# Role of Advanced Practice Providers in Trauma Systems

Nicolas Hall AG-ACNP & Mindy Hamilton PA-C

# Disclosures

None

# Objectives

- NP and PA Role Clarification
- Oregon Trauma Registry
- APP Trauma Duties
- Quality, Acceptance and Integration
- Value
- Expanding role

# Nurse Practitioner, Physician Associate, or integrated Advanced Practice Provider Team

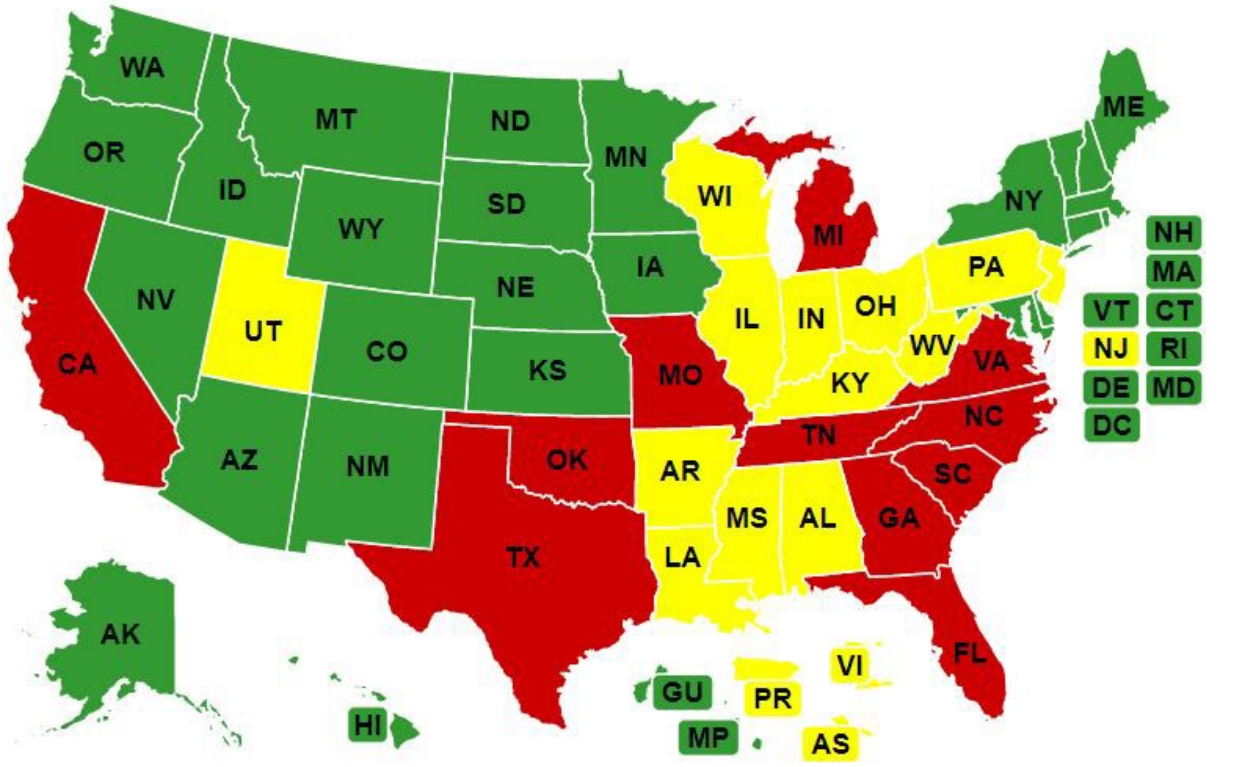
## Introduction to NP inpatient role

- MSN—>DNP, 31-48mo
- AG-ACNP, ENP, FNP
- Scope defined by state
- Practice agreement defined by hospital or practice environment
- Autonomy gained often with experience
- Limitations- Operative

## Physician Assistant-->Physician Associate

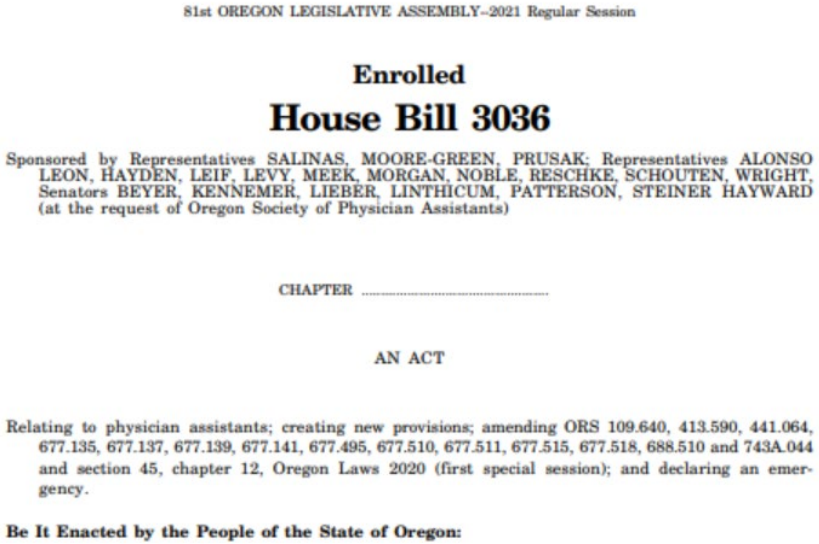
- 24+ month Masters' Degree
- Scope of Practice defined by the state
- Autonomy determined by community standards based on education, training and experience
- Collaboration Agreement
  - How the PA collaborates with the physician

# NP Licensing Scope of Practice




**Legend**

- Full Practice
- Reduced Practice
- Restricted Practice



81st OREGON LEGISLATIVE ASSEMBLY–2021 Regular Session

**Enrolled**

# House Bill 3036

Sponsored by Representatives SALINAS, MOORE-GREEN, PRUSAK; Representatives ALONSO LEON, HAYDEN, LEIF, LEVY, MEEK, MORGAN, NOBLE, RESCHKE, SCHOUTEN, WRIGHT, Senators BEYER, KENNEMER, LIEBER, LINTHICUM, PATTERSON, STEINER HAYWARD (at the request of Oregon Society of Physician Assistants)

CHAPTER .....

