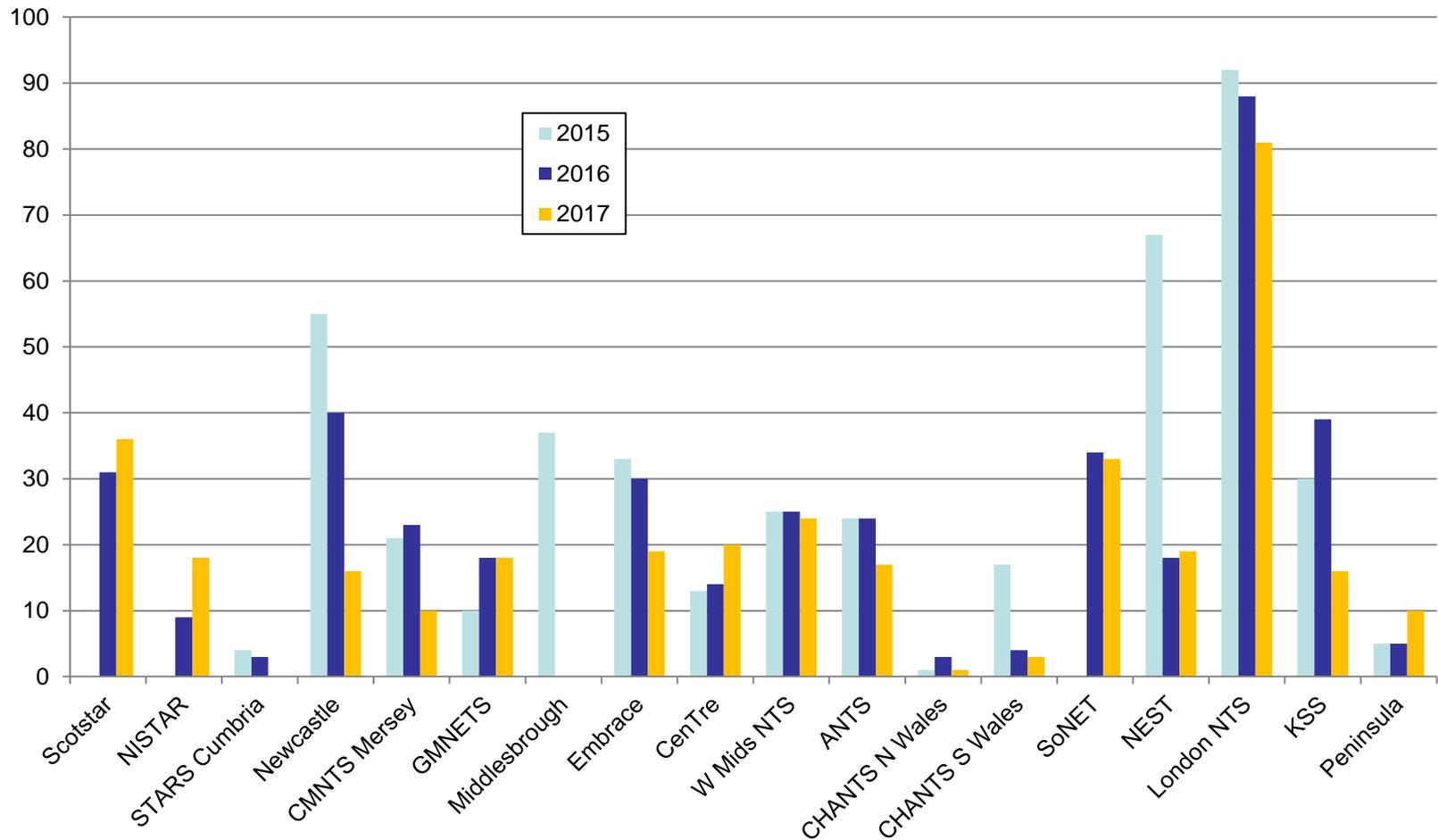


# Response standards

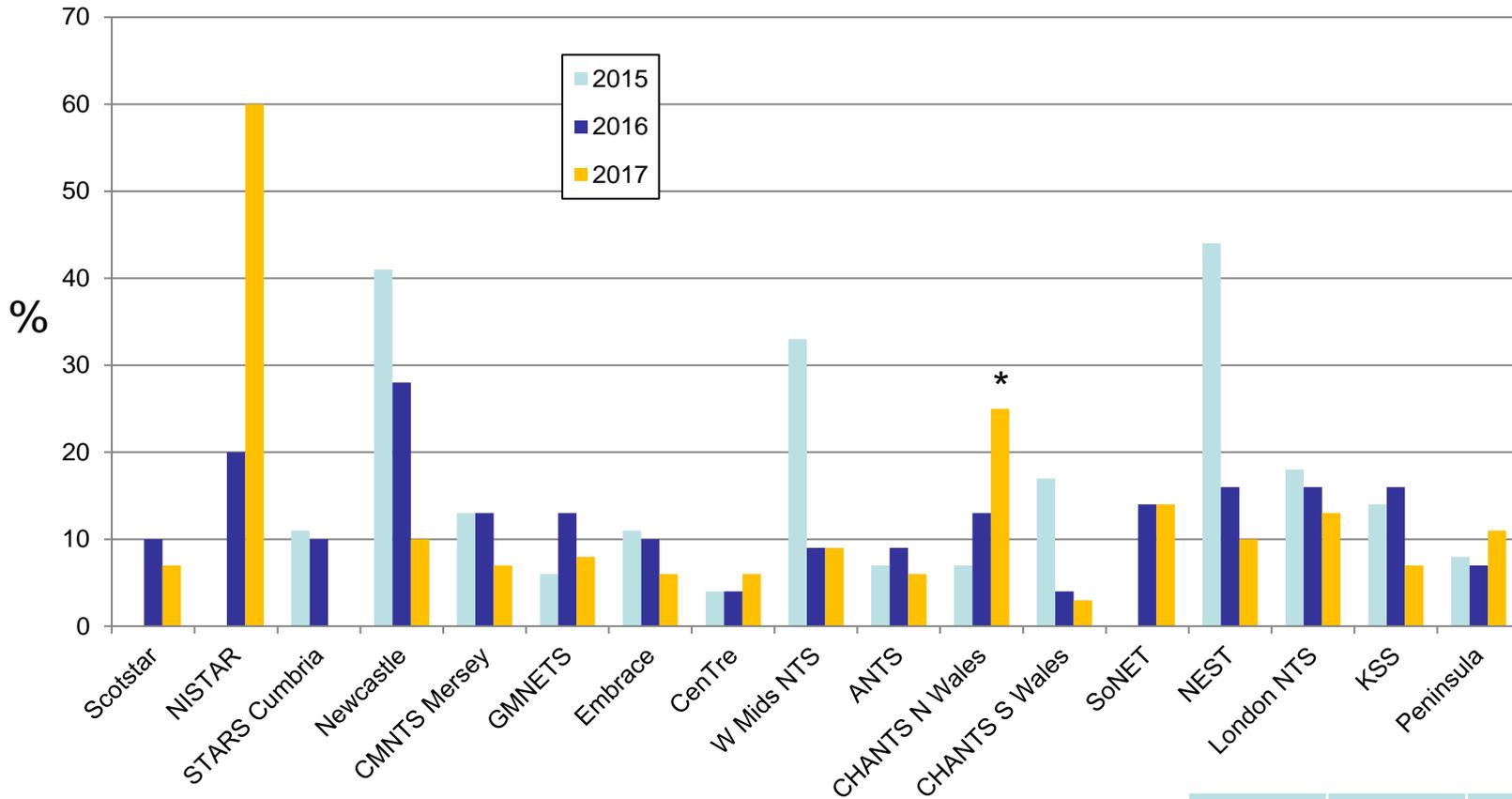
## Data on

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

# Number of time-critical transfers/team, Jan-Jun 2015-2017



# TC transfers/team as % of uplift transfers, Jan-Jun 2015 - 2017



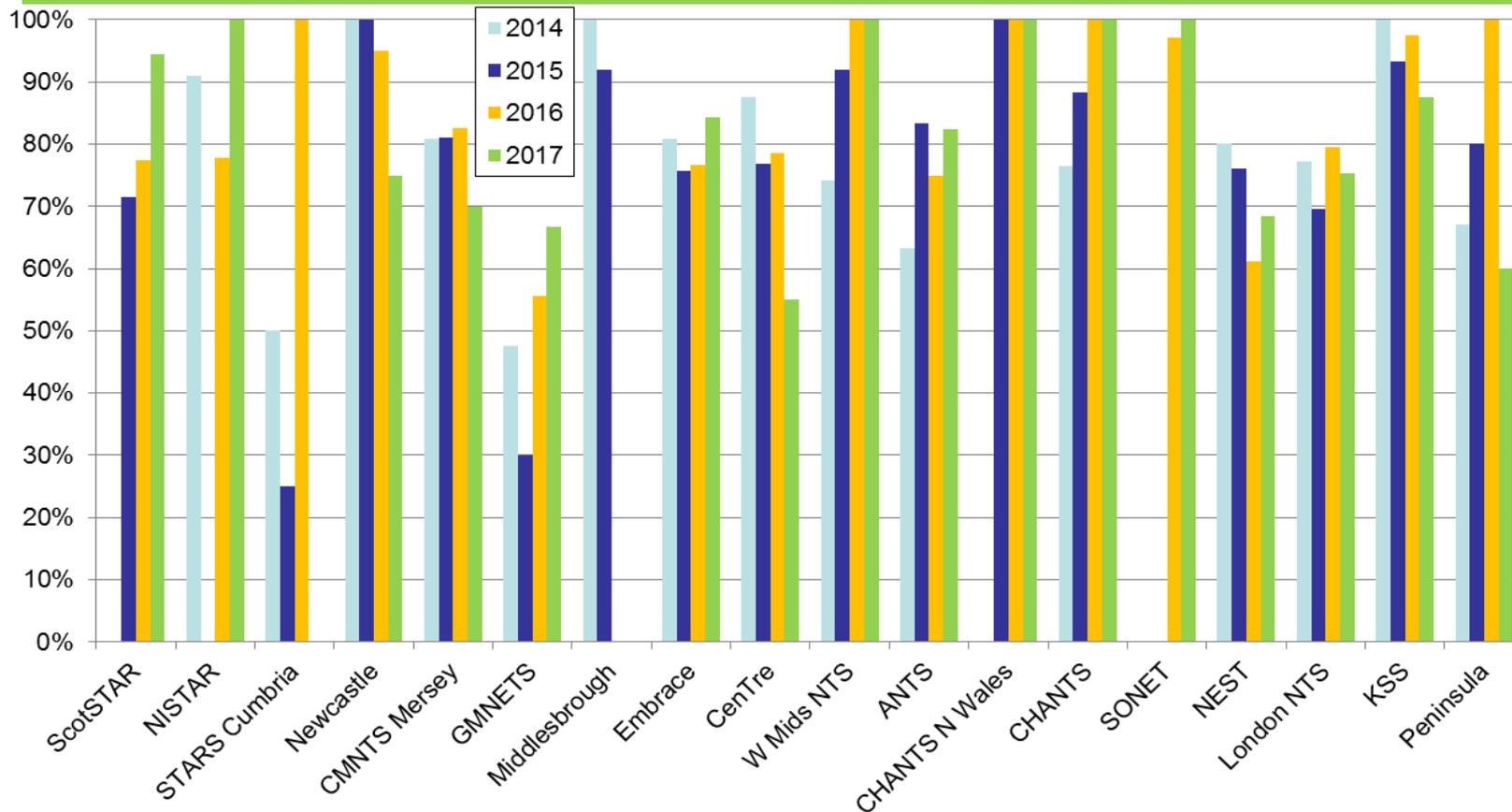
\* small numbers

	2015	2016	2017
TC	469	408	341
Uplift	3172	3355	3729
%	15	12	9

% of time critical transfers team mobile within 60 minutes of start of referring call.

