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Study Provides Guidance for ICU Staffing

The findings of a new study examining the ratio of nurse practitioners (NPs) and physician assistants (PAs) to patients may help hospital administrators better determine appropriate staffing levels in ICUs. Published in the *American Journal of Critical Care (AJCC)*, "Patient-to-Provider Ratios for Nurse Practitioners and Physician Assistants in Critical Care Settings: Results From a National Survey" is the first national study to report on advanced practice provider-to-patient ratios in ICUs and other acute and critical care settings. The study was funded by the American Association of Critical-Care Nurses (AACN) through an Impact Research Grant, which supports clinical inquiry that drives change in high acuity and critical care nursing practice.

The researchers collected 433 responses via an online survey of NPs and PAs who are members of the American Association of Nurse Practitioners, American Academy of Physician Assistants or the Society of Critical Care Medicine and practise in the U.S. and Canada.

Average provider-to-patient ratios reported were:

- ICUs - 1:5 for both NPs and PAs;
- Paediatric ICUs - 1:4 for NPs;
- Critical care settings that integrated fellows and medical residents - 1:4 for both NPs and PAs.

The researchers noted that the key factors that impact patient-to-provider ratios are the severity of the patients' illnesses, the number of patients in the unit and the number of providers in the unit. Other factors include patient diagnosis, the number of physicians in the unit, time of day and the number of fellows and medical residents on service.

To find out more about the study, *ICU Management* spoke to lead author, Ruth Kleinpell.

Why was it important to gather this data and how will it help future planning?

More organisations are hiring NPs and PAs to assist in the management of acute and critically ill patients as part of team-based care in the ICU. However, information is lacking on how NP and PA roles in the ICU are being developed and implemented, including the number of patients they are overseeing as part of their roles in the ICU. The information provided in the survey can help ICU directors and others better develop staffing models and structure roles for NPs and PAs in the ICU to work in conjunction with the intensivist-led team.

Integrating NPs and PAs on the ICU team and assigning appropriate workloads can ensure optimal care for ICU patients as well as promote recruitment and retention of qualified NPs and PAs. Their roles also promote continuity of care as, unlike rotating physicians, resident or fellows, their consistent presence in the ICU can help to promote high quality care; promote patient, family and staff education; facilitate discharge planning; and improve quality of care in the ICU.

What are the next steps in establishing optimal ratios for ICUs for NPs and PAs and the factors that affect these ratios?

Additional information is needed about NP and PA roles in the ICU. While the results of the study indicate that on average, they are helping to manage between 3 and 5 ICU patients, other factors that need to be considered include the patient's severity of illness, the number of patients in the ICU, the number of providers in the ICU, the patient's diagnosis and care needs, and the number of ICU admissions and discharges that may be occurring at the same time, among others.

Is there any potential conflict between the roles of PAs and NPs? As NPs already have established educational routes in critical care, should PAs have a similar educational programme?

The roles of the NPs and PAs are not in conflict but are rather complementary. As advanced practice providers they similarly assist the intensivist-led team to manage patients in the ICUs. However, their roles may vary in that PAs may have a role in assisting in the operating theatre or in performing procedures while the NP may also have a role in providing education to the family and nursing staff, implement quality improvement or research initiatives, or work on unit based guidelines. Working together with other members of the ICU team, NPs and PAs help to meet the workforce needs in the ICU.

The expansion of NPs and PAs was a response to duty hours regulations for physicians. Are existing regulations sufficient on when and where to employ NPs and PAs in the ICU?

The resident duty hour restrictions are one factor that has led to increased use of NPs and PAs in the ICU. Other factors have included increased patient acuity levels; complex care needs requiring care management and oversight; the need to focus on improving quality of care metrics in the ICU such as decreasing infection rates; implementing guideline-based care, for example deep vein thrombosis prophylaxis or other care measures; and providing continuity of care.

You write that "ensuring appropriate scope of practice is an essential aspect of utilising NPs and PAs in the ICU." How should scope of practice be addressed, for example in education and training, by professional associations, regulatory bodies or individual ICUs?

Scope of practice is designated by the NP and PAs' education and training. In the United States, master's degree education is required and some are seeking clinical doctorate level training in programmes that specifically focus on acute and critical care. Additionally, national certification is a requirement for most U.S. states for NP practice, with NPs receiving certification as an acute care NP to work in the ICU. PAs can seek a certificate of added qualification, commonly in emergency medicine, surgery or hospital medicine as one does not currently exist for critical care. While a hospital's credentialing and privileging process impacts NP and PA scope of practice, individual ICUs do not designate scope of practice. National credentialing boards and professional association specialty competency guidelines are an additional reference source

for defining scope of practice.

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