AN ACT

Relating to physician assistants; creating new provisions; amending ORS 109.640, 413.590, 441.064, 677.135, 677.137, 677.139, 677.141, 677.495, 677.510, 677.511, 677.515, 677.518, 688.510 and 743A.044 and section 45, chapter 12, Oregon Laws 2020 (first special session); and declaring an emergency.

**Be It Enacted by the People of the State of Oregon:**

HB 3036 states that a PA must engage in collaboration with the appropriate health care provider as indicated by the condition of the patient, the community standards of care, and the PA's education, experience, and competence.

The degree of autonomous judgment is determined at the PA's primary location of practice by the community standards of care and the PA's education, training, and experience.

A PA's scope of practice is based on the PA's education, training, and experience

A collaboration agreement is a written agreement that describes the manner in which the PA collaborates with physicians. The agreement does not assign supervisory responsibility to, or represent acceptance of legal responsibility by, a physician for the care provided by the PA.

No specific form is required.

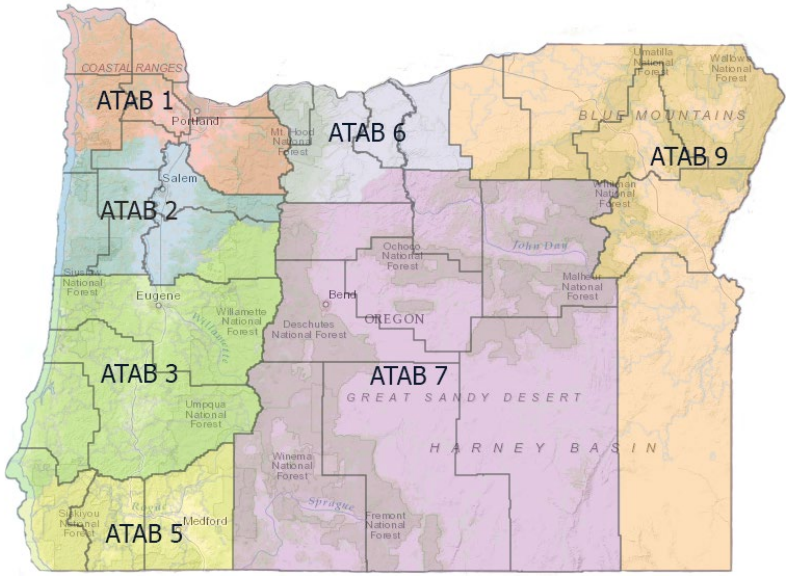
A collaboration agreement must include:

- The PA's name, license number, and primary location of practice;
- The name of the physician or employer with whom the PA is entering the collaboration agreement;
- A general description of the PA's process for collaboration with physicians and if applicable, include any differences in the process for collaboration based on practice location;
- The performance assessment and review process; and
- If the PA has fewer than 2,000 hours of post-graduate clinical experience, a Specified Collaboration Plan. See FAQ #14 for Plan details.

https://www.oregon.gov/omb/Topics-of-Interest/Documents/HB%203036%20FAQ.pdf

# Trauma Center Designations and Levels


- Oregon Trauma Registry
- Level 1 and 2
  - 24hr coverage by general surgeon, subspecialties, prevention programs, quality assessment programs
  - APPs providing shift work coverage
- Level 3 and 4
  - ATLS, stabilization prior to transfer
  - APPs providing EM coverage
  - APPs providing Surgical team coverage
- Critical Access Hospitals
  - APP may be the only provider




