The Evolution of Progressive Care Unit in Acute Care Settings

By: Rachel Lantacon MSN, RN, CCRN and Dorothy Macavinta MSNc, BSN, RN-BC, PCCN

The Progressive Care Unit (PCU), also known as the Intermediate Care Unit (IMU) or Step-down unit, was developed to care for those patients who do not require ICU but need closer monitoring than can be provided with medical-surgical (med-surg) level of care. Table 1 reflects the number of PCU units in the UC San Diego Health system, which have evolved throughout the years with the opening of more hospitals and units. Bed capacity has increased with more patients being monitored. PCUs are equipped with telemetry monitoring, continuous pulse oximetry machines, and arterial and central venous pressure monitors. This technology requires nurse knowledge on a list of educational topics such as vascular access, hemodynamic monitoring, pacemakers, automatic implantable cardiac defibrillators, pharmacologic infusions, advanced cardiac life support, and conscious sedation (Berke & Eckland, 2002). The additional technology and higher acuity of the patients requires education and training, and develops skills for nurses working in this environment (Stacey, 2011).

The evolution of the PCU and the rate that it is expanding and being utilized in hospitals today is a testament to how effective they can be, in both cost and care. The American Association of Critical-Care Nurses (AACN, 2010), explains that PCU patients are "moderately stable with less complexity (who) require moderate resources and require intermittent nursing vigilance or are stable with a high potential for becoming unstable and require an increased intensity of care." PCU patients can span from med-surg, telemetry, or intermediate care and

Rachel Lantacon, MSN, RN, CCRN was hired as new graduate nurse at UC San Diego Health in 2010. She now holds a Master's degree in Nursing from San Diego State University. In her current role, she serves as the Assistant Nurse Manager in the Medicine PCU in Hillcrest.

Dorothy Macavinta, MSNc, BSN, RN-BC, PCCN is the nurse manager of the 7 West and 9 West Medicine Progressive Care Unit at UC San Diego Health in Hillcrest. She earned her Bachelor's Degree in Nursing from San Diego State University and is currently finishing her MSN program. In 2006, Dorothy was the recipient of David and Alice Miller UC San Diego Health Nurse of the Year. Dorothy holds specialty certifications in Medical-Surgical Nursing and Progressive Care Nursing.

staffing is adjusted according to the patient's needs. Creating a PCU level of care criteria offers patients who would unnecessarily be kept in the ICU the possibility to be transferred or downgraded to PCU, thus increasing ICU capacity, allowing a bed for a patient who is more critical and could potentially benefit more (Vincent & Rubenfeld, 2015). PCUs are able to use telemetry monitoring devices to monitor cardiac rhythm and continuous oxygen saturation. With adherence to the mandated nurse to patient ratio, the nurse can monitor vital signs and patient condition more frequently. Due to the vast ways patients are able to be monitored, these units are able to manage higher acuity patients and care for a large proportion of inpatient admissions.

Bed availability and placement are important factors when assigning patients to a room or unit. There are strict acuity criteria for med-surg and intensive care units. The usage of PCUs helps with quicker and more efficient triage. The PCU is used as a middle ground to monitor patients that may be improving or deteriorating but not yet critically ill. Patients with changing level of care requirements also affect the admission, transfer, and discharge rates. Admissions can come from both med-surg and ICU beds; they can also be admitted directly from the emergency department or transferred from other health care facilities. The transfers and discharges are also dependent on the rate the patient is recovering or declining. The PCU is able to work with the patient's individual care, promoting the care for a patient with the right technological monitoring and invasive lines with nurses who have the knowledge and familiarity with a wide range of diagnoses and conditions.

Proper education and knowledgeable nurses are necessary in caring for any patient in the hospital. With the extensive range of patients being cared for in the PCU, nurses need to be competent. The completion of the competency based orientation makes the nurse accountable and aware of their responsibilities and scope of practice in their respective floors. According to our professional practice model, teaching and staff development is a core value in the nursing division. Exercising this core value through PCU education courses was essential to prepare nurses for specializing in this select patient population with proper hands-on practice-based learning and didactic PCU courses.

