Children's Hospitals Graduate Medical Education Payment Program Evaluation

Academic Years 2018-2023

The Health Resources and Services Administration (HRSA) is the primary federal agency for improving health care to people who are geographically isolated or economically or medically vulnerable. HRSA programs help those in need of high-quality primary health care by supporting the training of health professionals – focusing on the geographical distribution of providers to areas where they are needed most.

The Children's Hospitals Graduate Medical Education Payment Program (CHGME) provides federal funds to the nation's freestanding children's hospitals to help maintain their graduate medical education programs. Funding supports the education and training of residents and enhances their ability to care for low-income patients.

This report summarizes the results of a retrospective evaluation of the CHGME program from Academic Year (AY) 2018-2023, which also includes a descriptive summary of accomplishments for those who received CHGME support during AY 2022-2023.

Key Findings for AY 2018-2023

- During this five-year period, the CHGME program trained between 11,649 and 15,860 residents and fellows per year, produced 9,194 new physicians, and provided nearly 7.1 million hours of patient care in primary care settings.
- CHGME-funded residents also provided care in underserved areas, including 25.8 million hours in medically underserved communities and 142,561 hours in rural areas.
- Children who received inpatient services from CHGME-funded reporting hospitals during this period resided in 3,229 counties across the United States and its territories, representing 99.6% of all counties. Of these counties, 29% were classified as low-employment, 26% high-poverty, 23% persistent child poverty, and 15% as low-education areas. These findings demonstrate that these hospitals have provided services to a substantial number of children from underserved communities across the country.
- CHGME alumni were more likely to work in a medically underserved and/or rural setting if they came from a rural background (29% vs. 17%) or from a disadvantaged background (27% vs. 17%) compared to those without these backgrounds.
- 60% of CHGME alumni for whom employment information was available chose to practice in the state where they trained, 5% higher than the national average of 55%.

How did the CHGME program perform in AY 2022-2023?

During AY 2022-2023, 59 CHGME-funded hospitals served as sponsoring institutions for 44 residency programs and 267 fellowship programs and additionally served as major participating sites for 680 additional residency and fellowship programs. Table 1 summarizes the number of programs and resident trainees who received CHGME support during AY 2022-2023. Trainees included:

- 6,146 pediatrics residents in general pediatrics and nine combined pediatrics programs.
- 3,163 pediatric medical subspecialists (including 235 child and adolescent psychiatry fellows).
- 375 pediatric surgical specialists.
- 5,666 adult medical and surgical specialists, such as family medicine residents who rotate through children's hospitals for pediatrics training.
- 510 dentistry residents, including 399 pediatric dentists and 17 pediatric orthodontists.

Table 1. Program and Resident Counts by Specialty, AY 2022-2023

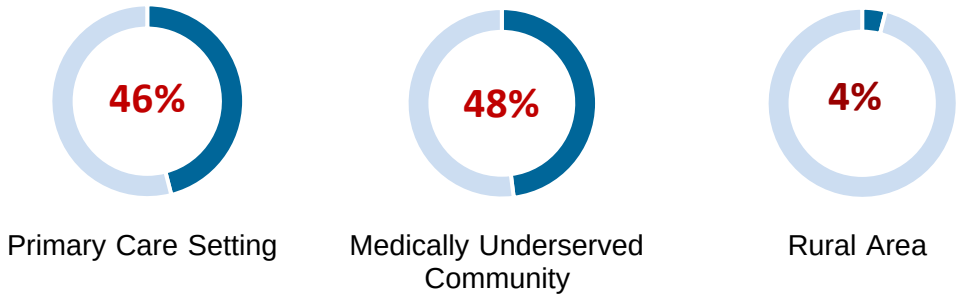
Specialty	Training Programs	Residents and Fellows	Program Completers
Pediatrics and Combined Pediatrics	98	6,146	1,953
Pediatric Medical Subspecialties	459	3,163	965
Pediatric Surgical Subspecialties	67	375	73
Adult Medical and Surgical Specialties	326	5,666	1,510
Pediatric and Adult Dentistry	41	510	205
Total	**991**	**15,860**	**4,706**

Note: Residents and fellows only include those supported by CHGME funds, not all who were trained in CHGME hospitals.

