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# Utilization of Oral Health Services by Medicaid-Insured Adults in New York, 2012-2013

OHWRC
Oral Health Workforce Research Center

Center for Health Workforce Studies
School of Public Health
University at Albany, State University of New York

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# PREFACE

This report summarizes dental care utilization patterns of Medicaid-eligible adults based on the availability of providers and the extent of coverage provided by the adult Medicaid benefit in New York in 2012-2013.

The report was prepared for the Oral Health Workforce Research Center (OHWRC) by Simona Surdu, Margaret Langelier, and Jean Moore, with layout design by Leanne Keough. OHWRC is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) under grant number U81HP27843, a Cooperative Agreement for a Regional Center for Health Workforce Studies. The content and conclusions of this report are those of OHWRC and should not be construed as the official position or policy of, nor should any endorsements be inferred by, HRSA, HHS, or the US government.

The mission of OHWRC is to provide accurate and policy-relevant research on the impact of the oral health workforce on oral health outcomes. The research conducted by OHWRC informs strategies designed to increase access to oral health services for vulnerable populations. OHWRC is based at the Center for Health Workforce Studies (CHWS) at the School of Public Health, University at Albany, State University of New York (SUNY), and is the only research center uniquely focused on the oral health workforce.

The views expressed in this report are those of OHWRC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, or other subcontractors.

*December 2016*

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# Executive Summary

# BACKGROUND

All states are required to provide a comprehensive dental insurance benefit for children under the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit in state Medicaid programs. The Medicaid dental benefit for adults varies widely across states. Some states narrowly cover treatment of dental pain and infection for adults, while other states offer more comprehensive adult benefits. In 2012, 22 states either offered no adult dental benefit in Medicaid or limited coverage to care related to dental trauma.[1] Many of the remaining states that did provide an adult Medicaid benefit limited the number of permissible dental visits or limited benefits to treatment for dental pain and infection only.

As of 2012, adult Medicaid beneficiaries in New York had an extensive dental benefit that included preventive services, restorative services, periodontal services, dentures, and oral surgery services.[2,3] This coverage has the potential to reduce the need for dental services in medical settings, including hospital emergency departments. In addition to the coverage provided by the adult Medicaid benefit, other factors such as socioeconomic characteristics, geography, and availability of private dental practices or safety net oral health providers may affect the utilization of oral health services by Medicaid-insured adults.

The objective of this research is to understand the impact of Medicaid dental benefits and availability of providers on utilization of dental services. The present report summarizes the findings of an analysis of Medicaid dental claims over a 2-year period (2012-2013) in New York.

# METHODS

This research study is based on an analysis of Medicaid enrollment, Medicaid dental fee-for-service claims, and Medicaid managed care encounter data for adult New Yorkers in the period between January 1, 2012, and December 31, 2013. The Medicaid data, aggregated by demographics and geography, were extracted using the Salient Interactive Miner software tool (Source: Salient NYS Medicaid System: includes payment cycles through 2011; access dates: March 15-22, 2016). The New York State Department of Health Institutional Review Board (IRB) has reviewed and approved this research study (IRB reference No. 15-026).

The Medicaid data contained demographic information for all enrollees during the study period, including age, sex, race, ethnicity, and county of residence. In addition to this information, the claims data included the settings in which services were received (dental office or clinic, emergency department). The study sample included all adults aged 21 years and older eligible for Medicaid benefits during the study period. Adult Medicaid enrollees who could not be linked to a specific county were excluded.

The average number of adult Medicaid enrollees was estimated at the midpoint of the time period under study (January 2013). Enrollment rates were calculated using the demographic distribution of all New Yorkers 21 years of age and older. The source of New York population data was the 2009-2013 American Community Survey (ACS), the 5-year estimates from the US Census Bureau. The ACS is a national survey that collects representative individual-level information about the population's demographic and socioeconomic characteristics.