2013: 73 % (n=404)	2016: 84% (n=408)
2014: 77% (n=409)	2017: 82% (n=341)
2015: 81% (n=469)	

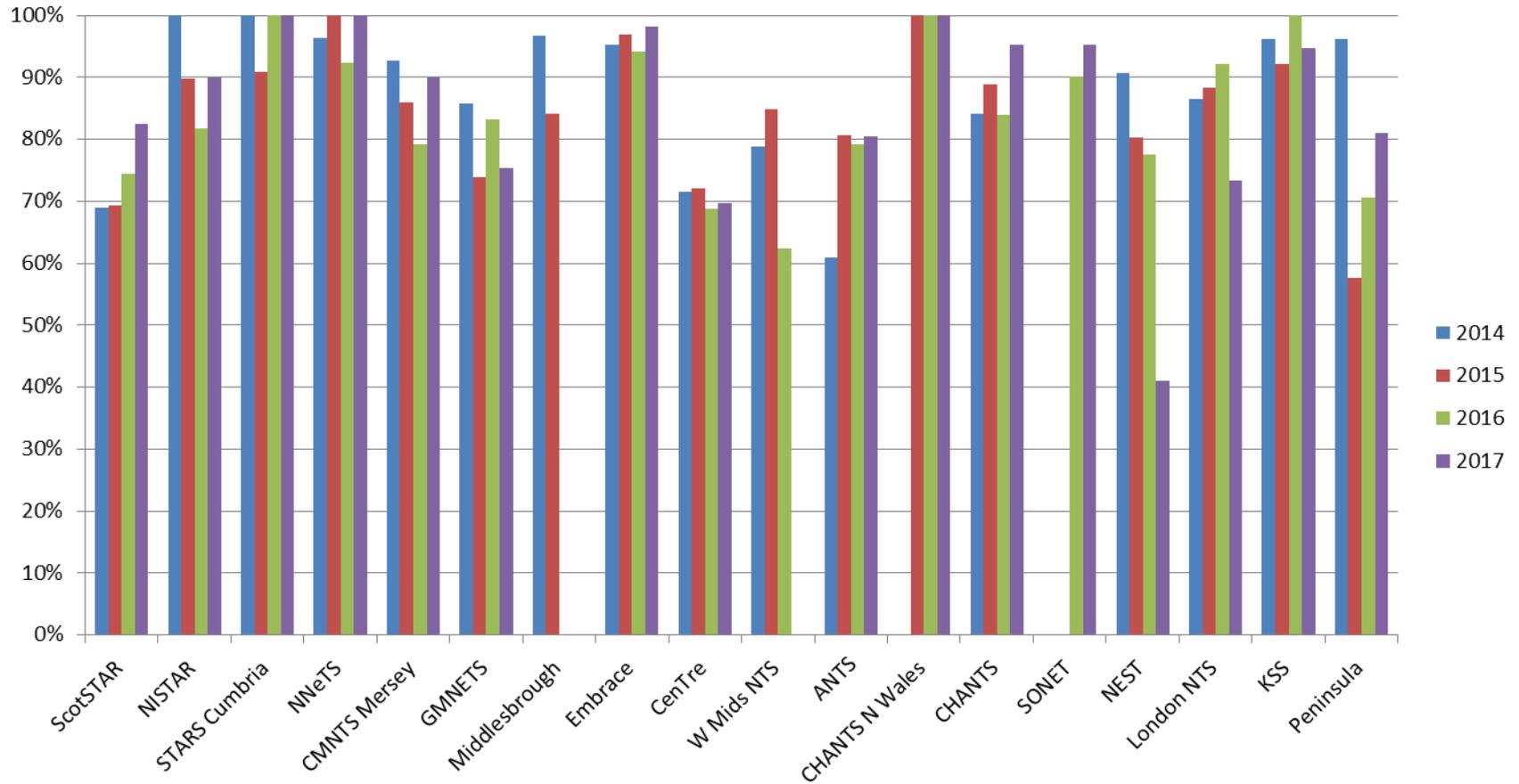
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2013: 73 % (n=404)	2016: 84% (n=408)
2014: 77% (n=409)	2017: 82% (n=341)
2015: 81% (n=469)	

Team arrived with the patient within 3.5 hours of the start of the referring call (Intensive care; uplift) (%), Jan-Jun/year.

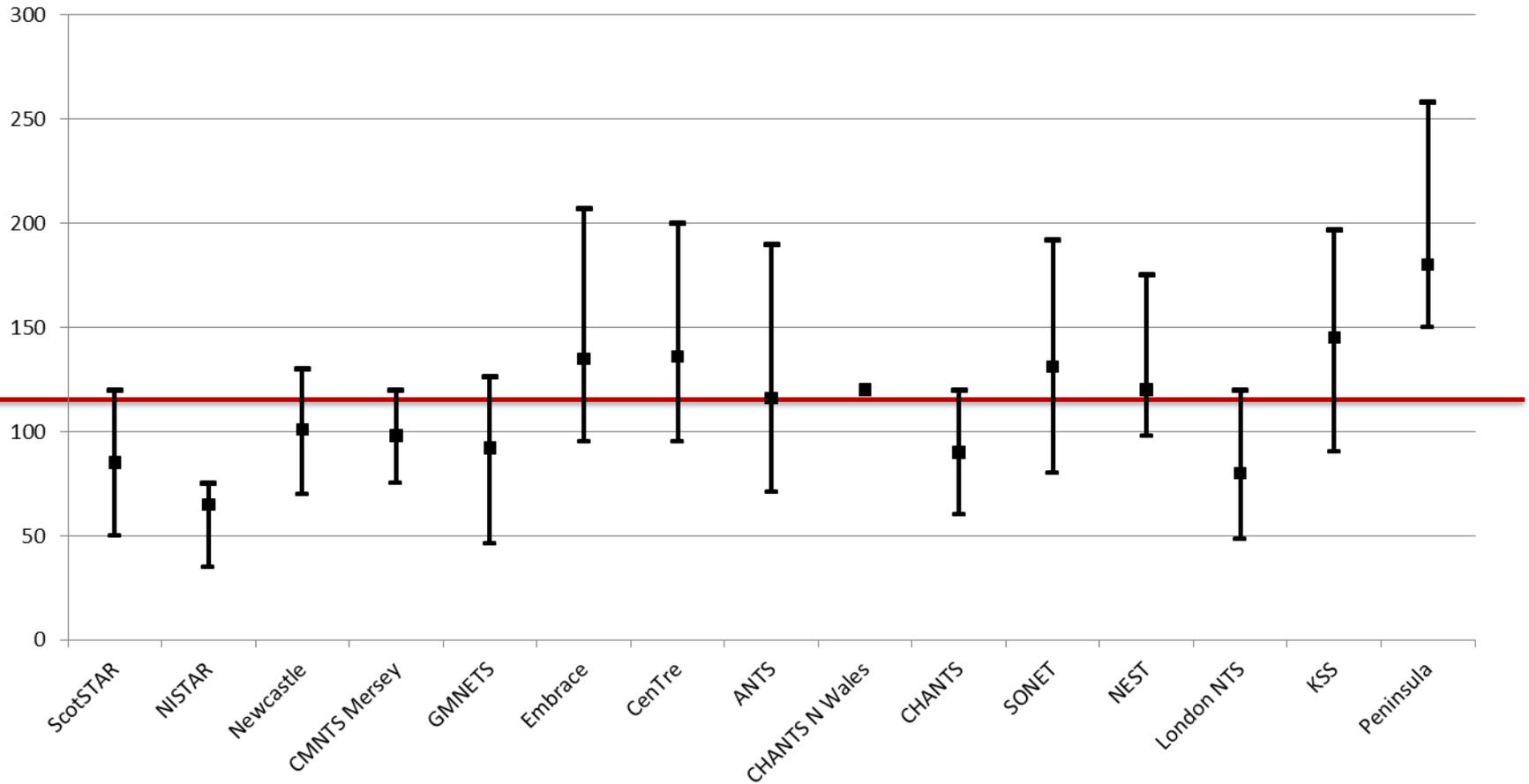
# Team arrived with the patient within 3.5 hours of the start of the referring call (Intensive care; uplift) (%), Jan-Jun/year.



2013: 72% (n=1689)  
 2014: 86% (n=1836)  
 2015: 83% (n=1945)

2016: 82% (n=1787)  
 2017: 80% (n=2031)

# Stabilising time (minutes), Jan-Jun 2017, Median (25<sup>th</sup> & 75<sup>th</sup> centiles), uplift/ICU transfers.



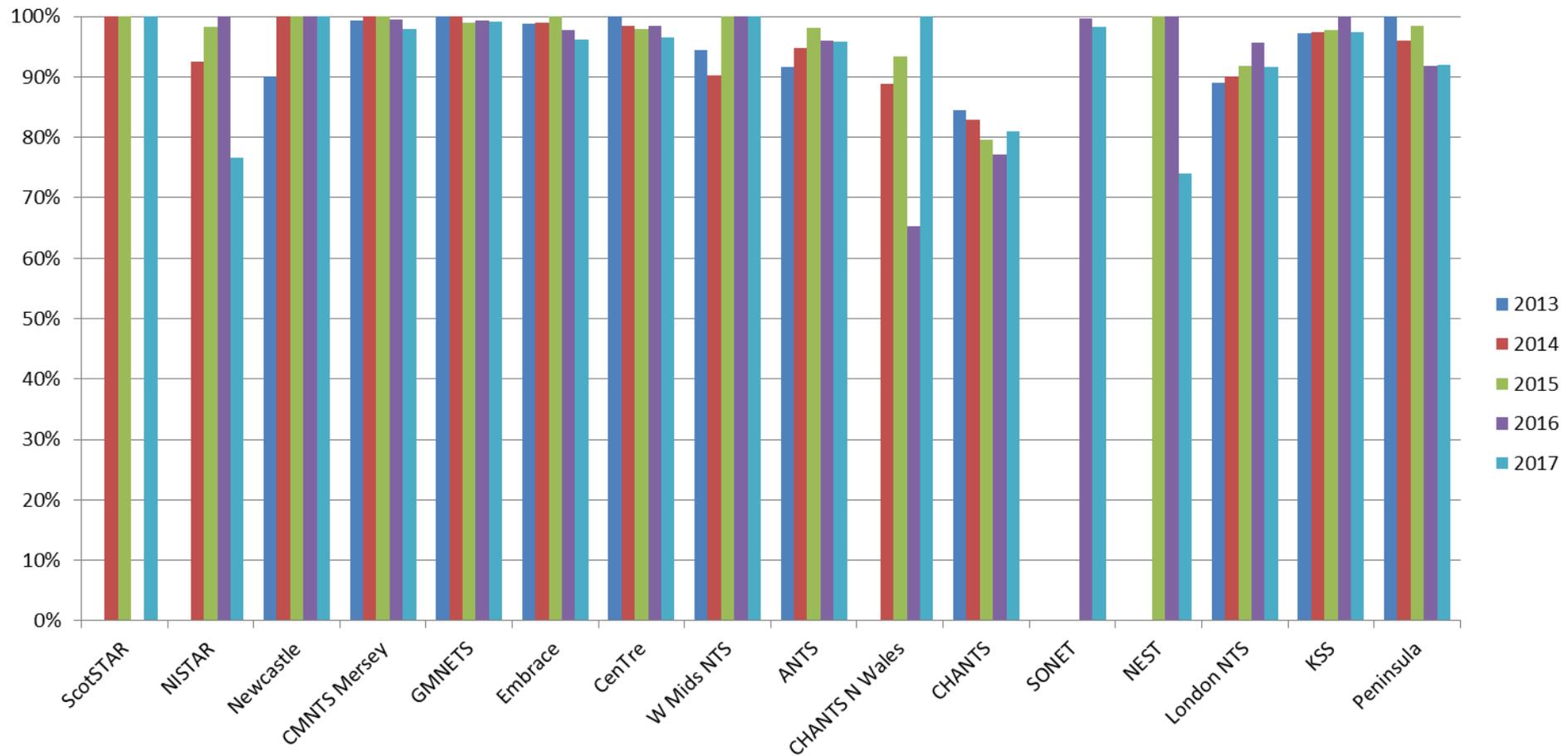
Neonatal Transport Services transfer at least 95% of patients requiring transfer for uplift within its defined catchment area. (%)