Clinical Training

CHGME training programs collaborated with 314 rotation sites to provide clinical training experiences for residents and fellows, of which 90% offered interprofessional team-based care training, 46% provided telehealth services, 43% integrated behavioral health into primary care settings, and 25% offered substance use treatment services. Figure 1 shows the percentage of sites that were in primary care settings, medically underserved communities,[1] or rural areas.

Figure 1. CHGME Clinical Training Settings, AY 2022-2023 (N=314)



Note: Clinical training settings are not mutually exclusive.

[1] A Medically Underserved Community (MUC) is a geographic location or population of individuals that is eligible for designation by a state and/or the federal government as a health professions shortage area, medically underserved area, and/or medically underserved population.

How many hours of patient care did CHGME-funded residents provide during AY 2018-2023?

During AY 2018-2023, CHGME funded training for 51% of all pediatricians and 53% of all pediatric specialists in the United States.[2] The program trained between 11,649 and 15,860 residents and fellows per year, produced 9,194 new physicians, and provided nearly 7.1 million hours of patient care in primary care settings.

CHGME residents also provided care for millions of children who may not otherwise have received it, including children from underserved areas, those from low-income families, and children who are vulnerable.

Providing Care for Children in Underserved Areas

During this five-year period, CHGME-funded residents provided care in underserved areas, including 25.8 million hours in medically underserved communities and 142,561 hours in rural areas (Table 2). Pediatrics and combined pediatrics residents comprised the majority of contact hours in both settings. Training in these settings is a crucial part of the CHGME program, enabling residents to develop the skills and knowledge that will assist them in caring for patients in underserved areas in the future.

Table 2. Patient Contact Hours by Setting and Specialty, AY 2018-2023

Specialty	Medically Underserved Community Contact Hours	Rural Contact Hours
Pediatrics and Combined Pediatrics	16,005,143	126,766
Pediatric Medical Subspecialties	5,837,439	6,730
Pediatric Surgical Subspecialties	569,848	1,277
Adult Medical and Surgical Specialties	2,329,300	7,788
Pediatric and Adult Dentistry	1,049,399	0
Total	**25,791,129**	**142,561**

Providing Care for Children of Low-Income Families

Of the 59 CHGME-supported hospitals, 51 are reporting hospitals, which serve as sponsoring institutions for residency and fellowship programs. These reporting hospitals recorded information on the number of patient visits and the payment method for each visit. During AY 2018-2023, reporting hospitals provided care during 81.1 million outpatient visits, 14.8 million emergency room (ER) visits, and 2.7 million inpatient visits (Table 3). Most visits in all three categories were funded by the Medicaid - Children's Health Insurance Program (CHIP), ranging from 47% for outpatient visits to 64% for ER visits. Between 1% and 3% of care was uncompensated charity care.

[2] Accreditation Council for Graduate Medical Education. *GME Data Resource Book Archives*. https://www.acgme.org/about/publications-and-resources/graduate-medical-education-data-resource-book/

Table 3. Total Emergency Room (ER), Inpatient, and Outpatient Visits for CHGME Reporting Hospitals, by Payment Method, AY 2018-2023 (N=51)

Payment Method	Outpatient Visits	ER Visits	Inpatient Discharges
Medicaid/CHIP	38,357,912 (47.3%)	9,428,504 (63.8%)	1,503,901 (55.2%)
Private Insurance	37,191,426 (45.9%)	4,054,670 (27.4%)	1,090,382 (40.0%)
Self-Pay	1,567,148 (1.9%)	488,653 (3.3%)	31,715 (1.2%)
Uncompensated	1,555,524 (1.9%)	374,964 (2.5%)	22,723 (0.8%)
Other Public[a]	1,981,793 (2.4%)	291,052 (2.0%)	65,027 (2.4%)
Medicare	444,485 (0.5%)	145,596 (1.0%)	12,232 (0.4%)
Total	**81,098,288**	**14,783,439**	**2,725,980**

[a] Includes TRICARE and Indian Health Service

The high percentage of visits paid by Medicaid/CHIP and the presence of uncompensated care provided opportunity for CHGME residents to serve low-income patients, an important goal of the CHGME program.

