



**SPECIAL SUPPLEMENT**

Pain Management  
in the ICU

# Innovation

Protecting ward patients: the case for continuous monitoring,  
*F. Michard, T.J. Gan, R. Bellomo*

Innovations in ICU ventilation: the future delivered, *F. Gordo, A. Abella,  
B. Lobo-Valbuena*

Data-driven management for intensive care units, *F. J. da Silva Ramos,  
J. I. F. Salluh*

Technology innovations in delivering accurate nutrition: preventing  
malnutrition and enforcing nutritional guidelines, *P. Singer, L. Elia*

The business of research, *J. B. Ochoa Gautier*

## PLUS

The role of disruptive and hybrid  
technologies in acute care,  
*T. Kyprianou*

Extravascular lung water as a  
target for intensive care, *M. Kirov,  
V. Kuzkov, L. Bjertnaes*

Managing delirium in the ICU  
with sleep guardians, *C. Irwin,  
S. Parkinson*

The establishment and provision  
of an acute kidney injury service  
at a tertiary renal centre, *S. Fray*

Communication myths of  
anaesthetists, *S. Watson*

The role of the Physician  
Assistant in critical care,  
*V. Bakshi*

The need to humanise the ICU,  
*S. East*

Noninvasive technologies for  
personalised haemodynamic  
monitoring: advanced  
haemodynamic monitoring  
methods, *B. Saugel*



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**Vishal Bakshi**

Chief NP/PA Intensivist  
Critical Care Medicine  
Emory Critical Care Center  
USA

vishal.bakshi@emoryhealthcare.org

# The role of the Physician Assistant in critical care

Physician Assistants play a leading role in the safe, efficient, value-based delivery of healthcare for the critically ill patient.

Since inception in the mid-1960s, the Physician Assistant (PA) profession has grown to become an integral part of healthcare delivery. As the name implies, PAs were historically seen as assistants to the physician, helping with task completion and the eventual offloading of responsibilities. With the passage of time and concurrent advancement of medicine, there has been a shift towards patient-centred care models with PAs assuming the role of primary caregiver within a multidisciplinary team (Grabenkort and Ramsay 1992). The physician remains at the epicenter of this team, coordinating the overall care and overseeing the trajectory of the patient whilst in the ICU.

As early as the 1990s, physician assistants along with nurse practitioners, collectively referred to today as Advanced Practice Providers (APPs), were being incorporated into ICUs (Buchman et al. 2017). National trends and future projections in the U.S. at the time predicted a net decrease in the number of physicians going into the critical care specialty. Juxtaposed with a projected net increase in the need for critical care beds for an ageing population of the post-World War 2 born “baby-boomer” generation approaching retirement age, a gap was identified in the workforce that needed to be addressed. In 2006, the Health Resources and Services Administration report (HRSA) offered a proposal to the United States Congress to cross train the non-physician healthcare workforce in the basic components of critical care to meet the upcoming staffing needs (Kleinpell et al. 2012).

As a consequence, the roles and responsibilities of the PA within the multidisciplinary

care team have evolved slowly over time, allowing for improved efficiency and delivery of critical care. Across various medical centres and academic hospitals within the United States, PAs today are considered an essential part of the 24 by 7 care delivery model for intensive care. Broadly speaking, there are three areas in which the PA functions: clinical care delivery, teaching, and academics as well as research and innovation, thereby fulfilling the tripartite mission of many major academic medical centres across the nation. This, in turn, helps to provide quality, value, and access for the focus point around which the care model was created: the critically ill patient.

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With respect to current trends in clinical roles and responsibilities within intensive care units across the country, PAs are encouraged to operate at the full extent of their scope of practice, thereby engaging in the complete and comprehensive care of the patient. PAs are often at the forefront of multidisciplinary rounds with the care team, coordinating discussion,

communication, and implementation of care plans with various consulting physician services, nursing, respiratory therapy, pharmacy, nutritional support, and other coordinated teams. As such, it is the expectation that the PA is up to date with current trends in pathophysiology and subsequent management of pertinent disease states. The total body, “head-to-toe” management of the patient along with the coordination of care with other disciplines by the PA under the direction of the attending physician has helped to create and define a sustainable model for safe and effective patient care delivery.

In addition to the management of pathophysiologic disease states, the PA is expected to have obtained competency in common ICU procedures, including but not limited to central venous cannulation, arterial cannulation, endotracheal intubation, thoracentesis, and abdominal paracentesis, to name a few. Specialised intensive care units often require specialised procedures such as lumbar puncture, fibre-optic bronchoscopy, and intra-aortic balloon pump removal, to name a few. Only after having demonstrated proficiency in the aforementioned procedures according to various state regulatory authorities, hospital guidelines and physician supervision, the PA is able to perform these procedures independently with periodic review and subsequent renewal of privileges.