Utilization rates were calculated separately for dental services provided in a dental office or clinic and those provided in a hospital emergency department. Multivariable Poisson regression models with robust variance estimation were used to determine adjusted utilization rate ratios (RR) and 95% confidence intervals (CI) for associations between oral health service utilization in the medical setting (emergency departments) and patients' gender, age, race/ethnicity, rural status of county of residence, ratio of dentists providing services to Medicaid enrollees, and year of service, accounting for clustering by county. Statistical significance was defined as $P<.05$ using 2-tailed tests. Analyses were conducted using SAS v9.4 (SAS Institute Inc., Cary, North Carolina).

The utilization rates by county are proxy estimates, as Medicaid beneficiaries can cross the border of their county of residence to seek oral health care in a neighboring county. Each of the 62 New York counties was classified as urban, rural, or mixed urban-rural based on the percentage of the population living in urban census tracts in the county, according to the Rural-Urban Commuting Area (RUCA) definition.

# KEY FINDINGS

## Medicaid Dental Insurance for Adults and Utilization Patterns of Dental Services in New York

### Adult Medicaid Enrollees

- Approximately 21.9% of the adult population (21 years and older) in New York were insured by Medicaid during all or part of the 2-year study period, 2012-2013.
- Enrollment rates among adults in New York Medicaid in 2012-2013 were highest among women; adults aged 21 to 24 years; and Hispanics, Non-Hispanic Asians, Native Hawaiians and other Pacific Islanders, and other races in 2012-2013.
- During the 2-year study period, the majority (73.8%) of adult enrollees in New York Medicaid resided in 9 urban counties, while about one-fourth resided in 53 rural or mixed urban-rural counties.

### Medicaid-Enrolled Adults Receiving Services in Dental Offices or Clinics

- Nearly one-third (30.2%) of adult New York Medicaid enrollees received at least 1 dental service in a dental office or clinic in 2012-2013.
- Among Medicaid enrollees, women, adults aged 30 to 34 years, Hispanics, and those living in urban counties utilized the most oral health services in dental offices or clinics during the 2-year study period.
- Men, adults 65 years and older, and Non-Hispanic American Indians who were enrolled in Medicaid had the lowest utilization rates for dental services in dental offices or clinics during the 2-year study period.
- Medicaid-enrolled adults living in urban counties had the highest access rates and those living in rural counties (particularly those with less than 30% of the county population living in urban areas) had the lowest rates of access to oral health services in dental offices or clinics in 2012-2013.

- The majority (75.7%) of dentists providing services to New York Medicaid-enrolled adults were located in urban counties, while less than one-fourth were located in rural and mixed urban-rural counties during the 2-year study period.

**Medicaid-Enrolled Adults Receiving Services for Dental Problems in Hospital Emergency Departments**

- More than 25,000 adult New York Medicaid enrollees (0.8%) received at least 1 service for oral health–related problems in hospital emergency departments in 2012-2013.

- The utilization rate for dental services in hospital emergency departments among adult Medicaid enrollees, adjusted for patients' demographics and county characteristics, was 8.0 per 1000 adult Medicaid enrollees during the 2-year study period.

- Men, young adults, Non-Hispanic Blacks or African Americans, and those living in rural or mixed urban-rural counties had significantly higher adjusted rates of utilization of dental services in hospital emergency departments compared with women, adults aged 55 to 64 years, and Non-Hispanic Whites during the 2-year study period.

- In 2012-2013, the adjusted rates of utilization of oral health care in hospital emergency departments were significantly higher for adult Medicaid beneficiaries residing in rural and mixed urban-rural counties than for those residing in urban counties.

- Emergency department utilization rates were higher for Medicaid beneficiaries residing in counties with lower ratios of dentists providing services to Medicaid-enrolled adults than for Medicaid enrollees residing in counties with higher ratios; however, the difference was not statistically significant.

**County Analysis of Dental Care Among Medicaid-Enrolled Adults**

- The number of dentists in private practice or clinics who provided dental services to Medicaid-enrolled adults during the 2-year study period varied from 0 (in 1 county) to more than 1000 (in 4 New York City counties/boroughs).

- Eleven rural counties and 1 mixed urban-rural county had 10 or fewer dentists in private practice or in clinics billing Medicaid for adult dental services in 2012-2013. Five of these 11 rural counties had less than 1 private-practice or clinic dentist who provided dental services to Medicaid enrollees per 1000 Medicaid-enrolled adults in 2012-2013.

