

# NEONATAL INTENSIVE CARE SERVICES – TEESSIDE

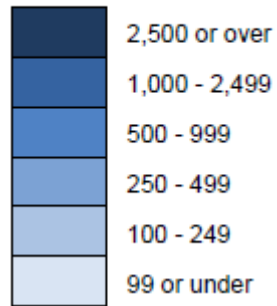
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Dr Sundeep Harigopal

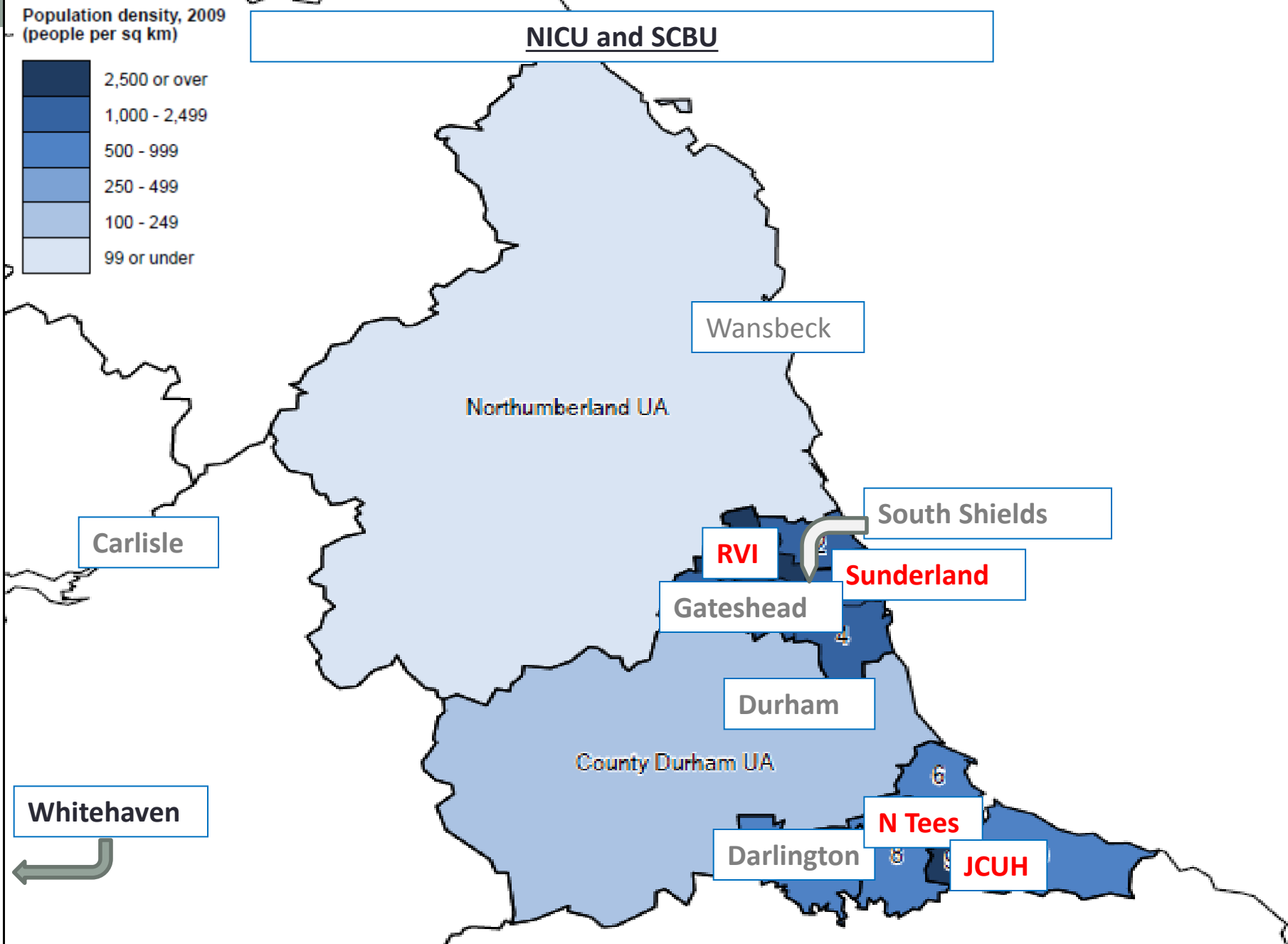
Lead – Northern Neonatal Network

Consultant Neonatal Paediatrician

Population density, 2009  
(people per sq km)



### NICU and SCBU



# Need

- Serious issues with capacity, occupancy, staffing and training
- Vital to concentrate the care of sickest in fewer units for better outcomes
- Too many intensive care units for the population
- Not meeting national standards

# Timeline

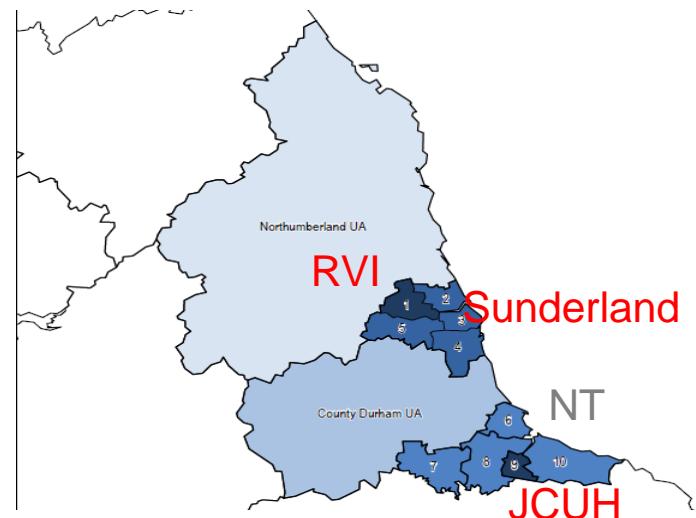
- Oct 2012/13: Network strategy document agreed (clinical)
- Feb-July 2014: Data collection and consulting NICUs
- Sept 2014: Recommended External review to Board
- Nov 2014: NHS England agree to commission review
- Mar: 2015: RCPCH review commenced
- July 2015: Report
- Dec 2015: OSC meeting
- Feb 2018 : JOSC

