

**Major General Spurgeon Neel and the Army Physician Assistant:
A Case Study of Policy Change**

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This study tells the story of the Army Medical Department in Vietnam. Hopefully, this experience will provide a basis for those who must evaluate our current doctrine and organization and for those who will be responsible for planning the medical support for future operations.

--Spurgeon Neel, *Medical Support of the U.S. Army in Vietnam 1965-1970*

So many MDs have been deployed to war zones that coverage back home – from military family members, retirees, and garrisoned troops – has been spread awfully thin.

--Noah Shachtman, *Military MD Shortage at Home*, December 2007.

Policy gives the Army its skeleton. Its components change to adapt to both stress and inactivity.

Flimsy policy weakens Army foundation and generates negative consequences that may remain invisible for years. Intelligent and innovative policy strengthens the Army and gives it resilience. Wartime experience is especially important in the process of military policy formation because it presents data specific to the core identity of a military force. As opportunities arise to incorporate wartime lessons into current policy, patterns of the past become relevant.

Perhaps the greatest modern medical policy-maker was Major General (MG) Spurgeon Neel. Serving from 1943 to 1977, Neel is best known as the “Father of DUST OFF” or the “Father of Aviation Medicine” for his pioneering role in the creation of the doctrine of helicopter medical evacuation.

One of Neel’s greatest strengths was his power of evidenced-based persuasion. He published more than 33 articles in the fields of flight, operational, and military medicine. He was passionate about his causes to be sure. Nonetheless, his support for them was based on rational analysis. Diverging from common mental models, the ideas contained in his writings included a supported set of instructions for an improved future. Most importantly, as a champion of change, MG Neel possessed the leadership skills to convince the establishment that his visions were incontrovertible.

Almost all of Neel’s policies have withstood the test of time. One has become distorted. In 1973, Neel described the concept of the physician assistant (PA) to the Army. Whether the idea was his alone, that of his superior, or a consensus creation is unclear. What is definite is that it was MG Neel who provided the justification and voice behind the plan. His vision for the PA position was specific. As with other policies, he supported it with documented insight and analysis. In 1984, many years after MG Neel

had left the Army, the PA position changed in a subtle but important way. This alteration occurred in the absence of a champion via a process that is best termed “bureaucratic policy change.”

The purpose of this essay is to gain understanding into the processes by which high-level Army policy may develop and change. Using decisions related to the PA position, championed-based change will be compared with the bureaucratic model. To best understand these competing models, significant detail will be devoted to an in-depth understanding of the PA policy. The essay will begin by evaluating the conditions that generated the perceived need for the PA position. It will examine the analysis that MG Neel used to advocate for the position. Understanding the conditions for the 1984 “bureaucratic” turnaround is paramount, as its consequences remain important today. An unintended yet fortunate feature of the 1984 policy alteration is that it provides an opportunity to directly measure the accuracy of MG Neel’s vision against its original benchmark. In the end, MG Neel’s foresight, leadership, and the policy he championed may be redeemed. The goal of this paper goes beyond judgment on the appropriate use of the PA. It seeks to demonstrate the difference of bureaucratic policy versus that made by champions.

Champion-Based Change: The Creation of the Army PA

As the Vietnam War concluded, the authors of its design actively sought to capture lessons learned. Out of their analysis was published a series of monographs commissioned by the Army Chief of Staff. The mission of medical analysis was delegated to MG Neel who, at the time, served as Deputy Surgeon General of the Army. MG Neel’s involvement in Vietnam was expansive, beginning in 1965. He served two tours in positions of “extreme responsibility”¹ including Surgeon, U.S. Army Vietnam, and Surgeon, U.S. Military Assistance Command, Vietnam. In these roles, he was the senior medical advisor to Generals Westmoreland and Abrams. His status as an expert on combat medicine administration, theory, and practice was established. MG Neel’s 1973 book, entitled, “Medical Support of the U.S. Army in Vietnam 1965-1970,”² is the definitive account of medical care in modern warfare.

While the PA position and its possible effect on Army staffing had already been introduced, it is in MG Neel’s book that the logic behind the Army’s large-scale adoption of the PA is detailed. Of importance is the fact that MG Neel conceived of the Army PA as a one-for-one substitute for the

Battalion Surgeon. In Vietnam, almost none of the Army's "Battalion Surgeons" had actually completed training in surgery – the title was a relic of a time in which the terms "doctor" and "surgeon" were interchangeable. Instead, the Battalion Surgeon was (and continues to be) a non-surgically trained physician who provided front-line care in the austere surroundings of the Battalion Aid Station. The Battalion Surgeon and the Battalion Aid Station had two primary missions: acute resuscitation of the combat wounded and routine primary care. Secondary missions included training and supplying combat medics. Additionally, the Battalion Aid Station coordinated medical evacuation. With no capability to hold patients, the Battalion Aid Station was very limited in diagnostic and therapeutic equipment. Devoid of X-ray, laboratory, blood bank, or nursing services, the Battalion Aid Station is best conceptualized as a resuscitation stop. Its mission was (and continues to be) to stabilize patients and then transfer them, without delay, to facilities capable of hospitalization and surgery.

