EP10 – Nurses use trended data in the budgeting process, with clinical nurse input, to redistribute existing nursing resources or obtain additional nursing resources.

Provide two examples, with supporting evidence, from different practice settings where trended data was used during the budget process, with clinical nurse input, to assess actual-to-budget performance to redistribute existing nursing resources or to acquire additional nursing resources. Trended data must be presented.

Example 1: MICU clinical nurse input used to plan resources required for unit refurbishment, relocation, and bed expansion.

UVA completed the construction of 72 new hospital beds in late 2012. These beds are located in a new tower, creating a series of units on a North wing that add 12 beds per floor on floors three through eight. Instead of opening all of these beds as new capacity, the beds were used initially as a relocation option during a major renovation project to upgrade and refurbish each ICU. During renovations, organizational and unit leaders continually reviewed information such as admission and discharge volumes, length of stay, market conditions, and the impact of the Accountable Care Act and shared that with staff. It was determined, once renovations were complete, that new capacity beds would be opened in a staged manner to ensure patient population needs were met.

Capacity constraints were limiting the number of patient transfers that could be accepted from outside hospitals, as well as causing an increase in the number of transfers denied or cancelled by the requestor due to delays. Exhibit EP10.a is a screenshot showing the **increasing trend** of denied transfers. (Exhibit EP10.a: External Transfers By Service, 2010-2014) Therefore, the MICU was a prime target for expanding capacity into one of the new 12-bed tower units. This expansion would provide a unique challenge: operating one unit from two locations.

The space MICU had been occupying on 3 West was a 16-bed unit, and the additional 12-bed capacity provided by the North tower beds would expand the MICU footprint to 28 beds over the next year. Rick Carpenter, MSN, RN, MICU Nurse Manager, initiated work on the **FY13 budget process**, with a special focus on the **resources** that would be necessary to staff and operate two locations and additional beds. FY14's budget would be affected by the expansion as well, so long-term planning began. **Clinical nurses** were involved in each phase of the expansion to provide input on nursing and ancillary- and material-**resource allocation** and planning.

Phase 1: March 2012, MICU moves to 3 North and 5 North for planned 3 West MICU renovations

The initial move did not add beds; however, it drastically changed the logistics for existing staff because it changed the location from one space to two, a setup that would

be a permanent change for the unit. This initial expansion to two units without adding beds allowed the team to evaluate new logistics and prepare for the impact of expanding capacity. The MICU used a large dry-erase white board at the nurses' station to gather daily **input from clinical nurses**. At daily huddles, the HUCs, nurses, and PCA/PCTs reviewed what was working and what wasn't working in the new environment. Each day this feedback was used to identify issues and find solutions.

Based on their lived experience of operating in two locations, the MICU team provided feedback that an increase in nursing resources was required. These needs were able to be addressed in April 2012, during the **FY13 budget cycle** (Table 1).

EP10 Table 1: MICU Team Feedback on Unit-Expansion Enhancements

Clinical Nurse Input from Unit Huddles, Unit Committees, Staff Meetings	**Resources Acquired**
Visitor/phone traffic for two locations	Additional HUC FTEs
Inadequate PCA/PCT support	Additional PCA FTEs
Shift manager cannot provide adequate leadership in two locations	Additional shift manager added to each shift in each unit, increasing shift manager shift differential payout to four RNs/24-hour period instead of two
Planning for incremental expansion that would begin January 2013. How many additional RNs needed, what would the orientation burden be?	Planned allocation, increase in FTEs for January 2013 and March 2013.
Supply/equipment	Centrally supported, did not require additional allocation
Communications between shift managers difficult	Cell phones provided to each shift manager, paid for by unit budget

In April 2012, Carpenter began coordinating **input from clinical nurse**s to predict the additional **human resources** needed for the increases in capacity to 18 beds in September, 22 beds in January 2013 and finally to 28 beds in March 2013.

