

Utilization of mid-level providers in trauma centers: a national survey

Amy M. Helten^{1*}, Angela D. Johnston^{1*}, Sue M. Nyberg, MHS, PA-C¹, Gina Berg-Copas, PhD(c)²

¹Department of Physician Assistant, College of Health Professions, ²University of Kansas School of Medicine - Wichita

Introduction: The Accreditation Council for Graduate Medical Education recently implemented standards which limits hours worked by resident physicians to no more than 80 hours per week. As a result of these limitations, teaching hospitals throughout the United States may be faced with potential staffing shortages. Recent census data published by professional organizations indicate an upward trend in the number of physician assistants (PAs) working in the subspecialty of trauma. As the roles of hospital based mid-level providers (MLPs), including advanced registered nurse practitioners (ARNPs) and PAs, continue to evolve, a greater understanding of those roles will help to identify future employment trends for these professions. *Methods:* A survey tool was developed and mailed to 464 major trauma centers in the United States. The survey was designed to determine the prevalence and utilization of MLPs on the trauma service. *Results:* 246 surveys were returned for a response rate of 53%. Results of this study indicate that the following clinicians utilized in direct care of the trauma patient are as follows: Surgical Resident Physicians (54.1%), PAs (32.9%), and ARNPs (34.6%). In addition, 29% of respondents who do not currently utilize MLPs indicated that they intended to utilize them in the future. *Conclusion:* Over half of the facilities responding to the survey utilize MLPs on their trauma service. Pearson Chi Square analysis suggests that ACS verified facilities utilize MLPs proportionately more than non-verified facilities and that Level I trauma centers use proportionately more MLPs than Level 2 trauma centers ($p < .05$). In the majority of the trauma centers, MLPs appear to be utilized to perform traditional duties performed with fewer MLPs performing invasive procedures. Finally, almost 30% of the respondents who do not currently utilize MLPs state that they intend to utilize them in the future. This indicates the potential for continued job growth for MLPs.

1. Introduction

Physician Assistants and Nurse Practitioners were introduced to the medical community in the 1960s. Both professions were developed to increase access to healthcare in rural and underserved populations secondary to physician staffing shortages. However, utilization trends indicate movement away from primary care, as more MLPs move into specialized care such as trauma, surgery, and cardiology.^[1, 2]

In 2003, the ACGME implemented standards which limits hours worked by resident physicians to no more than 80 hours per week. Therefore, the reduced availability of surgical residents in teaching hospitals prompted these facilities to find alternative means of providing patient care. The literature reveals multiple possibilities for the use of MLPs to offset these shortages.^[3]

The purpose of this study was to determine current prevalence and utilization of MLPs in trauma centers and to identify potential future utilization in hospital trauma centers.

2. Methods, Results, Discussion, and Significance

Methods: This descriptive, cross-sectional study was conducted from March 2007 through June 2007. A nine-item survey tool was developed to address the research questions and was reviewed by faculty of the PA department at Wichita State University and local healthcare providers in an effort to improve face and content validity. The survey population included trauma centers designated by their state or region and/or verified by the American College of Surgeons as a Level I or II trauma center. A listing of the 1,334 trauma centers in the United States was acquired through the American Trauma Society with 464 meeting the criteria listed above; 186 of these designated as Level I and 245 designated as Level II. The remaining trauma centers are designated as Level III/IV/V or unspecified and therefore were not included in the survey population. A cover letter, survey, and return envelope were sent to the Trauma Care Coordinators for each of the 464 facilities.

In addition to ACS verification or state/regional designation status, the survey was designed to collect information regarding current utilization of surgical residents, physician assistants and nurse practitioners by the trauma facility. In addition, respondents were asked to identify common job duties for mid-level providers, if currently utilized. Finally, if MLPs were not currently utilized, respondents were asked to indicate potential future utilization of MLPs as a part of their trauma service.

Pearson's Chi-square test of association analysis were used to evaluate the relationships between trauma center verification/designation and use of MLP. Data were analyzed using the SPSS Version 15.0 for Windows (REF).

Results: A total of 464 surveys were mailed with 246 returned for a response rate of 53%. Results of the survey indicate 56.1% of trauma centers that responded are verified by the ACS, 45.7% are Level I and 54.3% Level II. The majority of the respondents (92.7%) are also designated as a trauma center by state or regional guidelines.

In addition to the attending trauma surgeon, clinicians utilized in direct care of the trauma patient are as follows (Fig. 1): Surgical Resident Physicians (54.1%), PAs (32.9%), and ARNPs (34.6%). A slight majority of the trauma centers (54.5%) utilized either PAs, NPs or both types of providers. Pearson Chi Square analysis suggests that ACS verified trauma centers utilize MLPs more frequently than non-verified trauma centers ($p < .05$) and that a greater proportion of Level 1 centers utilize MLPs than Level 2 centers ($p < .05$). Regarding specific daily tasks performed by MLPs on a trauma service, in the majority of the facilities MLPs assisted in trauma resuscitations and performed traditional tasks such as rounds on the general medical floor and dictation of the history, physical exam and discharge summary. In the majority of the facilities, however, MLPs did not perform more invasive tasks such as inserting arterial lines, central lines, chest tubes, and intracranial monitors. Finally, of the facilities which do not currently utilize MLPs, 29% stated that they intended to utilize such providers in the future while an additional 32% were uncertain about future use.

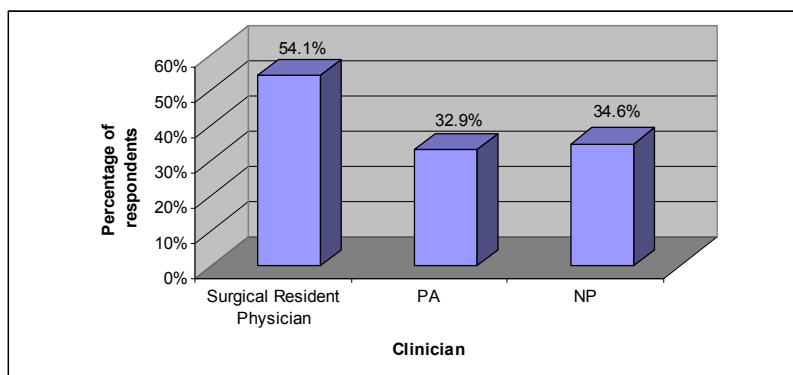


Fig. 1. Clinicians Utilized in Direct Patient Care of Trauma Patients in Addition to the Attending Trauma Surgeon.

3. Conclusion

Over half of the facilities responding to the survey utilize MLPs on their trauma service. Results of the study also suggest that ACS verified facilities utilize MLPs proportionately more than non-verified facilities. In the majority of the trauma centers, MLPs appear to be utilized to perform traditional duties performed with fewer MLPs performing invasive procedures. Finally, almost 30% of the respondents who do not currently utilize MLPs state that they intend to utilize them in the future. This indicates the potential for continued job growth for MLPs.

- [1] Larson EH, Hart LG, Hummel J. Rural physician assistants: a survey of graduates of MEDEX Northwest. *Public Health Rep.* Mar-Apr 1994;109(2):266-274.
- [2] Schweer L, Cook, BS, Fanta, KB. Trauma Nurse Practitioner: Front Line Approach to Management of the Pediatric Trauma Patient in an Academic Program. *Journal of Trauma Nursing.* Oct-Dec 2004;11(4):157-163.
- [3] Duffy K. Physician Assistants: Filling the Gap in Patient Care in Academic Hospitals. *Perspective on Physician Assistant Education.* 2003;14(3):158-167.