- The ratio of adult Medicaid patients per private-practice or clinic dentist ranged from 14:1 to 909:1 during the 2-year study period. On average, 4 rural counties had private-practice or clinic dentists providing dental care to more than 250 Medicaid-enrolled adults during the 2-year study period.

- Utilization rates for oral health services in dental offices or clinics by adult Medicaid enrollees by county ranged from 17.5% to 41.5% in 2012-2013.

- These 2012-2013 county utilization rates were the lowest (≤20%) in 5 rural counties and in 1 mixed urban-rural county.

- County utilization rates for oral health services in hospital emergency departments by adult Medicaid enrollees ranged from 0.1% to 4.1% in 2012-2013.

- Adult Medicaid enrollees in 4 rural counties and 3 mixed urban-rural counties had the highest utilization rates (≥2.6%) for dental services in hospital emergency departments during the 2-year study period.

# CONCLUSIONS

The findings from this study of Medicaid claims data in New York describe differences in the utilization of oral health services by Medicaid beneficiaries. The data appear to mostly validate existing national literature describing the demographics of patients on Medicaid, the low rates of utilization of oral health services among enrollees, and the use of emergency departments by some for ambulatory care–sensitive dental conditions. People living in rural or mixed urban-rural areas in New York exhibited higher rates of emergency department use than those in urban areas, as did men, underrepresented minorities, and younger adults. Women, non-Hispanic Whites, and middle-aged and older adults exhibited more appropriate care-seeking behaviors by using dental offices and clinics for oral health services.

Rural areas generally have fewer dentists per population than more populous counties, which limits the availability of dental services in private dental practices, especially for the Medicaid insured. However, the findings also suggest that broad generalizations about differences in availability and utilization of oral health services for Medicaid beneficiaries in rural areas are not possible. These data show variations in rates of oral health services utilization that suggest that oral health delivery systems differ by locale, even in rural areas of New York. Differences among the small number of dentists in rural areas willing to treat Medicaid-insured adults can have a substantial impact on the local population and the availability of oral health services. Thus, strategies selected to address the barriers to accessible oral health services for Medicaid enrollees must consider the characteristics of local communities and the specific needs of the population in each.

Utilization of emergency departments for treatment of dental conditions also varied across New York. The Capital District exhibited the highest rates of emergency department utilization among Medicaid beneficiaries in the state. At the same time, there were more dentists per Medicaid enrollee in one of the Capital District counties than in any other county in the state. These findings suggest a lack of oral health literacy and understanding of appropriate care-seeking behaviors among enrolled populations that might be addressed through community education. Dental complaints are best addressed in dental offices and clinics, which are better equipped to address dental problems than emergency departments.

New York is among the states with the most generous dental benefits for Medicaid-enrolled adults in the nation. Nevertheless, only about one-fourth of Medicaid beneficiaries received any oral health service in the 2-year period assessed in this study. This suggests that the population would benefit from improved oral health literacy and education on the importance of maintaining oral health, and also that greater engagement of oral health professionals with the Medicaid program should be encouraged.

# Technical Report

# BACKGROUND

All states are required to provide a comprehensive dental insurance benefit for children under the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit in state Medicaid programs. The Medicaid dental benefit for adults varies widely across states. Some states narrowly cover treatment of dental pain and infection for adults, while other states offer more comprehensive adult benefits.

In 2012, 22 states either offered no adult dental benefit in Medicaid or limited coverage to care related to dental trauma.[1] Many of the remaining states that did provide an adult Medicaid benefit limited the number of permissible dental visits or limited benefits to treatment for dental pain and infection only.

As of 2012, adult Medicaid beneficiaries in New York had an extensive dental benefit that included preventive services, restorative services, periodontal services, dentures, and oral surgery services.[2,3] This coverage has the potential to reduce the need for dental services in medical settings, including hospital emergency departments.

In addition to the coverage provided by the adult Medicaid benefit, other factors such as socioeconomic characteristics, geography, and availability of private dental practices or safety net oral health providers may affect the utilization of oral health services by Medicaid-insured adults.

