UCL - The Predicted Range

Animation Concept

STORYBOARD

QUDOS ANIMATIONS

Storyboard v03
12th April 2016

Script

Voice	*Images*
As some hospitals will treat children with more complex medical problems than other hospitals,	We open on two hospitals next to one another with different children in front of them.
we would not expect all hospitals to have the same survival rate.	Show survival rates above each hospital of (e.g.) 96% and 98%
So it doesn't make sense to simply compare one hospital's survival rate with another's.	We put the two survival rates on either side of a balance which tilts down to one side.
Instead, we must compare a hospital's survival rate to what we would expect for that hospital: its predicted range of survival.	Drop 98% survival and keep 96% survival rate and show a predicted range (but above the rate not over it).
How can we predict a survival range?	Empty screen and draw hospital
We look at the children the hospital has treated during the year.	Draw arrivals at hospital
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.	Data arrives on clipboard
A statistical formula weighs up these risk factors for each case and calculates a chance of survival.	Data drops from the clipboard onto a balance, yielding an individual % number. Would be good if we could see it go through the actual formula?
We then need to combine the predicted chances of survival for each child into an overall predicted range for survival at each hospital	Show individual chances of survival merge together in an overall range?!
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. We calculate the chances of survival for each child after their operation using the statistical formula.	Show 100 icons and % values
	Grid of 100 kids with their numbers
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	2 of the 100 fade out.
giving an overall 98% survival rate.	show dot
Given the chances that have been calculated for all these patients, another plausible result for these 100 children is that 3 don't survive	This needs to be the other 2 fading in and another 3 fading out –

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Script

Voice	*Images*
giving 97% overall survival.	previous dot fades, new one comes in
	Repeat rapidly showing possible survival rates for the whole group.
When we take into account all the chances calculated by the formula, it turns out that in 19 out of 20 of 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.	draw on interval, show occasional dot outside
In 998 out of 1000 possible futures, we expect it to lie in this wider interval. We call this the extended predicted range.	[all dots lie inside]
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.	Compare two hospitals that do few and many operations
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.	Return to the two hospitals from the beginning.
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.	Use the two hospitals from above slide and show their predicted ranges (one lower than the other).
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.	Add in the 96% and 98% survivals on top of the predicted ranges in roughly the same place (middle?) Somehow illustrate this.

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1

As some hospitals will treat children with more complex medical problems than other hospitals,

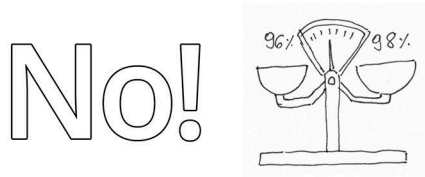
We open on two hospitals next to one another with different children in front of them.

2

...we would not expect all hospitals to have the same survival rate.

Survival rates appear above each hospital of 96% and 98%

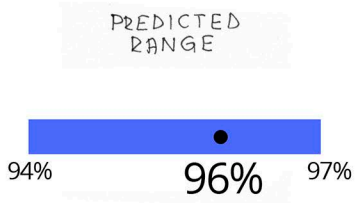
3



So it doesn't make sense to simply compare one hospital's survival rate with another's.

The hospitals survival rates now weigh against each other, tilting slightly underneath 98%

4



Instead, we must compare a hospital's survival rate to what we would expect for that hospital: its predicted range of survival.

As the 98% vanishes, it's replaced with the predicted range of 96%

5

How can we predict a survival range?

The predicted range is then erased and reveals an empty screen. A hospital is then drawn.

6

We look at the children the hospital has treated during the year.

Zoom into the hospital. We draw some children in front of it.

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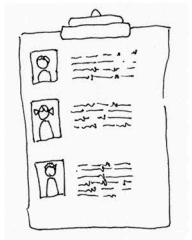
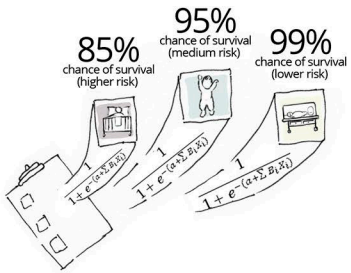
7



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.

The childrens faces now appear on a clipboard.

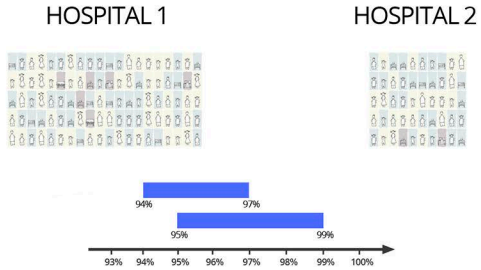
8



A statistical formula weighs up these risk factors for each case and calculates a chance of survival.

Data drops from the clipboard, yielding an individual % number and a formula?

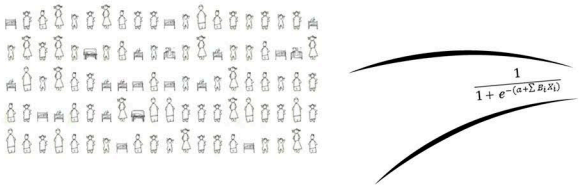
9



We then need to combine the predicted chances of survival for each child into an overall predicted range for survival at each hospital

Zoom into the patients and eliminate the frame. A comparison between 2 hospitals appears.