Providing Care for Vulnerable Children

CHGME aims to serve the medical needs of vulnerable children. During the five-year period, CHGME residents provided care for many types of vulnerable children at an average of 352 clinical training sites per year. Seventy-six percent of these sites served low-income families, 73% served the chronically ill, 70% served uninsured or underinsured, 67% served those with disabilities, and 63% served victims of interpersonal abuse or trauma; this reflects an 11-17% increase from AY 2018-2019 to AY 2022-2023 in the percentage of sites reaching vulnerable children.

What are the characteristics of the communities where children served by the CHGME program were discharged?

As part of annual reporting, CHGME reporting hospitals (n=51) provided ZIP codes for the 2.7 million children who were discharged after receiving inpatient services. ZIP codes were linked with county data from the Area Health Resources Files[3] to examine the characteristics of these children's communities. Figure 2 shows the regional breakdown for the 51 CHGME reporting hospitals and the 3,229 counties (or county equivalents) where these children resided.

Figure 2. Number of Reporting Hospitals (n=51) and Counties (n=3,229) Served by CHGME, by Census Region, AY 2018-2023

Note: Territories include Puerto Rico, Guam, U.S. Virgin Islands, American Samoa, and Northern Mariana Islands.

[3] Health Resources and Services Administration. (2023). *Area Health Resources Files (AHRF) 2021-2022 County Level Data*. U.S. Department of Health and Human Services. https://data.hrsa.gov/data/download

Analysis of the linked data showed that:

- The South had the largest number of CHGME-funded hospitals and reached the largest percentage of counties (44%), followed by the Midwest (33%), West (14%), Northeast (7%), and U.S. territories (3%).
- The 3,229 counties where these children resided represented nearly all counties (99.6%) in the United States and its territories.
- When examining socioeconomic data from these counties, 29% were classified as low-employment, 26% high-poverty, 23% persistent child poverty, and 15% as low-education areas.[4]
- 84% of counties were classified as primary care Health Professional Shortage Areas.[5]
- Finally, when examining rurality by ZIP code, 45% of the ZIP codes where these children resided were classified as rural.[6]

Together, these results demonstrate that CHGME-funded reporting hospitals have provided services to children not only across the United States and its territories, but to a substantial number of children from underserved areas, such as low-income, impoverished, rural, and medically underserved communities.

Where are CHGME alumni working?

During AY 2018-2023, 11,547 of 20,627 CHGME-funded residents from all 59 hospitals provided information about their employment setting after completing the CHGME program. At time of graduation:

- 49% worked at academic medical centers.
- 23% were pursuing additional education or fellowship training.
- 10% worked in private practice.
- 6% worked at a non-academic medical center.
- 4% worked at an academic institution.
- 2% worked at a specialty clinic or other clinical site.
- 1% worked at a community-based site.

Alumni Practice State

To examine CHGME-trained physician distribution patterns, NCHWA analyzed employment data to determine whether alumni chose to practice in the state where they trained versus another state. Over the AY 2018-2023 period, 60% of alumni for whom employment and state location information was available (n=11,783) chose to practice in the state where they trained, 5% higher than the

