

# University- Versus Community-Based Residency Programs: Does the Distinction Matter?

J. Gene Chen, MD, MHS

Arwa Saidi, MB, BCh, MEd

Scott Rivkees, MD

Nicole Paradise Black, MD, MEd

I am the program director of a pediatrics residency. My program, formerly a community-based residency, recently entered into a partnership with a university that uses a collaborative model in which individual programs maintain separate identities but share resources.<sup>1</sup> During our annual update for the Accreditation Council for Graduate Medical Education, I was faced with the following question: Is my program a university-based or a community-based residency? Or is it a hybrid?

The program demonstrates characteristics of both. Our institution is a not-for-profit, tertiary care, freestanding children's hospital with a Level 1 pediatric trauma center and neonatal, pediatrics, and pediatrics cardiovascular intensive care units. The institution provides resource-intensive services such as extracorporeal membrane oxygenation, is well-represented in pediatrics subspecialties, and serves as a major referral center in a rapidly growing state. Academically, it has a "major" teaching designation from the American Hospital Association,<sup>2</sup> includes multiple residencies and fellowships in both medical and surgical fields, and serves as the primary rotation site for 2 medical schools. The mission statement of the organization is "to improve the health and quality of life of the individuals and communities we serve."<sup>3</sup> The organization has won numerous national awards for patient care, and provides many outreach services to the local population. Many of our graduates become community pediatricians in the surrounding area.

For the first time in 40 years of accreditation, the title of the program now includes the name of a university. Does this change the nature of the program?

## Perceived Differences Between the 2 Models

Many medical schools train their students in both university and community settings, and the education seems comparable. Objective structured clinical

examination scores show no differences between students at university and community sites.<sup>4,5</sup> National Board of Medical Examiners (NBME) scores and other end-of-course testing for clerkships in pediatrics,<sup>6</sup> surgery,<sup>7</sup> emergency medicine,<sup>8</sup> and obstetrics and gynecology<sup>9</sup> also demonstrate no differences.

One medical school demonstrated a higher failure rate on the pediatrics NBME examination among medical students who had an ambulatory experience in a community setting compared to students in a university setting, but attributed the difference to structured learning experiences that occurred more often in the university setting.<sup>10</sup> Conversely, medical students rotating in community-based settings have reported more patients seen and procedures performed, and higher ratings of attending physicians in emergency medicine,<sup>11</sup> more continuity visits and procedures in family medicine,<sup>12</sup> and higher opinions of learning experiences in pediatrics.<sup>6</sup>

In graduate medical education (GME), a key outcome is graduate performance on board examinations. In pediatrics, the Fellowship and Residency Electronic Interactive Database Access System (FREIDA) lists 197 residencies in the United States and characterizes them as university-based, community-based/university-affiliated, community-based, and military.<sup>13</sup> On the American Board of Pediatrics General Pediatrics Certifying Examination, mean pass rates for first-time test takers from 2013 to 2015 were 85.9% for university-based residencies and 79.0% for all other types ( $t = 3.72, P < .001$ ).<sup>14</sup> In surgery, university-based programs also outperformed community-based programs on the American Board of Surgery Qualifying Examination and Certifying Examination.<sup>15</sup> Proposed contributing factors to the success of university-based programs on board pass rates include the depth of patient exposure, the quality of the curriculum, the strength of the faculty, and the ability to recruit more knowledgeable residents due to affiliation with more prestigious institutions.<sup>16</sup> Accordingly, 71% of US medical school graduates cite "academic medical center programs" as a factor in selecting residency programs during the application process.<sup>17</sup>

DOI: <http://dx.doi.org/10.4300/JGME-D-16-00579.1>

The advantages to community-based residency programs may be less tangible, but more relevant to the current clinical environment. Community hospitals generally are smaller, but closely aligned with the community.<sup>18</sup> Although patient mix is often cited as an advantage in university-based programs, community settings can certainly provide excellent clinical exposure. One study<sup>19</sup> showed that family medicine residents saw similar numbers of patients and a breadth and depth of diagnoses in a university and a community hospital, while another study<sup>20</sup> demonstrated that pediatrics residents assigned to continuity clinics in community-based ambulatory settings saw a higher number of patients, including more patients with chronic illnesses, and more patients seeking health supervision, compared to residents in a hospital-based practice.

Residents gain practical experience in community settings where they are likely to practice following training.<sup>21</sup> Clinicians in community hospitals and ambulatory practices certainly have responsibility for teaching, and learners often include residents and medical students.<sup>22</sup> Future research examining outcomes for graduates could elucidate the long-term advantages of both university- and community-based training models.

