

Operational Research Society

*Health and Social Services Special Interest Group meeting**

(Hosted by the University of Westminster Health and Social Care Modelling Group)

Patient Safety Risk Management

TUESDAY 22 November 2005, 16:00-18:00

115 New Cavendish Street, Room C1.04, University of Westminster, London

<http://www.streetmap.co.uk/streetmap.dll?G2M?X=529158&Y=181858&A=Y&Z=1>

Dr Naomi Price-Lloyd, School of Mathematics, Cardiff University, UK

“A comparison of mortality rates of MRSA and MSSA in an ICU”

Abstract: Staphylococcus aureus is a bacterium that lives harmlessly on the skin of approximately a third of healthy people. However, it can cause disease if it enters the body via cuts, surgical incisions, catheters etc. It is thus a growing problem in hospitals, where it can be easily transferred from person-to-person. Symptoms range from relatively superficial skin/wound infections to pneumonia or blood poisoning which may prove fatal, particularly in intensive care patients who are already seriously ill. Historically, Staphylococcus aureus infections have been treated with antibiotics such as Penicillin, and more recently, Methicillin. However, over-prescription and misuse of antibiotics have led to increasing bacterial resistance. Methicillin resistant Staphylococcus aureus (MRSA) is now endemic in many UK hospitals. It must be treated with alternative antibiotics, such as Vancomycin, which is notoriously expensive. This study investigates the difference in mortality rates of patients with MRSA and the non-resistant strain, Methicillin susceptible Staphylococcus aureus (MSSA), in a large intensive care unit, using case-matching techniques and logistic regression models.

Prof Steve Gallivan, Clinical Operational Research Unit (Director), University College London, UK

“An application of triangles to safety research”

Abstract: Many believe that measures which reduce the incidence of ‘no harm’ or ‘minor’ safety incidents also reduce the number of ‘major’ incidents, a view championed by Heinrich who suggested that the ratios of such events are relatively constant. A project is discussed initially aimed at establishing such ratios for medication errors. The speaker was asked to advise on statistics and this resulted in the project taking a radical change of direction. A combination of thought experiment and analysis of empirical data showed the project aims were not feasible, casting considerable doubt on Heinrich’s theory.

Dr Robert C., Lee, Calgary Health Technology Implementation Unit (Director), University of Calgary, Canada

“Risk analysis and risk management in cancer therapy: it’s not as simple as we first thought. . .”

Abstract: Treating cancer with ionizing radiation (radiation therapy) is complex and subject to rare but potentially severe adverse incidents; resulting in morbidity or mortality to multiple patients, along with subsequent litigation and/or criminal action in some cases. Our objective is to implement a quantitative risk and decision analysis model, along with an incident tracking and learning system, to elucidate risks (i.e. probability and consequences of incidents), to inform evidence based risk management and resource allocation decisions, and to improve quality in radiation therapy. We are working with a team of medical physicists, technical staff, and oncologists, and employing several linked conceptual and modelling approaches to inform decision-making. I will describe the project as a whole; then I will focus on a few specific analyses that have been performed to date.

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