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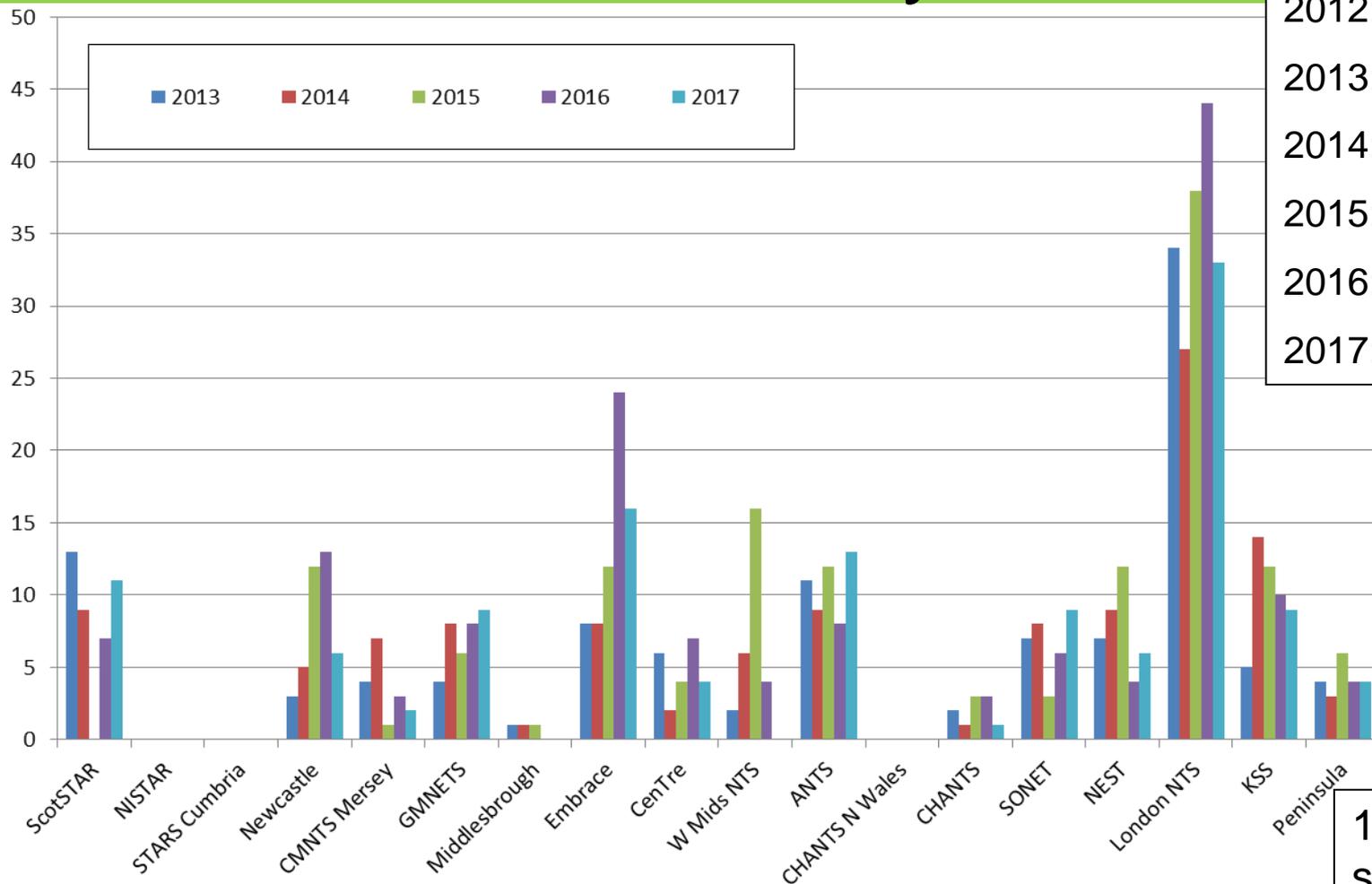
	2013	2014	2015	2016	2017
n=	3109*	3416	3268	3355	<b>3729*</b>
Done by commissioned team n= (%)	2704 (87)	3097 (91)	3172 (97)	2971 (89)	<b>3543 (95)</b>

\* \* = 20% increase

# Neonatal Transport Services transfer at least 95% of patients requiring transfer for uplift within its defined catchment area. (Jan-Jun, %)



# Number transferred on iNO – Jan – June/year



Total for UK

2012: 99

2013: 111

2014: 117

2015: 138

2016: 145

2017:

100% of  
services  
have iNO  
available

# Number transferred for cooling or assessment for cooling, Jan – Jun/year

Total for UK

2012: 247

2015: 274

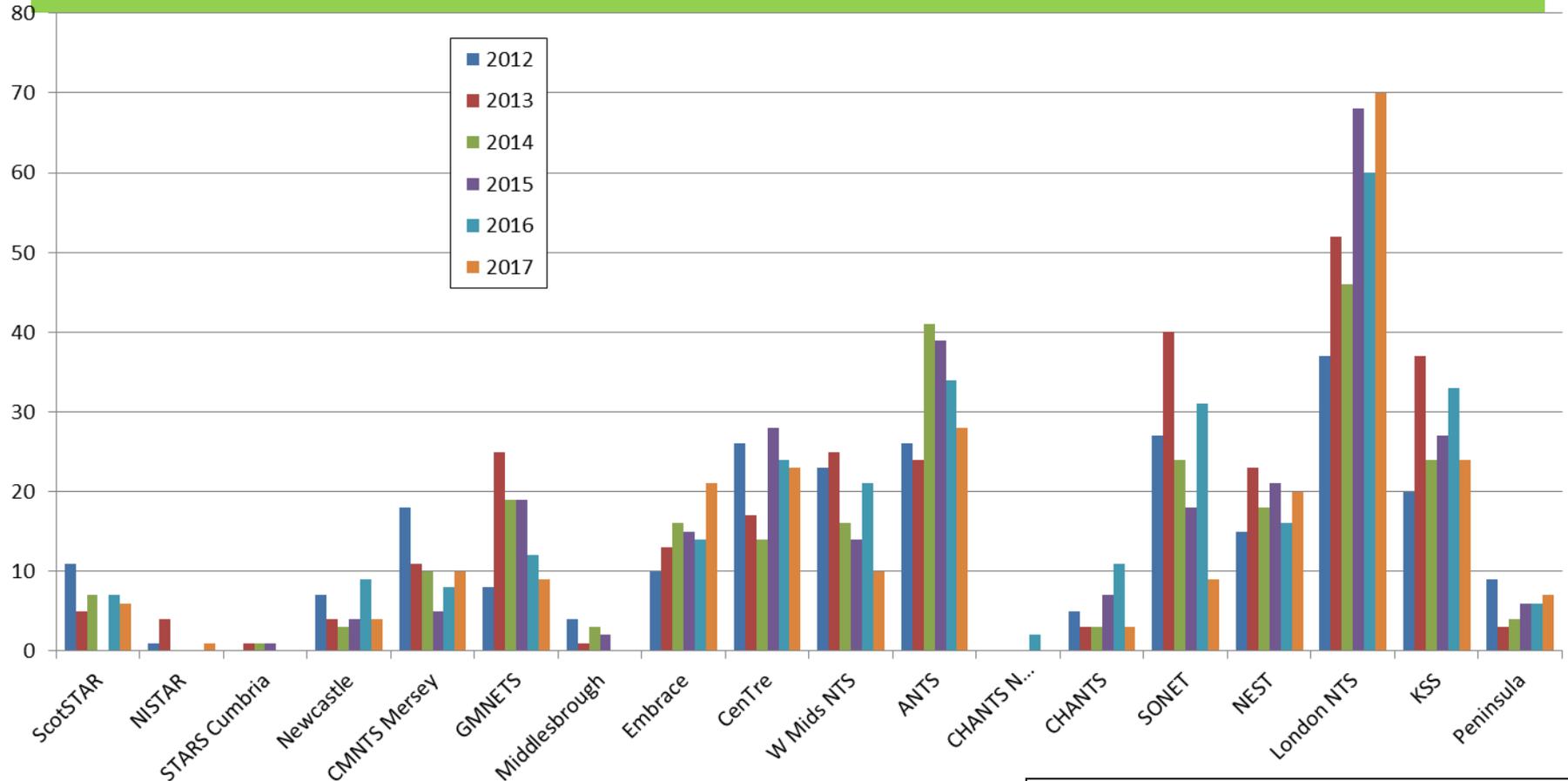
2013: 288

2016: 288

2014: 249

2017: 245

# Number transferred for cooling or assessment for cooling, Jan – June 2012 - 2017

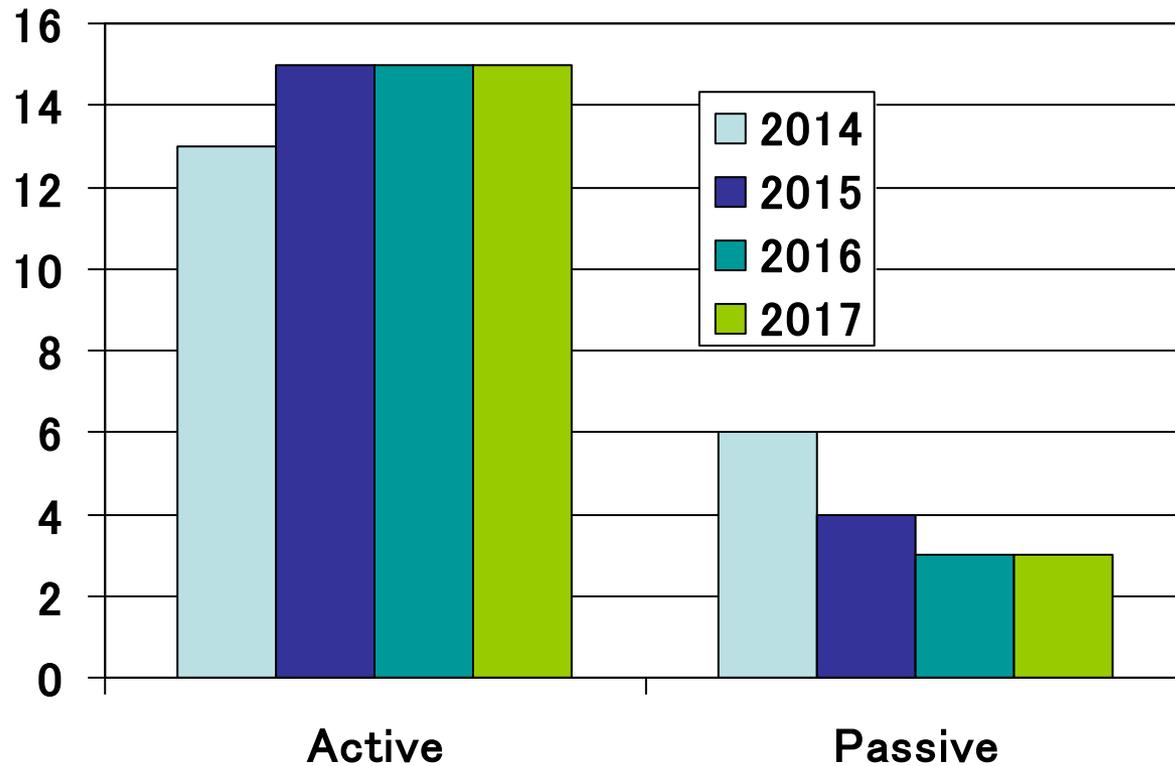


Total for UK	
2012: 247	2015: 274
2013: 288	2016: 288
2014: 249	2017: 245

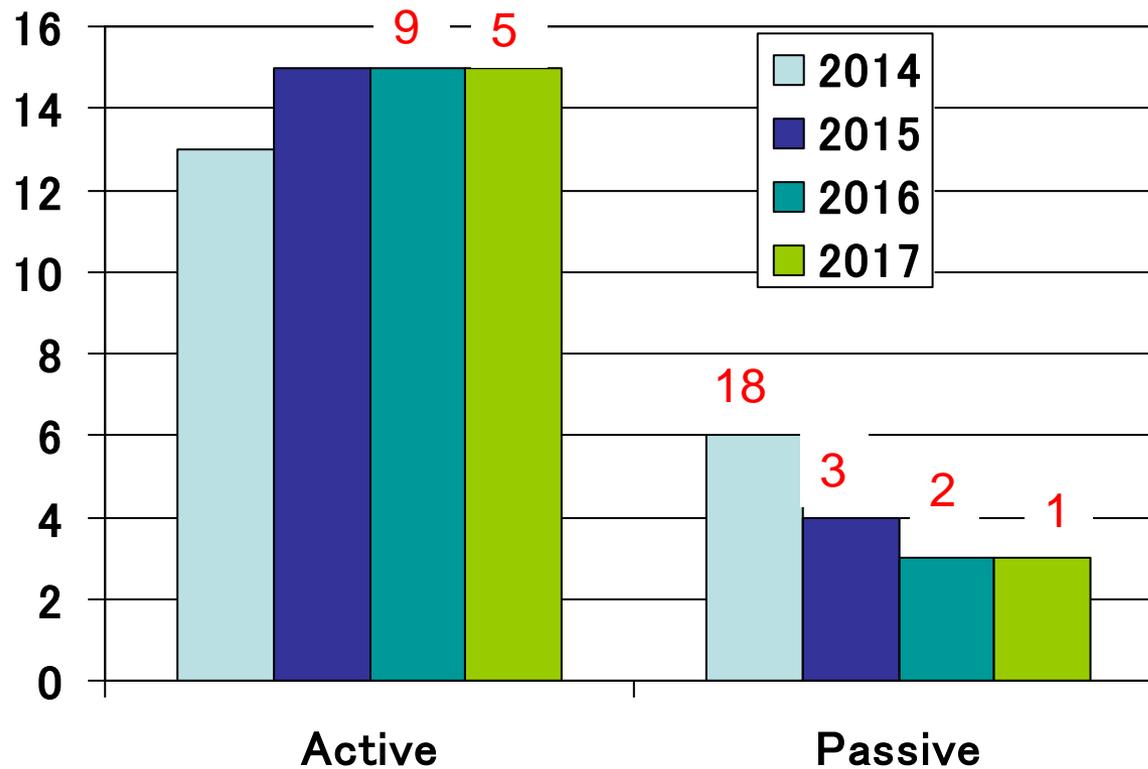
# Transferred for cooling, temp 33-34<sup>0</sup>C at 6 hours of age.