Oregon Trauma Hospitals

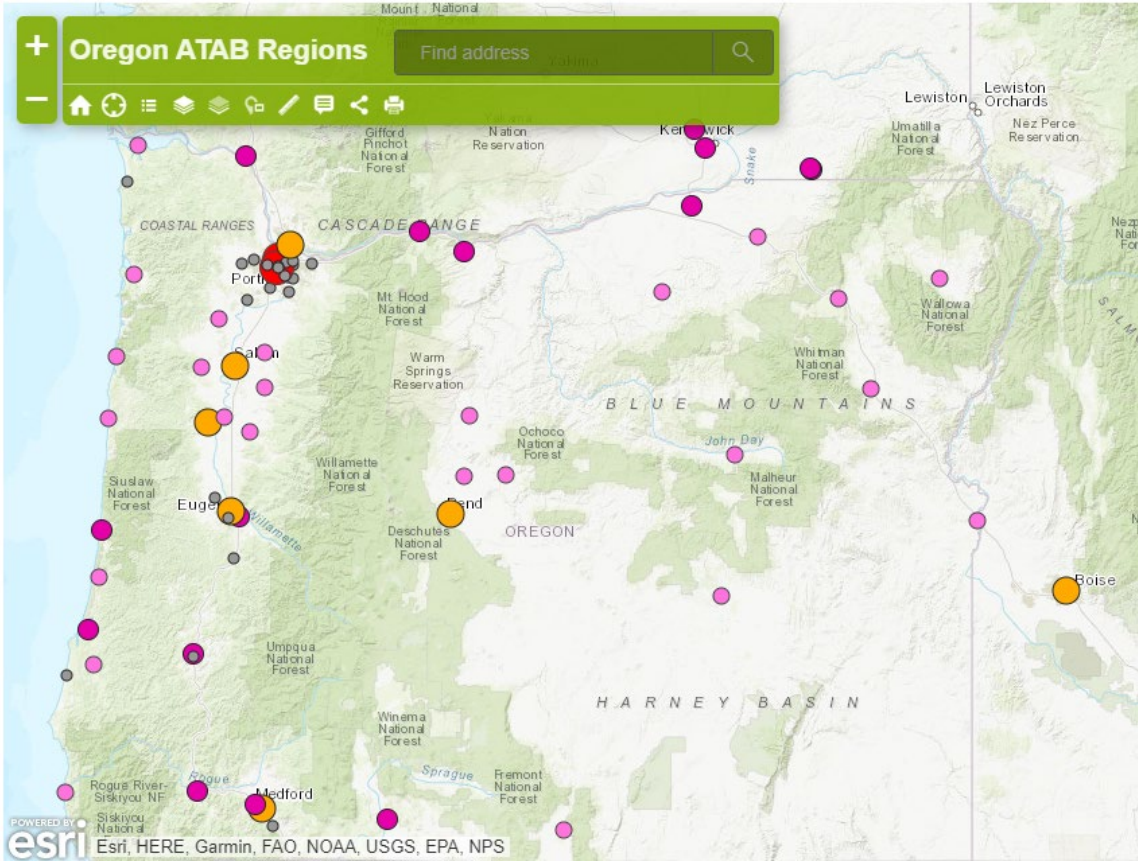
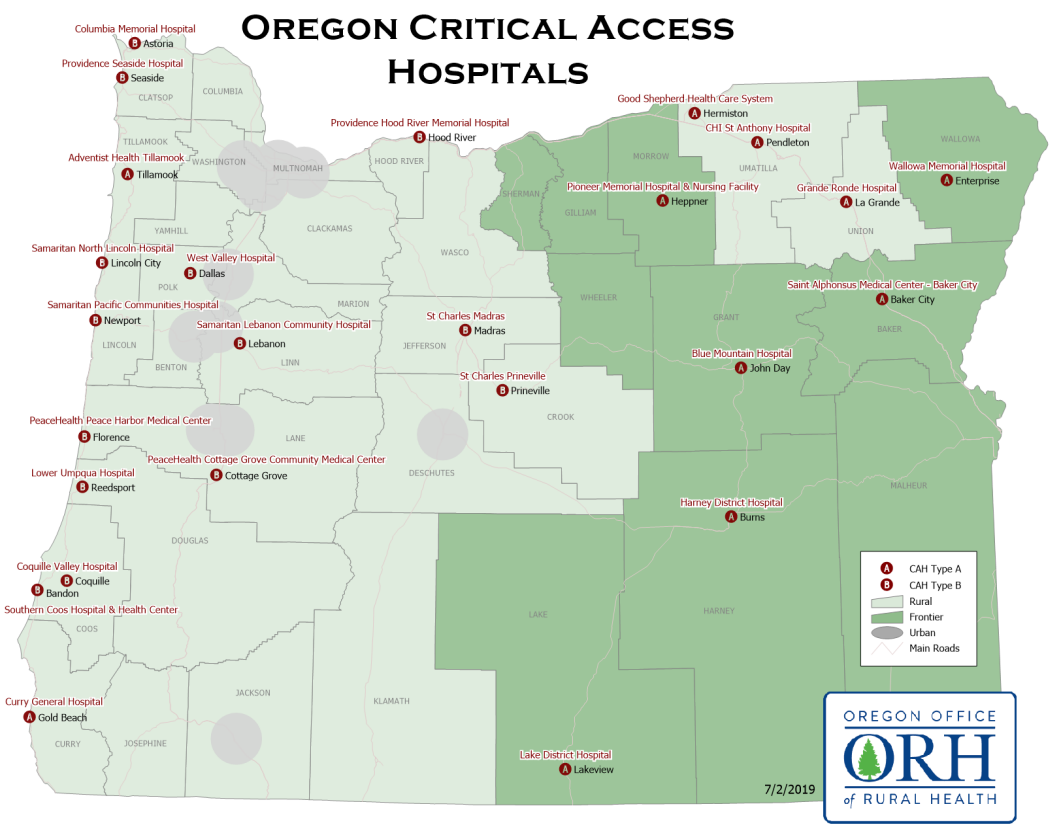



*Table 1: Oregon trauma center count by level and ATAB, 2018*

| Level | ATAB 1 | ATAB 2 | ATAB 3 | ATAB 5 | ATAB 6 | ATAB 7 | ATAB 9 | Total by level |
|---|---|---|---|---|---|---|---|---|
| Level 1 | 2 | | | | | | | 2 |
| Level 2 | | 2 | 1 | 1 | | 1 | | 5 |
| Level 3 | | | 3 | 2 | 2 | 2 | 1 | 10 |
| Level 4 | 2 | 8 | 3 | 2 | | 5 | 6 | 26 |
| Total by ATAB | 4 | 10 | 7 | 5 | 2 | 8 | 7 | 43 |

