

# Teaching Health Center Graduate Medical Education Locations Predominantly Located in Federally Designated Underserved Areas

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## ABSTRACT

**Background** The Teaching Health Center Graduate Medical Education (THCGME) program is an Affordable Care Act funding initiative designed to expand primary care residency training in community-based ambulatory settings. Statute suggests, but does not require, training in underserved settings. Residents who train in underserved settings are more likely to go on to practice in similar settings, and graduates more often than not practice near where they have trained.

**Objective** The objective of this study was to describe and quantify federally designated clinical continuity training sites of the THCGME program.

**Methods** Geographic locations of the training sites were collected and characterized as Health Professional Shortage Area, Medically Underserved Area, Population, or rural areas, and were compared with the distribution of Centers for Medicare and Medicaid Services (CMS)-funded training positions.

**Results** More than half of the teaching health centers (57%) are located in states that are in the 4 quintiles with the lowest CMS-funded resident-to-population ratio. Of the 109 training sites identified, more than 70% are located in federally designated high-need areas.

**Conclusions** The THCGME program is a model that funds residency training in community-based ambulatory settings. Statute suggests, but does not explicitly require, that training take place in underserved settings. Because the majority of the 109 clinical training sites of the 60 funded programs in 2014–2015 are located in federally designated underserved locations, the THCGME program deserves further study as a model to improve primary care distribution into high-need communities.

## Introduction

It is well documented that there are insufficient numbers of primary care physicians who practice in less populated rural and underserved urban areas.<sup>1</sup> Residents who train in underserved settings tend to practice in similar settings, and residency graduates, more often than not, practice near where they train.<sup>2,3</sup> Efforts to utilize the existing graduate medical education funding to produce physicians to serve these populations have had little measurable impact.<sup>4–6</sup>

The Teaching Health Center Graduate Medical Education (THCGME) program, a 5-year Affordable Care Act payment program to expand the number of primary care and dental residents trained in community-based ambulatory settings,<sup>7</sup> has expanded primary care training. The THCGME residency positions in primary care and oral health have the potential to ameliorate the geographic maldistribution of primary care physicians nationally by locating

training in underserved sites.<sup>8</sup> Statute suggests, but does not require, that THCGME programs be located in underserved areas. Until now the location of clinical continuity training sites has not been available. The purpose of this study was to identify how many, and which, clinical continuity sites are located in federally designated underserved areas.

## Methods

Through an e-mail survey and telephone follow-up we contacted the 60 THCGME programs funded during the 2014–2015 academic year to ascertain the addresses of the community-based clinical continuity sites where residents train and provide primary care. Using ArcGIS and NAVTEQ databases (Esri, Redlands, CA), all sites were geocoded, and longitude and latitude coordinates were applied. Once the location was identified, a geographic spatial join was conducted using ArcGIS, identifying the sites that were within a Primary Care Health Professional Shortage Area (HPSA) or a Medically Underserved Area or Population (MUA/P). Rural areas were defined by US

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TABLE

Federal Designation of Teaching Health Center Graduate Medical Education Clinical Care Sites

| Designation                             | No. (%) |
|-----------------------------------------|---------|
| Current federal designation             | 77 (71) |
| Without current federal designation     | 32 (29) |
| <b>Single designation</b>               |         |
| Rural                                   | 14 (13) |
| MUA/P                                   | 64 (59) |
| HPSA                                    | 52 (48) |
| <b>Two or more designations</b>         |         |
| Both HPSA and MUA/P                     | 40 (37) |
| Both HPSA and rural                     | 13 (12) |
| Both rural and MUA/P                    | 12 (11) |
| HPSA, rural, and MUA/P                  | 12 (11) |
| Recent HPSA designation (2011)          | 12 (11) |
| <b>Total No. of clinical care sites</b> | 109     |

Abbreviations: MUA/P, Medically Underserved Area or Population; HPSA, Primary Care Health Professional Shortage Area.