# Royal College of Paediatrics & Child Health Review July 2015

- *The **greatest risk to the service and patient safety is further delay.***
- *For over ten years reconfiguration and new models of care have been advocated but **prevarication** and the organisational **self-interest** inherent in the NHS internal market have disabled agreed developments which would have made better use of NHS resources and improved care for families.*
- *There should be **no further procrastination.***

# Key recommendations

- Configuration
  - **Redesignation must happen swiftly**
  - Three levels of care - ICU  
HDU  
SCBU
- RVI
  - quaternary centre
- Sunderland:
  - Provide IC for > 26 weeks gestation born in Sunderland or transferred from northern SCUs
- JCUH
  - **Expand to become a viable tertiary neonatal unit**
- **N Tees**
  - **To care for >30 weeks gestation**
  - **Only IC and HD care will be affected**
  - **Over 93% of neonatal care will be at N Tees**



# OSC meetings

## December 2015

- Agreed N Tees would not look after babies less than 27 weeks as an immediate (Implemented September 2017)
- Agreed that we need to address the care of very preterm babies between 27-30 weeks gestation
- “Agreed” to decouple neonatal service from wider changes if no progress – now almost 24 months!
  - Clinical reasons

## 15 February 2018 – JOSOC

- *the Joint Committee agreed it did not have significant concerns on the current proposals, but it was noted that a local briefing would be considered at Stockton.*

## Perinatal outcomes for extremely preterm babies in relation to place of birth in England: the EPICure 2 study, 2014

- Survival is greater in specialist hospitals providing neonatal intensive care and is further improved in **higher activity** services.
- Definition: High activity ( $\geq 2000$  days respiratory support/year and more than 4 consultants with more than 50% of their time dedicated to neonatology)

Standard/Specification	North Tees			James Cook		
	11-12	12-13	13-14	11-12	12-13	13-14
"At least 2000 days of respiratory support per annum"	1449	1551	1936	2243	2429	2678



# BAPM recommendations 2014

Standard/Specification	North Tees		
	11-12	12-13	13-14
"Throughput of at least 100 VLBW infants per year"	92	84	79
"At least 2000 days of respiratory support per annum"	1449	1551	1936
"NICUs should be provided in centers that also deliver neonatal general surgery and if possible cardiac surgery"			
"All NICUs should use the DH toolkit and have sufficient nursing staff to deliver BAPM nurse to patient ratios at 80% occupancy"			
Appropriate tier 1 AND tier 2 medical staffing?			
Consultant neonatologist qualification/duties criteria?			
Additional medical Tier 2 night cover for NICUs >2500 IC days		N/A	
Additional medical Tier 1 night cover for NICUs >7000 deliveries per annum		N/A	
Consultant presence of 12 hours each day			?

BAPM – British Association of Perinatal medicine

# BAPM recommendations 2010

Standard/Specification	North Tees
Nurse staffing meets recommended minimum ratio levels	Red
Tier 1 Medical staffing meets recommended role description	Red
Tier 2 Medical staffing meets recommended role description	Red
Tier 3 Medical staffing meets recommended role description	Green
Tier 1 Medical staffing meets recommended number levels	Red
Tier 2 Medical staffing meets recommended number levels	Red
Tier 3 Medical staffing meets recommended number levels	Red
Access to specialist dieticians	Red
Access to specialist physiotherapists	Green
Access to specialist occupational therapists	Red
Access to specialist SALT	Green
Access to specialist pharmacists	Green
Access to psychology/counselling support for parents	Green

# Nursing standards

## Don't meet standards

	Q3 16-17		Q4 16-17		Q1 17-18		Q2 17-18		Total		% Days that met BAPM
James Cook	48	44	34	56	37	54	21	71	140	225	61.6%
N.Tees	70	22	40	50	47	44	38	54	195	170	46.6%