# Critical Access Hospitals




| Name | City | State | ZIP | Certified Date | Beds |
|---|---|---|---|---|---|
| Coquille Valley Hospital | Coquille | Oregon | 97423 | 3/1/2003 | 25 |
| Samaritan Pacific Communities Hospital | Newport | Oregon | 97365 | 7/1/2003 | 25 |
| Grande Ronde Hospital | La Grande | Oregon | 97850 | 8/1/2004 | 25 |
| Saint Alphonsus Medical Center - Baker City | Baker City | Oregon | 97814 | 7/1/2003 | 25 |
| Lake District Hospital | Lakeview | Oregon | 97630 | 12/5/2001 | 21 |
| Lower Umpqua Hospital | Reedsport | Oregon | 97467 | 7/24/2002 | 24 |
| St. Charles- Prineville | Prineville | Oregon | 97754 | 2/20/2003 | 25 |
| Columbia Memorial Hospital | Astoria | Oregon | 97103 | 7/1/2004 | 25 |
| PeaceHealth Peace Harbor Medical Center | Florence | Oregon | 97439 | 7/1/2003 | 21 |
| Harney District Hospital | Burns | Oregon | 97720 | 10/10/2001 | 25 |
| Adventist Health Tillamook | Tillamook | Oregon | 97141 | 1/29/2004 | 25 |
| Southern Coos Hospital and Health Center | Bandon | Oregon | 97411 | 11/6/2000 | 19 |
| Samaritan Lebanon Community Hospital | Lebanon | Oregon | 97355 | 6/1/2005 | 25 |
| St. Charles-Madras | Madras | Oregon | 97741 | 9/18/2005 | 25 |
| Good Shepherd Medical Center | Hermiston | Oregon | 97838 | 12/29/2005 | 25 |
| CHI St Anthony Hospital | Pendleton | Oregon | 97801 | 5/18/2004 | 25 |
| Providence Hood River Memorial Hospital | Hood River | Oregon | 97031 | 4/30/2004 | 25 |
| Wallowa Memorial Hospital | Enterprise | Oregon | 97828 | 9/17/2001 | 25 |
| West Valley Hospital | Dallas | Oregon | 97338 | 12/27/2001 | 15 |
| Providence Seaside Hospital | Seaside | Oregon | 97138 | 9/1/2000 | 25 |
| Curry General Hospital | Gold Beach | Oregon | 97444 | 8/18/2004 | 24 |
| Samaritan North Lincoln Hospital | Lincoln City | Oregon | 97367 | 9/1/2000 | 25 |
| Pioneer Memorial Hospital & Nursing Facility | Heppner | Oregon | 97836 | 4/1/2002 | 12 |
| PeaceHealth Cottage Grove Community Medical Center | Cottage Grove | Oregon | 97424 | 7/3/2000 | 11 |
| Blue Mountain Hospital | John Day | Oregon | 97845 | 7/30/2001 | 16 |


Annual Record of Trauma Team Specialty 2018

*Table 18: Annual record count of trauma team specialty*

| Trauma Team Specialty | 2017 | 2018 | Percent change |
|---|---|---|---|
| ED attending | 12,308 | 13,456 | 9.3% |
| Trauma surgeon | 5,880 | 6,188 | 5.2% |
| Trauma nurse 1 | 3,513 | 5,617 | 59.9% |
| Physician assistant | 1,507 | 1,742 | 15.6% |
| (Missing) | 1,694 | 1,728 | 2.0% |
| Anesthesia | 1,269 | 1,623 | 27.9% |
| Trauma nurse 2 | 983 | 1,163 | 18.3% |
| Radiology | 967 | 1,101 | 13.9% |
| Orthopedic surgeon | 849 | 908 | 6.9% |
| Neurosurgeon | 879 | 867 | -1.4% |
| Laboratory | 789 | 861 | 9.1% |
| Non-surgical | 819 | 825 | 0.7% |
| Respiratory | 625 | 724 | 15.8% |
| Nursing supervisor | 374 | 455 | 21.7% |
| Recorder | 285 | 369 | 29.5% |
| Oral-maxillofacial surgeon (includes ENT & dental) | 341 | 321 | -5.9% |
| Specialty RN | 256 | 272 | 6.2% |
| Admitting staff | 871 | 251 | -71.2% |

