Perceptions of Frontline Providers on the Appropriate Qualifications for Battalion Level Care in United States Army Ground Maneuver Forces

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ABSTRACT  Objectives: The U.S. Army emplaces physician assistants (PAs) in its maneuver battalions. When contingencies arise, clinic-based physicians join them to augment capability. Because both entities operate similarly, the policy permits a comparison of perceptions of optimal skill sets for the battalion medical mission. Methods: We conducted a survey to discover associations in opinion regarding the best qualifications for battalion care. We asked deployed PAs and physicians to rate themselves and their counterparts in eight domains. We hypothesized that both entities would rate PAs as superior based on their permanent presence at battalion level and their familiarity with the disease and injury patterns of their population. Results: Among 26 respondents, PAs awarded themselves a score of 8.3 ± 0.3 out of 10 and a score of 6.5 ± 0.5 to physicians. Physicians awarded PAs a score of 8.4 ± 0.3 and themselves a score of 8.3 ± 0.3. Conclusion: Participants support the PA as an appropriate capability for battalion care in prolonged combat environments.

INTRODUCTION

The U.S. Army currently staffs its frontline medical outposts with two disparate medical entities. The physician assistant (PA) is responsible for the peacetime medical care of the battalion. PAs work in small aid stations classically decentralized across garrison posts. On-site clinical oversight is almost always absent because physician supervisors are located at the brigade level. During wartime, however, specialized (residency-trained) physicians, pulled from clinical duties in hospitals and clinics, augment PAs to double the battalion provider capability. The two medical entities work together at the deployed battalion aid station (BAS)—an outpost without laboratory, X-ray, blood bank, or patient holding bed. When not engaged in trauma, the two deployed battalion providers perform primary care for the young healthy population the aid station serves.

At face value, the PA is a good capability for the deployed battalion mission. Army PAs are trained specifically to manage outpatient primary care. As the primary trainers of Army combat medics in peacetime, they are required to maintain a functional knowledge of the treatment of battle injury and trauma.

Physician augmenters represent a more diverse capability. According to Army regulation, physicians trained in the primary specialties of family medicine, preventive medicine, neurology, psychiatry, obstetrics and gynecology, pediatrics, internal medicine, emergency medicine, dermatology, and allergy/immunology may be called upon to serve in deployed BASs. Even subspecialists may be enlisted for the battalion role. In peacetime, these officers perform the administrative, leadership, and clinical duties necessary to manage clinics and inpatient services. Apart from experiences in medical school, many have no current exposure, academic or otherwise, to trauma resuscitation.

The administrative mechanism by which physicians leave their home garrison roles to join PAs at deployed aid stations is the result of standardized Army doctrine. The manning policy, entitled the Professional Filler System (PROFIS), ensures a validated “one size fits all” medical personnel package for all battalions engaging in current and projected combat operations. It has been used with little variation since the current wars began in 2001. Although battalion manning can be modified for specialized missions (e.g., humanitarian), such change, unlike PROFIS-directed physician augmentation for combat operations, is not the result of standardized policy.

The PROFIS system is dependent on physician manpower borrowed from garrison clinics and hospitals. Over the course of a protracted conflict, the cost of this wide-reaching doctrine and its associated home front vacancies grows. The Army’s inability to meet access to care standards, for example, achieved National news coverage in 2009.2 Physician retention and recruiting shortfalls have generated concerns of a future Army doctor shortage.

As the Army evolves to suit an era of persistent conflict, its standardized medical staffing policy should be re-examined. If PAs are appropriately trained for the combat mission, the value of moving physicians to their side in contingency scenarios merits scrutiny in light of the second order effects of
physician shortages imparted on garrison hospitals. Critical to the analysis is an evaluation of the skill sets of both physicians and PAs as they apply specifically to the BAS mission. In the interim, an evaluation of frontline provider attitudes about the appropriate qualifications for the provision of medical care at the BAS is a good starting point.

As part of a quality assurance project, we sought to discover perceptions among deployed 3rd Infantry Division (3rd ID) battalion providers regarding the optimum qualification requirement for the BAS. Recognizing that the sample size would be obligatorily small because of the uncommon nature of the personnel that were eligible for survey, we designed a project whose only objective was to reveal the potential existence of consonance in frontline provider opinion.

METHODS

The PA versus Specialist Physician for Battalion Combat Medical Care (PA SPICE) project was a survey distributed to medical providers deployed in combat positions during Operation Iraqi Freedom 10-12 in the 2010 calendar year. In order to be eligible for the survey, participants had to be (1) U.S. Army PAs or physicians working in subordinate units under the deployed or garrison 3rd ID headquarters, (2) deployed to the battalion level in ground maneuver units, (3) located (during some portion of the deployment) with a provider of the alternate credential set (PA with physician and vice versa), (4) in the Iraq combat theater for at least 1 month, or (5) deployed to Iraq within the past 12 months. We selected this population because it represents a cohort uniquely qualified to comment on the skills and preparation required to practice medicine in deployed BASs. The main exclusion criteria included providers operating at the division level, brigade level, in aviation units, or within combat hospitals or specialty medical teams.