The Center for Health Workforce Studies (CHWS), which has been designated the national Oral Health Workforce Research Center under a cooperative agreement with and funding from the Health Resources and Services Administration (HRSA), conducts research related to oral health and the oral health workforce.

Even though the New York Medicaid program offered an extensive dental benefit, more than 25,000 adult Medicaid beneficiaries in New York received care for oral health problems in hospital emergency departments in 2012-2013. The objectives of this study were to:

- Assess oral health care service utilization in dental offices or clinics and hospital emergency departments by adult Medicaid beneficiaries in New York
- Evaluate the effects of patient demographics and county characteristics on this usage

# METHODS

This research study is based on an analysis of Medicaid enrollment, Medicaid dental fee-for-service claims, and Medicaid managed care encounter data for adult New Yorkers in the period between January 1, 2012, and December 31, 2013. The Medicaid data, aggregated by demographics and geography, were extracted using the Salient Interactive Miner software tool (Source: Salient NYS Medicaid System: includes payment cycles through 2011; access dates: March 15-22, 2016). The New York State Department of Health Institutional Review Board (IRB) has reviewed and approved this research study (IRB reference No. 15-026).

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The utilization rates by county are proxy estimates, as Medicaid beneficiaries can cross the border of their county of residence to seek oral health care in a neighboring county. Each of the 62 New York counties was classified as urban, rural, or mixed urban-rural based on the percentage of the population living in urban census tracts in the county, according to the Rural-Urban Commuting Area (RUCA) definition:

- Counties with 95% or more of their population living in urban census tracts were considered *urban* (9 counties): Westchester, Suffolk, Rockland, Nassau, New York, Kings, Queens, Bronx, Richmond

- Counties with 65% to 95% of their population living in urban census tracts were considered mixed urban-rural (15 counties): Warren, Oneida, Rensselaer, Saratoga, Broome, Dutchess, Chemung, Niagara, Orange, Putnam, Onondaga, Albany, Erie, Schenectady, Monroe

- Counties with less than 65% of their population living in urban census tracts were considered rural (38 counties):

    - 40% to 65% urban (14 counties): Genesee, Madison, Seneca, Cayuga, Livingston, Herkimer, Fulton, Jefferson, Ontario, Ulster, Cortland, Chautauqua, Tompkins, Montgomery

    - 30% to 40% urban (11 counties): Washington, Tioga, Clinton, Wyoming, Franklin, St Lawrence, Cattaraugus, Oswego, Orleans, Wayne, Steuben

    - <30% urban (13 counties): Hamilton, Lewis, Chenango, Schoharie, Schuyler, Allegany, Delaware, Essex, Sullivan, Columbia, Greene, Yates, Otsego

# FINDINGS

## Adult Medicaid Enrollment Rates in New York

In 2012-2013, among the 14,328,088 adults aged 21 years and older residing in New York, more than one-fifth were enrolled in the state Medicaid program and had an extensive dental benefit, including preventive services and minor and major restorative procedures (Table 1).

Women (25.1%), adults aged 21 to 24 years (28.1%), Hispanics (36.4%), and members of "other" races or ethnicities (Non-Hispanic Asian, Native Hawaiian or other Pacific Islander, some other race, or 2 or more races) (46.6%) had the highest enrollment rates in Medicaid. Men (18.3%), adults aged 55 to 64 years (18.5%), and Non-Hispanic Whites (12.1%) had the lowest enrollment rates (Table 1).

***Table 1. Medicaid Enrollment Rates of Adults 21 Years and Older by Demographic Characteristics in New York, 2012-2013***