Department of Agriculture and University of Washington Rural Urban Commuting Areas (RUCAs) at the ZIP code level. Additionally, we conducted a geospatial link-up with HPSAs from 2011 to see which sites were located in a HPSA prior to THCGME funding.

We used the HPSAs and MUA/Ps downloaded from the HRSA data warehouse in February 2015 to determine the shortage designation for each address. The 2013 RUCA codes used were based on 2010 US Census data.

The study was determined to be exempted as human subject research by the American Academy of Family Physicians Independent Review Board.

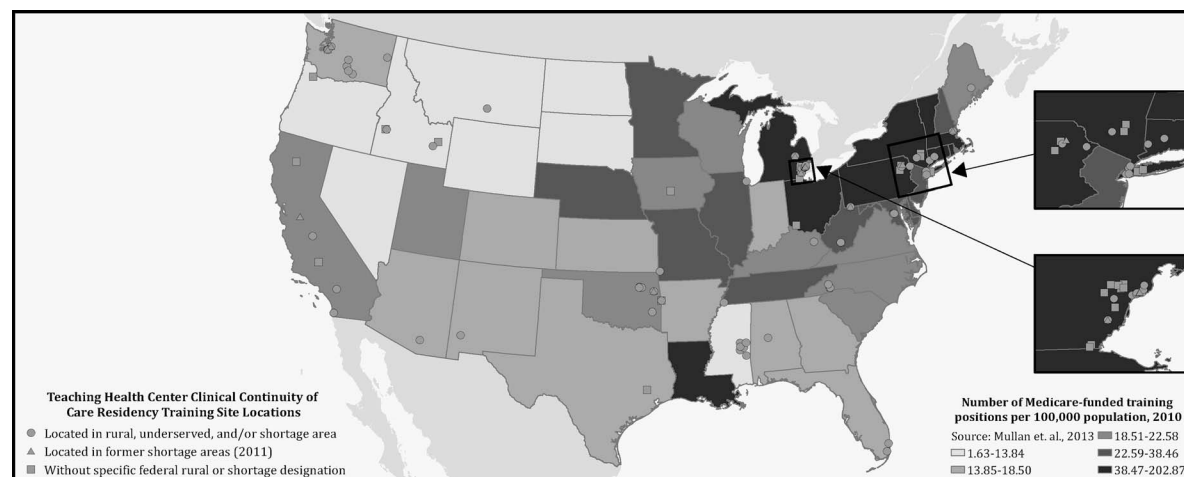
## Results

We received responses from all 60 programs. Collectively, programs submitted 109 clinical training addresses located in 27 states plus the District of Columbia, encompassing 58 counties across the nation. These facilities support residency programs for family medicine, internal medicine, geriatrics, obstetrics and gynecology, pediatrics, psychiatry, and dentistry. More than 70% of THC clinical continuity sites are located in a federally designated high-need area defined by 1 or more of the following: Primary Care HPSA, MUA/P, or rural area (TABLE). Forty sites are designated as both HPSA and MUA/P. Of the 109 sites, 57% are located in states that fall into the 4 lower quintiles of Centers for Medicare & Medicaid Services–funded resident-to-population ratio states,<sup>8</sup> including 3 of 8 in the lowest quintile, with only 1.6 to 13.84 residency slots per 100 000 population (FIGURE).

## Discussion

Three unique aspects of the THCGME program include residency sponsorship by an ambulatory community-based setting, funding that flows directly to the program instead of to large teaching hospitals, and the statutory suggestion that programs locate in settings such as community health centers or rural health clinics. Prior to this study, the available addresses were administrative locations of programs that are not necessarily the residencies' community patient care settings.