Community-based residency programs may be in a better position to address the projected shortfall of 33 000 primary care physicians in the United States by 2035.<sup>23</sup> In the paradigm of community-oriented medical education, learners gain medical knowledge of different social and clinical environments in a community setting.<sup>24</sup> There is a particular shortage of primary care physicians in rural areas, and several medical schools have been created specifically to address this deficiency, with 53% to 64% of their graduates eventually practicing in rural communities.<sup>25</sup> Other schools have implemented required rural curricula.<sup>25</sup>

In GME, characteristics of residencies that increase the likelihood graduates will practice in a rural setting include having a rural location, a rural mission, more emphasis on procedures, more training occur in rural settings,<sup>26</sup> and having a rural track.<sup>27</sup> In surgery, educators have developed initiatives such as a 1-year clinical fellowship in surgery targeted to rural practice.<sup>28</sup> As more research is done on the retention of these graduates in primary care, we can better evaluate the impact of community-based medical schools and residencies on this shortfall.

### Benefits of Combining Attributes of Both Models

Educators realize the benefits of combining attributes of both training models. Exposure to community

settings during residency is associated with anticipated involvement in the community at graduation.<sup>29</sup> An initiative targeted toward pediatrics training in an urban setting sought to enhance resident participation in community child health activities, and the 5-year follow-up demonstrated that more graduates were involved in community pediatrics compared to a control group.<sup>30</sup> University-based pediatrics programs often have residents rotate at community-oriented sites,<sup>31</sup> producing the interesting finding that there are now more than twice as many hospitals with pediatrics residents as pediatrics residency programs.<sup>22</sup> In surgery, many community programs have their residents complete specialty rotations not available at their home institution (burn surgery, transplant surgery, and pediatric surgery) at university hospitals.<sup>28</sup> Collaborations and mergers between residencies in pediatrics,<sup>1,32</sup> surgery,<sup>33</sup> psychiatry,<sup>34</sup> and other specialties<sup>35</sup> have become more prevalent.

After exploring these attributes, I designated my program as “community-based/university-affiliated.” I also concluded that the distinction may not matter. As institutions merge and health care systems consolidate, the landscape of GME will become more homogeneous, and eventually the program designations of “university-based” and “community-based” may cease to exist.

### References

1. Carr AM, Irigoyen M, Arbeter AM, et al. A collaborative model for inpatient training in a small pediatric residency program. *J Grad Med Educ.* 2011;3(3):383–386.
2. American Hospital Association Data Viewer. <http://www.ahadataviewer.com>. Accessed May 2, 2017.
3. Orlando Health. Mission, vision, and values. <http://www.orlandohealth.com/about-us/corporate-information/mission-vision-and-values>. Accessed May 2, 2017.
4. Carney PA, Ogrinc G, Harwood BG, et al. The influence of teaching setting on medical students' clinical skills development: is the academic medical center the “gold standard”? *Acad Med.* 2005;80(12):1153–1158.
5. Satran L, Harris IB, Allen S, et al. Hospital-based versus community-based clinical education: comparing performances and course evaluations by students in their second-year pediatrics rotation. *Acad Med.* 1993;68(5):380–382.
6. McCurdy FA, Beck GL, Kollath JP, et al. Pediatric clerkship experience and performance in the Nebraska Education Consortium: a community vs university