| Demographic Characteristics | Adults 21 Years and Older in NYS[a] | Medicaid Enrollees 21 Years and Older in NYS | |
|---|---|---|---|
| | Average Estimate (2009-2013) | Average Estimate (2012-2013) | Enrollment Rate |
| **Sex** | | | |
| Female | 7,523,155 | 1,887,077 | 25.1% |
| Male | 6,804,933 | 1,245,972 | 18.3% |
| **Age** | | | |
| 21-24 years | 1,114,395 | 312,917 | 28.1% |
| 25-29 years | 1,400,843 | 354,799 | 25.3% |
| 30-34 years | 1,311,271 | 313,860 | 23.9% |
| 35-44 years | 2,584,838 | 552,972 | 21.4% |
| 45-54 years | 2,857,187 | 568,933 | 19.9% |
| 55-64 years | 2,365,359 | 437,986 | 18.5% |
| 65+ years | 2,694,195 | 591,582 | 22.0% |
| **Race/ethnicity** | | | |
| American Indian[b] | 32,411 | 9,409 | 29.0% |
| Black or African American[b] | 1,982,396 | 610,729 | 30.8% |
| Hispanic | 2,320,176 | 843,927 | 36.4% |
| Other[b,c] or unknown | 1,341,191 | 624,530 | 46.6% |
| White[b] | 8,651,914 | 1,044,454 | 12.1% |
| **All** | **14,328,088** | **3,133,049** | **21.9%** |

[a] Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates;

[b] Non-Hispanic ethnicity.

[c] Asian, Native Hawaiian and other Pacific Islander, some other race, and 2 or more races.

## Crude Utilization Rates for Oral Health Services Among Adults With Medicaid Insurance in New York

On average in 2012-2013, among the 3,133,049 Medicaid-enrolled adults in New York, nearly one-third received at least one oral health service in a dental office or clinic, and more than 25,000 enrollees accessed hospital emergency departments to seek care for oral health–related problems (Table 2).

*Table 2. Medicaid Enrollment and Utilization of Oral Health Services Among Adults in New York, 2012-2013*

| Adults 21 Years and Older | Average Estimate (2012-2013) | Crude Utilization Rate |
|---|---|---|
| Medicaid Enrollees | 3,133,049 | |
| **Medicaid enrollees with at least one dental service received in:** | | |
| Dental offices or clinics | 946,217 | 30.2% |
| Hospital emergency departments | 25,215 | 0.8% |

Women (31.5%), adults aged 30 to 34 years (37.5%), and Hispanic enrollees (34.7%) had the highest rates of utilization of oral health services in dental offices or clinics, while men (28.2%), adults aged 65+ years (13.4%), and Non-Hispanic American Indians (26.3%) had the lowest utilization rates in 2012-2013 (Table 3).

Adults aged 25 to 29 years (1.7%), Non-Hispanic Blacks (1.1%), and Non-Hispanic Whites (1.1%) had the highest rates of receiving dental care in hospital emergency departments during the 2-year study period (Table 3).

***Table 3. Demographic Characteristics of Medicaid Enrollees and Recipients of Oral Health Services Among Adults in New York, 2012-2013***

| Demographic Characteristics | Adult Medicaid Enrollees | Medicaid Adult Enrollees With at Least One Dental Service in a Dental Office or Clinic | | Medicaid Adult Enrollees With at Least One Dental Service in a Hospital Emergency Department | |
|---|---|---|---|---|---|
| | Average Estimate (2012-2013) | Average Estimate (2012-2013) | Crude Utilization Rate | Average Estimate (2012-2013) | Crude Utilization Rate |
| **Sex** | | | | | |
| Female | 1,887,077 | 595,055 | 31.5% | 14,924 | 0.8% |
| Male | 1,245,972 | 351,163 | 28.2% | 10,291 | 0.8% |
| **Age** | | | | | |
| 21-24 years | 312,917 | 108,487 | 34.7% | 4,484 | 1.4% |
| 25-29 years | 354,799 | 128,869 | 36.3% | 5,962 | 1.7% |
| 30-34 years | 313,860 | 117,776 | 37.5% | 4,180 | 1.3% |
| 35-44 years | 552,972 | 203,411 | 36.8% | 4,882 | 0.9% |
| 45-54 years | 568,933 | 195,728 | 34.4% | 3,629 | 0.6% |
| 55-64 years | 437,986 | 132,216 | 30.2% | 1,537 | 0.4% |
| 65+ years | 591,582 | 79,242 | 13.4% | 541 | 0.1% |
| **Race/ethnicity** | | | | | |
| American Indian[a] | 9,409 | 2,479 | 26.3% | 69 | 0.7% |
| Asian or Pacific Islander | 384,803 | 121,150 | 31.5% | 603 | 0.2% |
| Black or African American[a] | 610,729 | 173,791 | 28.5% | 6,519 | 1.1% |
| Hispanic | 843,927 | 292,580 | 34.7% | 4,905 | 0.6% |
| Multiple Races[a] | 200,404 | 63,418 | 31.6% | 1,448 | 0.7% |
| Unknown | 39,323 | 6,021 | 15.3% | 124 | 0.3% |
| White[a] | 1,044,454 | 286,779 | 27.5% | 11,548 | 1.1% |