Three observations from the Vietnam conflict suggested to MG Neel that the Battalion Surgeon and his training did not represent the appropriate capability for battalion level care. First, the array of combatants in Vietnam was notable for its lack of traditional boundaries. Soldiers engaged in combat in noncontiguous areas. It was as though the linear areas previously used to simplify the conduct of war had been mixed in a shaker and then spilled across the map. This topography greatly affected evacuation because medical doctrinal organization of the battlefield became impossible. Battalion Surgeons were not necessarily closer to the fight than higher-level medical resources. As patients were increasingly evacuated directly from point of injury to higher levels of care, Battalion Surgeons and their aid stations declined in importance.

Second, and of major importance, was the deduction that the innovation of the air ambulance was revolutionary and applicable to the conduct of future wars. In 1965, Neel remarked on the high use of helicopters in the evacuation of combat wounded: "Whereas only ten percent of the wounded were carried by copters in Korea, the ratio is up to 90 percent in Vietnam."³ In his book, Neel states that, "By mid-summer of 1967, it was apparent that the impact of the helicopter on the doctrine and organization of field medical service was not transitory."⁴ Neel suggests that others echoed the sentiment: "Many medical

officers with combat experience in Vietnam agreed that the reliance upon the helicopter was not a condition that was limited to the peculiarities of the Vietnam conflict.”⁵ The military revolution of helicopter medical evacuation changed not only the speed of evacuation but also the practical design of medical care across the battlefield. The World War II linear ground-based evacuation model (from point of injury to aid station to nonsurgical hospital to surgical hospital) gradually changed to a model called “rapid evacuation” in which the helicopter represented the centerpiece of action rather than the front line aid station. Helicopter air ambulances overflew Battalion Aid Stations to get patients directly from point of injury to surgical hospitals. According to Neel, “The first copter stop may be either a MASH [mobile army surgical hospital] or the division unit.”⁶ Because of the speed of evacuation, the need to push low-density medical expertise forward to nonsurgical aid stations was no longer required.

MG Neel’s third observation was that physicians were of limited effectiveness if isolated from the tools and environment of their training. In the monograph, he devotes much discussion to the developing complexity of medical care in the 1970s. General practitioners, the age-old model for the Battalion Surgeon, were becoming rare due to the progression of medicine toward specialty care. Even in specialties of primary care (such as family medicine), physician training no longer produced an appropriate capability for the setting. A broad hospital-based education did not match the limited primary and trauma care needs of stark forward Battalion Aid Stations. Furthermore, the lengthy time spent in academic and professional pursuits did not produce officers of the high administrative and operational caliber needed to lead within maneuver units.

Bringing the issue to a head was the reality of a significant physician shortage. According to Frederick E. Gerber, “beginning in the late 1960s and early 1970’s, the Army experienced massive losses of career medical officers due to poor ‘conditions of employment.’”⁷ The Army needed to resource its remaining assets wisely. Placing doctors at battalion level was not a prudent use of their expertise.

With these factors as a backdrop, MG Neel recommended that physicians would be best utilized if deployed to the settings in which they had trained. By serving in field and surgical hospitals, physicians

could maximally leverage all the tools of the medical trade.⁸ The following paragraph summarizes succinctly the pattern of thought that resulted in the elimination of the Battalion Surgeon.

Vietnam, and other recent experience in division and brigade medical support, has shown that it is no longer necessary nor desirable to assign medical officers to combat battalions. The impact of helicopter evacuation, frequently overflying battalion aid stations and going directly to supporting medical facilities, is only one of the considerations. Equally important is the nature of modern medical education and modern medicine, and the orientation of today's young physician, who depends heavily on laboratory and X-ray facilities, and on consultations with other physicians. This is the best way to practice medicine and field medical organization is being modified to accommodate this reality.⁹

MG Neel did not suggest that the Battalion Aid Station didn't need a premier front-line provider. Neel recognized the important role of the Battalion Aid Station as a command and control center for battalion medical care. He knew that a talented teacher and trainer must remain present to train medics. What MG Neel suggested was that physician training was not ideally suited to the task. In announcing the end of the era of the Battalion Surgeon, MG Neel concurrently proclaimed the beginning of the era of the PA as his replacement. Like the author of a comic book, MG Neel envisioned the PA as a super-hero who would be "built" with all the right powers for the mission.

The battalion surgeon is being removed from the combat battalion. His clinical replacement will be a well-qualified technician, probably in the grade of warrant officer, and modeled after the "physician's assistant" in civilian practice. The technician will work under the direction of the physicians in the brigade base and will provide initial resuscitation to wounded and do screening at sick call.¹⁰

This "well qualified technician" would be a medical professional similar in credentials to a general practitioner. Beyond individual care, however, his focus would be on the occupational health and care of his military unit. Not only would the "well-qualified technician" be an expert in combat trauma, he would be an administrator, advisor, and importantly, trainer of medics in battlefield first aid.

To make this superhero-type of provider a reality, a two-year training program was created at the Army Medical Department Center and School. Because the training plan for this capability focused on combat care from inception to conclusion, its focus was discriminating. Economy in training would be attained by minimizing instruction in hospitalization systems and

inpatient care. Instead, the Army PA would focus his learning on the use of the medical equipment available to him at the Battalion Aid Station. Only the best and brightest of experienced combat medics would be selected. The final concept of the envisioned “well-qualified technician” went well beyond being modeled after the PA to being that exact entity without modification. Meeting MG Neel’s original intent, Army PAs replaced physicians at the battalion level beginning in 1973.

