



## Characteristics of Medicaid Beneficiaries Who Use Rural Health Clinics

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### BACKGROUND

For almost four decades, Rural Health Clinics (RHCs) (currently numbering about 4,100) have served patients from underserved rural areas. Although Medicaid is an important payer for RHCs, little is known about Medicaid patients and the services provided to them partly because of the complexity of identifying claims generated from RHCs in Medicaid claims data sources.

Another brief written by the North Carolina Rural Health Research Program enumerates a method of identifying RHC claims based on up to four fields in Medicaid claims.<sup>1</sup> We follow suggestions made in that brief to identify claims from RHCs or those from individual providers under RHC programs and describe the population who used RHC services

from four Medicaid states. This description of RHC users should assist policy makers and researchers in understanding and planning for the population who receives services from RHCs.

### KEY FINDINGS

- A substantial number of RHC users in California, Georgia, North Carolina, and Texas are identified as Medicaid enrollees, ranging from approximately 100,000 to over 800,000 people per state.
- Demographic characteristics vary substantially by state. The percentage of RHC users who are dually enrolled in Medicare and Medicaid ranges from 1% in Texas to 19% in North Carolina. Fifty to 79% of the RHC user population are coded as living in a rural area following the Federal Office of Rural Health Policy definition. However, 20% of the RHCs in these four states are not in areas defined as rural.

### METHODS

State data from North Carolina, Georgia, California and Texas were drawn from the Centers for Medicare and Medicaid Services' (CMS) Medicaid Analytic Files Extract (MAX) data system. MAX data consist of Medicaid enrollment and claims data from states after extensive cleaning and reorganization, and thus may vary slightly from Medicaid claims available directly from state data systems.

We used the 2009-2010 MAX Other Services (OT) claims data, which includes all Medicaid claims that are not identified as inpatient, long-term care, or prescription drug claims. The four selected states are diverse and have considerable rural populations. We identified RHC claims using the sequential assignment method outlined in the previously mentioned RHC

methods brief;<sup>1</sup> we used all of the RHC identification methods outlined here since the additional data on RHCs was available for this study. These methods include 1) using a state-specific provider specialty code, 2) using a type of program code for RHC program funding, 3) using a place of service code indicating services were delivered in an RHC, and finally 4) by linking the National Provider Identifier (NPI) to CMS's National Plan & Provider Enumeration System (NPPES) to select either clinics or providers who self-identify as an RHC provider in any of the taxonomy fields. These are Methods 1-3 and 6 from the methods brief.<sup>1</sup> We limited our analysis to the 2009-2010 years since NPI only became available in 2009 and 2010 was the most recent data available at this writing.

We pooled claims identifiable as RHC claims across both years and describe the year of data, whether Medicaid-covered RHC users are also enrolled in Medicare, demographic characteristics (sex, race, ethnicity, and age group), and urban or rural residence as recorded in the claims data. Rural residence of Medicaid-covered RHC users was derived based on enrollee zip code and defined using the Federal Office of Rural Health Policy definition of rural: non-metropolitan counties and portions of metropolitan counties with a rural-urban commuting area (RUCA) of 4 or greater. It is important to note that this differs from the criteria required of RHCs in the Rural Health Clinic Services Act. We classified individuals as residing in a rural area if they ever were recorded in a rural zip code during the two study years.

We provide frequencies of the top 10 diagnostic groups using the Clinical Classifications Software (CCS), level 2 codes from 2014, using the International Classification of Diseases, Ninth Revision (ICD-9) codes in either the first or second diagnostic field in RHC claims. We present these separately by state.

## RESULTS

Table 1 provides the number and percentage of claims from the four sample states. The two smaller states, North Carolina and Georgia, have approximately 100,000 Medicaid-covered RHC users each, compared to over 800,000 Medicaid-covered RHC users in California and over 300,000 Medicaid-covered RHC users in Texas. Many individuals have claims in both years, although RHC users are more likely to have claims in 2009 for North Carolina and Georgia and more likely to have claims in 2010 in California and Texas. The percentage of RHC users who are dually Medicare and Medicaid enrolled ranges substantially across states, from over 19% in North Carolina to just over 1% in Texas. Similar to Medicaid enrollees generally, most Medicaid-covered RHC users are women. User race varies by state and likely reflects the underlying characteristics of the Medicaid enrolled population. Latinos range from less than 1% of the RHC user population in Georgia to 54% in California. Age group also varies considerably by state, with children comprising 39% of the Medicaid-covered RHC user population in North Carolina, 53% in Georgia, 55% in California, and 78% in Texas. Elderly adults are 9% of the Medicaid-covered RHC population in North Carolina and Georgia, 5% in California and less than 1% in Texas. The proportion of Medicaid-covered RHC users who are coded as living in an urban area is surprisingly high, ranging from 21% in Texas to 58% in California.