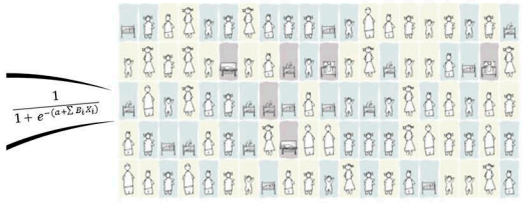
10



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.

Zoom into the patients of one of the hospitals. 100 icons appear.

11



We calculate the chances of survival for each child after their operation using the statistical formula.

We see a grid of 100 kids with different backgrounds which represent risks.

12

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...

2 of the 100 figures fade out.

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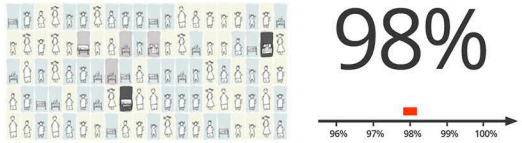
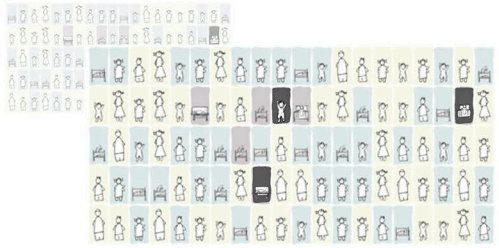


...giving an overall 98% survival rate.

A figure appears on the right side of the screen.

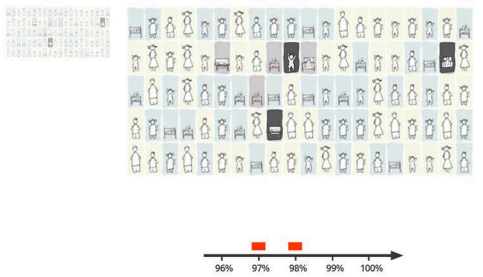
14



Given the chances that have been calculated for all these patients, another plausible result for these 100 children is that 3 don't survive...

We go back to the figures. Another 2 fade in and another 3 fade out.

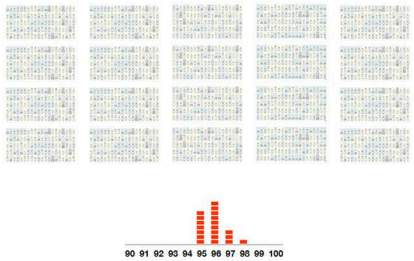
15



...giving 97% overall survival.

A bar appears from the bottom of the screen.

16



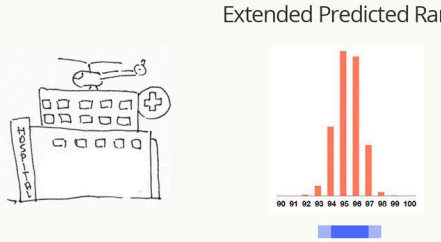
We repeat rapidly showing possible survival rates for the whole group.

17

When we take into account all the chances calculated by the formula, it turns out that in 19 out of 20 of 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.

The grids dissapear and the hospital appears back in the frame.

18



In 998 out of 1000 possible futures, we expect it to lie in this wider interval. We call this the extended predicted range.

We see now the extended predicted range.

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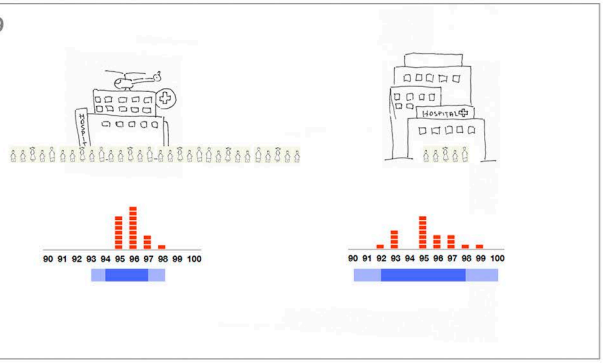
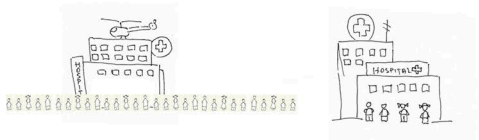


When a hospital does relatively few operations, unforeseeable factors have a bigger influence on the overall survival rate, and so it has a wider predicted range than a hospital that does more operations.

Another hospital enters the screen from the left. It has fewer dots in its predicted range.

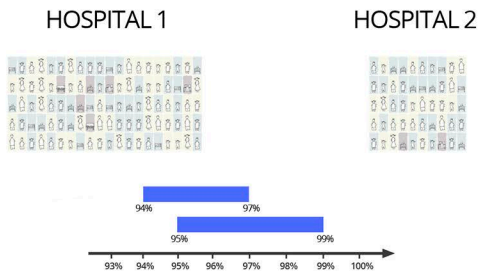
20



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.

We return to the two hospitals from the beginning.

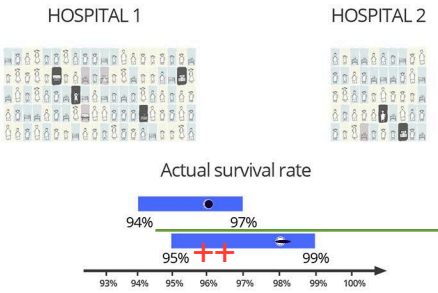
21



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.

We show their predicted ranges.

22



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.

We now add both icons in hospital 1 and 2 corresponding to the death values.

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