- comparison. *Arch Pediatr Adolesc Med.* 1999;153(9):989–994.
7. Williams M, Ambrose M, Carlin AM, et al. Evaluation of academic and community surgery clerkships at a Midwestern medical school. *J Surg Res.* 2004;116(1):11–13.
  8. Kroot LJ, Barlow W, Murphy-Spencer A. Comparison and evaluation of the clinical experience of fourth-year medical students in a mandatory emergency medicine clerkship at university and community hospitals. *Med Teach.* 2001;23(3):310–312.
  9. Myles TD. Obstetrics and gynecology final examination scores at university and community hospitals. A comparison. *J Reprod Med.* 2001;46(4):371–375.
  10. Malloy MH, Speer A. A comparison of performance between third-year students completing a pediatric ambulatory rotation on campus versus in the community. *Arch Pediatr Adolesc Med.* 1998;152(4):397–401.
  11. deLahunta EA, Bazarian J. University and community hospital medical student emergency medicine clerkship experiences. *Acad Emerg Med.* 1998;5(4):343–346.
  12. Carney PA, Eliassen MS, Pipas CF, et al. Ambulatory care education: how do academic medical centers, affiliated residency teaching sites, and community-based practices compare? *Acad Med.* 2004;79(1):69–77.
  13. American Medical Association. FREIDA online. <http://www.ama-assn.org/ama/pub/education-careers/graduate-medical-education/freida-online.page>. Accessed May 2, 2017.
  14. The American Board of Pediatrics. Exam pass rates. <https://www.abp.org/content/exam-pass-rates>. Accessed May 2, 2017.
  15. Falcone JL, Charles AG. Military and academic programs outperform community programs on the American Board of Surgery Examinations. *J Surg Educ.* 2013;70(5):613–617.
  16. Falcone JL. Compliance on the American Board of Pediatrics certifying examination and the importance of location and size on pass rates. *Clin Pediatr.* 2012;51(5):483–489.
  17. The Match. 2015 NRMP applicant survey. <http://www.nrmp.org/new-2015-nrmp-applicant-survey-available>. Accessed May 2, 2017.
  18. Singh S, Purohit T, Aoun E, et al. Comparison of the outcomes of endoscopic ultrasound based on community hospital versus tertiary academic center settings. *Dig Dis Sci.* 2014;59(8):1925–1930.
  19. Zoorob R, Malpani V, Malpani S. Adult inpatient training for a family practice residency: a university versus community-based setting. *Fam Med.* 2002;34(7):518–521.
  20. Recchia KC, Petros TM, Spooner SA, et al. Implementation of the community outpatient practice experience in a large pediatric residency program. *Pediatrics.* 1995;96(1):90–98.
  21. Mohsin R. Performance of clinical clerks doing paediatric rotations in a community hospital versus a university hospital. *Paediatr Child Health.* 2007;12(9):761–764.
  22. Roberts KB, Brown J, Quinonez RA, et al. Institutions and individuals: what makes a hospitalist “academic”? *Hosp Pediatr.* 2014;4(5):326–327.
  23. Petterson SM, Liaw WR, Tran C, et al. Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *Ann Fam Med.* 2015;13(2):107–114.
  24. Howe A, Ives G. Does community-based experience alter career preference? New evidence from a prospective longitudinal cohort study of undergraduate medical students. *Med Educ.* 2001;35(4):391–397.
  25. Bland CJ, Meurer LN, Maldonado G. Determinants of primary care specialty choice: a non-statistical meta-analysis of the literature. *Acad Med.* 1995;70(7):620–641.
  26. Bowman RC, Penrod JD. Family practice residency programs and the graduation of rural family physicians. *Fam Med.* 1998;30(4):288–292.
  27. Rosenthal TC, McGuigan MH, Anderson G. Rural residency tracks in family practice: graduate outcomes. *Fam Med.* 2000;32(3):174–177.
  28. Moesinger R, Hill B. Establishing a rural surgery training program: a large community hospital, expert subspecialty faculty, specific goals and objectives in each subspecialty, and an academic environment lay a foundation. *J Surg Educ.* 2009;66(2):106–112.
  29. Goldshore MA, Solomon BS, Downs SM, et al. Residency exposures and anticipated future involvement in community settings. *Acad Pediatr.* 2014;14(4):341–347.
  30. Minkovitz CS, Goldshore M, Solomon BS, et al. Five-year follow-up of community pediatrics training initiative. *Pediatrics.* 2014;134(1):83–90.
  31. Lovejoy FH, Nathan DG, Zuckerman BS, et al. The merger of two pediatric residency programs: lessons learned. *J Pediatr.* 2008;153(6):731–732.
  32. Cora-Bramble D, Joseph J, Jain S, et al. A cross-cultural pediatric residency program merger. *Acad Med.* 2006;81(12):1108–1114.
  33. Mahmoud A, Galante J, Wisner D, et al. Small community hospitals programs affiliation with university programs; “lessons learned” in 28-year successful affiliation. *J Surg Educ.* 2013;70(5):636–639.
  34. Tasman A, Riba M. Strategic issues for the successful merger of residency training programs. *Hosp Commun Psychiatry.* 1993;44(10):981–985.
  35. Cohen JR, Dowling M, Gallagher JS. The trials, tribulations and relative success of the ongoing clinical

merger of two large academic hospital systems. *Acad Med.* 2001;76(7):675–683.



**J. Gene Chen, MD, MHS**, is Clinical Assistant Professor, University of Florida College of Medicine, Program Director, University of Florida Pediatric Residency Program at Orlando Health, and Faculty, Pediatric Critical Care Medicine, Arnold Palmer Hospital for Children; **Arwa Saidi, MB, BCh, MEd**, is Professor, University of Florida College of Medicine, Associate Program Director, University of Florida Pediatric Residency Program at Orlando Health and University of Florida Pediatric Residency Program, and

Director, Adult Congenital Heart Disease Program; **Scott Rivkees, MD**, is Professor, University of Florida College of Medicine, Chairman, Department of Pediatrics, University of Florida, Gainesville, and Academic Chairman, University of Florida Department of Pediatric Medical Education at Orlando Health; and **Nicole Paradise Black, MD, MEd**, is Clinical Associate Professor, University of Florida College of Medicine, Program Director, University of Florida Pediatric Residency Program, and Pediatric Hospitalist, University of Florida College of Medicine.

Corresponding author: J. Gene Chen, MD, MHS, University of Florida Pediatric Residency at Orlando Health, MP 336, 86 West Underwood Street, Suite 202, Orlando, FL 32806, 407.649.6876, gene.chen@orlandoregional.org