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Is it Time for Physician Assistant (PA)/Nurse Practitioner (NP) Hospital Medicine Residency Training?

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The roles of non-physician providers, such as physician assistants (PA) and nurse practitioners (NP), are constantly evolving in the United States healthcare system. They are a vital part of many inpatient multi-disciplinary teams and their role is even more challenging on the busy hospitalist services. The demand for hospitalists is constantly increasing and the current supply of physicians has been unable to keep up with the increase in demand. Residents' now restricted duty hours and regulations have further widened the gap. With a record number of patients seeking healthcare (1), a reliance on mid-level providers has increased tremendously in the last few years. Non-physician providers are required to provide a high level of clinical care to complicated hospitalized patients, side-by-side with their physician colleagues. Non-physician providers are sometimes seen as the solution to all sorts of problems for which they have not been prepared during their education.

Most PA programs are two to three years long and require the same pre-requisite courses as medical schools do. PAs complete more than 2,000 hours of clinical rotations and must pass the Physician Assistant National Certifying Exam (PANCE), which is administered by the National Commission of Certification of Physician Assistants, before they can practice. NP candidates usually gain clinical experience working as a registered nurse (RN) for two or more years prior to their entry in the NP program. The NP programs vary in length from one to two academic years.

Success of non-physician providers is much more established in the internal medicine ambulatory setting. Meyers *et al*. describe success of mid-level provider-based model in chest pain units, where the participation of non-physician providers on the team resulted in not only financial benefit but also increased resident and physician satisfaction (2). Similar experiences were documented in other specialties including general surgery, trauma, pediatric neurosurgery, mental health, emergency medicine and primary care (3-7).

PA and NP schools provide a good clinical base, but they lack many aspects regarding teaching clinicians how to be effective and efficient hospitalists. Currently a hospitalist is not only required to be a champion of inpatient care but also as a leader in patient safety and clinical quality initiatives. Many hospitalist leaders are skeptical about the adequacy of education and training of non-physicians to work as hospitalists. Parekh and Roy stressed the limited data availability of success of non-physician providers as hospitalists (8). Sehgal *et al*. published in *Journal of Hospital Medicine* regarding hospitalist models of different academic medical centers that used non-physician providers as part of their staffing model. The University of California, San Francisco at Mt. Zion phased out mid-level providers one year prior to publication of Sehgal's article. The University of Michigan also decided to eliminate their non-physician program. At Brigham and Women Hospital, Boston, the non-physician service survives but

required additional physicians for supervision (9). It was noted that mid-level providers required significant time before they became autonomous and efficient in caring highly complex patients. Even after up to two years of on-the-job training, mid-levels required significant supervision.

It is interesting to note that in institutions where non-physician providers struggled to strive as a part of hospital medicine, they continue to be successful in other specialized areas (9). Success of mid-level providers in ambulatory medicine patients, especially surgical sub-specialties, could be due to less diagnostic and therapeutic complexity, as well as protocol-driven care. Hospital medicine patients are more complex and often require more intense and dedicated training for NP or PA providers. As a result of this lack of confidence, many non-physician hospitalists are left to work as a scribe for medical records, social workers, or hospitalists for very stable patients. This is obviously a waste of talent and underutilization of a capable work force.

Although there is no convincing evidence, one of the strategies for addressing this issue is formal training of non-physician providers committed to a career as a hospitalist. The formal residency training in hospital medicine will help PA/NP hospitalists to develop critical clinical and procedural skills, which are considered essential for modern hospitalists; learn how to be an effective part of a multi-disciplinary team; conduct clinical research; focus on performance improvement; and gain more clinical experience.

The concept of a residency program for mid-level providers is not new. Heinrich *et al.* published an article in March 1980 about their successful experience as establishing Physician Assistant Surgical Residency Training Program. It allows the PAs to gain both clinical and theoretical knowledge which normally would require years of on-job training (10). Dupher and Choksi published a study of a two-year PA post-graduate training program in hospital medicine (11). The training program was designed similarly to a traditional medical residency program involving direct patient care rotating on the general medical floor and intensive care units, along with didactics. When compared with a traditional three-year medical residency at the same institution, the PA training program had a similar number of adverse events, readmissions and patient satisfaction scores. A formal 12-month long postgraduate training program for physician assistants has been established at the Mayo Clinic in Arizona (12). The curriculum is based on the Society of Hospital Medicine's (SHM) core competencies. Currently there are residency training programs in different specialties registered with the Association of Postgraduate PA Program (APPAP) and three training programs are focused more on hospital medicine (13).