	2016	2017
Cooling n=	288	245
Transferred on active cooling n= (%)	277 (96)	229 (93)
Infant temperature data available n= (%)	216 (75)	191(78)
Temp 33-34 <sup>0</sup> C at 6hrs n= (%)	180 (83)	154 (81)

# Active vs. passive cooling, number of teams, 2014 - 2017.

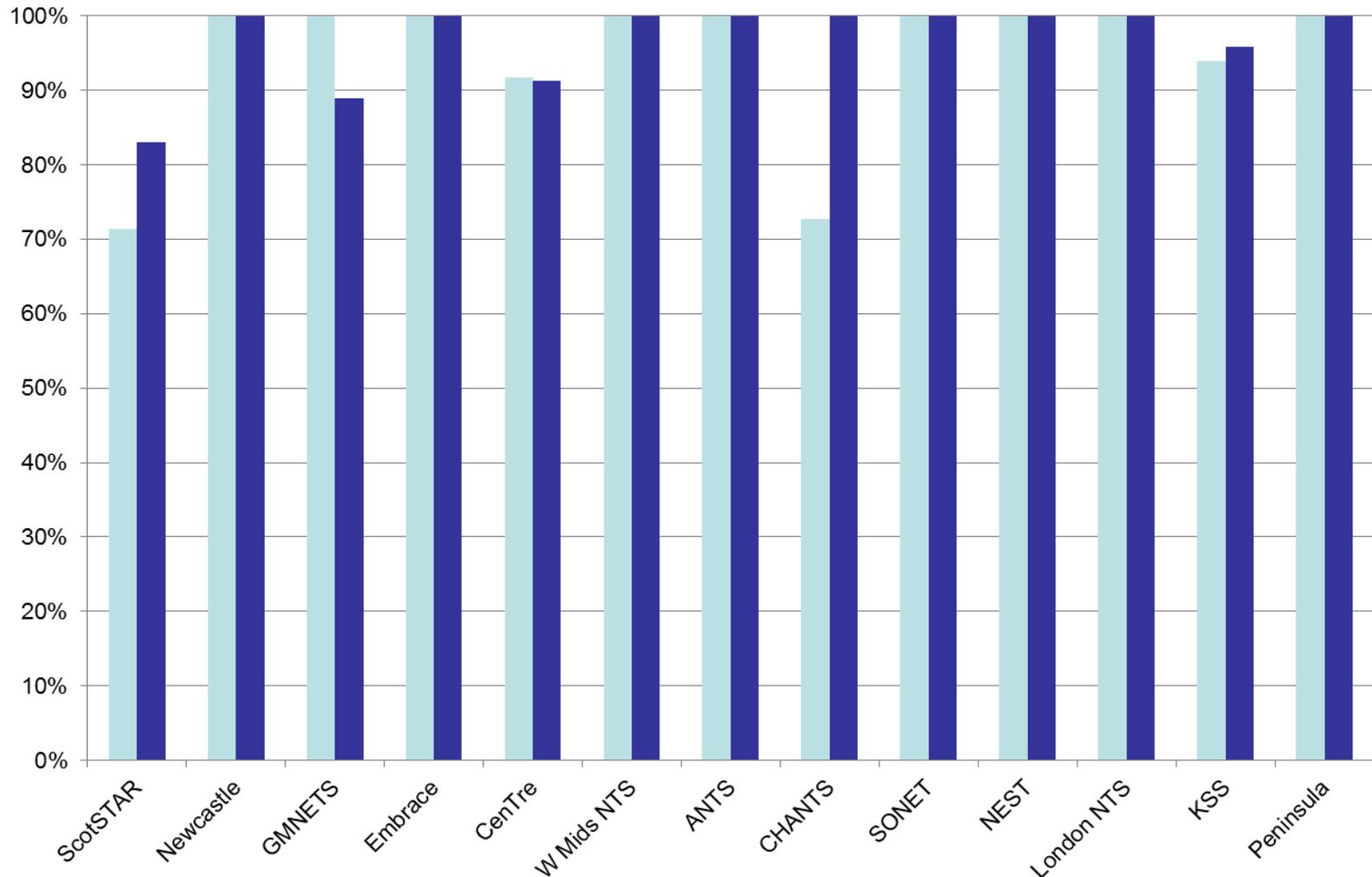


# Active vs. passive cooling, number of teams, 2014 - 2017 and number of infants transferred with passive cooling.

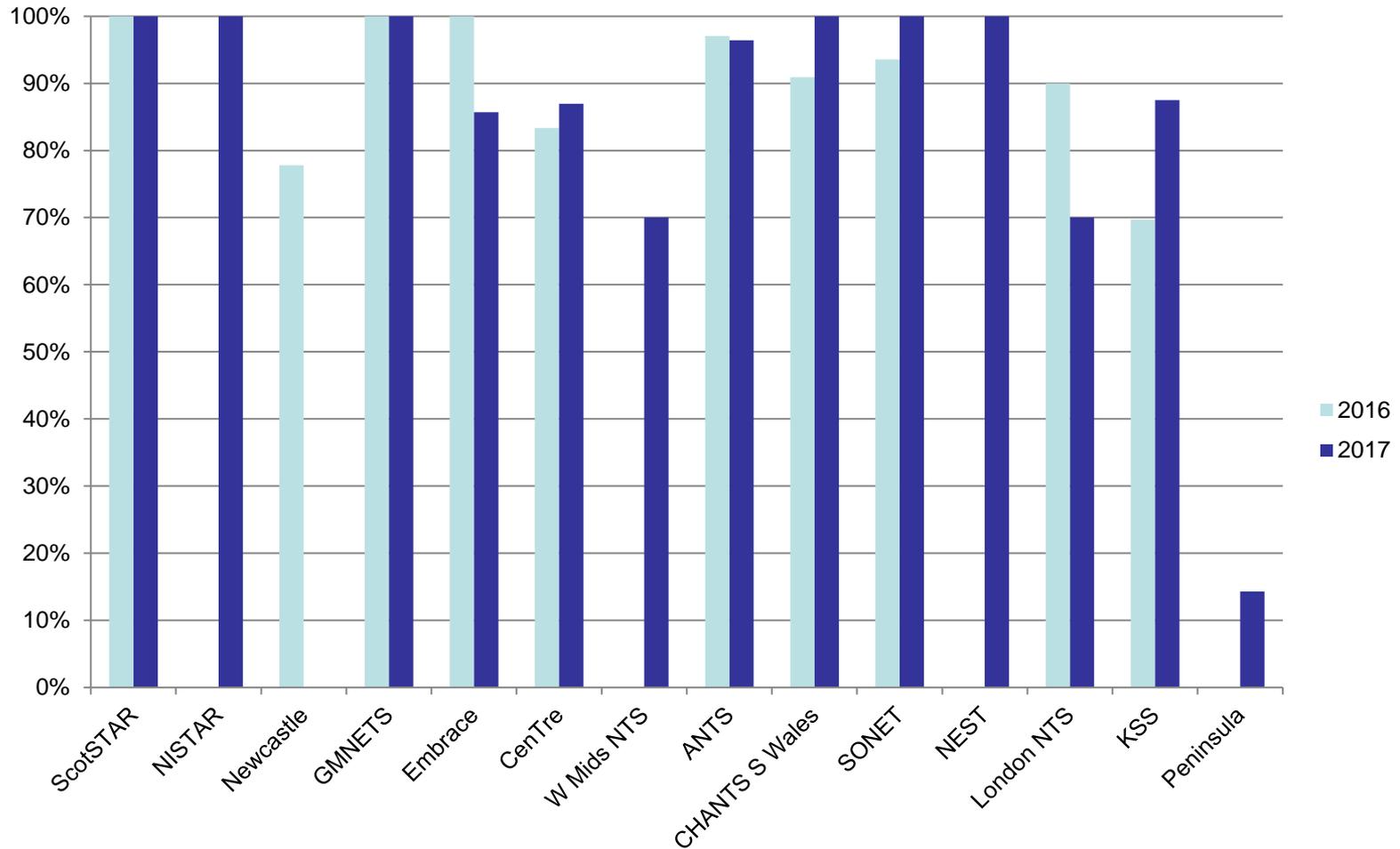


Numbers in red are infants receiving passive cooling in transit

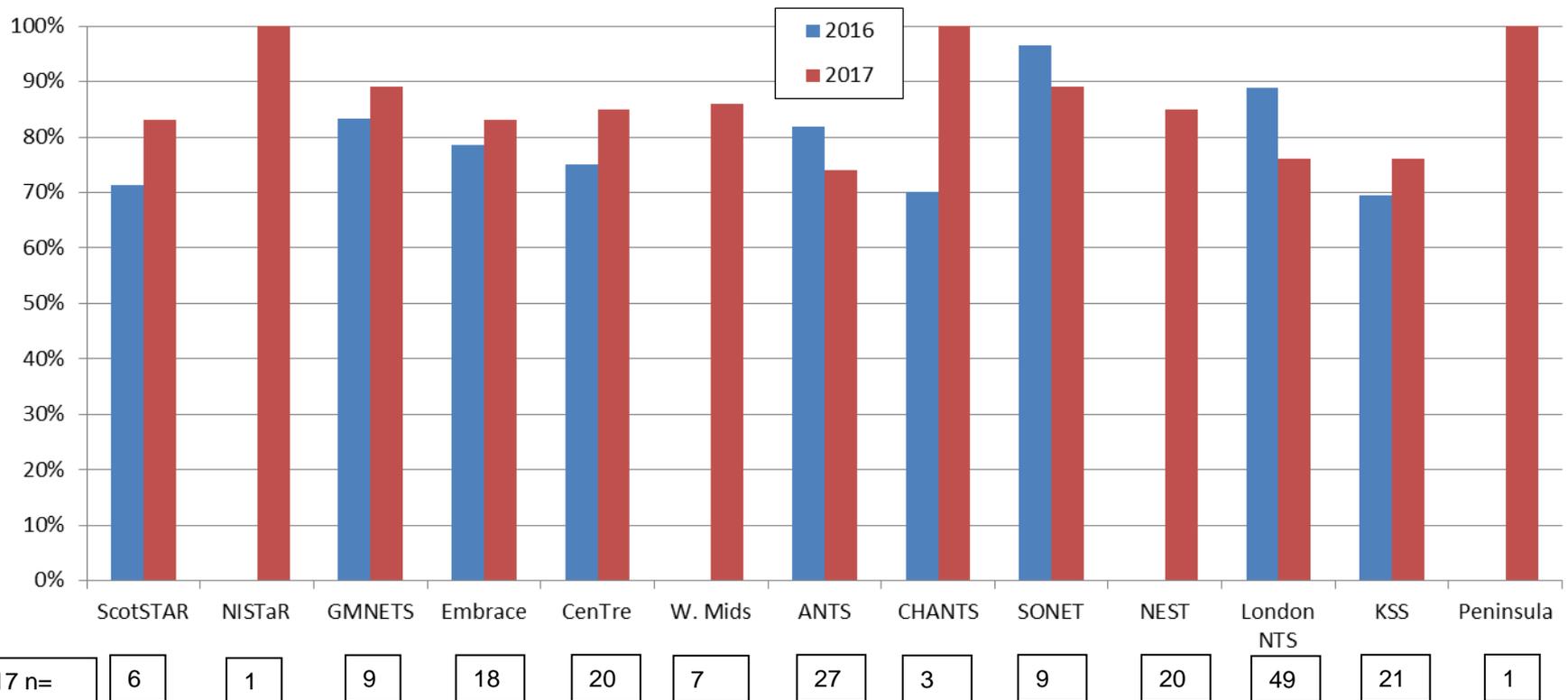
# Active cooling services, % transferred on active cooling Jan – Jun 2016 & 2017.