In summary, with MG Neel as the champion, the Army, as an institution, recognized that the skill-set captured in physician training was too comprehensive, expensive, and time-consuming for the limited requirement at the battalion level. MG Neel achieved this consensus by reinforcing the PA concept with combat-based evidence. His published analysis was critical as a guide for long-term change. Founded in the trials of war, it approached a potentially controversial subject with unflinching sensibility. As a result, its conclusions were (and still remain) difficult to refute. Accordingly, the Army adopted the policy. As a response to a classic example of champion-based change, the Army custom-built the PA to replace the physician in the role of front-line care provider.

PA Capabilities

Since the graduation of the first class in 1973, Army PAs have steadily demonstrated their value in the battalion medical mission. Currently, they treat all the routine medical problems of their units. In this duty, PAs are full physician surrogates for primary care. They have complete and unrestricted access to the medical system. Consequently, they order and interpret laboratory and radiologic studies; prescribe medications and other therapies; counsel and educate; recommend profiles and excusals from duty due to injury and illness; and refer patients to specialists. They represent the interface between Soldiers and all of Army medicine. The only clinical constraint placed upon PAs is that they must work under the supervision of a physician. As represented by the current peacetime model, on-site supervision, however, is not required. The physician assigned to the next higher headquarters (the brigade) supervises PAs working at battalion level.

To state that Army PAs are technical experts in primary care however, understates the scope of their practice in the Army. In their discussion of the duties of Army PAs, the Army Medical Department and Office of the Surgeon General do not mention clinical competency until very late in the job-description.

Army PAs plan, organize, perform, and supervise troop medical care at Levels I and II (unit and division level); they direct services, teach and train enlisted medics, perform as medical platoon leader or officer-in-charge in designated units. They function as special staff officers to commanders, providing professional advice on medically-related matters pertinent to unit readiness and unit mission. Army PAs participate in the delivery of health care to all categories of eligible beneficiaries; prescribe courses of treatment and medication . . .¹¹

As the lead medical officers for maneuver battalions during peacetime, an incredibly important role of the Army PA is to train medics for their wartime mission. The spectrum of PA involvement in the critical mission of medic training extends beyond unit level initiatives. In his description of the proposed Army-wide training curriculum of the new 91W medic program initiated at the Army Medical Department Center and School in 2001, Colonel Robert A. De Lorenzo makes no mention of physician-guided lessons. Instead, he states, “the faculty will gain dozens of PAs, reflecting the important relationship between battalion PAs and unit medics.”¹² This passage supports that PAs have been awarded a significant role in combat medic training at the Army institutional level. In recognition of the PA role in areas beyond that of pure clinical expertise, the PA corps transitioned from warrant to commissioned officership in 1992.

From inception, candidates for the limited number of Army PA training positions were selected based on proven records of excellence in military medical environments. The original 1972 Army PA program relied heavily on Special Forces medics. This trend has continued. In 2007, 65 percent of those accepted into the Interservice Physician Assistant Program (IPAP – the offspring of the original Army PA program) were former medics.¹³ The fact that more than 1000 candidates applied for 95 PA training positions in 2007¹⁴ provides commentary on 1) the luxury afforded to the military to select the very best for training and 2) the size of the pool for a future pipeline should the program expand. The high quality

of the current military PA Corps is supported by the fact that graduates outscored civilian PAs on licensing exams when last studied in 2004.¹⁵

The key justification behind the PA program is value, speed, and appropriateness of training. PAs are trained in about one quarter of the time of that of a specialty-trained physician (two years versus seven to eleven) and at a fraction of the cost and resources. As mentioned, focusing the PA curriculum on basic primary, field, and combat care from start to finish attains this economy. PAs emerge from the program fully trained in primary and combat care. In contrast, physician education begins very broad in scope and progressively narrows as physician-candidates make decisions about their specialty career choice. Diversity in specialization ultimately creates a physician pool of unpredictable suitability for the battalion mission. The responsiveness of PA training must also be noted. The number of PAs in the Army doubled between 2004 and 2006 in response to wartime needs.¹⁶

Analyzing the PA concept on an abstract level, in the PA, the Army created a desired product, and that product duplicated the World War II concept of the general practitioner as Battalion Surgeon. The military model of PA-led primary care paralleled similar reform in the American civilian medical sector, which was seeking to survive its own shortage of physician resources. As civilian physicians increasingly specialized, nonphysician extenders gradually filled the vacancies in general practice. By 1997 36.1 percent of civilians seeking outpatient care were seen by nonphysician clinicians in the United States.¹⁷ Nonphysician offsite care as used in the military is widely accepted by the civilian world. Forty-four out of 50 (88 percent) states have approved off-site supervision of PAs as of 1998.¹⁸ With Army PAs now numbering approximately 610,¹⁹ the depth to which the roots of the PA program have reached is a testament to the accuracy of the vision proposed in MG Neel's book.