# APP Trauma Duties

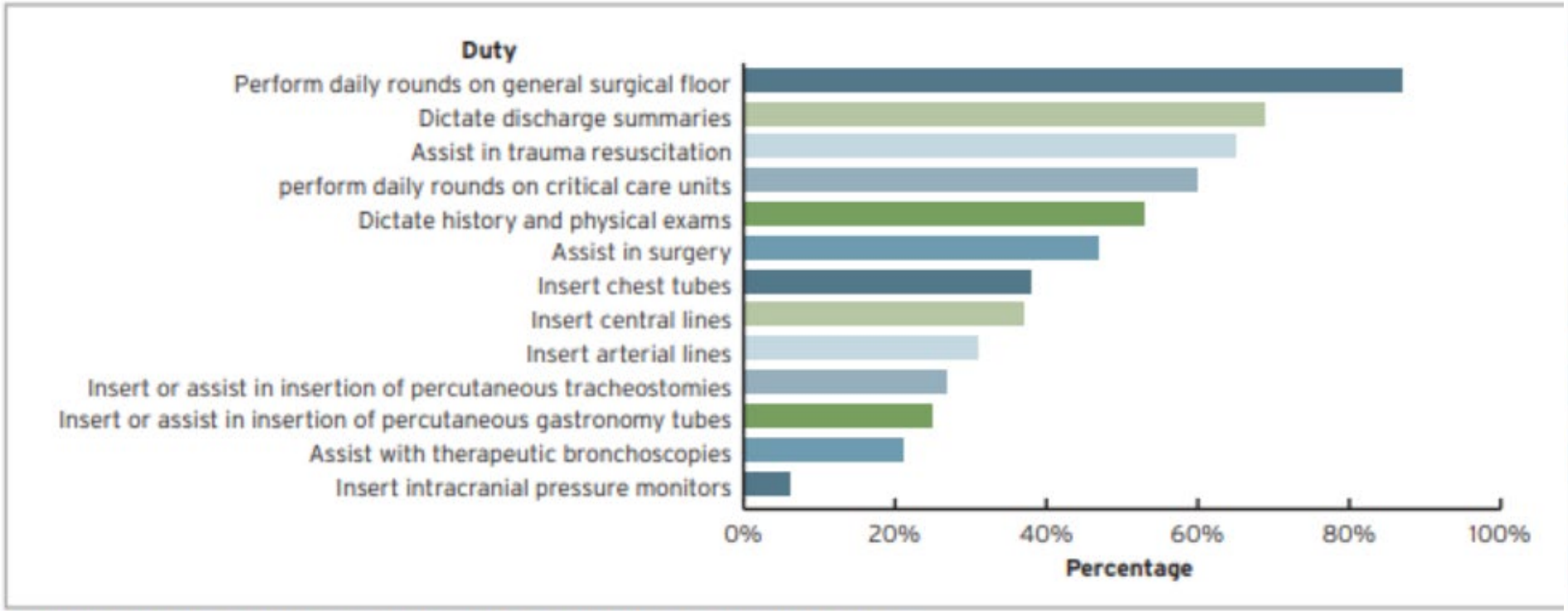



**FIGURE 1.** Duties and responsibilities of PAs and NPs on the trauma service

**TABLE 1. Trauma midlevel practitioner at St. Luke's Hospital: Roles and responsibilities**

| |
|---|
| Daily patient evaluation / documentation–general care units |
| Daily patient evaluation / documentation–ICU |
| Review daily laboratory work, radiology studies, etc. |
| Outpatient care |
| Daily discussion with nurses, therapists, case managers |
| Interface with subspecialty services |
| Perform simple surgical procedures: laceration repair, tube thoracostomy, insertion central venous catheters, suture removal, etc. |
| Discharge planning |
| Patient / family education |
| Trauma resuscitation* |
| Initial evaluation of trauma consults, trauma transfers |
| Development of clinical management guidelines |
| Performance improvement: case reviews, discussion at PI meetings, etc. |
| Patient / family phone calls |
| Completion of patient / family medical forms |
| Administrative duties: Maintenance of daily patient list; stocking outpatient supplies, schedules |
| Staff education |
| Community service |

*Trauma resuscitation performed under direct supervision of attending trauma surgeon and following successful completion of ATLS Provider Course

| Procedural Area/System | Exemplar Skills & Procedures |
|---|---|
| Airway Techniques | Intubation<br>Airway adjuncts<br>Mechanical ventilation<br>Non-invasive ventilatory management<br>Ventilatory monitoring |
| Resuscitation | Cardiopulmonary resuscitation (lifespan)<br>Post-resuscitative care<br>Blood, fluid, and component therapy<br>Central venous access (US guided)<br>Intraosseous infusion<br>Defibrillation |
| Anesthesia & Acute Pain Management | Local anesthesia<br>Regional nerve block<br>Procedural sedation and analgesia |
| Gastrointestinal | Gastrostomy tube replacement<br>Nasogastric tube<br>Paracentesis |
| Cardiovascular and Thoracic | Cardiac pacing<br>Cardioversion<br>ECG interpretation<br>Thoracentesis<br>Needle/Tube thoracostomy |
| Cutaneous | Escharotomy<br>Incision and drainage<br>Trephination, subungual<br>Wound closure techniques<br>Wound management |
| Head, Ear, Eye, Nose, and Throat | Control of epistaxis<br>Slit lamp examination<br>Tonometry<br>Tooth stabilization<br>Corneal foreign body removal<br>Drainage of hematoma (auricular, septal) |
| Systemic Infectious | Personal protection (equipment and techniques)<br>Universal precautions and exposure management |
| Musculoskeletal | Arthrocentesis<br>Compartment pressure measurement<br>Fracture/Dislocation immobilization techniques<br>Fracture/Dislocation reduction techniques<br>Spine immobilization techniques |

AAENP
AMERICAN ACADEMY OF EMERGENCY NURSE PRACTITIONERS

Society of Emergency Medicine Physician Assistants

## Guidelines for the Rural Emergency Medicine Physician Assistant

The emergency medicine physician assistant (EMPA) plays a critical role in providing emergency care as a member of the physician-led health care team in rural communities throughout the United States. The gold standard of emergency medical care utilizes "The Model of the Clinical Practice of Emergency Medicine," and is traditionally provided by a team of medical clinicians led by a board-certified, residency-trained emergency physician. Recruiting an emergency medicine board-certified physician in many rural locations is a challenge and is cost prohibitive. Alternatively, many facilities utilize family practice physicians, physician assistants and other practitioners. EMPAs with appropriate physician supervision/collaboration, education, training and other skills provide this care in many of our communities.

PAs in rural America working at critical-access hospitals require special skills, training and experience that are unique in this environment. The challenges of low volumes combined with occasional high acuity of critical care medicine present unique stresses that, at times, can overwhelm the critical access hospital. The rural EMPA must be properly armed with advanced education and training as well as knowledge of local resources to employ in these moments of critical care emergencies. Many EMPAs have taken their advanced education and training to the rural area to provide high-quality care to the patients they serve. SEMPA's goal is to establish a benchmark by which a physician assistant can obtain appropriate education and training with the appropriate skills to thrive in this environment and provide the highest quality emergency medicine care for these patients.

### I. Role of the EMPA in Rural Emergency Medicine and the Critical Access Setting

Many rural and critical access hospitals with very low volume EDs utilize EMPAs as solo providers. Appropriately trained EMPAs provide advanced care, ideally with the supervision/collaboration of a board-certified emergency physician. This, however, is not available in many rural facilities. Administration of patient care with telemedicine access to

CLINICAL RESEARCH STUDY

THE AMERICAN JOURNAL of MEDICINE®

# A Direct Comparison of the Clinical Practice Patterns of Advanced Practice Providers and Doctors

David Johnson, PA-C,[d] Othman Ouenes, BS,[a] Douglas Letson, MD,[d] Enrico de Belen, MD,[a] Tim Kubal, MD, MBA,[d] Catherine Czarnecki, BS,[e] Larry Weems, MD,[f] Brent Box, MD,[g] David Paculdo, MPH,[a] John Peabody, MD, PhD[a,b,c]

*[a]QURE Healthcare, San Francisco, Calif; [b]University of California, Los Angeles; [c]Institute for Global Health Sciences, University of California, San Francisco; [d]Moffitt Cancer Center, Tampa, Fla; [e]Aetna, Hartford, Conn; [f]Novant Health, Winston-Salem, NC; [g]AdventHealth, Altamonte Springs, Fla.*

# Quality

**Landsperger, J. S., Semler, M. W., Wang, L., Byrne, D. W., & Wheeler, A. P. (2016). Outcomes of nurse practitioner-developed critical care: A prospective cohort study. *Chest, 149*(5), 1146–1154.**

A prospective cohort study of adult medical intensive care unit (ICU) admissions at an academic tertiary-care center was conducted between 2011 and 2013. Landsperger, et al., compared 90-day survival between care administered to patients by ACNPs and resident teams using Cox proportional hazards regression. Among the 9,066 admissions the study addresses that patients cared for by ACNPs had lower ICU mortality rates and shorter lengths of hospital stay. Hospital mortality and ICU length of stay was similar between the two providers.

