

Statistics and the law: the case of the negligent nurse

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In a hospital in The Hague a number of unexpected cases of death or reanimation of patients occurred. When it was found that in all of these cases a nurse named Lucia was present and caring for these patients, she was arrested and tried for multiple murder. The case for the prosecution rested on toxicological evidence as well as a statistical analysis showing that her presence in all cases could not be attributed to chance. On the basis of this Lucia was sentenced to life imprisonment.

The case was appealed by the defendant and considered by the Appellate Court (Gerechtshof) in The Hague. The defense now produced another expert witness who claimed that the statistical evidence presented earlier was unconvincing. In an interview in a leading Dutch newspaper a third expert went quite a bit farther and claimed that the statistical analysis was completely wrong and when performed correctly, should have led to a verdict of not guilty. In the resulting confusion the court made it clear that it could not credit any of the statistical arguments anymore and confirmed the life sentence without mentioning the word statistics at all, though clearly still impressed by the unlikely presence of the defendant in all cases.

It seems that the various experts have succeeded only in confirming the wellknown distrust of statistical arguments that goes back to Disraeli's dictum that there are lies, damned lies and statistics. In this talk I'll try to explain that if the ordinary rules for statistical consulting had been followed, it would have been quite clear what statistics could and could not contribute to this case.