Bureaucratic Change: Reinstitution of the Battalion Surgeon

Without a major conflict to spotlight their actions, PAs excelled without fanfare for more than a decade. Puzzlingly, the PA was deemed inadequate for combat care in 1984. Through the Professional Filler System (PROFIS), physicians specializing in a diversity of non-surgical medical fields were dispatched to augment PAs at Battalion Aid Stations as a type of medical chaperone exclusively for

contingency operations. Routine garrison medical care and medic training duties remained the charge of the solo PA. While considered “momentous”²⁰ in its day, this decision, through the passage of time, has resulted in the current normalcy of present-day medical force structure. A thorough analysis of the justification behind the 1984 decision is critical. In contrast to MG Neel’s method of evidence-based reasoning, scientific study, and detailed documentation, this policy change occurred in the shadows. The Historical Department of the Army Office of the Surgeon General can produce no primary documentation of the type created by Neel to explain the turnaround. How was the careful analysis of Neel and his surveyed combat-hardened colleagues overturned?

The decision could not have been borne of novel American combat experience. The only major U.S. conflict in the time period had been the less than two-month invasion of Grenada, an operation that occurred in late 1983. Literature searches on the use of the PA in that conflict produce only testimonials of heroism. If the decision was based on particular events, trends, studies, or a specific re-examination of the needs of the combat battalion versus its medical capability in the PA, that data is not available. Instead, the decision appears to be one of many features of a larger plan to reform the Army. In support of this contention, the 1985 thesis, “The Battalion Surgeon: A Background Study and Analysis of His Military Training” by Frederick E. Gerber provides data. While a secondary source, the thesis attains credibility by its chronologic proximity to actual events. However, even at the time of research for that thesis, the author mentions as a limitation to his work: “the general lack of detailed and comprehensive documents specifically concerning the re-establishment of the Battalion Surgeon.”²¹

Historical context and other data suggest that the decision was part of a plan to introduce modularity into the Army Medical Corps. At the time, the Army Training and Doctrine Command was instituting a new doctrine entitled “Air Land Battle” which emphasized the combination of ground and air unit maneuver and firepower on a tactical level. As part of the focus on Air Land Battle, the Army designed a light modular division that could both fight major conventional land wars and deploy to contingency missions of the type seen in Vietnam. The Army Medical Department supported the light division concept through the creation of the “Modular Medical Support System (MMSS).” The concept

was briefed to and accepted by Vice Chief of Staff of the Army General Maxwell Thurman in December 1984. The supporting document, the “Medical Systems Program Review (MSPR)” is revealing.²²

The MSPR stated that the MMSS would “standardize medical units found throughout the division while providing them with increased capability and flexibility.” To this end, the MMSS defined five medical modules as follows: 1) combat medic, 2) treatment squad, 3) area support squad, 4) patient holding squad, and 5) ambulance squad. Of particular interest is the envisioned treatment squad. This module included a physician, a PA, and 14 medics.²³ This strategy was notable for three reasons: 1) because the treatment squad was included in combat battalion medical platoons, it recreated the role of the physician-trained Battalion Surgeon, 2) the required skill set of the module (patient assessment, insertion of breathing tubes, prevention and treatment of shock, body fluid replacement, emergency trauma treatment, and initial burn treatment) did not justify the inclusion of the physician, and 3) it combined the physician with the PA, the entity that had replaced him without difficulty for more than a decade, to create an augmented capability well beyond anything ever fielded before.

This MSPR suggests evolution in thought away from that of MG Neel and his colleagues. The paradigm shift occurred in a time and atmosphere beyond the reach of the harsh realities of Vietnam. Without detailed records of the type provided for the 1973 PA decision, the exact rationale by which the Battalion Surgeon was reborn will never be known. The very absence of documentation suggests consensus of a bureaucratic type in which justification is not considered necessary. Perhaps years of relative peace played a role. In the setting of abstract considerations of future wars, an attitude of “Nothing’s Too Good for the Soldiers” may have seemed affordable. Even so, the fundamental question of “why?” remains unanswered. Why did Neel’s well-supported concept of the “qualified technician” concept lose its footing?

Gerber connects the theory behind the change in reasoning to events in the Arab-Israeli conflict. He states, “Lessons learned from the Israeli Army’s experience in the Middle East Wars since 1968, heavily influenced the U.S. Army Medical Department to once again assign physicians as Battalion Surgeons.”²⁴ The Yom Kippur War of 1973 was particularly appealing as an object of study for the

authors of “Air Land Battle” in the 1980s.²⁵ From the military viewpoint, it represented the first confrontation of armored forces since the end of World War II. As such, it fit with conceptions of what future conventional war between the U.S. and Soviet Union would likely resemble. Unlike Vietnam, its battlefield morphology matched more comfortably within doctrinal code. In the medical realm, the Israelis deployed physicians to front line units. Gerber suggests that the success of that model compared to previous Arab-Israeli conflicts impressed Army Medical Department leaders.²⁶ That this sentiment may have swayed American doctrine is supported by the fact that Major General William Winkler, then Commandant of the Academy of Health Sciences, publically stated that the Israeli performance would influence the as yet unrevealed modified MMSS doctrine.²⁷

Is it plausible that the successes of the Israeli medical plan so blinded American policy makers that they failed to consider fundamental differences between the forces? The facts suggest it. Yet, an objective discussion of the differences between the defensive Israeli wars and the expeditionary-type wars fought by the U.S. should have been considered. The desert terrain supported a specific type of war whose lessons were not necessarily generalizable. Additionally, the very short duration of the 1973 war (less than three weeks) permitted an Israeli surge in physician staffing from a large base of nearby reserves. Such circumstances created a tidy war in which the realities of resource allocation for prolonged operations could be overlooked.