Exhibit EP10.b reflects the minutes of the MICU Orientation Committee discussing plans for orientation needs (Exhibit EP10.b: 4/26/12 MICU Orientation Minutes). Staffing formulas provided a framework for how many additional FTEs would be needed, but the work to orient 36 new hires was significant. The unit orientation coordinator and preceptors were included in discussions to plan the approach for an influx of staff much larger than the typical hiring numbers. Classes, competencies, and precepting time were all calculated. This provided Carpenter and his director, Andrea Caulfield, MSN, RN, FNP, NEA-BC, Director, Nursing Adult Critical Care & Inpatient Heart, with the

information they needed to advocate for the **necessary budget changes to acquire additional nursing resources**.

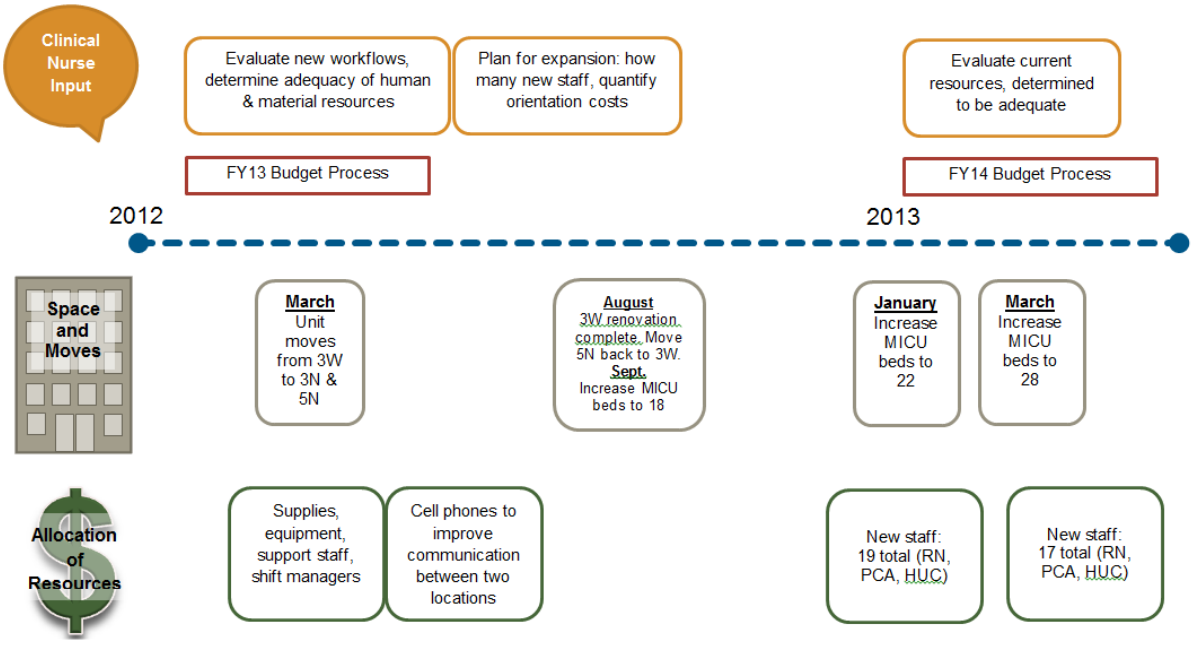
Staff meetings were used to gather feedback to solicit **clinical nurse input** and to share follow-up on previous **clinical nurse input.** Exhibit EP10.c shows communication soliciting feedback and resolution to an issue with alarm audibility that was identified when they moved into the new unit. (Exhibit EP10.c: 5/10/12 MICU Staff Meeting Minutes)

In August 2012, the 3 West MICU renovations were completed and the staff moved out of 5 North to achieve the final configuration of MICU occupancy of 3 West ICU and 3 North. The MICU capacity increased from 16 to 18 and did not require additional resources. Logistics continued to be front of mind as staff planned for two-unit existence. Exhibit EP10.d describes a process designed by clinical nurses to try different approaches for assignment-making and shift report. (Exhibit EP10.d: 08 2012 MICU Shift-Report Design) Over the next few months, they continued to communicate and gather **clinical nurse input** about the progress being made in planning and staffing.

