Title: SIMULATION TRAINING FOR INTENSIVE CARE PHYSICIANS AND NURSES

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Introduction. Intensive care facilities often have limited resources. Bed space and nursing personnel must be apportioned in accord with a rational scheme that provides for appropriate medical and nursing care to patients most likely to benefit from intensive therapy. The demand to admit patients to our ten-bed Surgical Intensive Care Unit (SICU) is such that SICU nursing supervisors and Critical Care Medicine (CCM) fellows are under constant pressure to find creative solutions to the problem of admitting new patients to an already overcrowded SICU.

Successful execution of solutions to bed allocation problems requires considerable experience which typically is gained by successive trial and error to achieve consistently satisfactory solutions. During this learning phase, nurses and physicians frequently execute daily plans that result in inefficient resource utilization, personal frustration, and occasional interpersonal conflicts. Our SICU is characterized by a relatively high nursing personnel turnover rate. In addition, it is our practice to assign a new CCM fellow to function as SICU Administrative Officer every three months. These factors combined to magnify the severity of the problem. It became apparent that a means for sharply decreasing the time required to achieve this skill was needed.

Methods. We used established precepts of simulation* to develop an effective four-hour training program that provides nurses and physicians with the equivalent of one month's experience in managing difficult SICU bed allocation problems. We first analyzed the steps in the information-gathering and decision-making processes. We found that the successful resolution of bed allocation problems requires seven discrete pieces of

*"Simulation Activities for the Health Sciences." National Medical Audiovisual Center, Atlanta, Georgia, 1978.

information integrated in an eight-step decision-making process governed by five different rules specific to our intensive care unit. The program consists of twenty packets, each one representative of the events of one day in the SICU. The numbered packets are arranged in order of increasing difficulty and allow the participant to progress gradually from simple to very complex situations. In each packet, the participant receives data on the same forms from which the seven different bits of essential information must be extracted in the SICU. These forms include nursing personnel work assignment sheets, SICU bed request forms, census reports from other special care units within the hospital, nursing sick call notifications, and surgical ward occupancy advisories. The participants use the data to complete a self-guiding worksheet which teaches the sequential data processing necessary to reach appropriate decisions. At the conclusion of each simulation (packet), the participant receives immediate feedback — both a summary of the manner in which a panel of "experts" resolved the same problem and a narrative discussion of the principles illustrated by that simulation.

Results. Pre- and post-testing of participants of the simulation program have demonstrated the effectiveness of this program to rapidly prepare new personnel to competently manage the process of intensive care resource allocation.

Discussion. This simulation can be easily adapted to realistically represent the unique problems of any intensive care unit's resource allocation procedures. It should be especially valuable for intensive care units characterized by a rapid turnover of nursing personnel who need to master these skills and for intensive care units committed to teaching resident physicians the necessary management tasks.