**Kleinpell, R. M., Grabenkort, W. R., Kapu, A. N., Constantine, R., & Sicoutris, C. (2019). Nurse practitioners and physician assistants in acute and critical care: a concise review of the literature and data 2008–2018. *Critical care medicine*, 47(10), 1442.**

Kleinpell, et al., conducted a concise review of the literature published on NP and PA utilization and outcomes in intensive care units and acute care settings over the 10-year period between 2008 and 2018. More than 50 individual studies and reviews were identified including those that examined care outcomes such as LOS, mortality and decreased admission rates. The authors conclude, “Overall, the studies demonstrate impact of the APP role through improved patient flow and clinical outcomes including reducing complications and improved patient care management with reduced time on mechanical ventilation, increased use of clinical practice guidelines, improved laboratory test use and increased palliative care consultations, among other areas of impact.”

**Carter, A., Chochinov, A. (2007). A systematic review of the impact of nurse practitioners on cost, quality of care, satisfaction and wait times in the emergency department. *Canadian Journal of Emergency Medicine, 9*(4), 286-95.**

This systematic review of 36 articles examines if the hiring of NPs in emergency rooms can reduce wait time, improve patient satisfaction and result in the delivery of cost-effective, quality care. Results showed that hiring NPs can result in reduced wait times, leading to higher patient satisfaction. NPs were found to be equally as competent as physicians at interpreting x-rays and more competent at following up with patients by phone, conducting physical examinations and issuing appropriate referrals.

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journal homepage: www.americanjournalofsurgery.com

# The impact of advanced practice providers on the surgical resident experience: Agree to disagree?

B. Eaton [a, *], L. Hessler [b], L. O'Meara [a], A. Herrera [c], R. Tesoriero [a, b], J. Diaz [a, b], B. Bruns [a, b]

[a] University of Maryland, R Adams Cowley Shock Trauma Center, Division of Acute Care Surgery, 22 South Greene St, Baltimore MD 21201, USA
[b] Department of Surgery, University of Maryland School of Medicine, 22 South Greene St, Baltimore MD 21201, USA
[c] Center for Shock, Trauma and Anesthesiology Research, 110 South Paca St, Room 03-002, Baltimore MD, 21201, USA

# Utilization

Article

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DOI: 10.1177/1062860611402984
http://ajmq.sagepub.com
SAGE

## Physician Assistant and Nurse Practitioner Utilization in Academic Medical Centers

Marc Moote, MS, PA-C,[1] Cathleen Krsek, RN, MSN, MBA,[2] Ruth Kleinpell, PhD, RN, FAAN, FCCM,[3] and Barbara Todd, DNP, CRNP, FAANP[4]

**Abstract**

The purpose of this study was to collect information on the utilization of physician assistants (PAs) and nurse practitioners (NPs) in academic health centers. Data were gathered from a national sample of University HealthSystem Consortium member academic medical centers (AMCs). PAs and NPs have been integrated into most services of respondent AMCs, where they are positively rated for the value they bring to these organizations. The primary reason cited by most AMCs for employing PAs and NPs was Accreditation Council for Graduate Medical Education resident duty hour restrictions (26.9%). Secondary reasons for employing PAs and NPs include increasing patient throughput (88%), increasing patient access (77%), improving patient safety/quality (77%), reducing length of stay (73%), and improving continuity of care (73%). However, 69% of AMCs report they have not successfully documented the financial impact of PA/NP practice or outcomes associated with individual PA or NP care.

# Acceptance

RESEARCH REPORT

A national survey:

## Acceptance of physician assistants and nurse practitioners in trauma centers

Sue M. Nyberg, MHS, PA-C; Kayla R. Keuter, MPH, PA-C; Gina M. Berg, PhD; Amy M. Helton, MPA, PA-C; Angela D. Johnston, MPA, PA-C

The physician assistant (PA) and nurse practitioner (NP) professions began in the 1960s as part of a strategy to cope with a lack of primary care medical providers in rural and underserved areas. PAs and NPs filled gaps in primary care services that were created as more physicians moved into specialty and subspecialty areas of medicine.[1-3] However, recent employment trends in the PA and NP professions indicate movement away from primary care and into specialty fields.[4-7]

Over the past few years, a change in resident physician staffing regulations in hospitals has created additional employment opportunities for PAs and NPs. On July 1, 2003, the Accreditation Council for Graduate Medical Education (ACGME) instituted standards for all residency programs nationwide limiting the hours worked by a resident physician to no more than 80 hours per week averaged over 4 weeks. As a result of these limitations, teaching hospitals throughout the United States were faced with potential staffing shortages.[8-12] Surgical resident coverage at trauma centers was one specialty affected by the new residency work hour standards. Thus, hospitals have increased utilization of PAs and NPs to fill practitioner gaps.[12-15]

According to the American Academy of Physician Assistants (AAPA) annual census data, the number of PAs working in trauma centers has increased.[3] The purpose of this study was to determine the prevalence of PA/NP utilization in major trauma centers in the United States. It was anticipated that results of this survey would provide additional information about the role of PAs/NPs on a trauma service and identify the potential for future employment growth. Increasing awareness of the responsibilities that have been entrusted to PAs/NPs may stimulate their utilization by trauma centers faced with staffing shortages.

