



Journal of Regional Medical Campuses

National Residency Matching Program (NRMP) results for students at the Main campus versus the Regional Medical Campus: A 6-year Comparison at a Single Medical School

Jeffrey G. Wong, MD; Michael P. Flanagan, MD; Kristen M. Horn

DOI: <https://doi.org/10.24926/jrnc.v3i1.2971>

Journal of Regional Medical Campuses, Vol. 3, Issue 1 (2020)

z.umn.edu/JRMC

All work in JRMC is licensed under CC BY-NC



National Residency Matching Program (NRMP) results for students at the Main campus versus the Regional Medical Campus: A 6-year Comparison at a Single Medical School

Jeffrey G. Wong, MD; Michael P. Flanagan, MD; Kristen M. Horn

Abstract

Introduction:

Anecdotally, some students and faculty members alike have at times expressed concern that medical students who train at Regional Medical Campuses (RMC) will be disadvantaged in the National Residency Matching Program (NRMP), and may not achieve the same level of success as their peers at the main academic medical center. This project was undertaken to examine the validity of these concerns at the RMC affiliated with the Penn State Hershey College of Medicine (PSCOM).

Methods:

Results from the annual NRMP process were analyzed over a 6-year period (2014-2019), for both the main Hershey Campus (HC) and University Park Regional Campus (UPRC). Comparisons included the types of residencies selected, percent of students matching in-state, percent matching in primary care specialties, and number having to participate in the supplemental offer and acceptance process (SOAP). No attempt was made to control for baseline student variables and all results were expressed as simple percentages.

Results:

During the study period, 819 students graduated from PSCOM (723 - Hershey Campus, 96 - UPRC). In total, 28 of the 723 Hershey Campus graduates (3.9%) and one of the 96 UPRC graduates (1%) went through the SOAP process. A higher percentage of UPRC students matched into primary care specialties (44.8% (UPRC) vs 33.2% (Hershey Campus), defined as Medicine, Pediatrics, Family Medicine and Obstetrics-Gynecology. Additionally, more UPRC students matched within the state of Pennsylvania for their residency (34.4% - UPRC vs 31.7% - Hershey Campus). Finally, UPRC students were also successful in matching into highly competitive specialties, including ophthalmology, orthopedic surgery, otolaryngology, diagnostic radiology, and neurosurgery.

Conclusions:

Concerns frequently expressed regarding a successful match for students studying at regional medical campuses are not supported by our findings. Compared to their main campus peers, the UPRC medical students have been equally successful in the NRMP match

Introduction

Regional medical campuses (RMCs) are becoming an increasingly important part of many medical schools in the United States and Canada. Prior to 1970, there were 4 registered RMCs in all of the United States and Canada. In the 5 decades since then, there has been an uneven but substantial increase in the number of RMCs. In the decade of 1970-1979, 35 RMCs were born; from 1980-1989, only 1; from 1990-1999 RMCs there were 4; in 2000-2009, there were 44, and in 2010-2019 there were 26 additional new RMCs founded, for a total of 120.¹ The large growth since the 2000 millennium may have in part been due to a response to the AAMC's president at the time, Jordan J. Cohen, and his

call for a 30% increase in medical schools to address anticipated physician shortages.² The Washington, Wyoming, Alaska, Montana, Idaho (WWAMI) program³ and the campuses associated with Michigan State University⁴ are examples of the regional campus response to this call. At present, there are a total of 107 RMCs in the United States and 13 in Canada. In the US, 52 medical schools have at least one regional medical campus (34%) and 9 Canadian schools have at least one RMC (53%). This large growth in the past 20 years has led to an increase in the total number of medical students who perform at least a portion of their training at these RMCs (presently estimated at over 6 800 students).¹

Jeffrey G. Wong, MD; Penn State College of Medicine, University Park Regional Campus, Office of Medical Education
State College, PA

Michael P. Flanagan, MD; Penn State College of Medicine, University Park Regional Campus, Office of Medical Education
State College, PA

Kristen M. Horn; Penn State College of Medicine, University Park Regional Campus, Office of Medical Education
State College, PA