We tested the hypothesis that both physicians and PAs would rate PAs as superiorly prepared for the core battalion medical mission as compared to physicians. This finding was expected because of the PAs permanent presence at the battalion level and their consequent familiarity with the disease and injury patterns of the their population.

To test the conjecture, we implemented an anonymous 4-part survey. The first part collected objective demographic data. The second part was a provider self-assessment of the skills required for the BAS mission. The third part was an assessment of the skills of co-located providers of the alternate qualification set. The fourth part of the survey assessed opinions on general BAS staffing policy distinct from the situation in which the providers were specifically enmeshed.

Apart from the demographic portion, the survey consisted of 10-point Likert questions with higher scores being better. The Likert questions were developed in an iterative fashion by contrasting three previously published surveys of military provider competence. A validation committee of five experts on operational medicine (2 division surgeons, a senior brigade surgeon, an emergency medicine-qualified brigade surgeon, and a senior PA) contributed to survey creation. The instrument was then subjected to evaluation by a focus group of non-3rd ID Battalion-level PAs and physicians to ensure that written answers were in consonance with verbal attitudes. The provider-rating questions (Fig. 1) delved into the following areas of frontline practice: sick call knowledge; combat casualty resuscitation; administrative and clinical decision making; medic training; staff officership; commitment and effectiveness; physical fitness and military preparedness; and innovation, research, and humanitarian aptitudes. The validation committee determined these measures to be the core competencies of an optimal BAS provider. The statements on general BAS staffing policy are provided in Figure 4.

The primary endpoint was global provider rating, the unweighted mean of all eight areas of frontline practice. Secondary endpoints consisted of a pure clinical score (the mean of the sick call knowledge, combat casualty resuscitation, and administrative and clinical decision-making areas) and a composite score including the mean of the clinical areas and the medic training area. The secondary endpoints highlighted the areas of frontline practice that the validation committee considered to be the most critical to medical provider performance. Distinguishing these areas by creating secondary endpoints was an alternative to weighting these areas more heavily in the global provider score.

Because we were querying a sample of a highly selected population of experts, statistical significance was not an objective of the study. Rather, we sought to develop, implement, and determine initial results from a quantitative study instrument that would provide direction for future research. In other words, the PA SPICE project was a pilot study.

We surveyed providers located in eight Brigade Combat Teams (BCTs) deployed to Iraq in 2010. Surveys were sent to providers in armor-heavy Heavy BCTs (HBCTs [4]), Infantry BCTs (IBCTs [2]), and mechanized infantry (Stryker) BCTs (SBCTs [2]). Additionally, the survey captured units in various points of deployment cycles. Two were in the last third of their scheduled 12-month deployment (IBCT, SBCT), three were in the beginning third of their deployment (SBCT, IBCT, HBCT) and three were in the middle third of their deployments (3 HBCTs).

RESULTS

We sent the survey set to 48 eligible providers (23 PAs and 25 PROFIS physicians). Of 28 responses received (58% of the surveyed population), two were excluded. In one, a physician did not feel that he had enough experience with his co-located PA to formulate judgments. In the other, a physician responder neglected to properly use the numerical scales needed to maintain uniformity in data. The final data set consisted of surveys from 13 PROFIS physicians (52% of the physician population) and 13 PAs (57% of the PA population). Of these, one physician did not complete the survey on general BAS staffing policy.

Table I demonstrates demographic data. In general, PAs were older, more junior in rank, and more experienced in
combat deployments. Additionally, PAs had more years of independent (nontraining) medical practice. They also benefited from more predeployment time with battalions. As shown in Figure 2, the physicians surveyed were a relatively representative sample of the physician PROFIS population deployed to 3rd ID battalions.

Table II displays the numeric results of the provider rating Likert questions. Figure 3 graphically displays the specific data pertaining to the primary and secondary outcome variables. The data suggest the presence of relative conformity in deployed provider opinion consistent with PA favorability for the battalion role.

Specifically, PAs consistently judged themselves as superior to physicians based on the global provider rating. The mean PA global provider self-rating was 8.3 ± 0.3 as compared to a mean global provider rating of 6.5 ± 0.5 assigned to physicians. The PA group awarded itself numerically higher marks in all eight components of the global provider score.