**Table 1: Demographic and Diagnostic Distribution of Medicaid RHC users**

Characteristic	North Carolina		Georgia		California		Texas	
	N	%	N	%	N	%	N	%
<b>Total Number of Medicaid-Covered RHC Users</b>	109,903		97,414		842,008		324,546	
<b>Year</b>								
Claims in 2009	84,109		66,279		581,738		226,683	
Claims in 2010	76,850		63,977		624,168		237,798	
<b>Dual Medicare/Medicaid Enrollees</b>	20,940	19.1%	15,812	16.2%	78,677	9.3%	4,123	1.3%
<b>Sex</b>								
Female	66,378	60.4%	59,473	61.1%	488,843	58.1%	177,541	54.7%
Male	43,539	39.6%	37,380	38.4%	339,331	40.3%	146,157	45.0%
Unknown	76	0.1%	561	0.6%	13,834	1.6%	848	0.3%
<b>Race</b>								
White	57,348	52.2%	42,887	44.0%	256,181	30.4%	117,443	36.2%
Black/African-American	37,862	34.5%	46,891	48.1%	31,825	3.8%	31,198	9.6%
American Indian or Alaskan Native	6,565	6.0%	51	0.1%	17,508	2.1%	939	0.3%
Asian	487	0.4%	340	0.3%	12,032	1.4%	1,350	0.4%
Native Hawaiian/ Other Pacific Islander	73	0.1%	36	0.0%	14,830	1.8%	0	0.0%
Unknown	8,139	7.4%	7,209	7.4%	509,632	60.5%	173,616	53.5%
<b>Latino Ethnicity</b>	5,550	5.0%	422	0.4%	456,882	54.3%	157,075	48.4%
<b>Age Group</b>								
Child (<18)	42,941	39.1%	51,238	52.6%	460,544	54.7%	253,306	78.0%
Non-elderly adult	57,207	52.1%	37,915	38.9%	337,215	40.0%	70,353	21.7%
Elderly adult (≥65)	9,755	8.9%	8,261	8.5%	44,249	5.3%	887	0.3%
<b>Rural Residence</b>								
Rural	84,685	77.1%	63,008	64.7%	337,337	40.1%	255,023	78.6%
Urban	25,171	22.9%	33,581	34.5%	490,837	58.3%	68,679	21.2%
Unknown/ no zip or county code available	47	0.0%	825	0.8%	13,834	1.6%	844	0.3%

Table 2 describes the prevalence of conditions recorded on RHC claims during 2009 and 2010. Only the most common 10 categories for each state are shown in the table. The mix of diagnoses given on RHC claims varies by state. The top three most prevalent condition groups are common across all four states: 1) factors influencing health care, 2) respiratory infections, and 3) symptoms, signs or ill-defined condition. The prevalence rates for these conditions, however, vary substantially. Almost 80% of North Carolina's RHC users have at least one claim indicating a factor influencing health care, which includes medical examinations/evaluations, diagnoses for routine infant health checks, and convalescence and palliative care, among other codes. The next most prevalent diagnosis group in North Carolina is respiratory infections, with over one-fourth of RHC users receiving a diagnosis in this category. These are also the two most common conditions diagnosed among California RHC users, with somewhat different prevalence rates of 39% and 33%, respectively. In contrast, respiratory infections is the most prevalent group among Georgia and Texas RHC users, with almost 40% of users in Georgia and 54% of users in Texas receiving a RHC diagnosis in this category. A previous brief on RHC use by Medicare enrollees found that hypertension was the most prevalent medical condition group,<sup>2</sup> with almost 12% of Medicare beneficiaries using RHCs being diagnosed with this condition. The prevalence rate is similar in the Medicaid population in two of the states (North Carolina and Georgia), but it is not among the top-ranked conditions in terms of prevalence by state. Respiratory infections are the second most commonly diagnosed groups among Medicare beneficiaries<sup>1</sup> and are also highly ranked among Medicaid enrollees. The prevalence rates of respiratory infections are much higher in Medicaid, ranging from 27% to 54% of Medicaid RHC users, in contrast to 8% of Medicare RHC users. These differences are likely related to the difference in age groups between Medicare and Medicaid RHC users, as well as the difference in age among the Medicaid states examined here.