Beyond these observations, American policy makers appear to have, at best, forgotten or, at worst, ignored the key doctrinal tenants so carefully captured by MG Neel based on Vietnam combat experience with unique American Forces. As discussed, these tenants included: 1) high U.S. helicopter availability allowing the rapid evacuation of patients from point of injury to definitive care, and 2) the substitution of battalion level physicians with “well qualified technicians” permitting appropriate resourcing of limited medical assets.

Of importance is the fact that the Israeli evacuation scheme retained features of the linear ground-based pattern of previous conventional wars. The Israeli forces had relatively few helicopters and no dedicated ambulance helicopters. As a result of these characteristics, air evacuation from point of injury

was impossible. Patients were transported to Battalion Aid Stations by ground ambulance where they waited for hours (three to four hours on the Northern Front and six to eight hours on the Southern Front) prior to helicopter evacuation.²⁸ This model, termed “persistence in combat” was one that the American Army, with its helicopter heavy composition, had matured beyond both practically and consciously in 1973. The strategy requires an extremely high provider resource burden and provides no advantage over a “rapid evacuation” strategy.²⁹ Indeed, the acceptance that the “persistence in combat” model no longer applied to American Forces had permitted medical doctrine to evolve after Vietnam.

An even larger oversight was the ignorance of the American policy-makers on the previously accepted logic of placing “well qualified technicians” at battalion level. The reinstitution of the Battalion Surgeon appears to have dismissed this practice with no discussion whatsoever. Again, study of events proves informative. A physician and seven medics manned Israeli Battalion Aid Stations in the early 1970s. PAs were not, as yet, available. This resulted in the term “physician-led” frequently being inserted into After Action Reports as a modifier of lessons learned. It is notable that a majority of these lessons, such as, “medical treatment must be rendered as far forward as possible,”³⁰ are not controversial. While there is acceptance of a causal relationship between rapid far-forward care and improved outcomes, what is debatable is whether the same relationship exists for “physician-led” forward care.

An example of such faulty reasoning is available in this statement; “physician-directed care far forward on the battlefield ensures maintenance of the casualty’s physiology thereby increasing the probability of his return to duty.”³¹ The problem with the assertion “physician-led” is that it relies on a descriptive term that encompasses a large and diverse set of skills. It doesn’t focus on the exact required capability. Nonetheless, the power of such statements, at face value, may have been difficult to discount without accessible knowledge of the issues discovered in Vietnam. MG Neel recognized the fallacy in such thought, parsed out the required need in the form of the PA, and took the steps required to reform.

Arguably the Israelis would have attained identical success if physicians had been replaced with “well trained technicians” and abundant helicopters. The 1973 War was not a head-to-head trial of 1980s Israeli versus American care. Rather it provided retrospective observational data contemporary in time to

Vietnam but applicable to a completely different force and type of war. It included a strategy of battlefield care that had already been rejected by American planners due to availability of helicopters and a “rapid evacuation” policy for their use. It included no comparison of military PAs, the 1980s American specialists in combat care, to specialized physicians. Without data suggesting otherwise, the resultant change in American doctrine likely represented an acceptance of applicability of Israeli practice to U.S. forces. Unfortunately, it also represented a reversal of the substantiated conclusions developed out of MG Neel’s work. Writers of doctrine regressed to assumptions of medical coverage beyond which the previous generation of medical planners had deliberately and rationally progressed. Ultimately, this reflexive step backwards was the origin of our current medical system.

Interestingly, the immediate impact of this policy change was not widely felt. The PROFIS system, created in 1980, was accepted as appropriate for the renewed Battalion Surgeon position. In this system, physicians only joined PAs for real-world deployments and training center rotations. With perhaps only written notification of their new duality, both physicians and PAs likely continued their day-to-day clinical activities relatively untouched. As a result, the consequences of the 1984 decision lay relatively dormant, apart from the short-lived exception of Desert Shield/Desert Storm, until the wars in Iraq and Afghanistan rinsed away their crust of peace-based idealism to reveal the very same desperate problems of wartime physician shortages identified in Vietnam.

The course of events that resulted in the current crisis reveals minimal documentation, minimal justification for change, ignorance of previous lessons, and no champion advocating its adoption. As will be shown, these features are consistent with change of a “bureaucratic” nature.

Decision Analysis: Was the PA an adequate replacement for the physician at Battalion Level?

The return of the physician Battalion Surgeon in 1984 created a situation that was never envisioned by MG Neel. Physician and PA working together at battalion level would have been considered beyond overkill in Vietnam. Even so, in the present day, the condition provides an opportunity to evaluate the high-level policy decisions of MG Neel and his staff and to determine whether his vision

of the future was accurate. Specifically, does the PA represent a better-suited capability than a specialty-trained physician to manage all aspects of battalion care?

