

Predicting Death: How It's Done (and why bother)

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Providing accurate predictions is really just a mathematical exercise, one that has amused statisticians for at least 100 years. However, the recent rage among insurers and government agencies for “grading” hospitals’ (and soon, perhaps, physicians’) performance has added a new urgency to getting the best possible answers. It is for this reason that an understanding of how these predictions are made is important to those caring for injured patients. Unfortunately, predictions cannot be perfect, and the issue of how good predictions must be to be useful is one that is just now being recognized.

Over a decade ago I innocently published a short paper (1) that tried out the then current methods of predicting mortality for trauma patients on a small collection of trauma patients whose data we had carefully collected at the University of New Mexico. In an effort to make the paper more interesting I suggested a few changes that I thought might improve the accuracy of such predictions. Little did I suspect that I would spend the next 15 years of my career trying to implement these “pie in the sky” proposals.

This lecture will expand upon the proposals made in (1), and culminate in a recent publication (2) that implements many of them. These ideas are quite general, however, and to demonstrate this we will also discuss briefly a recent paper (3) on predicting mortality in a very special group of injured patients: burn victims.

1. **Osler T:** Injury Severity Scoring: Perspectives in Development and Future Directions, Amer J Surg165(2A):43S-51S, 1993.
- 2.. **Osler T,** Glance LG, Buzas JS, Mukamel D, Dick A, Wagner J, A Trauma Mortality Prediction Model Based on the Anatomic Injury Scale. Annals of Surgery, 247:1041-1048;2008
3. **Osler T,** Glance LG, Hosmer DW. Simplified estimates of the probability of death following burn injuries: Extending and updating the Baux score. Journal of Trauma. 2009. In press.