**Table 2: Diagnostic Groups in RHC Claims, by State<sup>3,4</sup>**

Medical condition group	North Carolina			Georgia			California			Texas		
	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%
Factors influencing health care	1	85,878	78.5%	3	14,641	16.1%	1	311,550	38.7%	2	109,145	35.4%
Respiratory infections	2	29,082	26.6%	1	35,490	39.0%	2	264,530	32.9%	1	167,141	54.3%
Symptoms; signs; and ill-defined conditions	3	15,620	14.3%	2	16,068	17.6%	3	143,748	17.9%	3	70,135	22.8%
Hypertension	4	13,580	12.4%	5	12,802	14.1%						
Spondylosis; intervertebral disc disorders; other back	5	9,991	9.1%	9	6,785	7.5%	9	62,320	7.7%			
Ear conditions	6	9,979	9.1%	4	12,810	14.1%	4	122,351	15.2%	4	66,794	21.7%
Non-traumatic joint disorders	7	9,033	8.3%	10	6,576	7.2%	10	59,723	7.4%			
Diseases of the urinary system	8	8,748	8.0%	8	6,796	7.5%				10	20,229	6.6%
Other upper respiratory disease	9	7,011	6.4%	7	9,166	10.1%	8	62,838	7.8%	5	49,456	16.1%
Diabetes mellitus without complication	10	6,693	6.1%									
Immunizations and screening for infectious disease				6	10,668	11.7%	6	68,499	8.5%			
Disorders of teeth and jaw							5	75,583	9.4%			
Viral infection							7	64,623	8.0%	6	27,403	8.9%
Eye disorders										7	23,707	7.7%
Noninfectious gastroenteritis										8	20,374	6.6%
Skin and subcutaneous tissue infections										9	20,310	6.6%

## CONCLUSION

The composition of RHC users varies considerably across the four study states: North Carolina, Georgia, Texas, and California. Some of this composition reflects differences in the populations in the state, as well as differences in the Medicaid-enrolled population and covered services. However, there are still important differences in RHC users by state. One of the most important differences is by age groups. All states tend to cater RHC services toward children, with a minimum of 39% of the RHC population being under 18. Texas is an outlier in this regard, with almost 80% of their RHC population being children and very few elderly or dually enrolled individuals receiving Medicaid-funded RHC services. Another striking finding is on rural residence of RHC users. While Medicaid enrollees in rural zip codes are in the majority for three out of four states examined here (California is an exception), over a fifth of the sample in all four states are coded as living in urban areas. One reason for the high percentage of non-rural clients using the RHCs is the placement of the RHCs. In post-hoc analysis, we examined the location of the RHCs in our four study states. Approximately 20% of RHCs are not located in rural areas (as defined by FORHP), ranging in our four study states from 12% (Texas) to 28% (California). It is worth noting, however, that the FORHP definition of rural is less inclusive than the RHC program requirements, which are based on Census urbanized area. Although we did not have the exact geolocation for each RHC (e.g., some addresses use Post Office Boxes), our best estimate is that approximately 92% of the RHCs are located in a rural area using the Census definition.<sup>5</sup> The relatively high rate of use by urban Medicaid enrollees could also be due in part to urban beneficiaries finding RHCs more convenient (e.g., willing to accept Medicaid and/or shorter wait times), commuting patterns, or acute needs while traveling (e.g., an urban resident using a local provider while traveling).

Our data show that the RHC role varies by state. While we don't have an understanding of what this looks like for each state, we can see that RHCs are an important provider for Medicaid beneficiaries. A deeper understanding of the RHC role to all Medicaid programs would inform policy makers as to how communities develop models of care to meet the needs of their beneficiaries.

## REFERENCES AND NOTES

1. Domino ME, Tyree S, Rutledge R, Holmes M. Identifying RHCs in Medicaid data. April 2016. Findings Brief. NC Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, the University of North Carolina at Chapel Hill.
2. Radford A, Kirk D, and Howard HA. Profile of Rural Health Clinics: Medicare Payments & Common Diagnoses. December 2012. Findings Brief. NC Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, the University of North Carolina at Chapel Hill.
3. Diagnosis codes categorized into Medical Conditions using Clinical Classifications Software (CCS), level 2 codes, 2014.
4. Patient counts include Medicaid enrollees seen at an RHC receiving at least one diagnosis on RHC claims in the medical condition group at any time during the study period (2009-2010).
5. The Census Bureau identifies two types of urban areas: 1) Urbanized Areas of 50,000 or more people; 2) Urban Clusters of at least 2,500 and less than 50,000 people. "Rural" encompasses all population, housing, and territory not included within an urban area.

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