As stated previously, maneuver battalion PAs are currently augmented with physicians under the PROFIS system when deployed to war. The logic behind this arrangement must rely on two assumptions: 1) Because no additional technology or equipment is dispatched with the physician, his value must be coupled to his knowledge-base and/or skills and, 2) Because the Battalion Aid Station is a combat resuscitation stop, the possessed superior knowledge and skills must be related to combat resuscitation and first-aid. These assumptions raise the question: Why would a clinic or hospital-based physician who spends a small fraction (if any) of his practice in front line resuscitation own superior knowledge to that of a PA whose entire existence, training, and duties revolve around it?

The fact that the Army PA is expressly designed for the Battalion-level combat mission is a compelling argument for the proposition that little value is added by dispatching physicians forward. Moreover, there is no scientific data to support the superiority of specialty-trained physicians over PAs for the battalion mission. Indeed, considering the setting, it is quite likely that, apart from certain exceptions (emergency and critical care trained physicians), physicians, as a rule, are undertrained in comparison to PAs for combat medicine.

In the current environment, the hypothesis that the PA is superior to the physician would be difficult to study. Analysis must therefore be made using the existing literature base. In this venture, some conclusions can be drawn from current implementation. Implied in current medical doctrine, for example, is a supposition of interchangeability between Battalion Surgeon and PA. This suggests, at the very least, equality between the two. Survey information exists which confirms nothing less than equality and hints at elevated PA suitability. Additionally, one head-to-head study of physicians versus medical paraprofessionals in combat medicine is available. This data supports PA superiority for the combat mission. This data will be evaluated in succession.

The wars in Iraq and Afghanistan have spurred resurgence in literature on combat medicine. Articles, in general, are observational in nature. Furthermore, many reflect the bias of their physician

authors. This point is important because it would be rare for a professional to state that another was more prepared for a mission. Even so, the articles provide a source of material from which some idea of the “facts on the ground” can be gleaned. In an extensive literature review, no article was found which suggests that PAs were not anything but perfectly suited for the combat mission. More to the point, several articles are available which indicate, at the very least, equality between PA and physician. In his article describing a battalion’s medical coverage of offensive operations in Fallujah, Iraq from the summer of 2003 to the spring of 2004, Battalion Surgeon Scott Earwood and his team created “advanced trauma packages” to cover high risk missions.³² Notably, the PA and Battalion Surgeon were used completely interchangeably as leaders of this asset. Elsewhere, an emergency-medicine trained PA was part of a team that mentored other practitioners, including a pediatrician-trained Battalion Surgeon, in trauma management.³³ There is no doubt that the 173d Airborne Brigade favored its Battalion PAs over its Battalion Surgeons. When that unit parachuted into Iraq in 2003, it left its Battalion Surgeons at home and jumped the Battalion PAs to provide immediate medical coverage to the force.

Raw commentary on PA competency is available from a survey, which interestingly, made no attempt to study it. In 2005, Captain John Hughes surveyed every battalion and brigade commander at Fort Hood, Texas.³⁴ While his survey was created to identify a collective experience about brigade and battalion surgeons, several commanders discussed PAs in the free-text “comments” portion of the study tool. One commander stated that he would put his PA “up against any brigade surgeon any day.”³⁵ Another noted key differences between doctors and PAs. In his comments he suggests that doctors “must focus on emergency medicine/trauma management before going to combat.” On the other hand, “Troops trusted the PAs more because they were there every day and not just showing up before deploying.”³⁶

Survey information is available which more directly compares line officer opinions of physicians versus PAs. In a 1992 survey, Lieutenant Colonel George Shackelford Robinson asked 100 former Battalion Commanders to rate PAs and physicians in eight categories. PAs outscored physicians in every single category. Amongst these were leadership, administration, tactical skills, and notably technical (clinical) skills.³⁷ These findings were used to support campaigns for improved training of physicians. A

more optimistic point of view, however, would have been to accept success in the fulfillment of the goals of the original model of the Army PA as described by MG Neel. If the PA were not functioning completely as envisioned, created, and trained, the result would not have been such.

A rigorously controlled head-to-head trial of PA versus Battalion Surgeon would present very powerful information. If PAs were found to be inferior in quality, MG Neel's original policy would be exposed as flawed. The Israeli study, "Physician versus Paramedic in the Setting of Ground Forces Operations: Are They Interchangeable?" attempts to provide data on this very issue.³⁸ In the following passage, it is clear that the authors identify identical issues in the Israeli Army to that discussed here, albeit related to a different archetype.

The trend toward subspecialization in medicine causes the physician to become a "super-specialist" in a certain niche, but to neglect knowledge and manual capabilities that might come handy in the battlefield....A paramedic on the other hand is constantly focused on the field of emergency medicine and regularly performs manual lifesaving procedures. This keeps him in a high-level of performance but the actions the paramedic is trained to take target the very short-term period of prehospital care only.³⁹

To address the question of physician versus paramedic interchangeability in combat operations, the researchers interviewed 20 military physicians who, unlike the base of the American Medical Corps, had 10 to 15 years of experience in the setting of ground force operations. Common to the U.S. model, the study group's primary specialties were diverse. Of equal importance is the fact that the comparator, the Israeli paramedic, was likewise not identical to the American PA. In parallel with the studied physicians, they possessed experience in emergency and combat medicine likely beyond that of the American Army PA. Nonetheless, general truths discovered in the study likely achieve consonance between the two Armies. An example observation is provided below.