As a fundamental and core principle of care delivery, the physician is ultimately legally responsible for the patient. As such, the 24-hour clock within the intensive care unit has built in at least two formal times of communication between the PA and the

critical care intensivist physician in the form of morning and evening rounds. At any other time, it is the expectation that the PA communicates directly with the physician for any one or more of the following reasons:

1. New admission
2. Patient demise
3. Patient is off clinical trajectory, and the physician is unaware.
4. At the request of the physician, nurse or any other member of the care delivery team.
5. If the PA has a question and needs assistance.

An example to further illustrate the roles and responsibilities of the PA is offered: A 68-year-old female is admitted to the ICU with hypotension and associated fever and chills from the emergency department. Sepsis is prioritised in the differential diagnosis, and blood, urine and sputum cultures are sent before transfer to the ICU. Upon arrival, the PA performs the requisite history and physical exam, orders the necessary diagnostic studies including labs and radiologic imaging, and initiates therapy with fluid resuscitation and appropriate antibiotic coverage. The PA then presents the patient to the covering physician, complete with an assessment and plan. After the plan is discussed, refined and confirmed, the PA establishes central venous access if indicated for vasoactive agents as needed, along with arterial cannulation for continuous blood pressure monitoring as indicated. Admission orders and documentation along with care coordination between nursing and pharmacy for implementation of the care plan are all set in motion by the PA. This information is then passed on to the PA on the next shift, ensuring the continuation of seamless care throughout the patient's ICU stay.

Involvement in teaching is another realm within which the PA takes an active role. In academic centres across the states, the ICU is often full of student learners from various disciplines. A full complement of nursing students, APP students, pharmacy students, anaesthesia students, and medical students, along with first and second-year medical interns and resident physicians rotate weeks to months at a time through

the ICU. The PA is regarded as a trusted and permanent member on staff within the ICU, and helps to educate student learners and visitors on various topics ranging from relevant pathophysiology and clinical application to unit workflow, quality initiatives and operational considerations. Teaching techniques span the entire spectrum from formalised classroom teaching via lectures and presentations to informal, individual bedside instruction.

Thirdly, academic centers place notable importance on the furthering and advancement of knowledge through research initiatives. PAs are encouraged to actively participate, and clinical ladders for professional advancement within the hospital as well as within national societies are directly tied to incentives for participation in local, regional and/or national research opportunities. Collaboration between the physician and the PA, along with other members of the multidisciplinary team within critical care research initiatives have contributed significantly to the practice of evidence-based medicine.

As of 2013, the American Academy of Physician Assistants (AAPA) annual survey suggested that 2300 of the 114,000 (2.3%) PAs in the U.S. practice in critical care (Annual AAPA Survey 2014). Recent national trends have looked to further the refinement of PA application into critical care. Introduction of critical care residencies across the United States for PAs have helped provide focused and directed education for enhanced critical care thinking and practical application. Programmes range from 6 to 12 months in length, and offer condensed training in critical pathophysiologic concepts as well as procedural competencies through a mix of didactic learning and hands-on rotations through various specialty ICUs. From an operational standpoint, hiring PA graduates who have completed a critical care residency has resulted in quicker onboarding and orientation, thereby shortening the length of time to becoming a valued, productive member of the critical care team.

Current and future projections see the introduction and assimilation of PAs into the world of telemedicine, mirroring the augmentation of care delivery much like

that seen within the traditional brick and mortar ICU.

The intended success of the PA within critical care has at its base a foundational support structure by physician leaders. As the Chief APP for over 140 advanced practice providers (Physician Assistants and Nurse Practitioners) in the Emory Critical Care Center, I have been afforded the opportunity to help define, design and ultimately advance the role of the PA within critical care. Together in close partnership with senior physician vision and direction, along with the funding and support from senior administrative leadership, we have been able to create, design and implement the largest critical care APP workforce in the United States. This model, in turn, offers safe, effective and sustainable delivery of healthcare to the critically ill patient population. ■

### Conflict of interest

Vishal Bakshi has no conflicts of interest, financial or otherwise to disclose.

### Key points

- PAs today are considered an essential part of the 24 by 7 care delivery model for intensive care
- There are three areas in which the PA functions: clinical care delivery, teaching, and academics as well as research and innovation
- PAs are often at the forefront of multi-disciplinary rounds with the care team, coordinating discussion, communication, and implementation of care plans with various consulting physician services, nursing, respiratory therapy, pharmacy, nutritional support, and other coordinated teams

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