In January 2013, the first increase in MICU staff occurred, and the capacity increased to 22 beds. The planning that occurred in partnership with the clinical nurses paid off, and the onboarding of this new wave of staff went very smoothly. Due to the thorough planning and clinical nurse input, few refinements were made to their onboarding process, and the final capacity increase to 28 beds and the last big influx of newly oriented staff occurred in March 2013.

Finding themselves in the midst of another budget cycle, Carpenter consulted again with his clinical nurses through one-on-one conversations, emails, and staff meetings to evaluate the many changes that had occurred. Together, the team reviewed staffing and FTE allocations and determined that their staffing numbers were adequate for the fully expanded unit and no further allocations were necessary. Exhibit EP10.e shows the increase of actual and budgeted units of service. (Exhibit EP10.e: MICU FY12-FY13 Actual to Budget)

EP10 Figure 1: Visual Timeline Representation of MICU Expansion



Example 2: Post- Anesthesia Care Unit (PACU)

The PACU is a dynamic environment. Caring for a wide array of patients through all phases of recovery requires a flexible and skilled team. As a quaternary care and trauma center, our operative services can be called on around the clock to respond to in-patient emergencies, transplants, trauma alerts, and more.

Angel Cyphert, MSN, RN, Nurse Manager of the PACU, is a self-proclaimed fan of data. She successfully takes her interest and translates it to active involvement of her staff members in unit finances and budget decisions as well as learning about national healthcare trends. Sharing financial data is commonplace in PACU staff meetings. Nursing staff, therefore, are familiar with how the unit budget is created and adjusted as needed.

Budget Process—As Cyphert prepared for the budget cycle, she evaluated the positions allocated for the PACU. The **clinical nurses** serving in shift manager roles gave **input** regarding inadequate staffing between the hours of 1900-2300 (Exhibit EP10.f: 030514 PACU Leadership Meeting). She needed to gather information to fully understand the situation in order to make the appropriate budget requests.

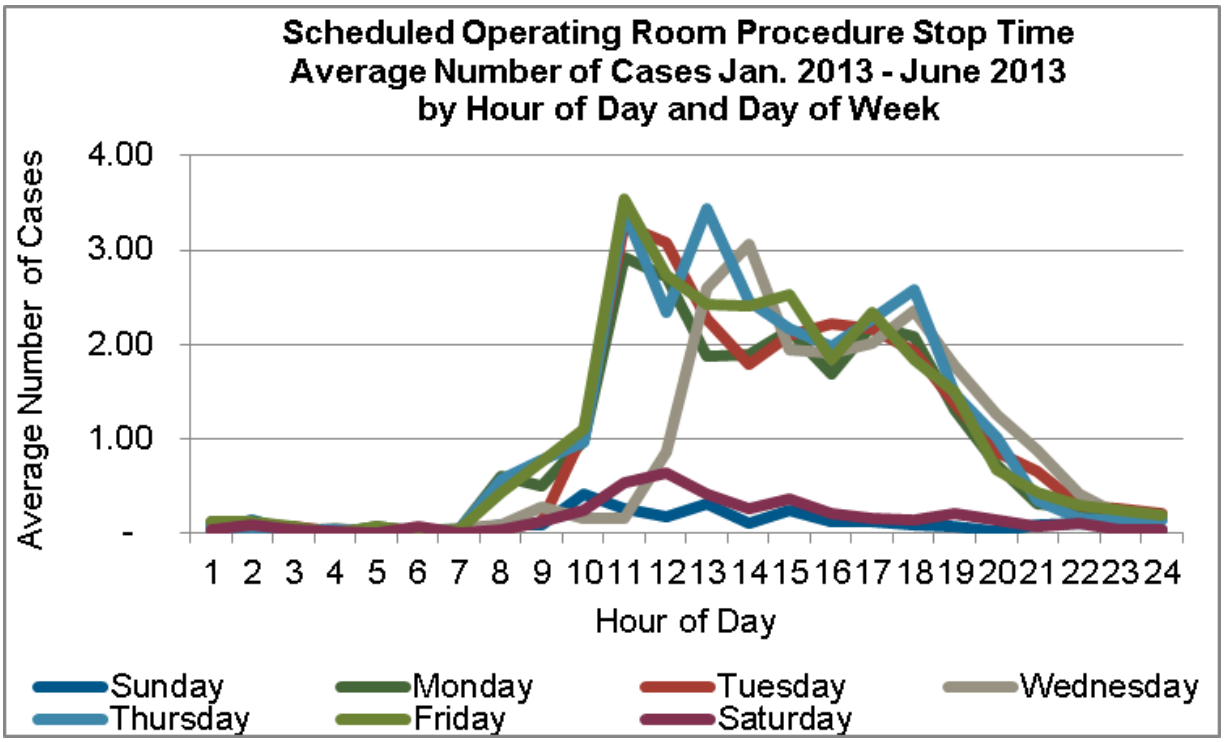
Clinical nurse input—As Cyphert explored the situation with her staff through staff meetings, unit-leadership meetings, and one-on-one conversations, they shared that

