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## Systems Analysis Projects in Advanced Nursing Practice Education

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## **Systems Analysis Projects in Advanced Nursing Practice Education**

John Barfield, Debra Smith, and Maribeth Smith

### **Overview**

This presentation will describe the rationale for using system analysis in graduate education, identify components of a system analysis project, and offer three examples of student projects.

### **Purpose**

The purpose of the presentation is to stimulate discussion among nursing educators regarding integration of an educational strategy which can enhance the ability of graduate students to analyze clinical and administrative problems.

### **Objectives**

At the end of the presentation the participant will be able to:

1. Discuss the importance of preparing graduate nursing students in clinical and administrative majors to analyze systems or aggregates.
2. Identify components and useful tools that comprise a system analysis project.
3. Discuss the advantages and limitations for using a system analysis project.
4. Visualize how a system analysis project can be used as an educational strategy in a graduate course or program.

### **Abstract**

The Graduate Faculty at Georgia College & State University revised the graduate nursing curriculum to better meet the needs of advanced practice nurses. The revision entailed developing a core course called "Systems Management for Advanced Practice." The course is required of graduate students in both administrative and clinical majors. Content within the course includes systems theory, health care economics, health care policy, U.S. health care system, outcomes management, continuous quality improvement, and disease management. Educational strategies that involved students with systems in their own practice areas were developed. Students first conducted a literature

review of empirical and scholarly work to determine what was known about their topic. Next students analyzed a small system within their practice setting or analyzed a small aggregate with a selected clinical problem such as hypertension, diabetes, COPD, etc. Through these papers and projects, students were able to recognize the importance of data-driven analysis. Abstracts from student papers are presented in the following paragraphs.

### **System Analysis of a Medical Center Emergency Department**

In the present competitive market patient and family satisfaction is vital for financial survival. The Emergency Department is a significant contributor to overall hospital admissions; therefore, customer perception of the Emergency Department is important for maintaining and increasing future market share. An integrative literature review was written to explore factors influencing patient wait time in the Emergency Department and their influence on overall patient satisfaction. Patient wait time was defined as, the length of time that it takes to be seen, treated and discharged from the Emergency Department. Findings from the literature review suggested that some effective ways to improve patient satisfaction were to reduce actual wait times, influence patients' perceptions of wait time, keep patients informed and improve the expressive quality of communication between nurses and patients.

Next, a system analysis was conducted to determine factors that might influence patient wait times and problems in the Emergency Department. Data were collected to define opportunities for improvement in the existing system. Flow charts, fishbone diagrams, bar graphs, run charts, and linear graphs were used to depict some of the data. The process and methodology were helpful in analyzing this complex system. The most astonishing finding was that 25% of wait time in the Emergency Department was related to registration. Since the writing of this paper bedside registration and an Express Care Unit have been implemented based on the findings of the system analysis. The results continue to serve as a foundation for new process improvement efforts in reducing patient wait times in the Emergency Department and improving patient satisfaction.

## **Decline in Pressure Ulcer Prevalence: An Analysis of Causative and Contributory Factors**

An analysis was conducted to determine contributing factors to a sharp decline in pressure ulcer prevalence between 1997 and 1999. Statistical data were collected from monthly reports for quality assurance that demonstrated incidence of hospital acquired pressure ulcers, number of referrals to the Wound, Ostomy, and Continence (WOC) nurse, and the number of patient contacts by the WOC nurse and type of intervention occurred in each contact. Findings of the analysis demonstrated effective strategies that were used in this hospital were as follows: better risk assessment using Braden Scale, identification of pre-existing wounds with the addition of a trigger in the automated admission assessment, consistent participation by the WOC nurse in the hospital's orientation program, higher rate of referrals to WOC nurse, and increased number of specialty beds available within the hospital.

## **Information Services Work Request Process Analysis**

The information services (IS) department serves the computer software and hardware needs of a rural hospital. The hospital has an automated computerized patient record, computerized accounting system, and administrative computing systems. The IS department handles software and hardware issues, user training, new system installation and implementation, database maintenance, custom report writing, and service requests. The department currently has five employees who serve the hospital's information needs. There is no official help desk, and work requests come into the department in a number of different ways. Because the department is small and there is no help desk, requests for service are sometimes lost or the service is slow in being completed. This system analysis focused on identifying ways to improve the work request process to better serve the user needs. Data analysis and interviews with staff and customers revealed recommendations for process redesign. These included purchasing an interface between the clinical system and the work request system to facilitate automatic flow of work orders without manual entry by staff members, designing work order system with defined tasks and auto-assignment of tasks to IS department members, and designing priority levels for defined tasks.

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