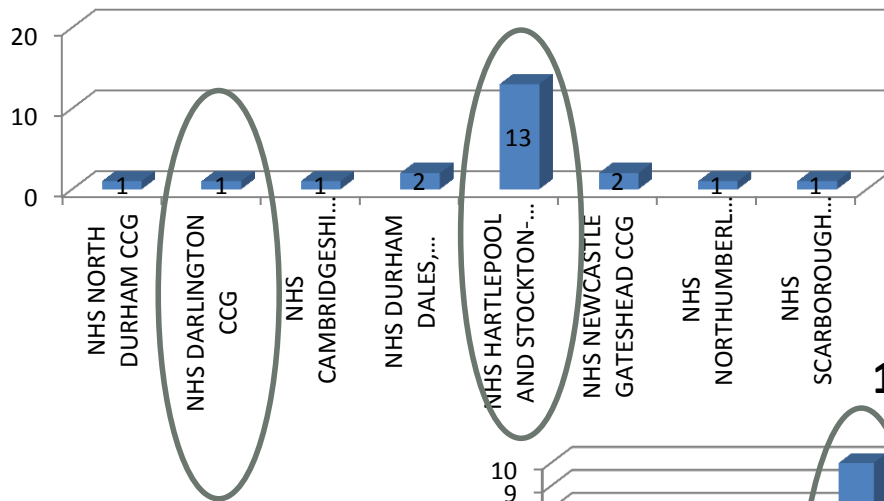
Number of days that did not meet BAPM

Number of days that did meet BAPM

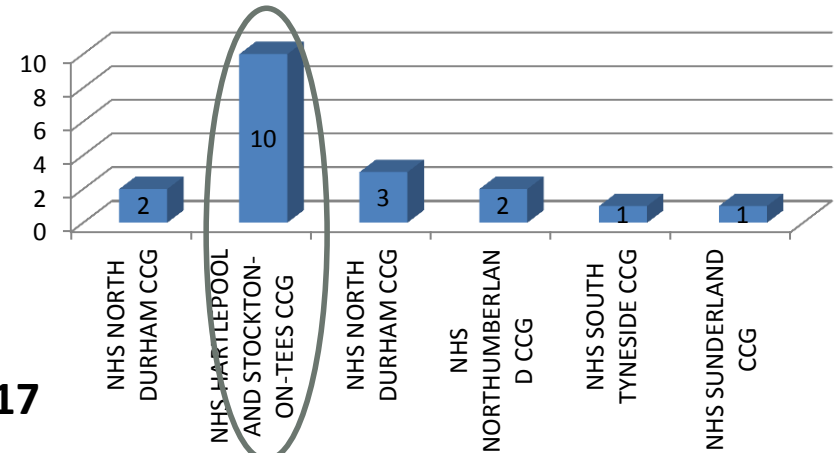


# IMPACT if implemented

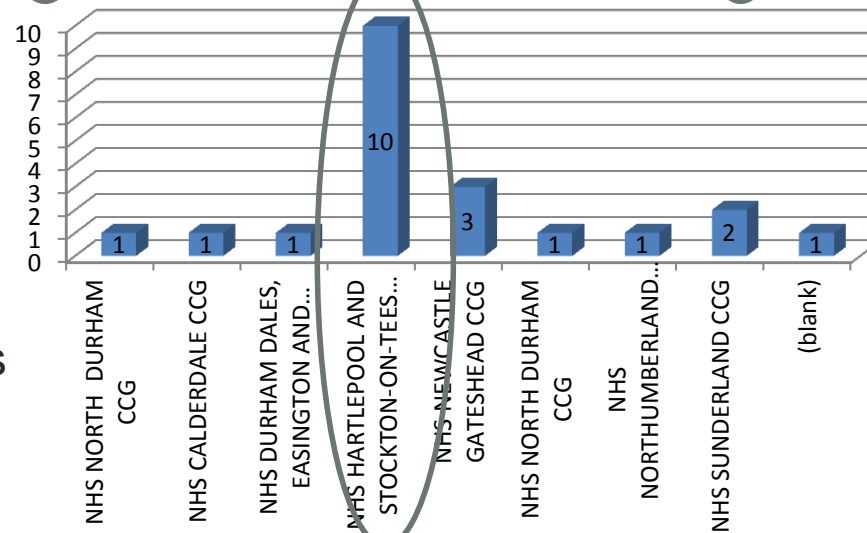
Number of babies 27-29 weeks gestation by CCG 14/15



Number of babies 27-29 weeks gestation by CCG 15/16



16/17



Real impact on the ones circled

# Average admissions and care days

<b>Total 3 Years</b>			
<b>Gestation Weeks</b>	<b>Admissions</b>	<b>Intensive Care Days</b>	<b>High dependency care Days</b>
27	19	470	392
28	18	194	179
29	25	229	225
<b>Total 3 Years</b>	<b>62</b>	<b>893</b>	<b>796</b>
<b>Average PA</b>	<b>20</b>	<b>297</b>	<b>265</b>

Half of these from outside Hartlepool, and Stockton

Less than 1 cot pa

Less than 1 cot pa

# Impact - summary

- Total cases that are currently cared for in N Tees who will be cared for in Middleborough – 20 babies per year
- ‘Real’ impact on Hartlepool & Stockton – 10 babies/ year
- Remaining 10 cases would have been cared for in N Tees due to lack of capacity in one of the other 3 NICUs.

# North Tees

- N Tees and James Cook will work a single Teesside service
- Will continue to provide neonatal care.
  - 3000 care days and all transitional care and normal new born care
  - Of 5000 babies less than 15 babies affected
- Only change will be for babies receiving intensive care.
  - 10-15 babies a year
  - ***This is to provide best chance to babies in N Tees***
  - Plenty of evidence of improved outcomes in high volume units
  - N Tees is the smallest NICU in the country
- Led by trained paediatricians and an excellent team of advanced neonatal nurse practitioners.
- Middlesbrough – Will only provide care for very small proposition very preterm babies to improve the care of all Teesside babies.

# Evidence

- Independent review recommending urgent change
- Clinical consensus
- Maternity network and Local maternity systems support
- Systems wide collaborative to identify vulnerable services
  - Identified Neonates as vulnerable and needs to urgent change
- Minimal change (~10 babies per year)
- **Evidence to support better outcome in high volume units**
  - North Tees is the smallest unit in the country