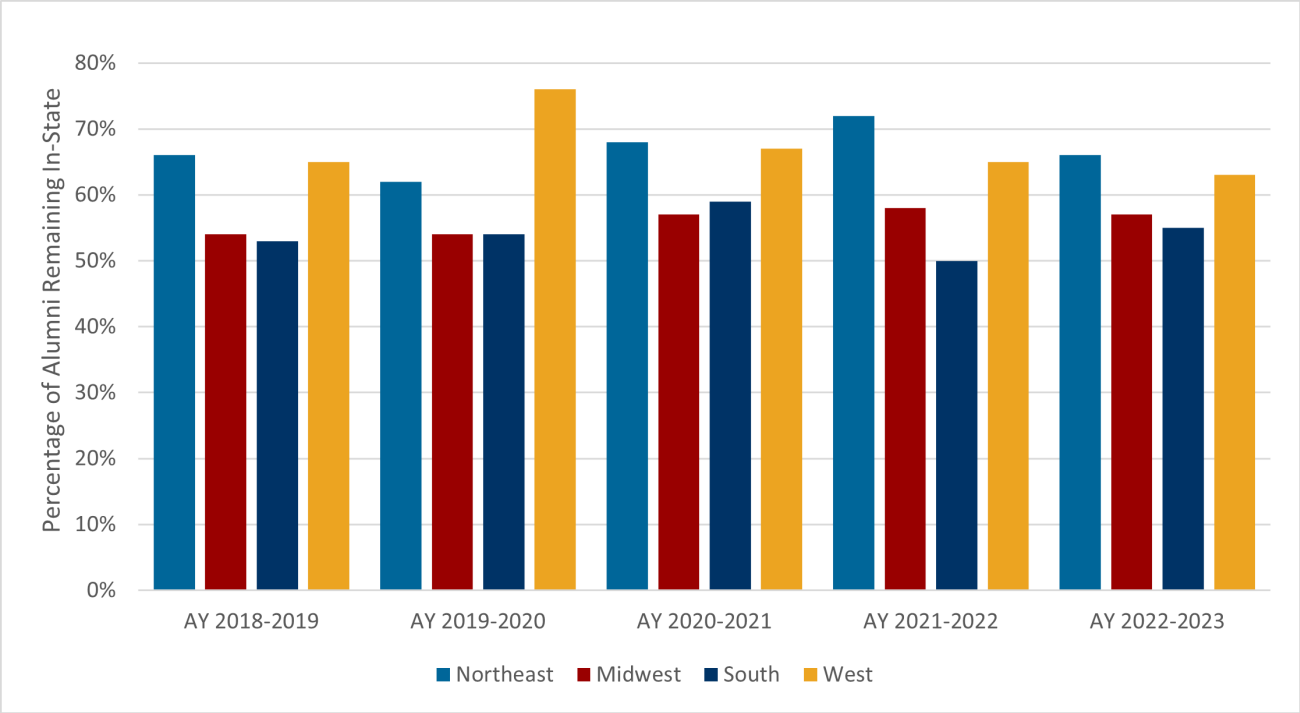
[4] Low education: 20% or more of county residents age 25-64 did not have a high school diploma or equivalent. Low employment: less than 65% of county residents age 25-64 were employed. High poverty: 20% or more of county residents were poor. Persistent child poverty: 20% or more of county-related children under 18 were poor. Low education, low employment, and persistent child poverty data were not available for U.S. territories.

[5] A Health Professional Shortage Area (HPSA) identifies a geographic area, population, or facility experiencing a shortage of health care services, for the purpose of distributing health providers to where they are needed most. Criteria for HPSA designation include population-to-provider ratio, percentage of population experiencing poverty, and travel time to the nearest source of care. https://bhw.hrsa.gov/workforce-shortage-areas/shortage-designation#hpsas

[6] Health Resources and Services Administration. *Federal Office of Rural Health Policy (FORHP) Data Files*. U.S. Department of Health and Human Services. https://www.hrsa.gov/rural-health/about-us/what-is-rural/data-files. Note: Percentage does not include U.S. territories, for which FORHP data was not available.

national average of 55%.[7] When broken down by Census region, all regions had more than half of alumni remain in the state where they trained (Figure 3). The West region had the highest overall percentage (68%), followed by the Northeast (67%), Midwest (56%), and South (55%).

Figure 3. Percentage of Alumni Employed In-State by Census Region and Year (n=11,783)



Note: Figure does not include data from U.S. territories.

Predicting Who Works in Underserved Settings

Studies examining primary care resident employment outcomes have shown that residents with certain traits or characteristics, such as being from a rural or disadvantaged background, may be more likely to work in underserved settings after completing their residency program.[8,9] CHGME alumni were more likely to work in medically underserved communities and/or rural areas if they came from a rural background (29% vs. 17%)[10] or from a disadvantaged background (27% vs. 17%)[11] compared to those without these backgrounds (Figure 4).

[7] Association of American Medical Colleges. (2022). *Report on Residents.* https://www.aamc.org/data-reports/students-residents/interactive-data/report-residents/2022/table-c6-physician-retention-state-residency-training-state