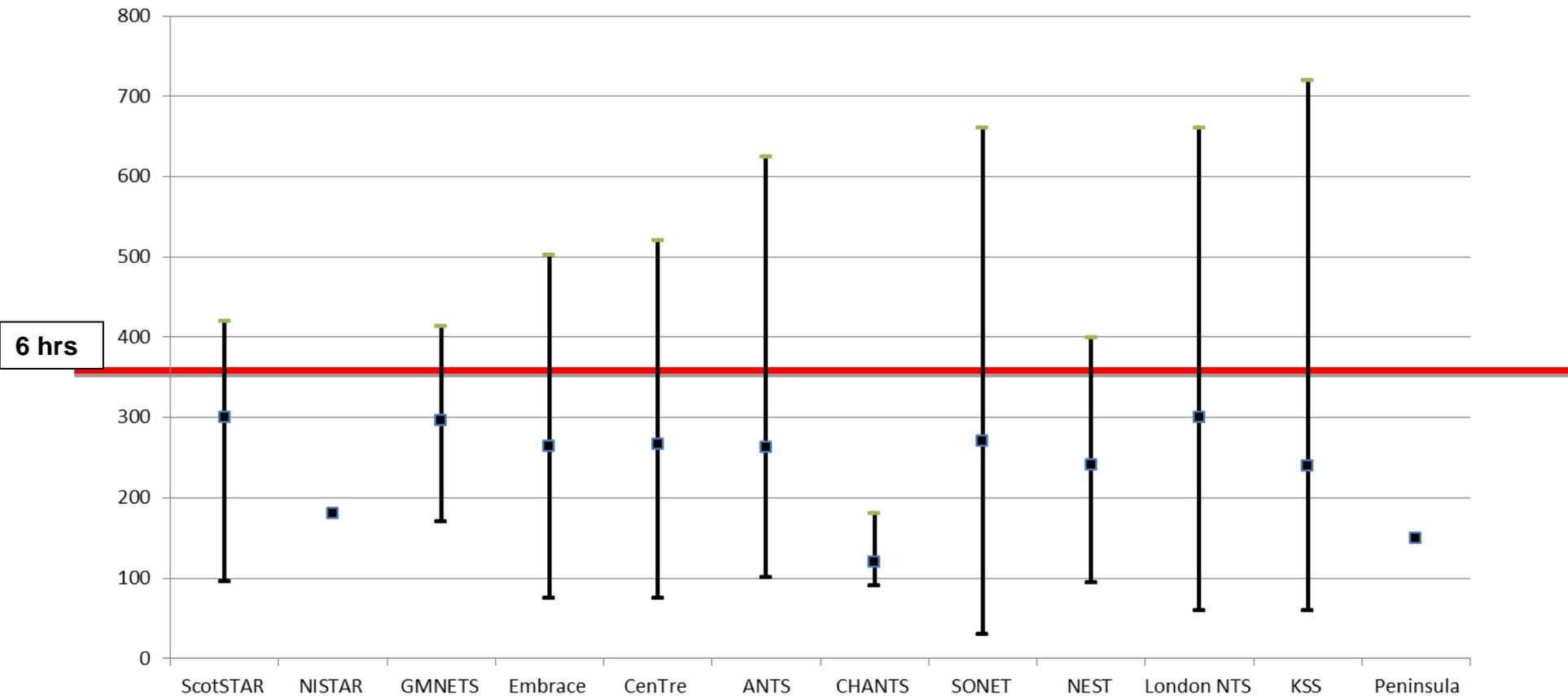
# Teams undertaking cooling transfers, % of transfers with infant temperature data available.



# Infants transferred for cooling, percentage in target range at 6 hours of age.



# Age (mins) target temperature achieved, infants transferred for cooling, 2017 (median, range)



# Hypocarbia & hypercarbia

- $p\text{CO}_2 < 4 \text{ kPa}$

- $p\text{CO}_2 > 7 \text{ kPa}$  and  $\text{pH} < 7.2$

...on the gas measurement on completion of transfer of ventilated infants.

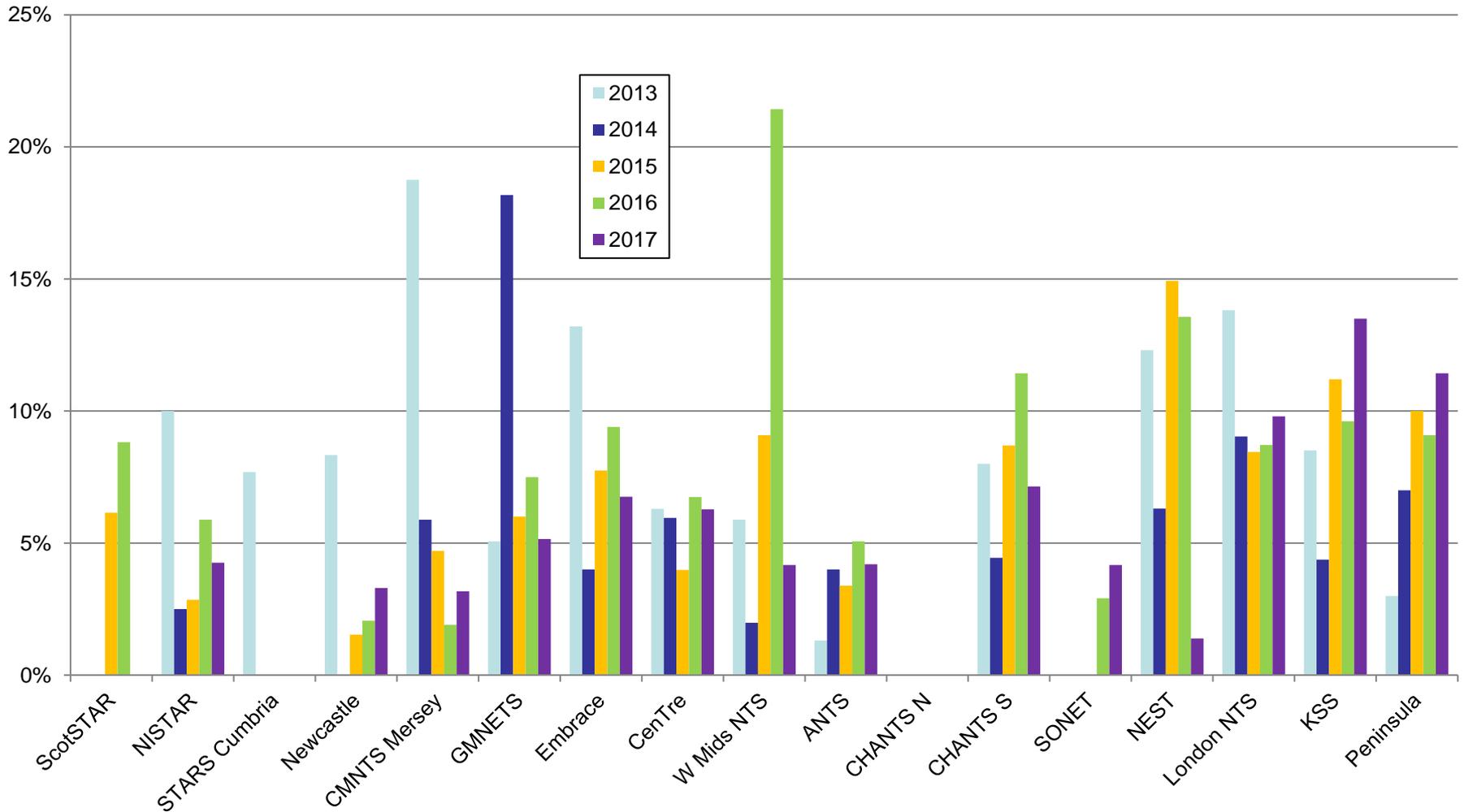
Note that not all infants had  $p\text{CO}_2$  available post-transfer.

## Hypocarbia & hypercarbia, Jan-Jun/year, infants on a ventilator during journey, all operational reasons.

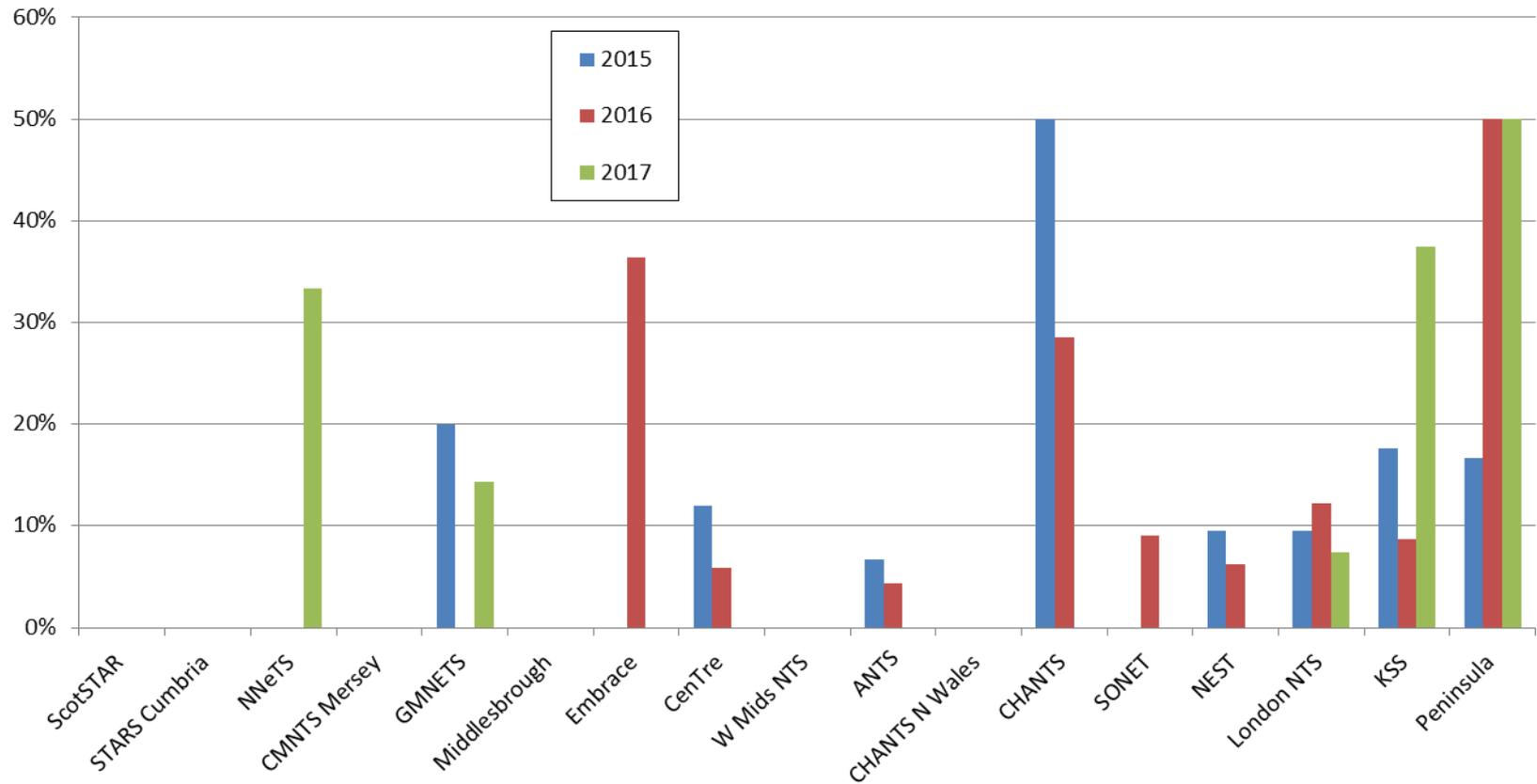
	2013	2014	2015	2016	2017
Ventilated + gas available n=	1355	1895	1685	1493	1519
pCO <sub>2</sub> <4kPa, n=(%)	118 (9)	106 (5)	122 (7)	107 (7)	100 (6)
pCO <sub>2</sub> >7kPa & pH<7.2, n=(%)		68 (3)	94 (6)	79 (5)	83 (5)

Infants transferred for cooling	2014	2015	2016	2017
Cooling, n=	249	274	288	245
Cooling & ventilated & gas available n=(%)	202 (81)	230 (84)	217 (75)	190 (78)
pCO <sub>2</sub> <4kPa, n=(%)	27 (13)	25 (11)	21 (10)	15 (8)

