

Investigating neonatal care for preterm babies

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Background

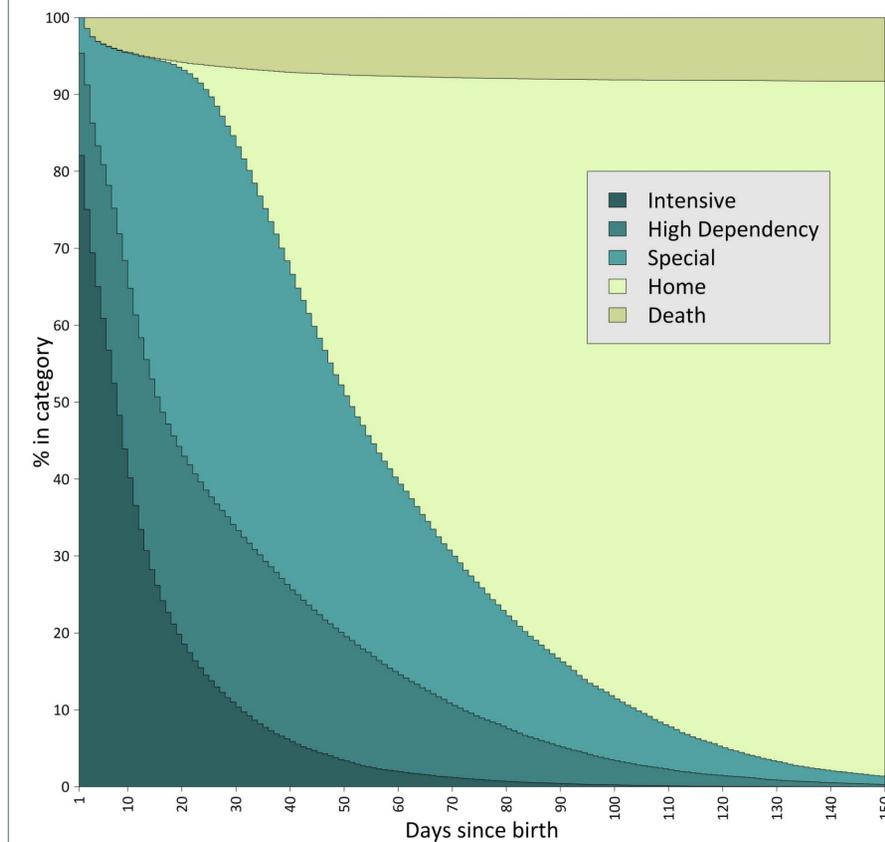
After they are born, around 1 in 8 babies need specialist neonatal care, but for babies born very prematurely this is even higher. Predicting how long these babies will be in hospital is difficult for two reasons:

- (1) Babies who die are often excluded or included in research without adapting the analysis appropriately
- (2) Estimates of length of stay do not consider the levels and types of care a baby needs

Why is this research important?

- All babies contribute workload for the NHS, irrespective of what happens to them. Accurate estimates need to include all babies
- Many parents ask “**when will my baby go home?**” and currently clinicians can only give vague answers: “**maybe around the date they were due to be born**” – my research will provide more information to inform these conversations.

Plot: The proportion of babies in each level of care, or who have died or been discharged, in the days after birth



Initial findings (see plot to left)

Between 2011 & 2014, 21,038 very preterm babies were admitted to neonatal units in England. Using the plot it is possible to read any time point to see the percentage of babies in each category.

For example, on day ten of life:

- 40.2% are receiving intensive care
- 24.7% are receiving high dependency care
- 30.6% are receiving special care
- 4.5% have died and none have been discharged home



Baby Donovan, born nine weeks early, receiving phototherapy (a type of special care)



Baby Donovan receiving CPAP to help him breathe (a type of high dependency care)

What does my research add?

I am a statistician and my research uses a method which can consider all babies, irrespective of their outcome. The days they spend in hospital are broken down into the different levels of care they can receive. These are:

- Intensive care
- High dependency care (see photo on right)
- Special care (see photo on left)

At the same time, I can estimate how many babies may die and how many may be discharged home.

Impact

When concluded, my research will be used:

- To counsel parents about whether their baby may survive, and how long their baby will be in hospital
- To inform estimates of resource use for the NHS and to aid the commissioning of care