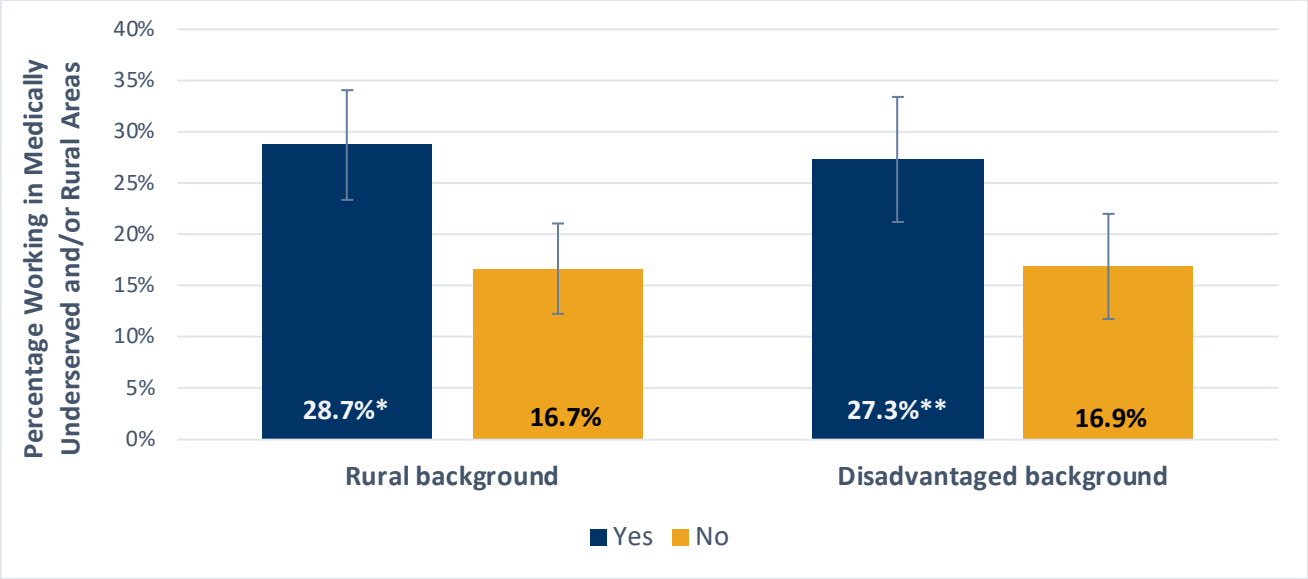
[8] Duffrin, C., Diaz, S., Cashion, M., Watson, R., Cummings, D., Jackson, N. (2014). Factors associated with placement of rural primary care physicians in North Carolina. *Southern Medical Journal*, 107(11), 728-33. DOI: 10.14423/SMJ.0000000000000196

[9] Talib, Z., Jewers, M.M., Strasser, J.H., Popiel, D.K., Goldbert, D.G., Chen, C., Kepley, H., Mullan, F., Regenstein, M. (2018). Primary care residents in teaching health centers: Their intentions to practice in underserved settings after residency training. *Academic Medicine,* 93(1), 98-103. DOI: 10.1097/ACM.0000000000001889

[10] χ^2 (1) = 26.5, p < .00001

[11] χ^2 (1) = 15.0, p = .0001

Figure 4. CHGME Alumni Working in a Medically Underserved Community and/or Rural Area One Year After Program Completion, by Background, AY 2018-2023 (n=5,946)



Note: Error bars represent 95% confidence intervals.
*p < .00001,[10] **p = .0001[11]

Medicaid and CHIP Enrollment

Finally, while not all CHGME-funded residents work in underserved settings after completing residency, they can offer services to underserved and low-income populations by enrolling in Medicaid and/or the Children's Health Insurance Program (CHIP).

Beginning in AY 2021-2022, CHGME awardees began reporting the number of residents who, one year after program completion, began participating in Medicaid and/or CHIP. Of 2,560 residents who completed CHGME and reported employment data during AY 2021-2023, 70% had enrolled in Medicaid and/or CHIP one year later and 98% of these enrollees were accepting new Medicaid patients.

Conclusion

The CHGME program fills a large funding gap in graduate medical education by supporting the training of future pediatricians, pediatric specialists, and subspecialists in freestanding children's teaching hospitals. It trains over half of all pediatric residents in the United States and provides care to millions of children across the country and its territories each year, including a substantial number of vulnerable children and those from underserved and low-income areas. Sixty percent of CHGME alumni choose to practice in the state where they trained, further enhancing the impact of this program in the immediate geographic area. The program's impact is significant, and it continues to support HRSA's goal to improve access to quality health care and services as well as train health professionals and distribute them to areas where they are needed most.

For more information, visit the website: bhw.hrsa.gov