Physicians also rated PAs highly. Interestingly, there was no difference in perception of PA abilities between the groups surveyed (8.3 ± 0.3 for PAs, 8.4 ± 0.3 for physicians). There was, however, variation in perception of physician capabilities. As a group, physicians did not view themselves, in aggregate, as numerically inferior to PAs. Instead, the mean self-assigned global provider rating by physicians (8.3 ± 0.3) was equivalent to the mean rating they assigned to PAs (8.4 ± 0.3).

Breaking down the physician global provider score into its component groups, the physician group rated itself higher
than the PA group only in the nonclinical areas of staff officership, commitment and effectiveness, and physical condition and military preparedness.

To lessen the effect of egocentricity, the PA SPICE study instrument included five statements designed to elicit opinions about current BAS staffing policy in general. The degree to which participants agreed or disagreed with these statements is presented in Figure 4.

**DISCUSSION**

The results of this project should be interpreted with three limitations in mind. First, because of its small sample size mandated by rare inclusion criteria, the research suffers from the power limitations of its genre. It would be useful to study future groups of similar personnel to evaluate the stability of the findings. Second, the study measured provider’s beliefs on quality of care rather than actual clinical outcomes. Although findings of clinical equivalence between physicians and nonphysician extenders in large primary care outcomes trials have previously been documented, such trials have not been conducted in the military setting. Finally, this study is limited by its context. The project was conducted in a particular time in a long war making its results only applicable to the scenario evaluated. The war in Afghanistan, for example, is being fought in a harsh mountainous terrain with potentially much larger evacuation distances than those present in Iraq. The PA SPICE survey does not test an argument in favor or against the PROFIS physician augmentation of isolated BASs in instances where prolonged stabilization and holding are required.

With these limitations in mind, we believe the data indicates a general belief among modern day frontline providers that the PA skill set is more appropriate for the BAS mission than that of the specialty trained physician. Specifically, the provider rating portion of the PA SPICE survey suggests a relative consensus among frontline providers that PAs are indeed, at the very least, equivalent to physicians for the BAS mission. Despite what they may have felt about their individual skills, experience, and circumstance, a majority of deployed providers, when asked about credential applicability
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in general (Fig. 4), agreed that PAs are more appropriate providers for the BAS mission than specialist physicians. This data complements previous research that demonstrates that maneuver commanders believe that PAs are superior to physicians in all facets of medical officership.7

Deserving of comment is the discordance between groups about the physician global provider rating. The origin of this perceptual gap remains subject to debate. PAs may have inflated their self-assessments or downgraded physician scores in order to mitigate perceived intrusion into their selected career field. The findings may represent group differences in culture, analytical approach, or perceptions of potential gain or loss from a particular outcome of the survey. An alternative explanation for the discordance may be that physicians inflated their self-assessments to achieve equivalence to that of their impressions of PAs. The general opinion portion of the survey was included, in part, to detect and offset the potential occurrence of social desirability bias. The results, whereby individual physicians rated themselves as equivalent to PAs, yet were supportive of a PA-led model in general, suggest that socially desirable responding may have been at play.

Finally, it is possible that physicians either subconsciously or deliberately “threw the contest” in an effort to avoid future deployment to austere environments. Were this the case, inferior physician self-assessment scores would have been expected. Additionally, such motivations are discordant with physician-officer’s military and medical oaths and thus would likely only manifest in scenarios in which near-equality in perceptions of skill sets was present.

A consensus that Army PAs are, in general, at least equivalent for the BAS mission is not unexpected given the fact that PAs are specifically trained in Soldier primary care while specialist physicians are, by definition, focused on wider or more unique areas within medicine. Deployment brings a change of environment to PAs. On the other hand, deployed PROFIS physicians