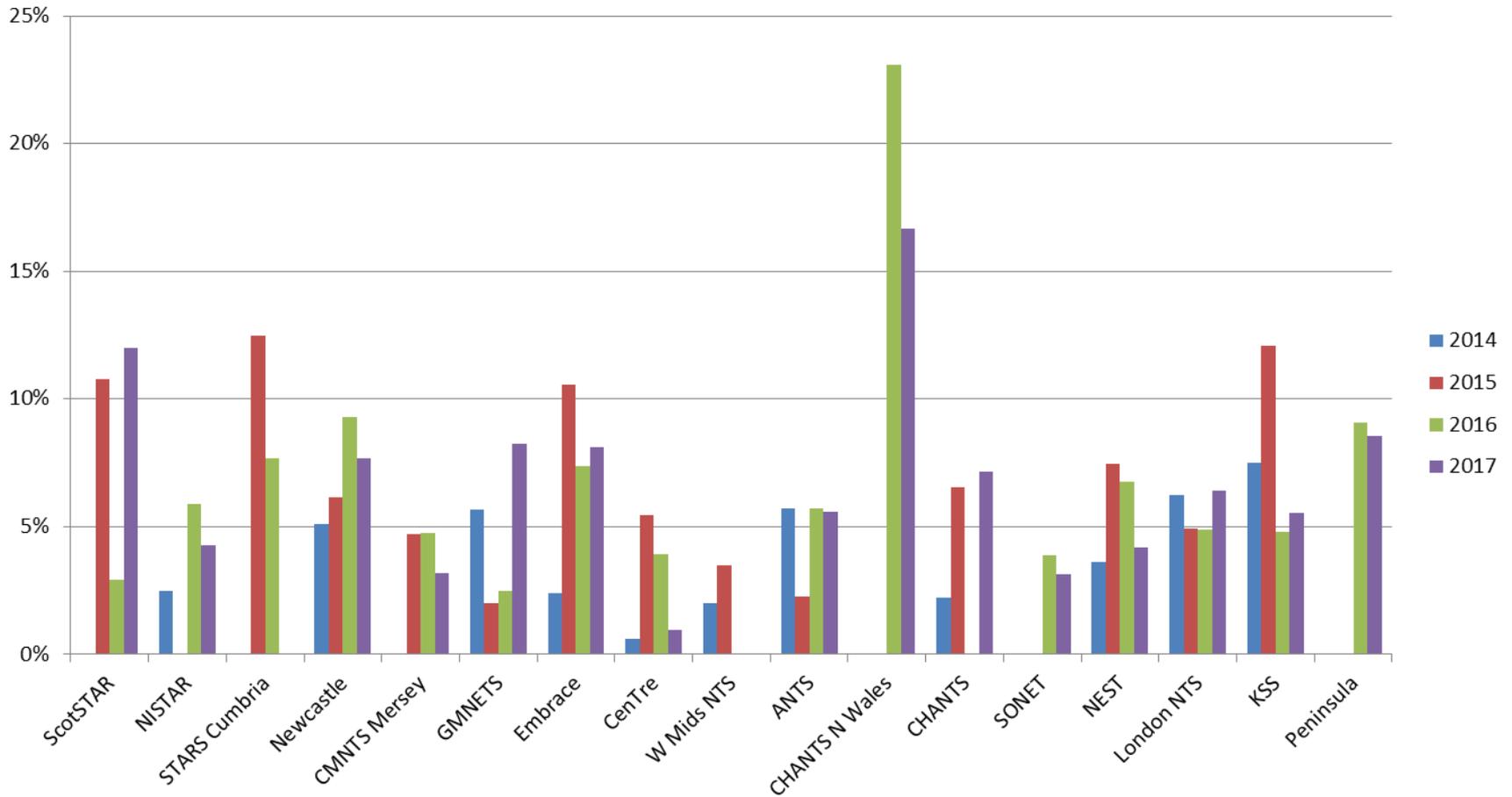
# % pCO<sub>2</sub> <4 kPa on completion , per service. Jan – June 2013-17



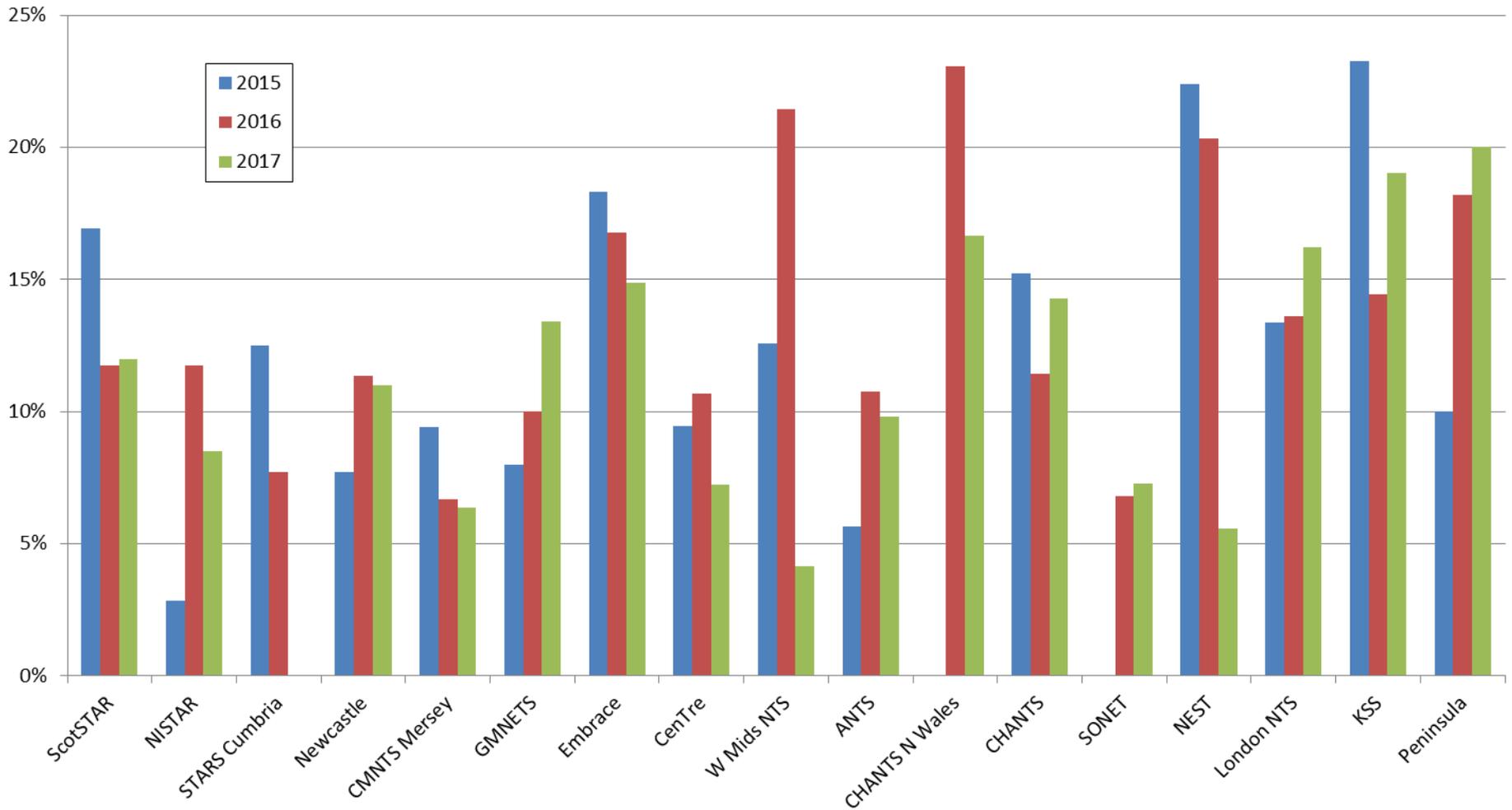
% pCO<sub>2</sub> <4 kPa on completion, per service.  
Jan – June 2015-17, infants on a ventilator during journey  
(cooling transfers)



# % pCO<sub>2</sub> >7kPa & pH<7.2 on completion , per service, Jan – June 2014-17.



# % pCO<sub>2</sub> >7kPa & pH<7.2 and/or pCO<sub>2</sub> <4 kPa on completion , per service, Jan – June 2015-17.



# Congenital Diaphragmatic Hernia

- Current policy interest.
- Little existing data.
- Snapshot to inform further discussion +/- data.

# CDH data

No CDH transfers (n=7)	Complete (n=8)	Some (n=3)
STARS Cumbria	NISTAR	Cheshire & Mersey
Middlesbrough	NNeTS	West Mids NTS
CHANTS N Wales	GMNETS	ANTS
CHANTS S Wales	Embrace	
NEST	CenTre	
KSS	SONeT	
Peninsula	London NTS	
	ScotSTaR	

# Congenital diaphragmatic hernia transfers, Jan-Jun 2017

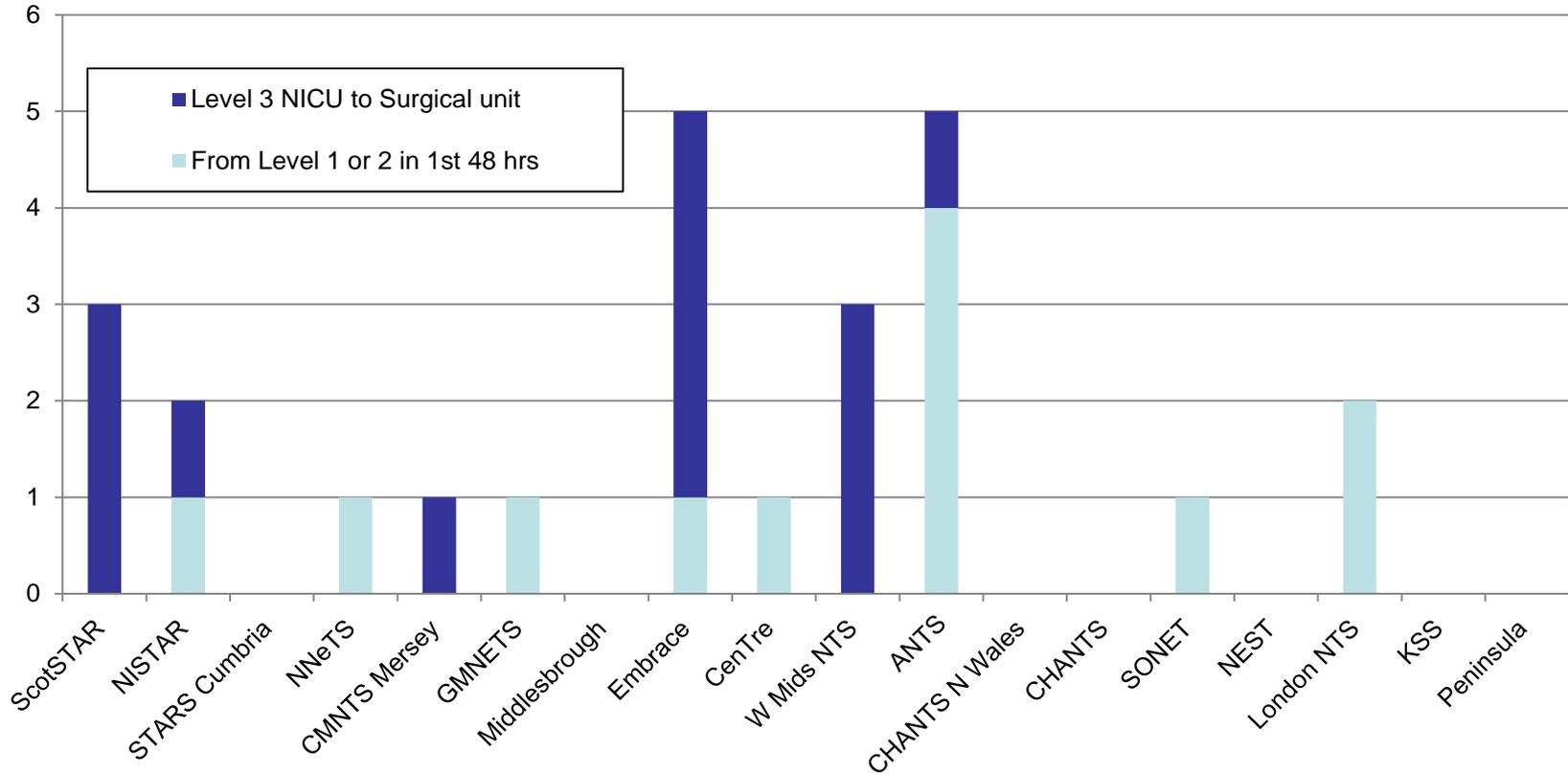
a.	<b>ICU &amp; uplift transfers with CDH (n=)</b>	<b>25</b>
b.	Number of (a) transferred from SCU or LNU in 1 <sup>st</sup> 48 hrs	12
c.	Transferred from NICU (L3) to surgical unit for primary surgical care (n=)	13
d.	Referred but not transported (n=)	3