The geographic distribution of THCGME community settings indicates that the program may impact 2 of the major drivers of physician workforce distribu-



FIGURE

Teaching Health Center Graduate Medical Education Clinical Training Site Locations Illustrating State Level Medicare Supported Resident-to-Population Ratios

tion: funding priorities and sites of training. Early reports indicate that THCGME graduates are likely to practice in underserved and rural areas at 3 to 4 times the rate of traditional graduates, with almost half (45%) planning to practice in Federally Qualified Health Centers.<sup>9</sup> With the training of more than 550 residents during the year of study (2014–2015) and the anticipated growth rate to be more than 700 in 2015–2016,<sup>10</sup> the THCGME program may begin to approach the estimated need for an additional 2200 primary care graduates annually by 2020.<sup>11</sup>

A limitation of this analysis is the lack of specific information on the number of enrolled THCGME residents who are caring for patients at the identified sites. Due to variations among the programs and during the year and the percentage of time residents spend at specific locations, we were unable to obtain reliable replicable numbers of residents or percentages of time spent at sites; therefore, we are reporting only the number of funded programs. In addition, this study looks at current training, not where graduates will practice after completing residency or whether they will continue to practice primary care.

## Conclusion

The THCGME program funds residency training in community-based ambulatory settings. Statute suggests, but does not explicitly require, that training take place in underserved settings. Because the majority of the 109 clinical training sites of the 60 funded programs in 2014–2015 are located in federally designated underserved locations, the THCGME program deserves further study as a model to improve primary care distribution into high-need communities.

## References

- Petterson SM, Phillips RL Jr, Bazemore AW, Koinis GT. Unequal distribution of the US primary care workforce. *Am Fam Physician*. 2013;87(11):online.
- Phillips RL, Petterson S, Bazemore A. Do residents who train in safety net settings return for practice? *Acad Med*. 2013;88(12):1934–1940.
- Fagan EB, Finnegan SC, Bazemore AW, Gibbons CB, Petterson SM. Migration after family medicine residency: 56% of graduates practice within 100 miles of training. *Am Fam Physician*. 2013;88(10):704.
- Eden J, Berwick D, Wilensky G, eds; Committee on the Governance and Financing of Graduate Medical Education; Board of Health Care Services; Institute of Medicine. *Graduate Medical Education That Meets the Nation's Health Needs*. Washington, DC: The National Academies Press; 2014.
- Chen C, Petterson S, Phillips RL, Mullan F, Bazemore A, O'Donnell SD. Toward graduate medical education (GME) accountability: measuring the outcomes of GME institutions. *Acad Med*. 2013;88(9):1267–1280.
- Chen C, Xierali I, Piwnica-Worms K, Phillips R. The redistribution of graduate medical education positions in 2005 failed to boost primary care or rural training. *Health Aff (Millwood)*. 2013;32(1):102–110.
- Section 340H of the Public Health Service Act 42 USC 256h; Program of payments to teaching health centers that operate graduate medical education programs, as added by PL 111-148, 5508(c). <https://www.gpo.gov/fdsys/pkg/BILLS-111hr3590enr/pdf/BILLS-111hr3590enr.pdf>. Accessed February 3, 2016.
- Mullan F, Chen C, Steinmetz E. The geography of graduate medical education: imbalances signal need for new distribution policies. *Health Aff (Millwood)*. 2013;32(11):1914–1921.
- Geiger Gibson/RCHN Community Health Foundation Research Collaborative. Policy research brief 40. Teaching health centers: a promising approach for building primary care workforce for the 21st century. [http://publichealth.gwu.edu/pdf/eIR/GGRCHN\\_PolicyResearchBrief\\_40.pdf](http://publichealth.gwu.edu/pdf/eIR/GGRCHN_PolicyResearchBrief_40.pdf). Accessed January 27, 2016.
- Brown E, Klink K. Teaching health center GME funding instability threatens program viability. *Am Fam Physician*. 2015;91(3):168–169.
- Petterson SM, Liaw WR, Tran C, Bazemore AW. Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *Ann Fam Med*. 2015;13(2):107–114.



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