they believed they could redistribute the current FTE complement to cover the later hours of the day more effectively. Cyphert encouraged them to evaluate that possibility before she requested additional positions.

The existing method used to determine budgeted staffing levels was based on the Operating Room's scheduled stop times for each of the cases that would recover in the PACU. This information had been obtained from the Operating Room scheduling software, Centricity Peri-Operative Manager. The method for scheduling nurses was to use the predicted arrival time of patients into the PACU and adjust the nursing schedule to match the arrival times. Susan Ketcham, BSN, RN, CPAN, Clinician III, and Eleanor Bergland, BSN, RN, CPAN, Clinician III, began using information from the staff-scheduling system Visual Staff Scheduler (VSS-Pro), exported to Excel, to view the scheduled **budgeted** staffing levels across the day and evening hours. After evaluating the trended scheduling data, based on six months of trended Operating Room procedure stop times/estimated PACU arrival times from Centricity, Ketcham and Bergland believed that the method of scheduling to PACU arrival times did not produce the optimal schedule and they began evaluating a different view.

EP10 Figure 2 shows the trended data used to track PACU patient arrival times.

EP10 Figure 2: Scheduled Operating Room Procedure Stop Time: Average Number of Cases Jan. 2013-June 2013 by Hour of Day and Day of Week.