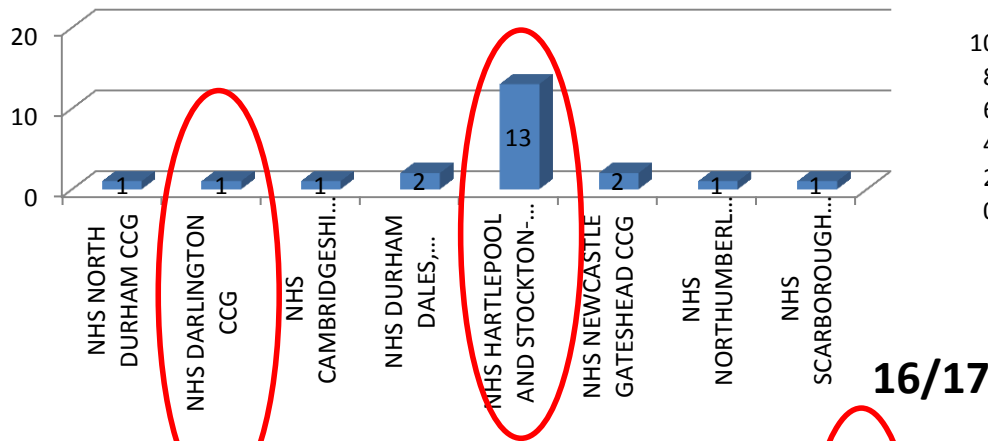


# Questions put forward

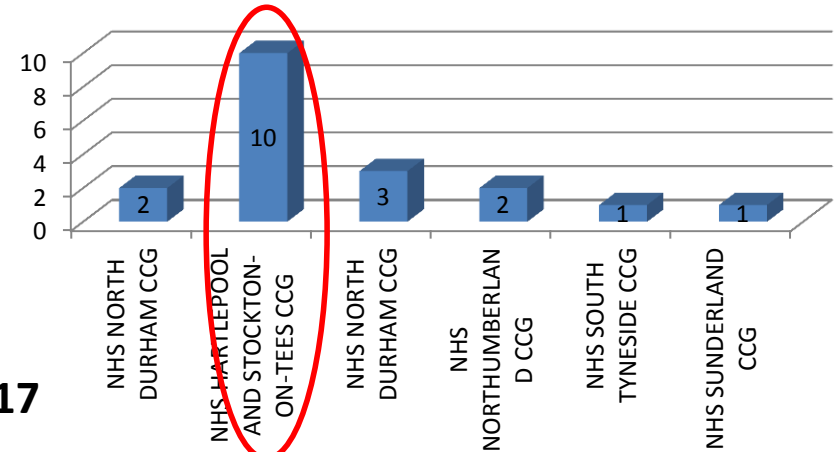
- Breakdown of babies that attend current services and their CCG and Local Authority of origin
- Capacity at James Cook to accommodate future service delivery
- Details of why babies from outside of the immediate area have had to be cared for at North Tees as part of current service delivery?

# Breakdown of babies that attend current services and their CCG and Local Authority of origin

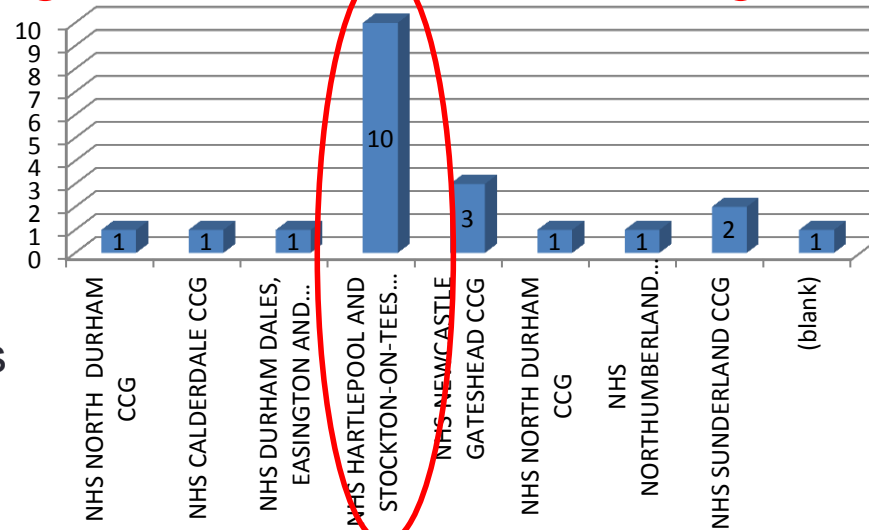
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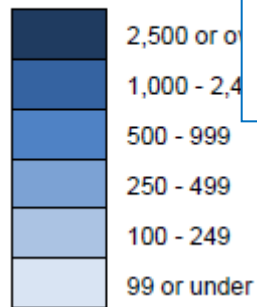
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# Capacity at James Cook to accommodate future service delivery

- Assurance from JCUH trust and NNN modelling
- Occupancy rates for JCUH – 60-80%
- Increase in capacity needed is only less than two cots worth of activity
  - 297 IC days + 265 HD days = 1.5 cots
- Majority of neonatal care will remain at North Tees
  - All babies 30 weeks and over will be cared for in N Tees
  - Over 3000 care days (~10 cots) and all transitional and normal newborn care