# Congenital diaphragmatic hernia transfers, Jan-Jun 2017

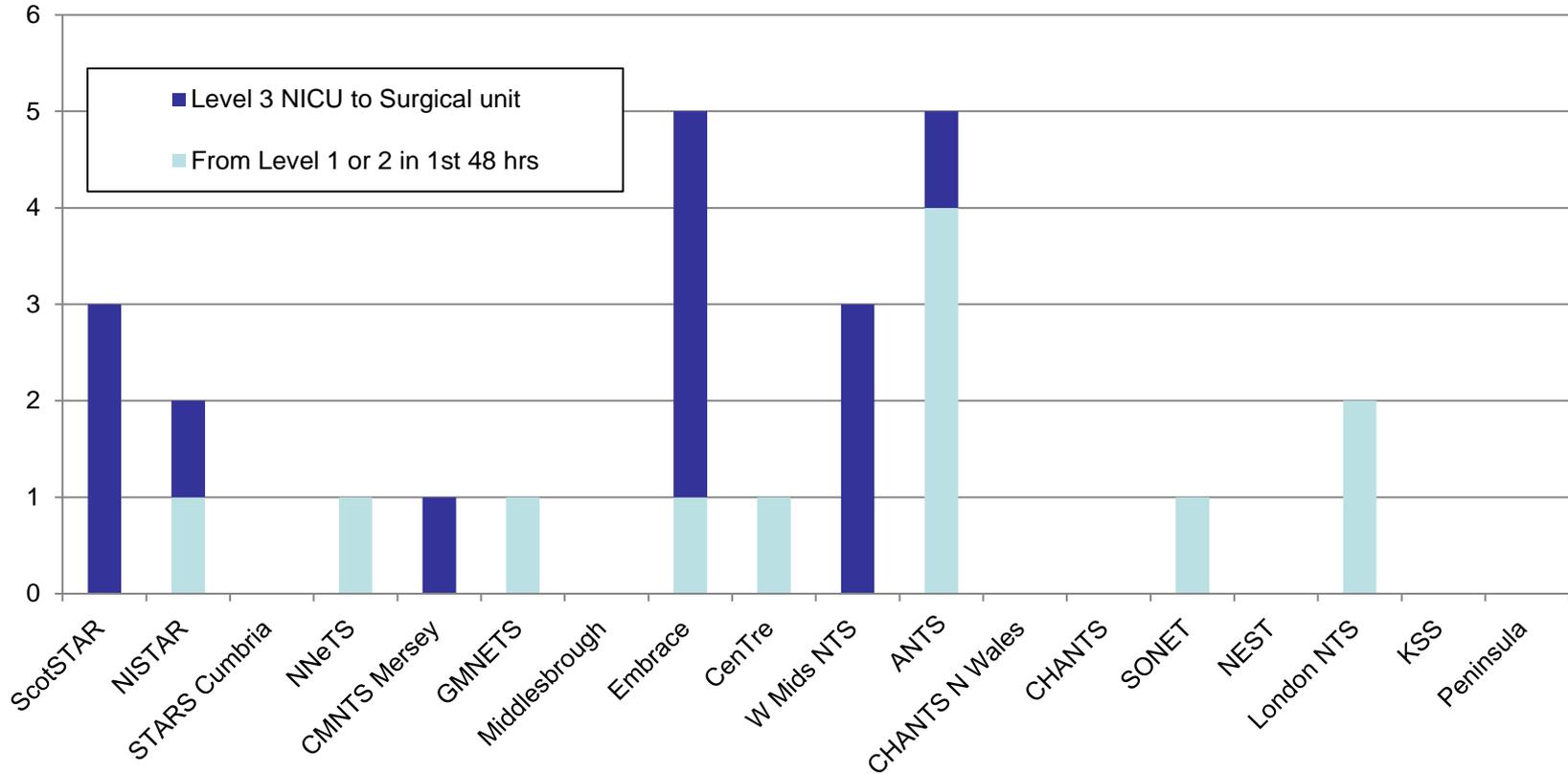
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c.	Transferred from NICU (L3) to surgical unit for primary surgical care (n=)	13
d.	Referred but not transported (n=)	3

Note also Glenfield ECMO did 8 transfers on ECMO over the same period, 7 from NICU, 1 from LNU.

# CDH transfers Jan-Jun 2017



# CDH transfers Jan-Jun 2017



A further 3 transfers were referred but not transferred (2 W. Mids, 1 ANTS)

# CDH, transfers from LNU or SCU in 1<sup>st</sup> 48hrs of life

	Time (mins) n=11
Despatch (median, range)	39 (18 - 165)
Response (median, range)	89 (72 – 170)
Stabilising (median, range)	134.5 (60 – 214)

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Support in transit	n=11
Intubated	10
HFO	0
iNO	3

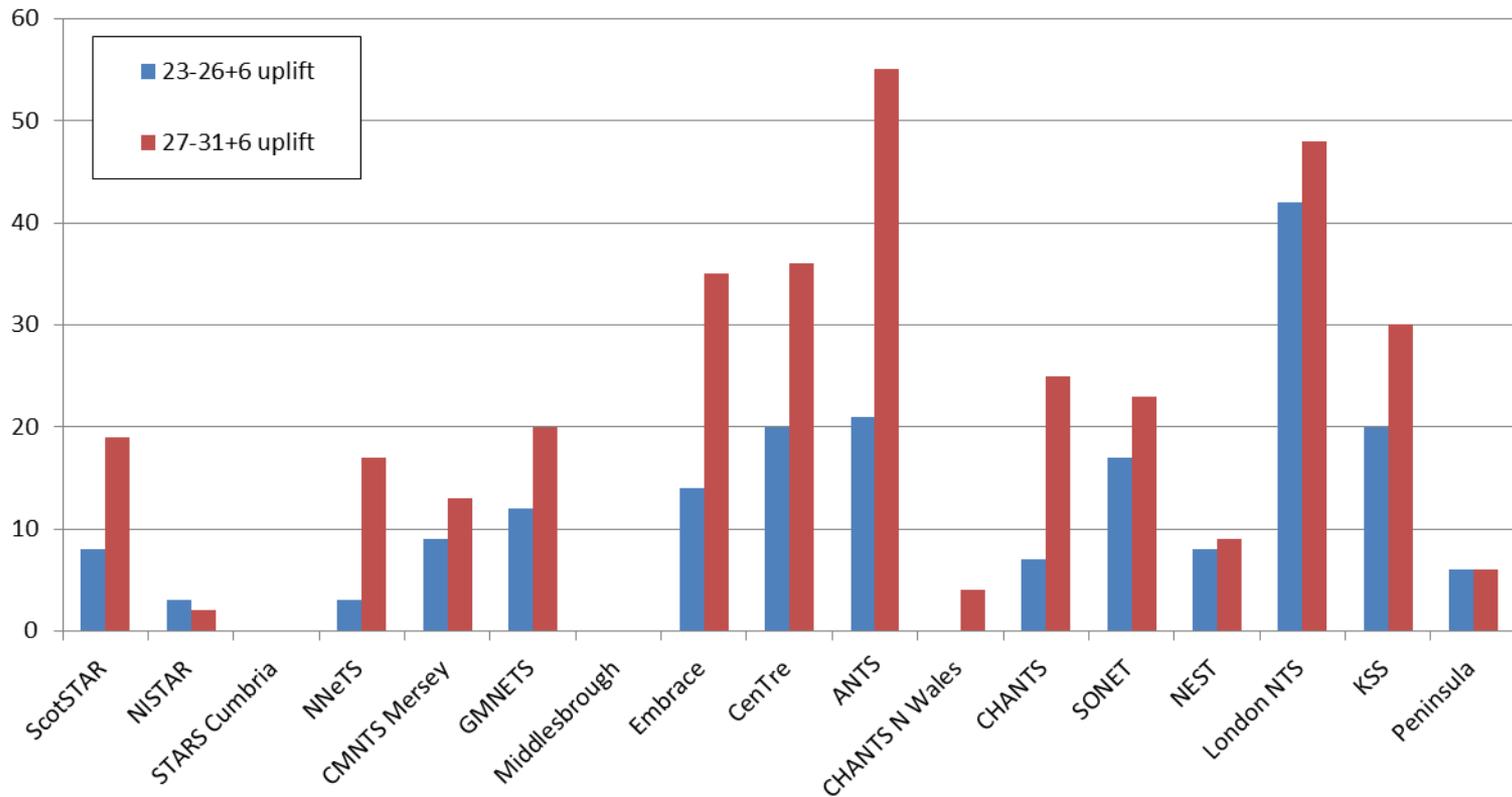
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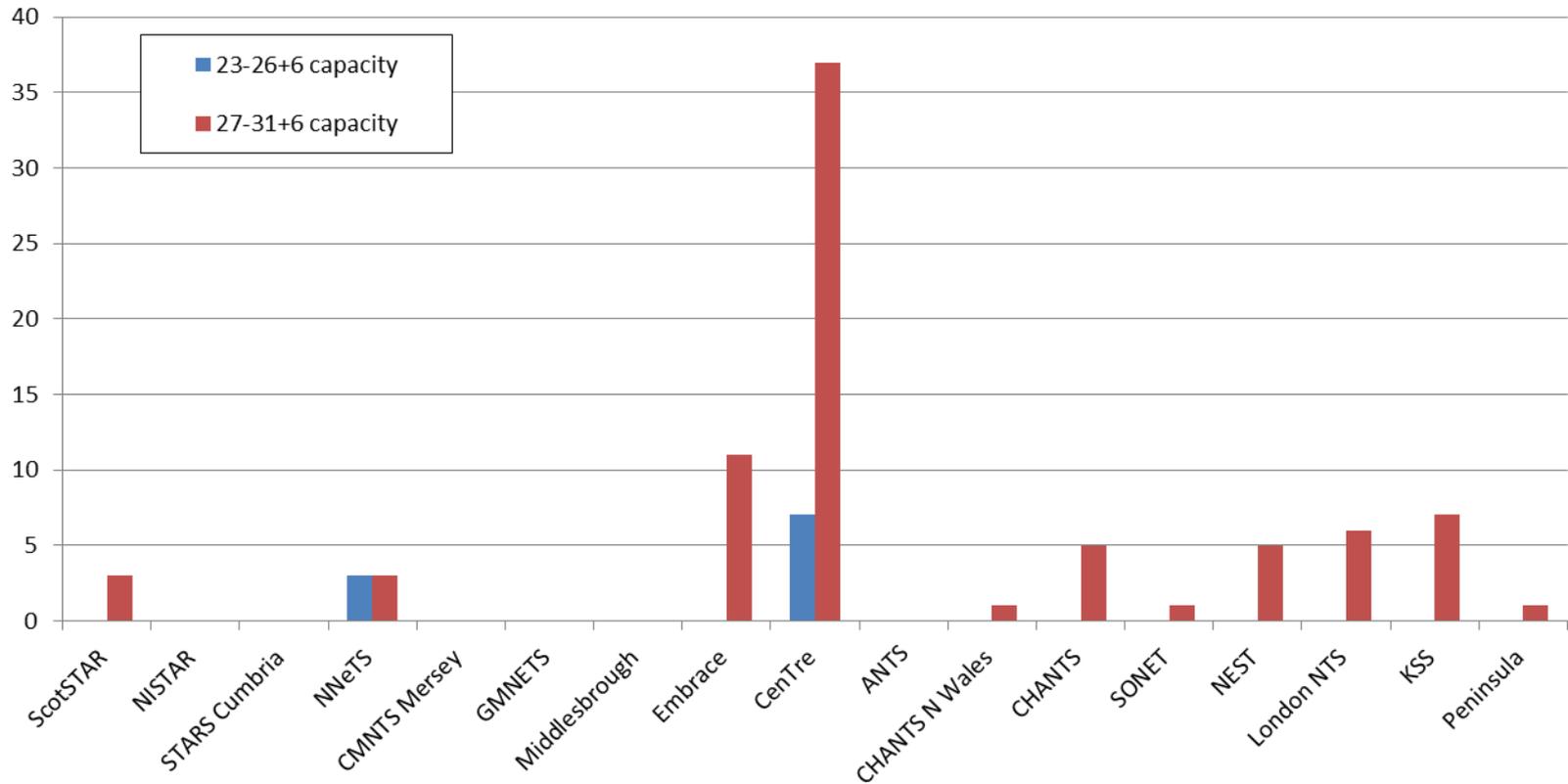
Support in transit	n=11
Intubated	10
HFO	0
iNO	3

On completion of transfer	n=10
pH (median) range	7.35 (7.28 – 7.48)
pCO <sub>2</sub> (median) range	5.24 (3.7 – 7.25)

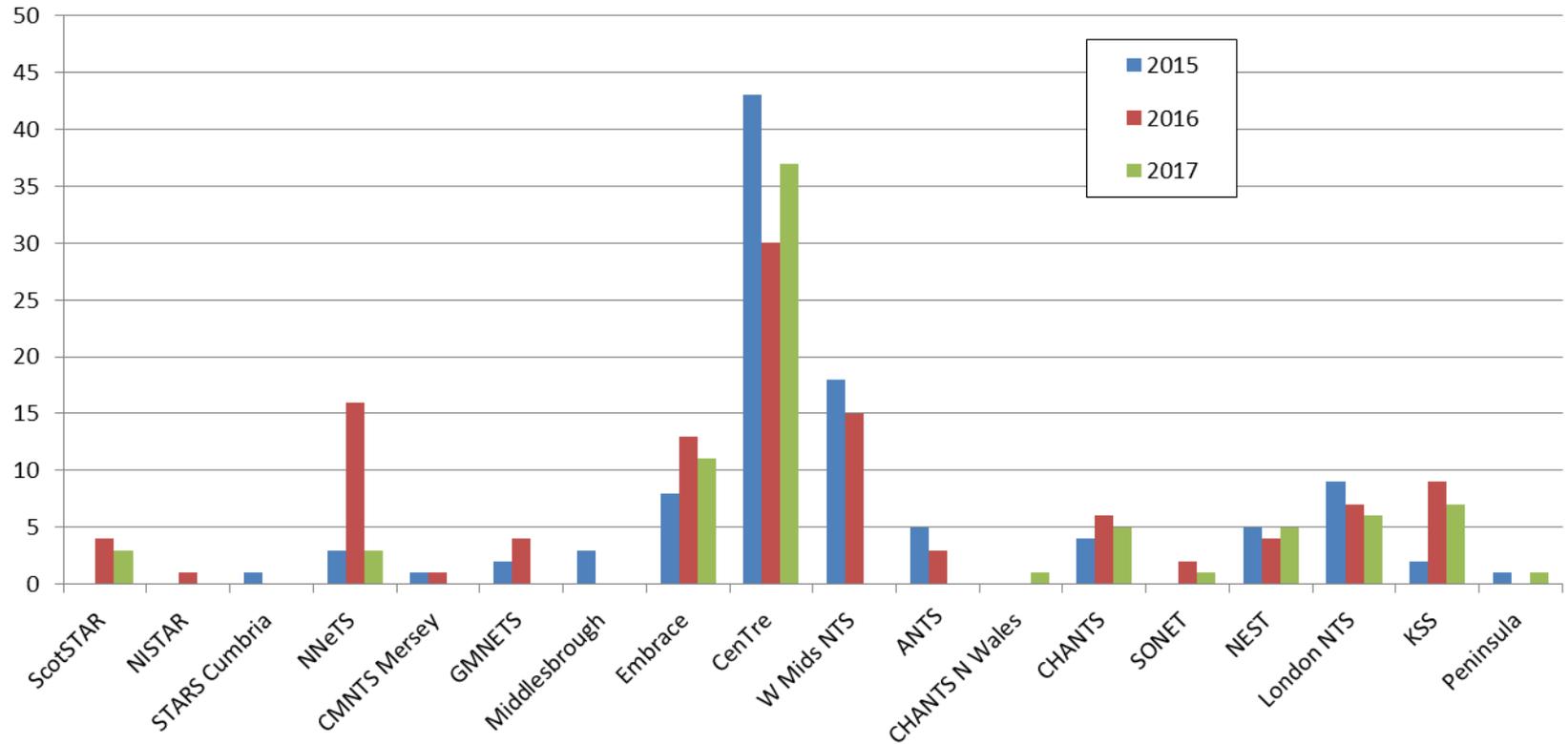
# Uplift transfers, 1<sup>st</sup> 3 days of life, 23-32 week infants, Jan-Jun 2017



