**Idea of Animation 1**

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| ***Slide*** | ***Voice*** |
| 1 | As some hospitals will treat children with more complex medical problems than other hospitals, |
| 2 | we would not expect all hospitals to have the same survival rate. |
| 3 | So it doesn’t make sense to simply compare one hospital’s survival rate with another’s. |
| 4 | Instead, we must compare a hospital’s survival rate to what we would expect for that hospital: its predicted range of survival. |
| 5 | How can we predict a survival range? |
| 6 | We look at the children the hospital has treated during the year. |
| 7 | The NHS collects data on all children who have surgery, which includes recording risk factors such as age, weight, difficulty of the proposed surgery, diagnosis and complicating conditions. |
| 8 | A statistical formula weighs up these risk factors for each case and calculates a chance of survival. |
| 10 (old numbering) | We then need to combine the predicted chances of survival for each child into an overall predicted range for survival at each hospital |
| 11 | How does it work? Here’s an example. To make the numbers easy, let’s suppose that the hospital does exactly 100 heart operations in one year. |
| 12 | We calculate the chances of survival for each child after their operation using the statistical formula. |
| 13 | We cannot predict exactly what will happen to these children, and sadly it is very unlikely that they will ALL survive. A plausible way for things to turn out is that 2 don't survive… |
| 14 | giving an overall 98% survival rate |
| 15 | Given the chances that have been calculated for all these patients, another plausible result for these 100 children is that 3 don't survive |
| 16 | giving 97% overall survival. |
| 17 | Animation (no text) |
| 18 | When we take into account all the chances calculated by the formula, it turns out that in 19 out of 20 possible future outcomes for those 100 children, the overall survival rate for the hospital lies in the blue interval – we call this the predicted range. |
| 19 | In 998 out of 1000 possible futures, we expect it to lie in this wider interval. We call this the extended predicted range. |
| 20 | When a hospital does relatively few operations, unforeseeable factors have a bigger influence on the overall survival rate, and so it has a wider predicted range than a hospital that does more operations. |
| 21 | The predicted range depends only on the children treated by a hospital. Different hospitals will always have different predicted ranges since they treat different children. |
| 22 | If one hospital has a lower predicted range than another, it is only because it treated children with more complex medical problems over that period. |
| 23 | In this example, there is no reason to believe that a particular child would have a higher chance of survival being treated at one hospital compared to the other, as both have performed as predicted. |