As a group, paramedics are more homogenous than physicians. Therefore, in planning the medical assistance to ground force missions, an active paramedic with similar experience will probably be as effective as the other, while in the case of a physician, one should carefully look into further details such as the physician's field of specialty and the degree of practice in treating trauma patients.⁴⁰

The significant finding in the study is the fact that paramedics were graded higher than physicians in "ability to perform lifesaving manual procedures."⁴¹ This piece of data supports the contention that PAs

can and should act alone at battalion level. Not designed to hospitalize patients, the Battalion Aid Station's main role in combat (and therefore that of the officers manning it) is to save the lives of the wounded. That paramedics were graded as superior in procedures that attained that goal is of important. No piece of evidence could better match the PA capability to the Battalion Aid Station. The fact that paramedics scored lower at prolonged care is not surprising given the physician's traditional role and extended training in that area. More to the point, these findings perfectly support a "rapid evacuation" model in which PAs remain forward at non-hospitalization units such as Battalion Aid Stations while physicians fill specialized roles in patient-holding facilities. Each position capitalizes on the appropriate expertise for the setting.

The subject of preparedness for trauma is controversial. The problem is complex owing to the wide continuum in skills of the deployed physician contingent. Many variables factor into contributions made by any particular entity whether it is PA or physician. Intangible benefits likely exist in which the PA-physician interchange improves aspects of practice. Profits from division of labor may exist but do not support the deployment of the two disparate education levels.

The preceding points do not intend to draw any evidenced-based conclusions. They only serve to suggest that the current Army PA meets the vision articulated by MG Neel as the appropriate provider for the Battalion Aid Station. The problem with the PA is not that he is not the best capability for the battalion mission but that he is not marketed as such. Collaterally, placing physicians at the Battalion Aid Station level removes them from garrison and combat support hospitals where their low-density expertise is desperately needed.

Policy Making: Champion versus Bureaucratic Models

Beyond the details of MG Neel and the Army PA, this case study reveals how policy change occurs in the Army. Two different types of policy development are presented. The first, as personified by MG Neel, is one in which leaders study existing shortfalls, develop a best-fit solution, and then lead the organization towards implementation. The discovery of an existing policy flaw does not need to be owned by the eventual champion. Indeed, it is plausible that MG Neel was not involved in early stages of PA

conceptualization. In some cases, the lay-press, a journal article, or an outside agency may identify policy weakness. While the source of the problem is unimportant in the “champion-based” model, leadership is critical. Central to the model is a credible leader who takes ownership of the problem, devotes his time and thought to it, and approaches it with pure objectivity. Historically, champion-based change is “top-down” as is indicated in the following passage.

Once identified as a trend, an observation, insight or lesson is analyzed via the doctrine, organization, training, material, leadership and education, personnel and facilities (DOTMLPF) process looking for an immediate fix... an interim fix ... and a long-term solution.... We are still relearning lessons from previous wars because this process was broken in the past and usually only succeeded if there was a “champion” at a high level who pushed the issue.

Not all “top-down” policy change is champion-based. Much high-level policy change occurs logically and fluidly according to the bureaucratic model. Inherent in the word “champion” is battle and resistance. In policy issues, the battle is against the status quo, the comfort of an existing system, emotional arguments, and prejudices that what is current must be just. Also implied in the term is a lone voice. In fact, champion-based change must begin with an individual or small number of individual experts. In isolation, a champion may focus on an issue with such intensity that it becomes possible to dissect it free of emotion or paradigm. An individual approach works in the champion-based model because it permits divergent thought to ripen to a level that cannot be attained in large committees. Quantum leaps are possible.

Because champion-based models often challenge accepted guidelines, their logic must be clearly documented and thoughtfully marketed to enlighten the entire organization of their necessity. It is in this activity that MG Neel ultimately distinguished himself as a “champion.” More than thirty years later, his book remains replete with evidence-based guidance of ongoing potential use to the Medical Corps.

While champion-based change is tangible, much of policy change occurs in an institutionally unconscious manner. Routine policy change is a necessity for organizational survival. This type of policy change is best described as “bureaucratic.” Sometimes it is disseminated from leaders without controversy and is accepted as necessary to benefit the organization. Often it occurs inadvertently or collaterally to

larger champion-based changes. Essential to the concept of bureaucratic change is that it does not stray significantly from the status quo. Governed by consensus, it lacks the power to make bold strides because it regresses to accepted thought.

While champion based change is founded in rationality, bureaucratic thought embraces solutions that are emotionally satisfying or based on core values. Bureaucratic change frequently occurs without documentation as its reasoning is understood by all. In the PA case analysis, the 1984 reinstitution of the Battalion Surgeon was a change that occurred as a collateral action to a larger doctrinal change. Although data from the Israeli Army was considered, analysis of transferability was lacking. Additionally, the previous wartime realities of physician shortages due to forward deployment were likely not considered. Instead, the policy likely so satisfied core beliefs of “Nothing’s Too Good for our Soldiers” and “Physicians Provide the Best Care” that it was permitted to occur in a bureaucratic manner.

Conclusion

As the U.S. Army prepares to leave the conflict in Iraq, policy will be changed based on collective experience. Change may occur as a result of enlightened leadership or it may develop bureaucratically. There is a role for both as long as the implications of the method are recognized. Even so, MG Neel’s leadership example should be remembered and similar opportunities exploited. In the PA, Neel championed a practical solution for improved utilization of low-density physician expertise. He then assured its success through documentation and marketing. His decisions were partially overturned in 1984 but that event also permitted validation of his solution against its original benchmark.