# Capacity transfers, 1<sup>st</sup> 3 days of life, 23-31<sup>+6</sup> week infants, Jan-Jun 2017

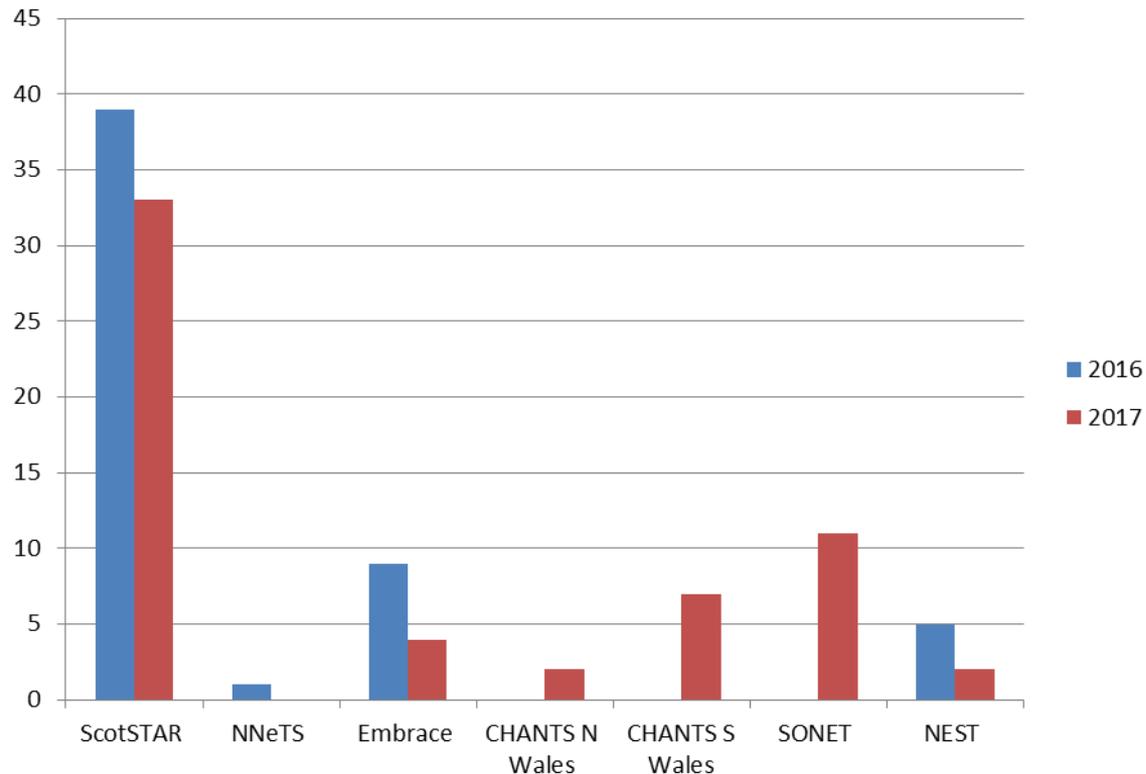


# Capacity transfers, 1<sup>st</sup> 3 days of life, 27-31<sup>+6</sup> week infants, Jan-Jun 2015 - 2017

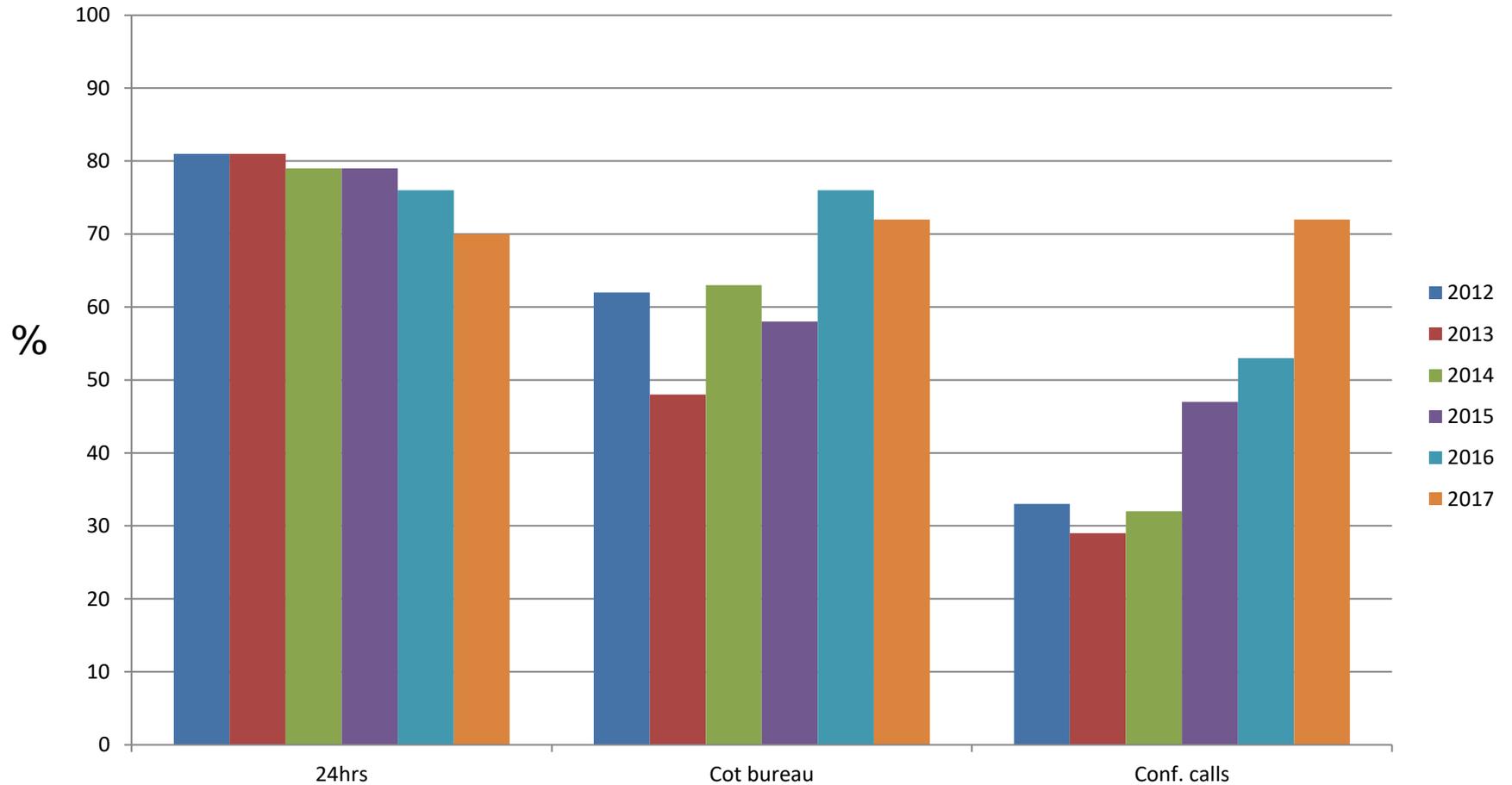


# Air Transport, Jan – Jun 2016, 2017

Jan- Jun 2016 - 54 transfers undertaken by 4 services.  
Jan- Jun 2017 - 59 transfers undertaken by 6 services.



# Service Characteristics



Do you have a service policy to treat as time-critical transfers infants referred with bile-stained vomiting/aspirates?

	Yes	No
2015	9	10
2016	6	11
2017	8	10

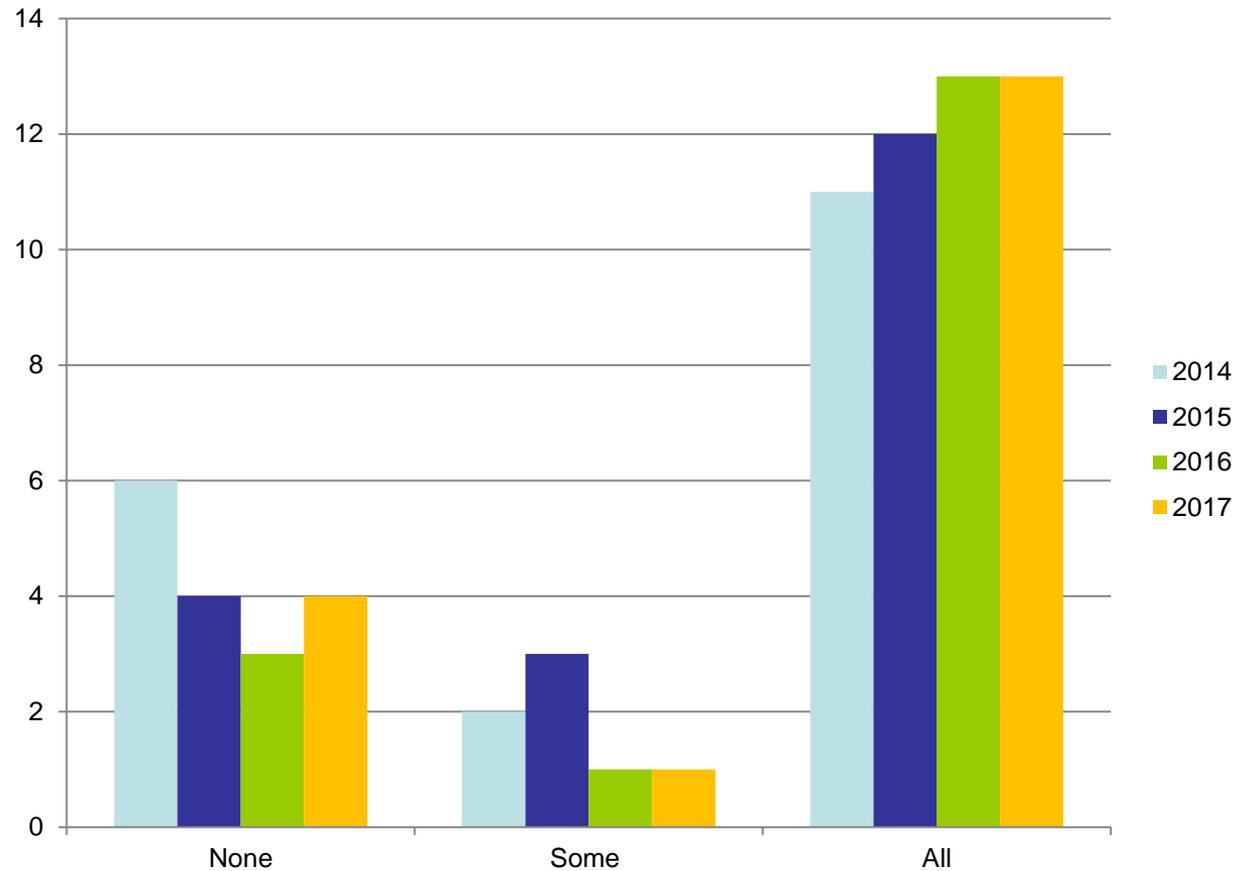
# IUT

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

Yes: 13

No: 5

# Dedicated vehicles, 2014-2017.



# Consultants

- Consultant availability **to attend transfers:**
  - Scheduled, all of the time.
  - Scheduled, some of the time
  - Maybe available, ad-hoc.
  - Never available to attend.