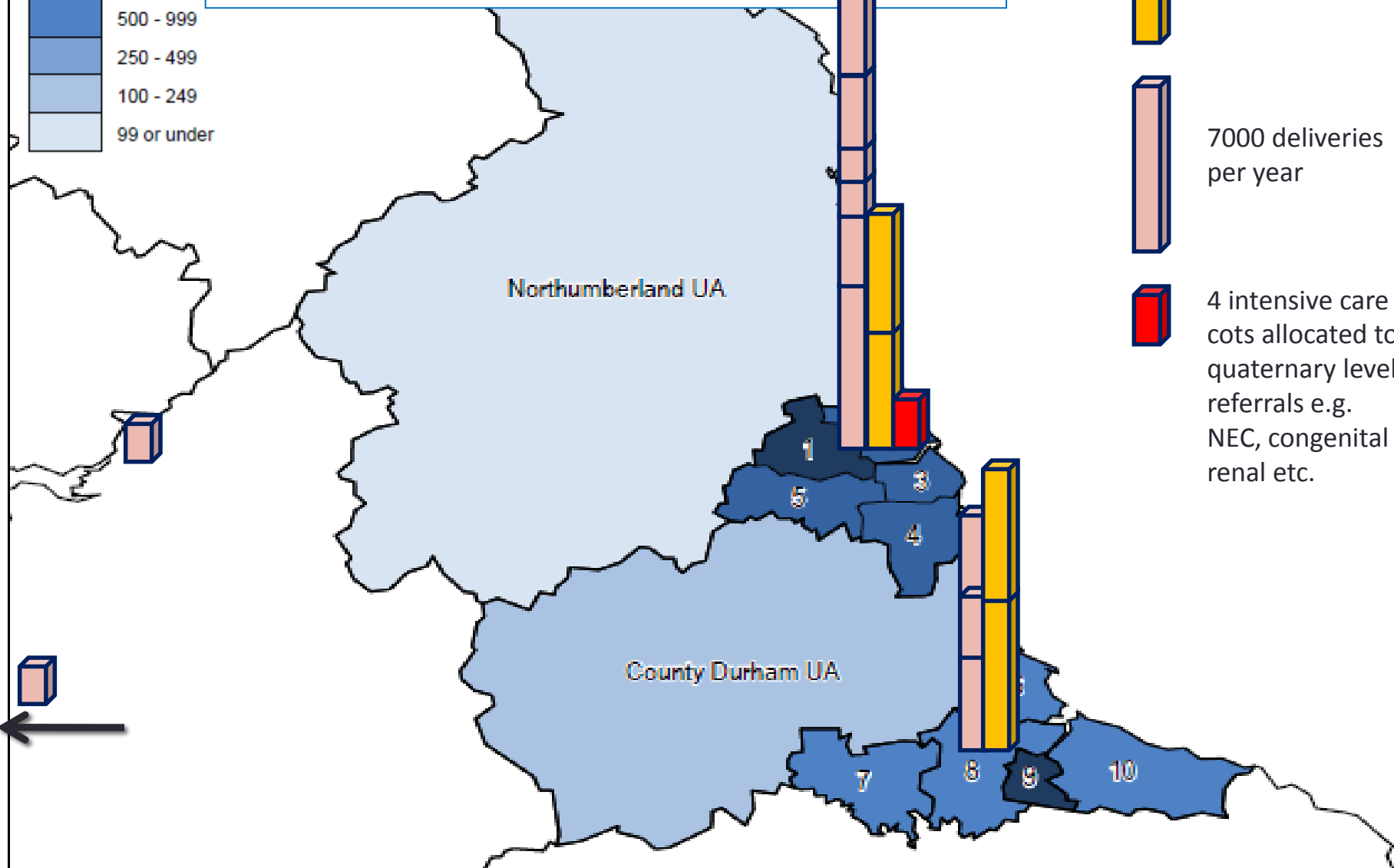
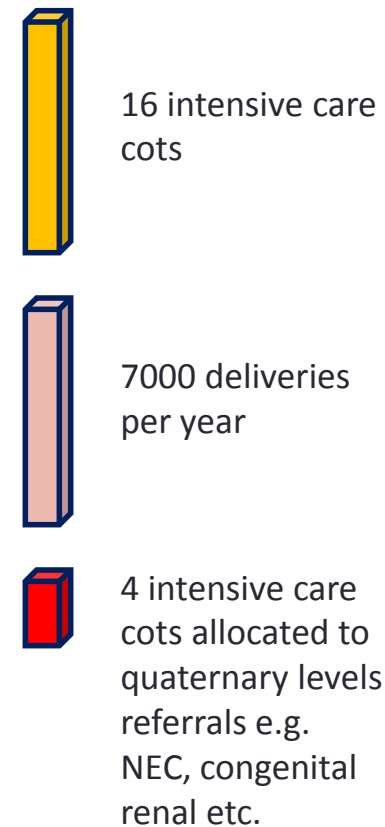
Details of why babies from outside of the immediate area have had to be cared for at North Tees as part of current service delivery?

Population density,  
(people per sq km)



## Location and number of deliveries and Neonatal Intensive care provision

Figure assumes 4 cots at RVI allocated to babies requiring surgery or requiring renal input etc



# Risks of no change

- Substandard care for babies needing **intensive care**
  - Depriving babies North of Tees access to best possible care and outcomes in the future.
- Continuing improvement in outcomes for these babies hampered as this can only happen in centres of excellence where maximum use can be made of emerging technologies/treatments and new enhanced clinical skills
- Increase in transfer and thereby a detrimental effect on mortality
- Current service provision detrimental in the long run
  - Staff working across two sites
- Work force
  - Staff
  - Deskillling

