



Psychiatry and Behavioral Sciences Section - 2014

19 Understanding the Mathematics and Economics of Malingering: Games in the Forensic Hospital

Nicholas Nguyen, MD*, *Institute of Psychiatry, Law & Behavioral Science, PO Box 86125, Los Angeles, CA 90086-0125*

After attending this presentation, attendees will become familiar with the understanding and application of game theory to the law, particularly in the realm of patients who malingering in forensic hospitals. Attendees will understand how environment of care, systemic forensic hospital factors, and treatment issues influence the forensic hospital treatment “game” model. Finally, implications for individual management and hospital policy will be discussed.

This presentation will impact the forensic science community by supporting the development of a reductionist model of the forensic hospital malingering “game,” so that instrumental factors at play can be clearly and directly understood. Furthermore, the model will provide a discrete and reproducible method for the clinician and hospital administrator to identify and curtail malingering, allowing scarce forensic clinical services to be appropriately and optimally utilized.

Game theory can be formally defined as “the study of mathematical models of conflict and cooperation between intelligent, rational decision-makers.” The principles of game theory are generalizable to almost any social or interactive process and uses range from classical applications in economics, political science, and psychology, to more contemporary applications such as evolutionary biology and philosophy. In the language of game theory, a game refers to any interactive situation involving two or more individuals. The individuals are called players. The behavior of each player is described by a “utility function,” which gives a quantitative representation of each player’s preference for outcome. Models are then derived based upon the fundamental assumption that players make decisions which are motivated by a desire to maximize that utility function. Effective game theory representations provide clarity and insight into the factors that are at work, but may not be readily apparent when trying to examine a complex situation in detail.

Game theory can contribute to the better understanding of clinical management in the forensic hospital. The forensic hospital presents interactions and motivations which can be very distinct and more difficult to characterize than clinical practice in conventional, non-forensic settings. Additionally, the quality and nature of the players themselves are significantly more complex. Consider the common situation of a floridly psychotic man who has committed a serious crime and is now committed to the forensic hospital after being determined incompetent to stand trial. In conventional psychiatric practice, the prompt alleviation of mental symptoms would be the treatment endpoint mutually shared by the clinician and patient. In the forensic hospital setting, even though all of the measurable clinical parameters may be identical, the interaction between the clinician and the patient may be quite different. While the clinician’s goals remain unchanged, the patient may now have incentive to remain ill in order to delay confrontation of legal consequences. Furthermore, there are now additional players in the game, including the defense attorney, the prosecuting attorney, and the forensic evaluator who all shape the behavior of the clinician and patient.

A problematic but common game encountered in forensic clinical practice is malingering. The *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* (DSM-5) describes malingering as “the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives.” The DSM-5 acknowledges the propensity for malingering to occur in forensic clinical practice, and further lists criterion 1 for the diagnosis as “medicolegal context of presentation.” Indeed, data presented at the 2009 American Academy of Psychiatry and the Law annual meeting indicated that greater than 18% of patients found incompetent to stand trial were malingering their psychiatric symptoms on admission to an inpatient facility for competency restoration. This is a troubling figure given the progressively increasing demand for forensic clinical services in a system with relatively fixed resources. In California, it was estimated that in 2011, accused and convicted offenders with mental illness occupied approximately 4,500 of the 5,000 state mental hospital beds, up from 500 one decade prior.

This presentation will support developing a reductionist model of the forensic hospital malingering “game,” so that instrumental factors at play can be clearly and directly understood. Furthermore, the model will provide a discrete and reproducible method for the clinician and hospital administrator to identify and curtail malingering, allowing scarce forensic clinical services to be appropriately and optimally utilized.

Game Theory, Malingering, Forensic Hospital