### TABLE II. Mean (95% CI) Provider Ratings Assessed by PAs and Physicians

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<tr>
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<th>PA Provided Ratings</th>
<th>Physician Provided Ratings</th>
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<tr>
<td></td>
<td>PA Self-ratings</td>
<td>PA Ratings of Physicians</td>
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<tr>
<td></td>
<td>Mean ± 95% CI</td>
<td>Mean ± 95% CI</td>
</tr>
<tr>
<td>Sick Call Knowledge</td>
<td>8.6 ± 0.4</td>
<td>8.0 ± 0.9</td>
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<tr>
<td>Combat Casualty Resuscitation Knowledge</td>
<td>8.5 ± 0.6</td>
<td>7.9 ± 1.0</td>
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<tr>
<td>Administrative and Clinical Decision Making</td>
<td>8.8 ± 0.5</td>
<td>7.3 ± 1.1</td>
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<tr>
<td>Medic Training</td>
<td>8.4 ± 1.0</td>
<td>5.3 ± 1.3</td>
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<tr>
<td>Staff Officership</td>
<td>7.5 ± 1.7</td>
<td>4.5 ± 1.8</td>
</tr>
<tr>
<td>Commitment and Effectiveness</td>
<td>8.7 ± 0.6</td>
<td>5.6 ± 1.7</td>
</tr>
<tr>
<td>Physical Condition and Military Preparedness</td>
<td>8.4 ± 1.0</td>
<td>6.7 ± 1.6</td>
</tr>
<tr>
<td>Innovation, Research, Humanitarian</td>
<td>7.4 ± 0.6</td>
<td>6.3 ± 1.5</td>
</tr>
<tr>
<td>Clinical Score†</td>
<td>8.6 ± 0.3</td>
<td>7.7 ± 0.6</td>
</tr>
<tr>
<td>Training and Clinical Score‡</td>
<td>8.6 ± 0.3</td>
<td>7.2 ± 0.6</td>
</tr>
<tr>
<td>Global Provider Score‡</td>
<td>8.3 ± 0.3</td>
<td>6.5 ± 0.5</td>
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†Mean of Sick Call Knowledge, Combat Casualty Resuscitation Knowledge, and Administrative and Clinical Decision-Making ratings.
‡Mean of Sick Call Knowledge, Combat Casualty Resuscitation Knowledge, Administrative and Clinical Decision-Making ratings, and Medic Training ratings.
§Mean of all eight provider ratings.

FIGURE 3. Graphic plot of provider ratings [Mean (95% CI)], assessed by PAs and physicians. § = the mean of Sick Call Knowledge, Combat Casualty Resuscitation Knowledge, and Administrative and Clinical Decision-Making; ¶ = the mean of Sick Call Knowledge, Combat Casualty Resuscitation Knowledge, Administrative and Clinical Decision-Making, and Medic Training; γ = the mean of all eight provider rating categories.
are subjected to a new environment, population, medical system, professional dynamic, command structure, and type of practice. Exposure to trauma is increased for both, and for this eventuality the Army offers both groups the same short refresher course.

A finding of consensus of perceptions about PA appropriateness for practice at the BAS level represents the fulfillment of the original design and expectation of the Army PA. The PA position was introduced into the Army in 1973.

FIGURE 4. Participant assessments of statements on battalion aid station staffing policy in general,
specifically to replace that of the battalion physician. Three factors contributed to the one-for-one exchange. First, termination of the doctor draft resulted in a physician shortage within the military. Second, Army medical leaders believed that the Vietnam-era innovation of helicopter evacuation of patients from point of injury to surgical units (bypassing BASs) reflected a permanent revolution in battlefield care. Last, advances in medical technology created a paradigm of physician training that was increasingly based on complicated hospital-based systems and focused in specialty and subspecialty areas of care. This training was wasted at austere BASs, which were designed neither for tertiary services nor for basic hospitalization. True to form, these exact factors and their impacts have been rediscovered in Afghanistan and Iraq.

From 1973 to 1984, PAs fulfilled the physician-replacement expectation without any evidence to suggest inadequacy. The 1984 decision to augment battalion PAs with physicians for contingency deployments was due to Cold War predictions of future warfare. The PA SPICE study suggests that attitudes persist that support the PA solution to conflict-driven physician shortages, as proposed by the Vietnam physicians, instead of the one-for-one exchange. First, tertiary care. Second, Army medical leaders believed expectation without any evidence to suggest inadequacy. The 1984 decision to augment battalion PAs with physicians for contingency deployments was due to Cold War predictions of future warfare. The PA SPICE study suggests that attitudes persist that support the PA solution to conflict-driven physician shortages, as proposed by the Vietnam physicians, instead likely remains valid.

Further studies of employed skill sets are needed. Physician extenders have made significant inroads in civilian primary care. Future Army generations may witness a return to the same practice. Nurse practitioners were not present in the 3rd ID formation (and therefore not studied) but are increasingly utilized in frontline roles. Video teleconferencing will likely continue to evolve as a tool to distribute resource-constrained specialty consultation to unaccompanied providers. The impact of provider type on Soldier morale likewise deserves analysis. Soldier perceptions of Battalion PAs and physicians are the subject of a follow-on project in the 3rd ID.

Any decision to change doctrine will have repercussions, which must be carefully analyzed. In the interim, attention should be turned toward public affairs. The PA should be marketed to the Army as a unique and effective capability tailored specifically for the BAS mission. Programs to build the PA to new heights are ongoing in the 3rd ID.

CONCLUSION
The responses from participants in this study suggest the presence of general agreement in opinion that PAs are appropriate and at least equivalent to specialist physicians for practice at prehospitalization aid stations in stability phases of combat operations.

ACKNOWLEDGMENTS
The authors would like to thank COL Allen Taylor (Ret.) for his review and thoughtful input into this article.

REFERENCES