Despite the growing number of medical students receiving their training at RMC's, there persists a strong parochial attitude by many in academic medicine that the training in such sites may be "substandard" when compared to the main medical campus. Anecdotal reports suggest that attitudes of some faculty and medical students, whose focus is at the central "Academic Medical Center" (AMC) campus, are generally unfavorable toward the training that students receive at the RMC. They may at times opine that the educational experience at the community-based RMC de-emphasizes the academic experience, results in a more limited patient care experience, and overall provides training that is of lesser quality than the experience delivered at the AMC.⁵

In contradistinction to these prevailing attitudes, educational reports from RMCs suggest quite the opposite picture. Medical students who train at RMCs frequently comment on the close-knit personalized attention that they receive from their community-based clinical teachers.⁶ This close-knit relationship between teacher and learner that is so often fostered at the RMC has resulted in meaningful feedback for improving performance and often more personalized letters-of-recommendation for students training at the RMC. Additionally, the routine amount of "hands-on" learning that medical students experience at the RMC often exceeds that of their peers who train at the AMCs – there are simply fewer learners competing for the clinical opportunities provided in the care of patients. Finally, the idea of training medical students in a location more similar to a facility where they may ultimately practice medicine has become increasingly valued.

Medical school training, however, is not an end goal – it is merely a step in the long process of developing the clinical skills necessary for the competent and compassionate care of patients. For US-trained medical students, both from AMCs as well as RMCs, the National Residency Matching Program (NRMP) annually matches them into residency positions in most all of the medical disciplines. Given that successfully obtaining a residency position is the overarching goal for medical students, we sought to objectively discover how medical school graduates from a single college of medicine (both the medical school's RMC and AMC) compared in their NRMP outcomes.

Setting and Methods

In 1965, the Penn State College of Medicine (PSCOM) was founded in Hershey, PA. The town of Hershey is 100 miles southeast of the main campus of Penn State University, located in State College, PA. In 2011, a RMC was established in State College and the founding dean, E. Eugene Marsh, M.D., helped to establish community-based clinical education. A small cohort of students, who were initially admitted to the Hershey campus, were invited to apply to University Park Campus in State College, PA and form the inaugural class of the new regional medical campus. The first

group of medical students arrived in 2012 and graduated in 2014.⁷ Since then, the University Park Regional Campus (UPRC) of the Penn State College of Medicine has matched students in the 6 subsequent years of the NRMP.

The annual reports for PSCOM from the NRMP were analyzed for the years 2014-2019, inclusive. Students who participated in the military matches were excluded from this analysis. The frequency of students matching into a medical specialty was tabulated for each Penn State graduate over the 6-year period. There was a distinction made between those students who performed their clinical rotations at the UPRC in State College, PA and those who were at the central medical school campus in Hershey, PA. The residency disciplines were categorized according to NRMP definitions. Additionally, the total number of students going into primary care specialties (defined as Family Medicine, Internal Medicine, Medicine-Pediatrics, and Pediatrics specialties) was tabulated. Moreover, the residency location (within or outside the state of Pennsylvania) was noted for each student. Finally, a review on whether any particular student remained "unmatched" after the initial process, and thus was required to go through the Supplemental Offer and Acceptance Process (SOAP), was tabulated. Since there was no attempt to control for factors on why students choose the Regional Campus over the Main campus and vice-versa, this descriptive study sought only to express findings in terms of raw percentages of the whole for the respective campuses (University Park or Hershey).

Results

The relative distribution of students matching into the various specialties is illustrated in Table 1. The total raw frequency of students matching into a specialty is followed by the percentage of students noted in parentheses. For the 6 graduating classes of medical students, there were 723 students who performed their clinical work at Hershey (387 [53.5%] women, and 336 [46.5%] men) and 96 students who performed their clinical work at the UPRC (52 [54.5%] women and 44[45.5%] men) for a total number of graduates of 819. Based on raw percentages, the students who completed clinical rotations at the UPRC were more likely to choose Primary Care Specialties [44.8% (UPRC) versus 33.2% (Hershey)]. Also, based on raw percentages, they were slightly more likely to stay within the State of Pennsylvania for their residency [34.4% (UPRC) versus 31.7% (Hershey)]. While our observation is that the UPRC students entered Primary Care Specialties more frequently, there were also students who successfully matched into some of the most highly competitive specialties,⁸ including ophthalmology, orthopedic surgery, otolaryngology, diagnostic radiology, and neurosurgery. In total, 28 of the 723 Hershey graduates (3.9%) and one of the 96 UPRC graduates (1%) went through the SOAP process.