Bureaucratic change is a natural part of organizational growth. In general, its flow is neutral. However, risk is assumed when the current of bureaucratic policy change clashes with existing champion-based policy. At such points of intersection, the intellect of a previous champion may be obscured by the latest standard. Bureaucratic consensus almost always overmatches the outlier-leader when justification is buried in history. It is forgivable for an organization to succumb to this tendency because the target of change is progress. However, when the flaws of an old system are re-revealed as they have been with physician utilization in the current wars, it is suitable to remember the landmark solutions of the leaders

of the past. It is now appropriate for the Army to rediscover the strengths of MG Neel, champion-based policy, and the Army PA.

¹Spurgeon Neel, *Medical Support of the U.S. Army in Vietnam 1965-1970* (Washington DC: U.S. Government Printing Office, 1973), iv.

²Spurgeon Neel, *Medical Support of the U.S. Army in Vietnam 1965-1970* (Washington DC: U.S. Government Printing Office, 1973).

³“The War: Working Against Death,” *Time Magazine*, 31December 1965, <http://www.time.com/time/magazine/article/0,9171,842352,00.html> (accessed 23 August 09).

⁴Neel, 97.

⁵Ibid.

⁶Time Magazine.

⁷Frederick E. Gerber, “The Battalion Surgeon: A Background Study and Analysis of His Military Training. U.S. Army” (Master’s thesis, Command and General Staff College, 1985), 5.

⁸Neel, 177.

⁹Ibid.

¹⁰Ibid.

¹¹U.S. Army Medical Department/Office of the Surgeon General, “Physician Assistants: Description of Duties,” <https://amsc.amedd.army.mil/pa/duties.html> (accessed 5 June 2009).

¹²Robert A. De Lorenzo, “Medic for the Millennium: The U.S. Army 91W Healthcare Specialist,” *Military Medicine* 166 (August 2001): 687.

¹³Kelly Kennedy, “Army Short on Physician Assistants” *The Army Times*, http://www.militarytimes.com/news/2008/01/military_physassit_08118w/ (accessed 4 March 2009).

¹⁴Ibid.

¹⁵John T. Cody et al., “Performance of Military-Trained Physician Assistants on the Physician Assistant National Certification Examination,” *Military Medicine* 169 (January 2004): 34-7.

¹⁶Roderick S. Hooker, “Federally Employed Physician Assistants,” *Military Medicine* 173 (September 2008): 896.

¹⁷Benjamin G. Druss, et al., “Trends in Care by Nonphysician Clinicians in the United States” *The New England Journal of Medicine* 348 (9 January 2003): 130-7.

¹⁸Richard A. Cooper, Tim Henderson, Craig Dietrich, “Roles of Nonphysician Clinicians as Autonomous Providers of Patient Care.” *Journal of the American Medical Association* 280 (September 1998): 795-802.

¹⁹Hooker.

²⁰Gerber, 26.

²¹*Ibid.*, 18.

²²Richard H. Agosta, Office of Medical History–Office of the Surgeon General, e-mail message to author, 20 May 2009. Email contained attachment, “Excerpts from the Medical Systems Program Review”.

²³*Ibid.*

²⁴Gerber, 14.

²⁵*Ibid.*, 26.

²⁶Gerber.

²⁷Paul Smith, “Army Considers Treating Slight Wounds at Front Line, Evacuating Severely Injured,” *Army Times*, 3 December 1984.

²⁸Gerber, 10-11.

²⁹David E. Johnson, Gary Cecchine, and Jerry M. Sollinger, *Army Medical Department Transformation: Executive Summary of Five Workshops* (Santa Monica: the RAND Corporation 2006), 23.

³⁰Gerber, 9.

³¹*Ibid.*, 8.

³²Scott Earwood and David E. Brooks, “The Seven P’s in Battalion Level Combat Health Support in the Military Operations in Urban Terrain Environment: The Fallujah Experience, Summer 2003 to Spring 2004,” *Military Medicine* 171 (April 2006): 273-7.

³³Robert T. Gerhardt, et al., “Out-of-Hospital Combat Casualty Care in the Current War in Iraq.” *Annals of Emergency Medicine* 53 (February 2009): 169-74.

³⁴John R. Hughes, Michael A. Miller, Warner D. Farr, Teresa M. Hughes, “Survey of U.S. Army Commanders’ Experiences with Brigade/Battalion Surgeons at Fort Hood, Texas,” *Military Medicine* 171 (March 2006): 240-245

³⁵*Ibid.*, 244.

³⁶*Ibid.*

³⁷George Shackleford Robinson, “Army Medical Department Officers in Division Assignments: Prepared to Succeed, or Doomed to Fail” (Military Studies Program Paper, U.S. Army War College, 1992).

³⁸Gad Levy et al., “Physician versus Paramedic in the Setting of Ground Forces Operations: Are They Interchangeable?” *Military Medicine* 172 (March 2007): 301-5.

³⁹*Ibid.*, 301.

⁴⁰*Ibid.*, 304.

⁴¹*Ibid.*