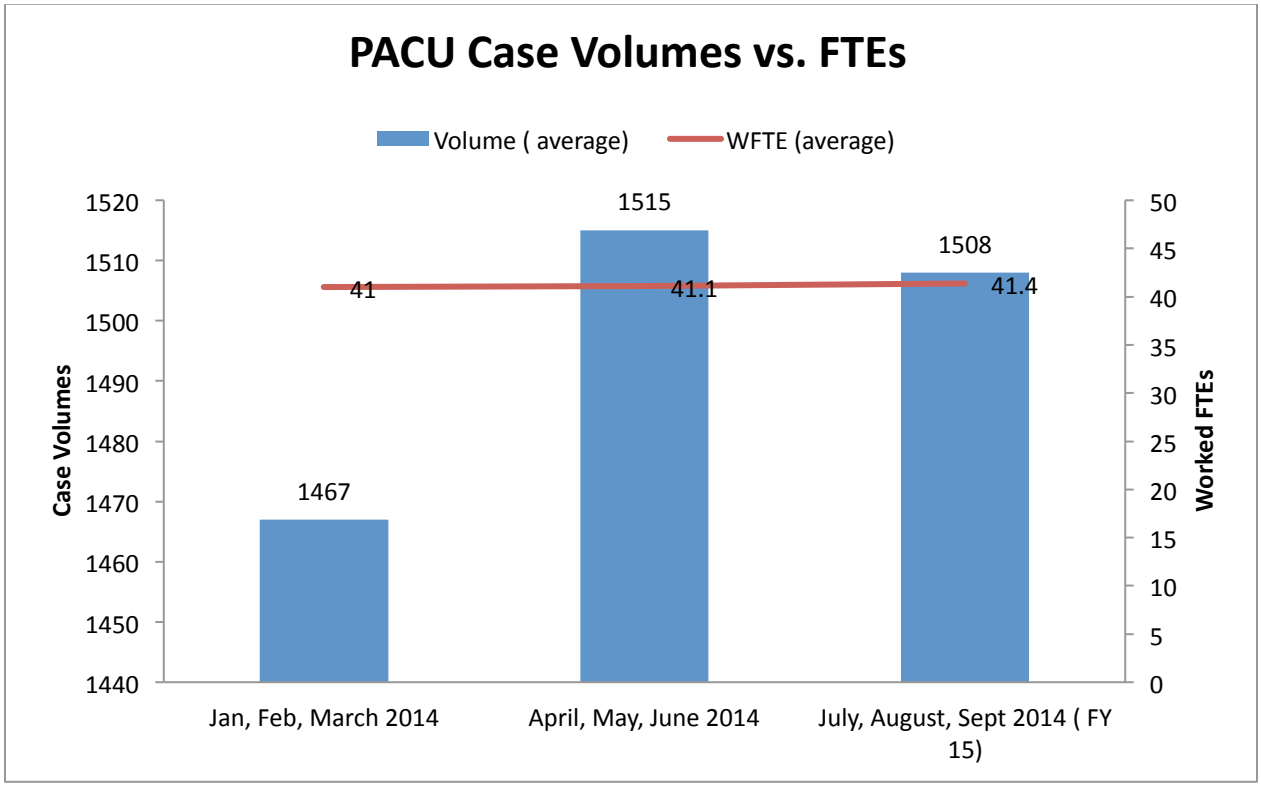
Instead of looking at arrival times, they began looking at the **actual** total patient time in PACU. Although somewhat variable, this method displayed the **actual** nurse-staffing-level needs more accurately than the arrival-time method. They found that there was occasionally more staff than necessary in the earlier hours of 0700-0900 compared with the **actual** patients in the PACU

During this process of evaluation, Cyphert asked her staff to consider staffing patterns in an effort to ensure the most efficient staffing model to match patient demand. Exhibit EP10.g: 030714 PACU Weekly Letter This included an additional future influence that would impact the **PACU budget decision-making**. The anticipated opening of a new ambulatory surgical center meant a decrease in lower-acuity cases and an increase in more complex, longer cases for the main OR and higher PACU volumes during the evening hours.

Redistribution of existing resources—The shift managers manually gathered evidence during the first three weeks of March 2014 and advocated for a shift in staffing patterns to better cover the **actual** PACU patient volume. Over the next few weeks, the shift managers made adjustments to the schedules and staffing patterns in the PACU to match the daily volume of patients in the PACU. What resulted was a much better match that did not leave the 1900-2300 hours understaffed. They monitored daily graphed trends and found that the redistribution of staff matched patient demands and worked hours were more closely matched. (Exhibit EP10.h 041514 PACU Nurse-to-Patient Flow) shows the adjusted trended data and improvement for a single day.

As a result of this analysis and **clinical nurse input,** Cyphert did not request additional positions in her FY15 budget. Existing resources were redistributed within the PACU to meet the needs of the nurses and the patients. Over the next few months, Cyphert and her team monitored the PACU volumes and worked hours to determine if the increase in volumes increased their worked hours. They found that the redistribution of staffing in the later hours of the day had allowed them to accommodate an increase in volume without an increase in worked hours as seen in EP10 Figure 3 below.

EP10 Figure 3: PACU Case Volumes vs. FTEs (1Q 2014 – 3Q 2014)



Participants:

EP10 Table 2: Participants, RN Shift Manager Staff-to-Patient Pattern Analysis

Name	Discipline	Title	Department
Eleanor Bergland	Nursing	RN Clinician III	PACU
Susan Ketcham	Nursing	RN Clinician III	PACU
Teri Coles	Nursing	RN Clinician III	PACU

Shifting staffing patterns to accommodate the higher volume and longer, more-complex cases allowed the nurses to remain true to the mission of “excellence, innovation and superlative quality in the care of patients.”