Table 2
Match Results for Graduating Years 2014-2019 (%)

Residency Discipline	Hershey	UPRC
Alternative Career	3 (0.4) *	
Anesthesiology	65 (9.0)	2 (2.0)
Child Neurology	1 (0.1)	2 (2.0)
Dermatology	22 (3.0)	
Diagnostic Radiology	30 (4.1)	4 (4.2)
Emergency Medicine	54 (7.5)	10 (10.4)
FAMILY MEDICINE (Prim Care)	52 (7.2)	22 (23.0)
INTERNAL MEDICINE (Prim Care)	114 (15.8)	12 (12.5)
Interventional Radiology	9 (1.2)	
Medicine-Emergency Medicine	1 (0.1)	
MEDICINE-PEDS (Prim Care)	18 (2.5)	
Medicine – Preliminary	3 (1.0)	1 (1.0)
Neurology	33 (4.6)	2 (2.0)
Neurological Surgery	5 (0.7)	1 (1.0)
Obstetrics-Gynecology	57 (7.9)	11 (11.4)
Ophthalmology	20 (2.8)	2 (2.0)
Orthopedic Surgery	39 (5.4)	1 (1.0)
Otolaryngology	11 (1.5)	1 (1.0)
Pathology	6 (0.8)	4 (4.2)
PEDIATRICS (Prim Care)	67 (9.3)	9 (9.4)
Pediatrics-Psychiatry	1 (0.1)	
Pediatric Anesthesiology	1 (0.1)	
Physical Medicine and Rehabilitation	20 (2.8)	1 (1.0)
Plastic Surgery	10 (1.4)	
Psychiatry	28 (3.9)	6 (6.2)
Radiation Oncology	5 (0.7)	
Research	3 (0.5)	
Surgery – General	29 (4.0)	4 (4.2)
Surgery – Preliminary	6 (0.8)	1 (1.0)
Thoracic Surgery	1 (0.1)	
Transitional	3 (0.4)	
Urology	6 (0.8)	
TOTALS	723	96

*Alternative Career included research or non-patient care careers after medical school

Discussion

Since the report of Abraham Flexner in the early 1900s, the general expectation was that the bulk of medical students' training ought to be performed at the AMC with its emphasis on expertise in the biomedical sciences.⁹ However, preparing students for work in the 21st century goes beyond the biomedical sciences and present-day students should be well-versed in the science of the community health system in which their patients live. RMCs, by the nature of their setting, are more likely to have their medical learners engaged within the nearby community and participate in health advocacy than those at AMCs.¹⁰ Providing medical training in a community where most patients actually live may provide learners with a more authentic experience than one wholly derived from a tertiary or quaternary care center. In our study, more of the RMC students selected primary care specialties (44.8% UPRC vs. 33.2% Hershey Campus). Other investigators have noted that graduates of RMCs are somewhat more likely to go into primary care specialties as well.¹¹ A potentially erroneous conclusion that could be drawn from this finding is that students who train at RMCs

can “only go into primary care” and that they will be at a disadvantage when applying for residency positions in non-primary care specialties. Our results suggest that the student's ability to match into other, non-primary care specialties, even highly competitive ones, is not impaired by training at the RMC. Whether or not this finding is generalizable to other medical schools and their RMC-trained students is an open question and could be a logical extension of this initial work. Other potential areas of study include documenting the value of the close-knit relationships between teachers and learners that frequently develop at the RMC and whether or not this close relationship translates into stronger letters of recommendation.