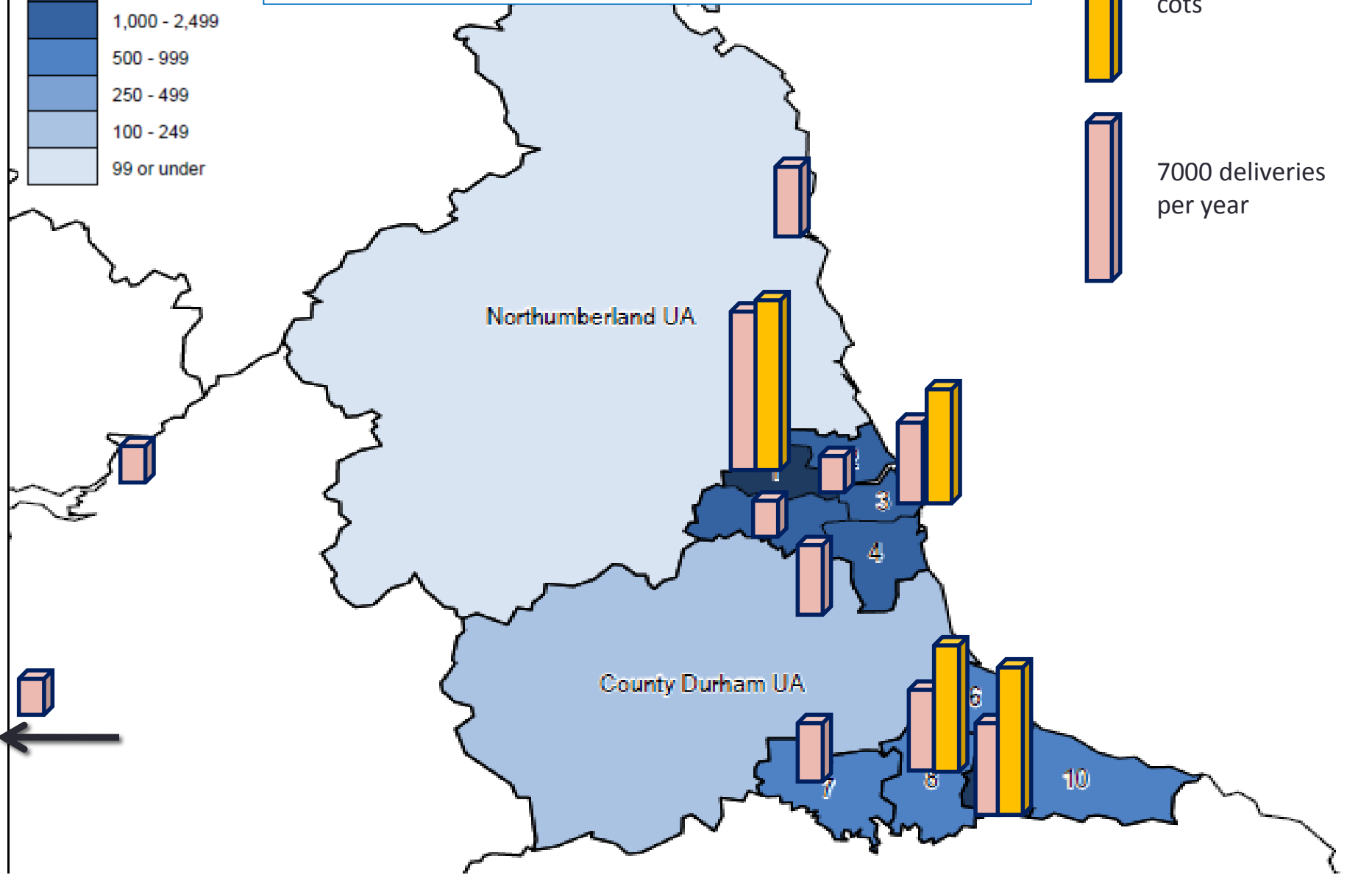
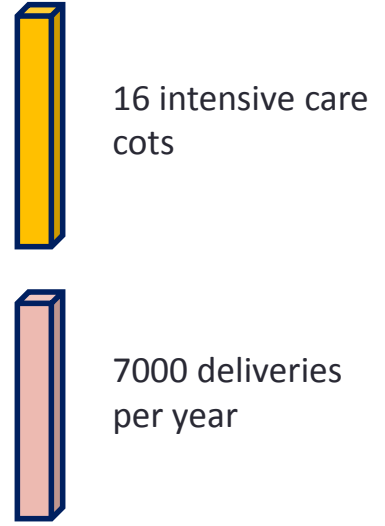
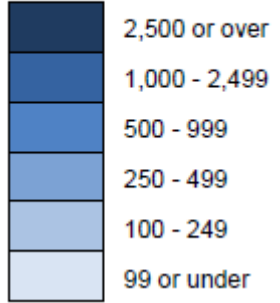


THANK YOU

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**Location and number of deliveries and Neonatal Intensive care provision**

Population density, 2009  
(people per sq km)