Initially, UCSD Hillcrest started with one PCU originating from the 11th, 9th and 7th floors. This unit previously catered to a variety of patients and diagnoses including but not limited to orthopedic, trauma, transplant surgeries, neuro-critical, medical: heart failure, and liver failure. There appeared to be no limitation on patients the unit could accept. Expansion of the Progressive Care units occurred as more nurses were cross-trained from the 11th, 9th, and 7th floors to transfer to the new hospitals and units were developed in the months and years following. With the opening of Sulpizio Cardiovascular Center in 2011 and specialized Trauma Unit in 2012, skills and knowledge were shared amongst these staff from the original PCU. In addition to shadowing with a designated preceptor, further allocation of funds and resources were utilized to ensure that specialty PCUs became highly skilled and knowledgeable in their respective fields. Such distribution of knowledge and training occurred again with the advent of Jacobs Medical Center in 2016. Multiple specialties and divisions arose: Medical, Surgical, Neuro-critical, and Oncology, from which many nurses were hired and trained from the original PCU. Development of specialized units may be advantageous in terms of improving patient outcomes. One example in the literature, in a Respiratory Intermediate Care Unit in the University Hospital of Cattinara, reported a reduction of inpatient mortality rates, length of stay and timely transfer to the ICU. Here the nurses specialized in proper utilization of noninvasive ventilation, administration of specific medications not normally provided in med-surg care, skills in chest physiotherapy, and arterial gas interpretation. (Confalonieri et.al, 2015). It is with these specializations that UCSD can boast expertise. One example is the unique care required to provide care in the highly specialized pulmonary thromboendarterectomy (PTE) patient opulation. The UCSD program has been shown to have the most successful PTE outcomes including the lowest post-operative mortality rate worldwide (2019).

There is a continuous trend in having multiple med-surg floors converted to PCU floors, allowing their nurses to take on higher acuity patients. The main goal is to soon have PCU floors of all specialties, thus improving patient flow. The PCU's evolution was a necessary and important shift in UCSD's history, allowing more nurses to grow and develop their skills, ensuring patients receive the proper level of monitoring, encouraging appropriate utilization of resources, and aiding with bed capacity throughout the hospital.

Table 1: Progressive Care Units at UCSD Health

UCSD Medical Center (Hillcrest)	Thornton (La Jolla)	Sulpizio Cardiovascular Center (La Jolla)	Jacobs Medical Center (La Jolla)
Opened: Former County Hospital -1963	Opened: 1993	Opened: Aug 2011	Opened: Nov 2016
UCSD- 1966	2E Surgical 27 beds	3B PTU 15 beds	4FGH Surgical Oncology 36 beds
5W Trauma 24 beds	2W Surgical 27 beds	4 A/B PTU 27 beds	5FG Medicine Oncology/Palliative Care 24 beds
7W Medicine 18 beds			5H Neuro 12 beds
9W Medicine 6 beds			6FGH Oncology 36 beds
11th Floor Surgical PCU 36 Beds			

REFERENCES:

American Association of Critical-Care Nurses (2010). Core curriculum for critical care nurses. St. Louis: Missouri: Saunders Elsevier.

Berke, W.J. & Ecklund, M.M. (2002). Keep pace with step-down care. Nursing Management, 33(2), 26-29. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=106481001&site=ehost-live

Confalonieri, M., Trevisan, R., Demsar, M., Lattuada, L., Longo, C., Cifaldi, R.,Pistelli, R. (2015). Opening of a respiratory intermediate care unit in a general hospital: Impact on mortality and other outcomes. Respiration, 90(3), 235-242. https://doi.org/10.1159/000433557

Stacy, K.M. (2011). Progressive care units: Different but the same. Critical Care Nurse, 31(3), 77-83. https://doi.org/10.4037/ccn2011644

University of California San Diego. (2019). PTE: Pulmonary thromboendarectomy surgery for pulmonary hypertension. Retrieved from https://health.ucsd.edu/specialties/cardiovascular/programs/pulmonary-vascular-disease/pte/Pages/default.aspx

Vincent, J. L., & Rubenfeld, G.D. (2015). Does intermediate care improve patient outcomes or reduce costs? Critical Care, 19(1), 89. https://doi.org/10.1186/s13054-015-0813-0