



# Mission Hospital Increases CVICU Data Validity to 86% and Saves \$374,000

## SITUATION OVERVIEW

### CHALLENGE

- Improve Cardiovascular ICU Operations
- Control Labor Costs

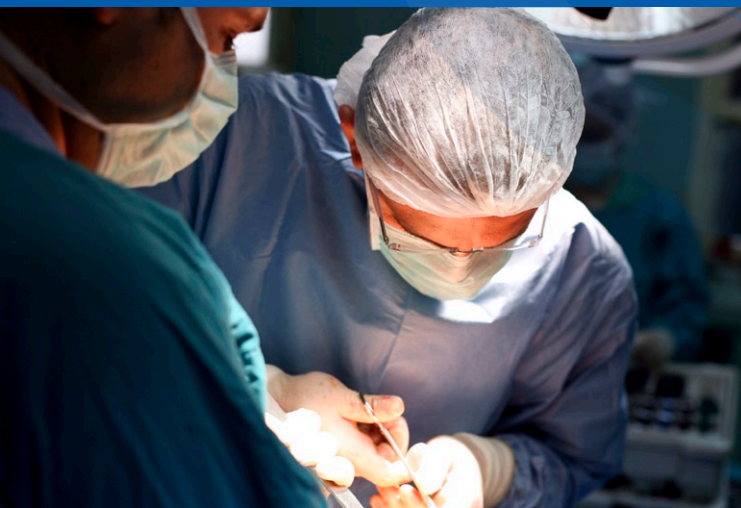
### SOLUTION

- Maximize Use of QuadraMed AcuityPlus

### RESULTS

- Improved Patient Data Validity to 86%
- Increased Patient Acuity to 3.37
- Reduced Annual Labor Costs by \$93,500
- Raised Staff Job Satisfaction Level

**M**ission Hospital, with two adjacent campuses in Asheville, is the main facility of the Mission Health System, a tertiary care regional referral center for Western North Carolina. The hospital performs more surgeries each year than any other facility in the state. ▶



In 1989, Mission Hospital became one of the earliest healthcare providers to install QuadraMed AcuityPlus. The hospital's chief nursing officer and nurse executives rely on the system, including its unique Complexity of Care module, for setting proper staffing levels to ensure high quality patient care. The system also provides analyses to evaluate the care provided and for budget development.

## IDENTIFYING THE PROBLEM

Mission Hospital needed to identify potential opportunities to more efficiently manage the operation of its 20-bed Cardiovascular Intensive Care Unit (CVICU). In 2004, management sought to further improve patient safety and care, address the staff's perception that their resources were inadequate, and to reverse the unit's over-budget status for labor.

The CVICU was comprised of two patient populations — immediate post-op patients requiring recovery, ranging from open heart to thoracotomies, and long-term ICU patients. Certified CVICU RNs, rather than perfusionists, were responsible for starting the balloon pumps of the open heart patients in the Cardiovascular Operating Room (CVOR), then returning to the unit with patients. In addition, there was only one Respiratory Therapist assigned per shift to provide support for weaning open heart patients off ventilators, which further overwhelmed the nursing staff, as well as the therapists.

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By maximizing its use of  
 QuadraMed AcuityPlus,  
 Mission Hospital **saves**  
**\$93,500 annually** in its CVICU,  
 with no additional IT investment.

## ANALYZING PRODUCTIVITY WITH ACUITYPLUS

Mission Hospital's executive staff began to address the situation by requesting a productivity analysis of the CVICU using AcuityPlus. The QuadraMed system performed well for 15 years, providing staff with valuable information used to manage operations for the general patient population. Thus utilizing the system to further analyze the operations in CVICU was the logical course of action.

The productivity analysis AcuityPlus generated included a review of CVICU patient classification accuracy and completeness. It found patient data validity stood at 61 percent, a number significantly less than the validity management sought for the unit. Interviews with RN staff revealed that the Charge Nurse was completing patient classification, while the nurse actually caring for the patient was not involved in the process.

Subsequent interviews with unit staff and support personnel further clarified the situation. The staff expressed concern that the demands of caring for two different patient populations simultaneously — immediate post-op and long-term ICU — could have a negative impact on patient safety and quality of care. These interviews also confirmed that the aggressive protocol for weaning open heart patients off ventilators using only one Respiratory Therapist per shift during peak hours — 11:00 a.m. to 7:00 p.m. — did make meeting patients' respiratory needs a significant challenge.

## MISSION HOSPITAL AT A GLANCE

Licensed beds: **730**  
Number of physicians: **700+**  
Number of employees: **6,000+**  
Annual inpatients: **43,081**  
Annual outpatients: **341,361**  
Annual ED patients: **96,009**

## ACUITYPLUS COMPARATIVE ANALYSIS

Mission Hospital staff went on to perform a comparative analysis using the AcuityPlus National Database. Two findings were of particular importance.

First, the BioMed and Materials Management departments, and an Equipment Tech, jointly replaced, serviced and stocked equipment. Benchmarking to similar facilities found that none had Equipment Tech positions, and a unit review revealed that the CVICU Equipment Tech and Nursing Assistant staffs experienced downtime on all shifts. Second, the practice at Mission of having certified CVICU nurses start patient balloon pumps in the CVOR and accompany them to the unit was contrary to the benchmark. This activity was being performed by perfusionists in similar units.

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Based on **AcuityPlus** analyses, Mission Hospital made changes that **significantly decreased the stress level** of staff members, and **dramatically increased job satisfaction**.

# case study

MISSION HOSPITAL [continued]

## OPERATIONAL IMPROVEMENTS

Using the AcuityPlus analyses to drive the decision-making process, Mission Hospital implemented a series of changes in 2005.

Mission shifted the responsibility for CVICU patient classification to the nurse caring for the patient, and added a second Respiratory Therapist to provide support during peak hours. The hospital transferred responsibility for starting balloon pumps and accompanying patients to the unit to perfusionists. Coupled with a renovation of the CVICU that divided it into separate ICU and Recovery units, these changes significantly decreased the stress level of staff members, and dramatically increased job satisfaction.

Mission did retain the Equipment Tech, but expanded the position's responsibilities, which in turn enabled the hospital to reduce the number of Nursing Assistants by one full time employee (FTE).

The measurable value of these changes is impressive. CVICU patient classification data validity increased from 61 to 82 percent in 2005, and moving forward, it improved to 86 percent and has remained at that level. This improved accuracy and raised patient acuity from 3.17 to 3.37, which is comparable to the national benchmark.



**QuadraMed AcuityPlus** offers a Complexity of Care module, which sets proper staffing levels to ensure the highest quality care for patients.

## SAVINGS CONTINUE TO MOUNT

In 2005, the elimination of one Nursing Assistant FTE resulted in a savings of \$23,500, while substituting perfusionists for RNs reduced annual expenses by \$70,000. Over the past four years, without factoring in inflation or salary increases, Mission Hospital has realized \$374,000 in savings. Throughout this period, the CVICU labor budget has remained well within defined parameters, and patient safety and quality of care have been enhanced by first maximizing the use of AcuityPlus.

For more than 20 years, QuadraMed AcuityPlus has been producing positive results for organizations ranging from small community hospitals to large multi-facility healthcare systems. 