Certainly, the issue of student affairs support and career advising can play an important role in the residency choices of medical students. One reference suggests that the geographical distance between students and advisors is one of the key differences in career advising that often exists between main and regional campuses.¹² On our Regional campus, one of the authors (MPF) serves as the career advisor on-site and so this concern is mitigated. Also, the UP Regional campus students had full access to the AAMC Careers in Medicine website¹³ as did the students at the main academic campus.

One further positive aspect of training at a RMC is in the potential for trainees to return back to the RMC catchment area. These areas are often physician workforce shortage areas and the rural communities located there are frequently struggling to attract and retain physicians.⁶ Studies looking at Graduate Medical Education suggest that many residents end up practicing close to where they trained.¹⁴ The experience with medical students training at RMCs is less well-studied, but is another area ripe for investigation.

Conclusions

A comparison of NRMP match results over a 6-year period (2014-2019) between the students who performed core clinical rotations at the Academic Medical Center versus the Regional Medical Campus showed that while the RMC cohort tended to match into primary care specialties at a higher rate than their AMC counterparts, they had no appreciable differences in matching into non-primary care and other highly competitive specialties. Our manuscript supports the notion that there are strengths at both campus that should be recognized and that can impact our learners' overall success.

References

1. AAMC 2019 Group on Regional Medical Campuses Business Meeting presentation, Spokane, WA, April 2019

2. Sabharwal R, Salsberg E. Projections of Future Medical School Enrollment. Analysis in Brief publication of the AAMC; 2008; 8(3): 1-2.
3. Norris TE, Coombs JB, House P, et al. Regional Solutions to the Physician Workforce Shortage: WWAMI Experience. *Academic Medicine* 2006; 81: 857-862. DOI: 10.1097/01.ACM.0000238105.96684.2f
4. Phillips JP, Wendling AL, Fahey CA, Mavis BE. The Effect of a Community-Based Medical School on the State and Local Workforce. *Academic Medicine* 2018; 93(2): 306-313. DOI: 10.1097/ACM.0000000000001823
5. Penner C. A Tale of Two Campuses: Lessons Learned in Establishing a Satellite Campus. *Medical Teacher* 2018; 45(5): 527-528. DOI: 10.1080/0142159X.2018.1439577to
6. Crump WJ, Fricker RS, Ziegler C, et al. Rural Track Training Based at a Regional Campus: Equivalency of Training, Residency Choice, and Practice Location. *Academic Medicine* 2013; 88(8): 1120-1128. DOI: 10.1097/ACM.0b013e31829a3df0
7. Marsh, EE, Flanagan, MP. Penn State College of Medicine, University Park Campus in The Regional Medical Campus: A Resource for Faculty, Staff and Learners (M. Flanagan Editor in Chief) 2018 Atlantic Publishing Group, Inc. Ocala, FL 244-250.
8. National Resident Matching Program, Results and Data: 2019 Main Residency Match®. National Resident Matching Program, Washington, DC. 2019
9. Flexner A 1910 Medical Education in the United States and Canada. The Carnegie Foundation New York, NY
10. Belkowitz J, Sanders LM, Zhang C, et al. Teaching Health Advocacy to Medical Students: A Comparison Study. *J Public Health Management Practice* 2014; 20(6): E10-E19. DOI: 10.1097/PHH.0000000000000031
11. Liaw W, Cheifetz C, Luangkhot s, et al. Match Rates into Family Medicine among Regional Medical Campus Graduates, 2007-2009. *J Am Board Fam Med* 2012; 25: 894-907. DOI: 10.3122/jabfm.2012.06.110336
12. Linder JE, Underkofler K . Career Counseling and Mentoring at a Regional Medical Campus in The Regional Medical Campus: A Resource for Faculty, Staff and Learners (M Flanagan Editor in Chief) 2018 Atlantic Publishing Group. Inc. Ocala, F 149.154.
13. <https://www.aamc.org/cim/> Accessed March 23, 2020.
14. Cowley DS, Keeble T, Jones J, et al. Educating Psychiatry Residents to Practice in Smaller Communities: A Regional Residency Track Model. *Academic Psychiatry* 2016; 40: 846-849. DOI 10.1007/s40596-016-0558-3