Northumberland UA

County Durham UA

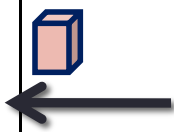
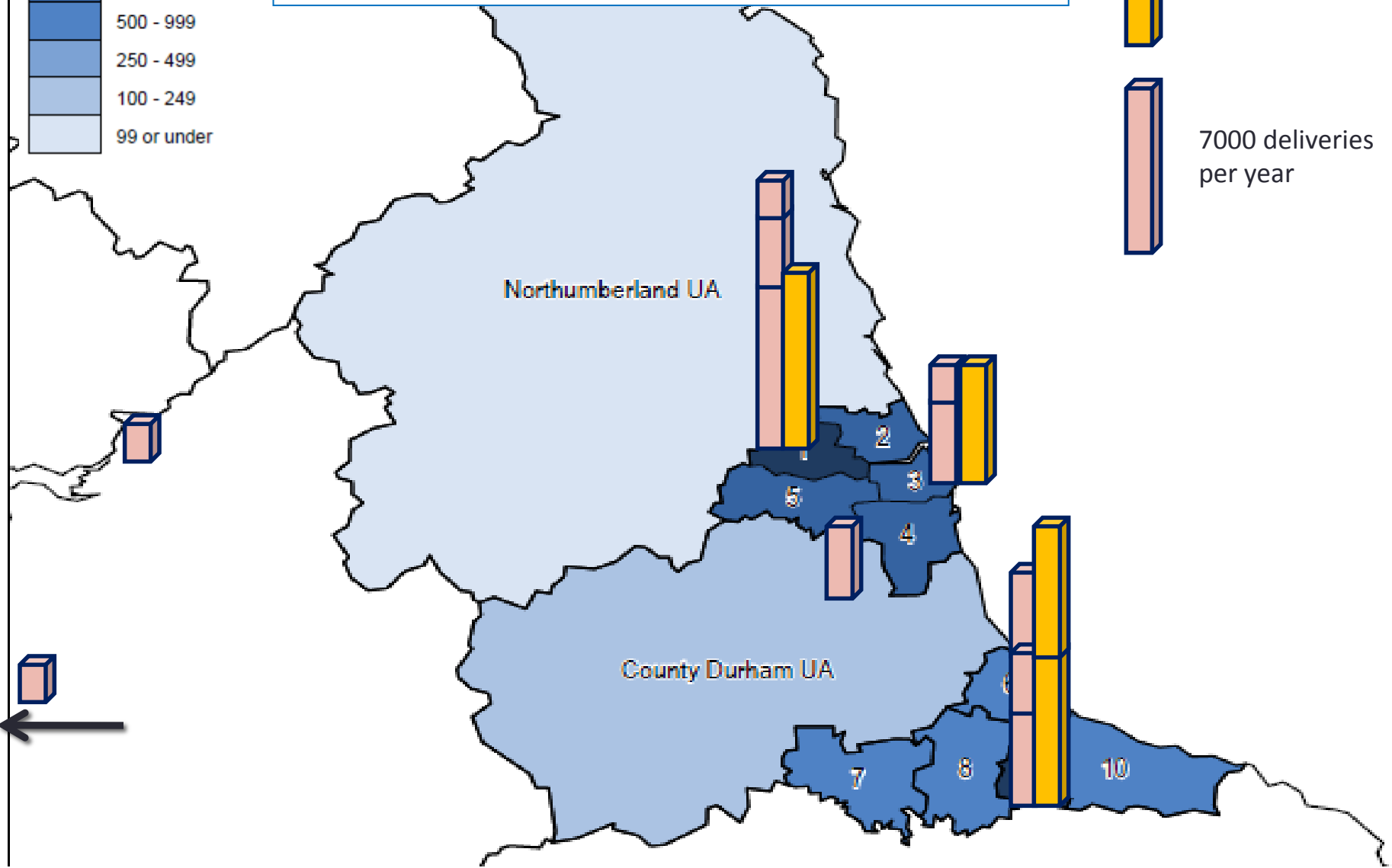
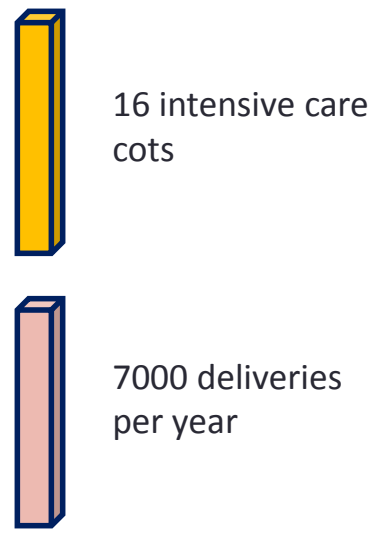
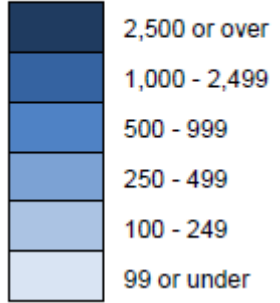
16 intensive care cots

7000 deliveries per year

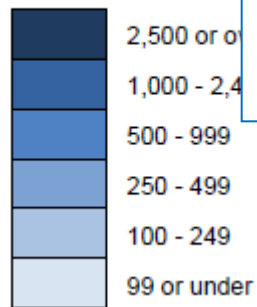


**Location and number of deliveries and Neonatal Intensive care provision**  
**Figure combines Tees units**

Population density, 2009  
 (people per sq km)