Continued on page 36

The authors are from Wichita, Kansas. **Sue Nyberg** is Associate Professor and Chair, Department of Physician Assistant, Wichita State University. **Kayla Keuter** practices in the Department of Trauma, Wesley Medical Center. **Gina Berg** is Research Assistant Professor, Department of Preventive Medicine and Public Health, University of Kansas School of Medicine. **Amy Helton** practices at Cardiovascular Consultants of Kansas, Inc. **Angela Johnston** works in family practice at Spectrum Family Medical Clinic. The authors have indicated no relationships to disclose relating to the content of this article.

ABSTRACT

**Objective:** Census data published by professional organizations indicate an upward trend in the number of physician assistants (PAs) working in many specialty fields, including the subspecialty of trauma surgery. As the role of hospital-based PAs and nurse practitioners (NPs) continues to evolve, greater understanding of these roles will help identify future employment trends for these professions. The purpose of this study is to determine the prevalence of PAs and NPs in US trauma centers, to document their roles, and to identify their potential future utilization by trauma centers.

**Methods:** A survey was mailed to 464 directors of major trauma centers in the United States. The survey was designed to evaluate trauma centers' utilization of PAs/NPs. Respondents were asked to identify specific daily tasks of PAs/NPs and to indicate potential for their future utilization.

**Results:** Two hundred forty-six (246) of 464 surveys were returned, for a response rate of 53%. Approximately one-third of reporting major trauma centers reported utilizing PAs/NPs. More American College of Surgeons (ACS)-verified trauma facilities utilized PAs/NPs than did nonverified facilities; and Level I trauma centers used significantly more PAs/NPs than did Level II trauma centers. Nineteen percent (19%) of respondents who did not currently utilize PAs/NPs indicated that they intended to do so in the future. The majority of facilities utilized PAs/NPs to assist with trauma resuscitation and in performing traditional tasks, including obtaining and dictating histories and physical findings, participating in rounds on the general medical floor, and dictating discharge summaries. Fewer than half of reporting facilities indicated that PAs/NPs performed more invasive procedures, such as inserting arterial lines, central lines, chest tubes, and intracranial pressure monitors.

**Conclusions:** PAs and NPs are increasingly utilized as clinicians in the surgical subspecialty of trauma. In most trauma centers, PAs/NPs are utilized to complete the traditional duties of a surgical PA/NP, with fewer performing invasive procedures. Finally, 19% of responding trauma centers who do not currently utilize PAs/NPs state that they intend to in the future, indicating the potential for continued job growth for PAs/NPs in trauma care. This evaluation of the utilization of PAs/NPs in direct care to trauma patients indicates acceptance of PAs/NPs in trauma staffing models.





- Survey to 464 directors of major trauma centers
- 53% Response Rate
- 1/3 of major trauma centers reported using PA/NPs
- Significantly higher utilization at level 1 centers
- 19% with intention to start utilizing
- Tasks included; histories, physicals, rounding and fewer than half doing invasive procedures

# Cost Effectiveness

## The effect of a multidisciplinary hospitalist/physician and advanced practice nurse collaboration on hospital costs

Marie J Cowan [1], Martin Shapiro, Ron D Hays, Abdelmonem Afifi, Sondra Vazirani, Cathy Rodgers Ward, Susan L Ettner

### Abstract

**Objective:** To compare nurse practitioner/physician management of hospital care, multidisciplinary team-based planning, expedited discharge, and assessment after discharge to usual management.

**Background:** In the context of managed care, the goal of academic medical centers is to provide quality care at the lowest cost and minimize length of stay (LOS) while not compromising quality.

**Methods:** Comparative, 2-group, quasiexperimental design was used; 1,207 general medicine patient (n=581 in the experimental group and n=626 in the control group) were enrolled. The control unit provided usual care. The care management in the experimental unit had 3 different components: an advanced practice nurse who followed the patients during hospitalization and 30 days after discharge a hospitalist medical director and another hospitalist, and daily multidisciplinary rounds. LOS, hospital costs, mortality, and readmission 4 months after discharge were measured.

**Results:** Average LOS was significantly lower for patients in the experimental group than the control group (5 vs. 6 days, P<.0001). The "backfill profit" to the hospital was US$1591 per patient in the experimental group (SE, US$639). There were no significant group differences in mortality or readmissions.

**Conclusions:** Collaborative physician/nurse practitioner multidisciplinary care management of hospitalized medical patients reduced LOS and improved hospital profit without altering readmissions or mortality.

## An alternative approach to reducing the costs of patient care? A controlled trial of the multi-disciplinary doctor-nurse practitioner (MDNP) model

Susan L Ettner [1], Jenny Kotlerman, Abdelmonem Afifi, Sondra Vazirani, Ron D Hays, Martin Shapiro, Marie Cowan

### Abstract

**Objective:** Hospitals adapt to changing market conditions by exploring new care models that allow them to maintain high quality while containing costs. The authors examined the net cost savings associated with care management by teams of physicians and nurse practitioners, along with daily multidisciplinary rounds and postdischarge patient follow-up.

**Methods:** One thousand two hundred and seven general medicine inpatients in an academic medical center were randomized to the intervention versus usual care. Intervention costs were compared to the difference in nonintervention costs, estimated by comparing changes between preadmission and postadmission in regression-adjusted costs for intervention versus usual care patients. Intervention costs were calculated by assigning hourly costs to the time spent by different providers on the intervention. Patient costs during the index hospital stay were estimated from administrative records and during the 4-month follow-up by weighting self-reported utilization by unit costs.

**Results:** Intervention costs were $1187 per patient and associated with a significant $3331 reduction in nonintervention costs. About $1947 of the savings were realized during the initial hospital stay, with the remainder attributable to reductions in postdischarge service use. After adjustment for possible attrition bias, a reasonable estimate of the cost offset was $2165, for a net cost savings of $978 per patient. Because health outcomes were comparable for the 2 groups, the intervention was cost-effective.

**Conclusions:** Wider adoption of multidisciplinary interventions in similar settings might be considered. The savings previously reported with hospitalist models may also be achievable with other models that focus on efficient inpatient care and appropriate postdischarge care.