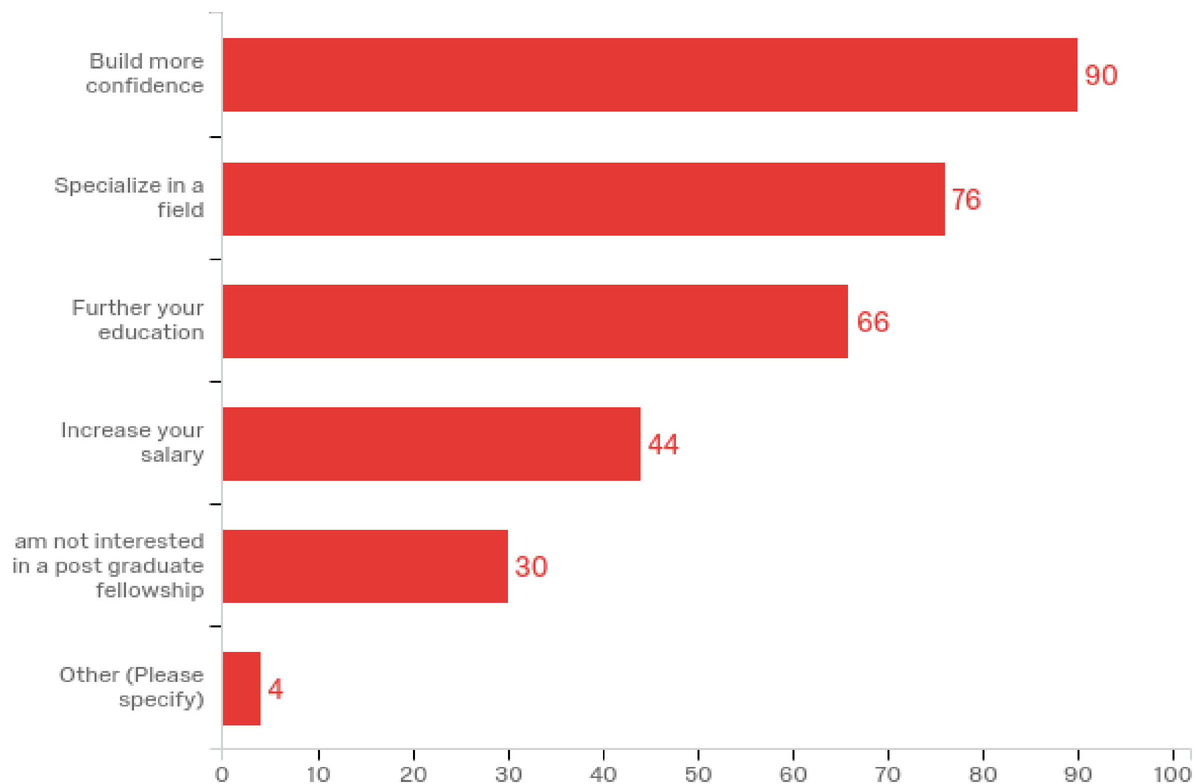
In the beginning of 2014, we at the Division of Hospital Medicine, University of Missouri Columbia, needed non-physician providers to support our hospitalist service. We had experience working with NPs/PAs, as there were five physician assistants already working within the division. We were aware of the pros and cons of having non-physicians working as hospitalists. There were some obvious advantages like NPs/PAs being first on-call, sharing the on-call burden and taking care of less complicated patients. We also knew non-physician providers' abilities and capacity to work as an independent provider could vary greatly. Very few mid-levels with the right skill set were readily available. Those experienced mid-levels were difficult to find and were expensive. We also knew that it would take significant time for on-the-job training for any inexperienced mid-level and it may not be cost effective.

We made a difficult decision to start a fellowship training program for mid-levels (14). The fellowship program curriculum was made carefully according to SHM's core competencies. We decided to take two candidates every year for the program. Their salary was set equal to a PGY-4 internal medicine resident, with similar benefits. We are now in the third year of running the program successfully. Successful candidates graduate by completing six months of medicine

floor rotations, two to eight weeks of electives in cardiology, intensive care, palliative care, infectious diseases, procedure team, peri-operative and consultative medicine with direct one-to-one supervision by faculty. Additionally, they also complete a two-week rotation in the Office of Clinical Effectiveness under the supervision of the chief quality officer where they learn how to conduct a quality improvement (QI) project. The QI rotation is followed up with the completion of one QI project each and presentation to department. During their medicine floor rotations, they have to attend mandatory didactics including morning reports, noon conferences, journal club and grand rounds along with internal medicine residents. After a year of extensive training, physician assistant fellows are confident, knowledgeable and well-rounded physician assistant hospitalists who are able to be part of any hospitalist team. Our graduates have already secured jobs in well-respected institutes including our own division and they have been offered 10 to 15 percent higher salary than their peers. As a faculty of both the internal medicine residency and PA residency, I have not seen any major differences in quality of care delivered by both, although we have not yet collected sufficient objective data for analysis.

Recently we did a survey involving all students of Physician Assistant schools across Missouri and we found a great interest in mid-levels for residency training. Out of 134 respondents of survey, 86.75% students were aware of mid-level fellowships and 70% of students were thinking about doing fellowship training.

What interests you in post graduate fellowship programs?



In conclusion, although the convincing evidence is lacking, the residency training in hospital medicine for non-physician providers has potential for long-term benefit such as successful recruitment and retention, improvement in clinical care delivery, new clinical and educational program development and possible national recognition beyond the benefit to the parent institution.

Notes

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