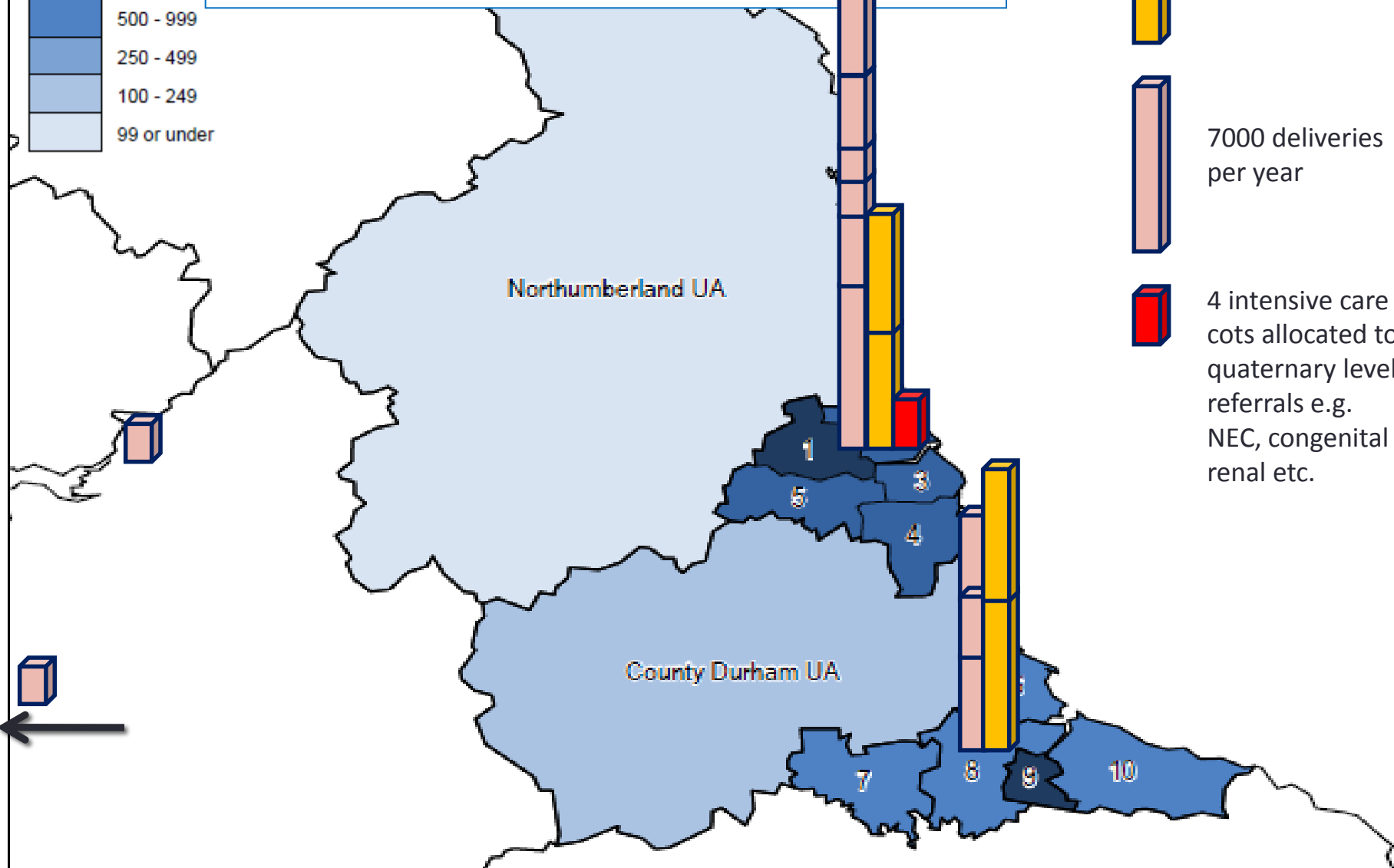
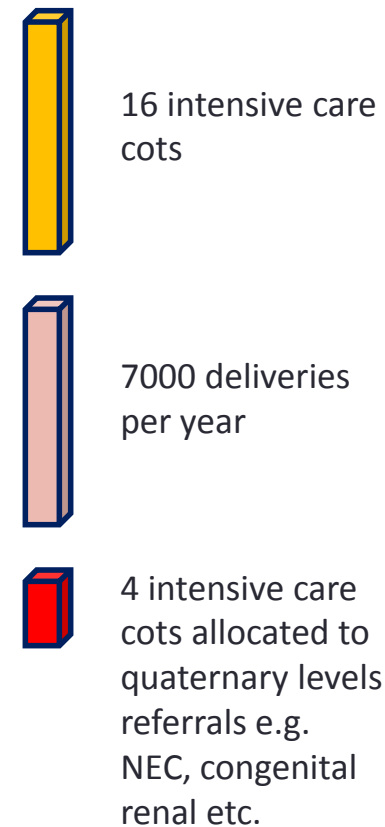


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## Location and number of deliveries and Neonatal Intensive care provision

Figure assumes 4 cots at RVI allocated to babies requiring surgery or requiring renal input etc



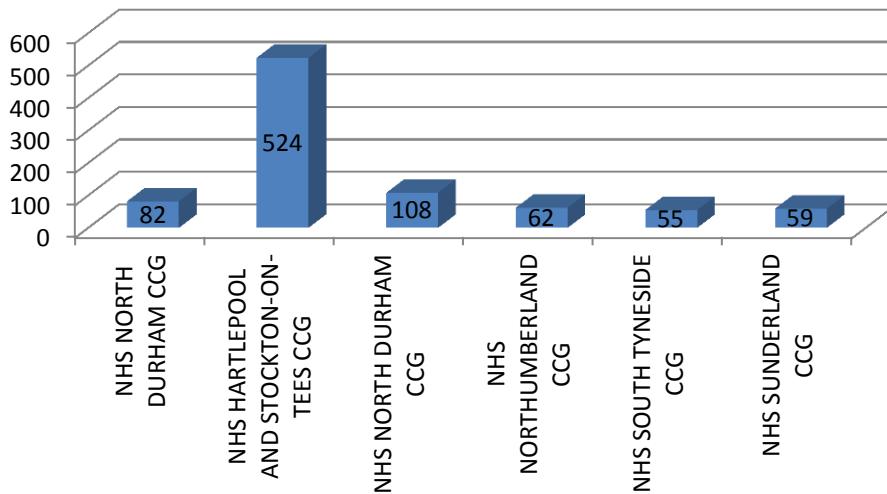
# Three issues

- Urgent need to increase capacity at RVI
  - 250-300 transfers as a results of lack of capacity at RVI!
  - Local population often transferred to distant NICUs
  - Evidence that transfer increases mortality!
  - Business case has been submitted by NuTH

Unit	Current	Cots needed (based on booking hospital)	Redistributed after “quaternary” activity *(80% average occupancy) FINAL	Net change by unit
RVI	16	20 (9+11)	$20+5 = 25$	+9
SRH	7	9 (4+5)	$9-2.5=6.5 \sim 7$	0
JCUH	10.5	14 (7+7)	$14-2.5=11.5 \sim 12$	+1.5
UHNT	4.5	1	$1-0=1$	-.3.5
Totals	38		45	+7

# IMPACT: Length of stay

**Total length of stay babies 27-29 weeks gestation 15/16**



Actual impact on LOS is much lesser  
As the graphs include total LOS stay  
but the impact will only be for intensive  
Care and 1 week of high dependency care

**Total length of stay babies 27-29 weeks gestation 16/17**