## ABSTRACT

**Objective:** This study analyzes the impact of midlevel practitioners (MLPs) on patient care and resource utilization at a level I trauma center.
**Methods:** A retrospective review of trauma patients admitted during two periods was performed: PRE-MLP, during which limited MLP coverage was available; and POST-MLP, when MLP coverage was expanded. Demographics, injury severity scores (ISS), and preexisting medical conditions (PEC) were recorded. Trauma service activity was measured by daily admissions, inpatient census, and daily discharges. Outcome variables included hospital mortality, total length of stay (HLOS), ICU length of stay (ICU-LOS), and incidence of the three most prevalent complications: deep vein thrombosis (DVT), major arrhythmia (MA), urinary tract infection (UTI).
**Results:** PRE-MLP and POST-MLP groups were similar with respect to age, gender, and ISS. Mean daily admissions were 3.05 during the PRE-MLP period and 4.01 during the POST-MLP period ($P = .0001$). Reduced incidence of UTI was demonstrated in the POST-MLP period: 0.9% versus 2.6% ($P = .0001$). Incidence of DVT and MA were unchanged. HLOS decreased from 5.09 days to 4.84 days ($P = .092$). ICU-LOS was reduced from 4.08 days to 3.28 days ($P = .019$).
**Conclusion:** Use of MLPs led to a significant reduction in ICU-LOS with no increased incidence of complications. MLPs offer a clinically effective and resource-efficient alternative to residents on a trauma service.


# A role in trauma care for advanced practice clinicians


## ABSTRACT

Advanced practice clinicians (APCs) are increasingly being utilized to care for patients on trauma services, but the quality of care provided by these alternate delivery models has been questioned. We hypothesized that APCs could safely administer trauma care that had traditionally been provided by surgical residents. Outcomes from an APC trauma-care delivery model were compared with those reported in the National Trauma Data Bank (NTDB). Parameters included in the comparison were mechanism of injury (MOI), length of hospital stay (LOS), injury severity score (ISS), and mortality. When MOI was used as the basis of comparison, the percentage of patients treated at the trauma center and the percentage of patients with information in the NTDB were similar. Despite having more seriously injured patients, the APC-staffed trauma center demonstrated a shorter LOS for all ISS categories; comparisons of patients with ISS >24 did not reach statistical significance. In addition, the APC-staffed trauma center had a statistically lower overall combined mortality rate when categorized by ISS. We conclude that an APC trauma-care delivery model provides outcomes at least as good as those reported by the NTDB.


# Utilization of PAs and NPs at a level I trauma center: Effects on outcomes

# Expanding Roles

## Analysis of an American College of Surgeons Committee on Trauma (ACS-COT) Approved Pilot Project: Increasing Provider Communication During Interhospital Transfer

Hours

Brian Fletcher, MS, APRN, ACNP-BC, CNE ■ Sarah K. West, MS, APRN, ACNP-BC ■
Christina Roberts, DNP, APRN, ACNP-BC ■ Kristie Pencil, DNP, APRN, ACNP-BC ■
M. Chance Spalding, PhD, DO ■ Stacey Martin, MS, APRN, ANP-BC, CNE ■
Marco Bonta, MD, MBA, FACS ■ Michael "Shay" O'Mara, MD, MBA, FACS

**ABSTRACT**

The American College of Surgeons Committee on Trauma requires physician-to-physician communication prior to interhospital transfer. This requirement can be difficult to achieve in high-volume trauma centers. This pilot project utilizes trauma advanced practice providers (APPs) as the primary communicator, in lieu of the trauma surgeon, prior to interhospital transfer. The hypothesis suggests that APPs can provide safe recommendations and accurately triage patients for the highest level trauma alert. From January to April 2018, a total of 1,145 patients were transferred to a Level I or Level II trauma center. All interhospital trauma transfers were dispatched through a designated transfer center APP (TCAPP). Descriptive statistics were used to describe the frequency of core TCAPP recommendations, including reversal agents for anticoagulants, antibiotics for open fractures, direct admission criteria, administration of blood products, and triaging to the highest level of trauma activation. TCAPP triage accuracy was analyzed and reported as percentages. Percentages are compared between independent groups using a chi-square test. Prior to implementation of the TCAPP role, provider-to-provider communication occurred in less than 1% of interhospital transfers; TCAPP-to-provider communication occurred 92% of the time ($p < .001$). During the study period, the TCAPP made 398 care-related recommendations. Three (<1%) TCAPP recommendations were deemed inappropriate. The TCAPP (89.7%) and physician (89.9%) triage accuracy was not significantly different ($p = .43$). Interhospital transfer communication and recommendations can be performed safely and accurately by a trauma trained APP.

**Key Words**

Interhospital transfer, Provider-to-provider communication, Trauma advanced practice provider

## Nurse Practitioners' Implementation of Evidence-Based Practice Into Routine Care: A Scoping Review

Vanessa Clarke [1] [2], Elaine Lehane [1], Helen Mulcahy [1], Patrick Cotter [1]

**Results:** Seven studies were included in the review. Findings indicated NPs valued EBP and believed it to be important in standardizing patient care. NPs' implementation of EBP was found to be relatively low overall. It was not possible to fully determine the extent to which NPs implemented EBP into routine care. NPs experienced similar barriers to EBP implementation as do nurse generalists such as lack of time, lack of EBP competence, lack of support from colleagues and managers, and inadequate resources. In particular, NPs identified collaborative practice issues as factors affecting EBP implementation. Identified barriers included physician-driven practice and the need to maintain professional and political boundaries. Supportive collaborative relationships and having professional confidence were identified facilitators.

# Expanding Roles

RESEARCH

## Assessing the Academic and Professional Needs of Trauma Nurse Practitioners and Physician Assistants

Wilson, Laurie N. PA-C; Wainwright, Gail A. MSN, RN; Stehly, Christy D. BS; Stoltzfus, Jill PhD; Hoff, William S. MD

Author Information

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