[a] Non-Hispanic ethnicity.

In 2012-2013, the majority of Medicaid-enrolled adults (73.8%) and dentists (75.7%) providing services to the Medicaid-enrolled population were located in urban counties (≥95% of county population living in urban areas). Only a small percentage (6.9%) of dentists provided services to Medicaid enrollees in rural counties (<65% of county population living in urban areas), with a slightly larger proportion (17.5%) providing services in mixed urban-rural counties (65% to 95% of county population living in urban areas) (Table 4).

It is, therefore, not surprising that access to oral health care in dental offices and clinics was highest in urban counties (31.9%), while rural and mixed urban-rural counties had lower rates of utilization of dental services among adult Medicaid enrollees (23.2% to 26.7%) in 2012-2013 (Table 4).

***Table 4. Geographic Distribution of Dentists Serving Medicaid-Enrolled Adults, Adult Medicaid Enrollees, and Utilization Rates for Oral Health Services in Dental Offices or Clinics in New York, 2012-2013***

| Geographic Characteristics | Dentists With at Least One Medicaid Claim for Services Provided to Adult Enrollees | | Adult Medicaid Enrollees | | Adult Medicaid Enrollees With at Least One Dental Service in a Dental Office or Clinic | |
|---|---|---|---|---|---|---|
| Percentage of County Population Living in Urban Areas | Average Estimate (2012-2013) | % of Total Number of Dentists | Average Estimate (2012-2013) | % of Total Number of Enollees | Average Estimate (2012-2013) | Crude Utilization Rate |
| <30% | 144 | 1.4% | 66,811 | 2.1% | 16,846 | 25.2% |
| 30%-40% | 191 | 1.8% | 104,575 | 3.3% | 24,296 | 23.2% |
| 40%-65% | 397 | 3.7% | 135,395 | 4.3% | 35,418 | 26.2% |
| 65%-95% | 1,862 | 17.5% | 514,043 | 16.4% | 137,392 | 26.7% |
| ≥95% | 8,061 | 75.7% | 2,312,225 | 73.8% | 736,810 | 31.9% |

Medicaid enrollees residing in rural and mixed urban-rural counties had the highest utilization rates for dental services in hospital emergency departments (1.6% to 1.8%) in 2012-2013, while those in urban counties were lowest (0.5%) (Table 5).

***Table 5. Geographic Distribution of Adult Medicaid Enrollees and Utilization Rates for Oral Health Services in Hospital Emergency Departments in New York, 2012-2013***

| Geographic Characteristics | Adult Medicaid Enrollees | Adult Medicaid Enrollees With at Least One Dental Service in a Hospital Emergency Department | |
|---|---|---|---|
| Percentage of County Population Living in Urban Areas | Average Estimate (2012-2013) | Average Estimate (2012-2013) | Crude Utilization Rate |
| <30% | 66,811 | 1,232 | 1.8% |
| 30%-40% | 104,575 | 1,715 | 1.6% |
| 40%-65% | 135,395 | 2,405 | 1.8% |
| 65%-95% | 514,043 | 8,549 | 1.7% |
| ≥95% | 2,312,225 | 11,314 | 0.5% |

## Adjusted Utilization Rates for Oral Health Services Among Adults With Medicaid Insurance in New York

On average, among the 3,133,049 Medicaid-enrolled adults in New York, 8.0 adults per 1000 Medicaid enrollees used hospital emergency departments for oral health services in 2012-2013 (Table 6).

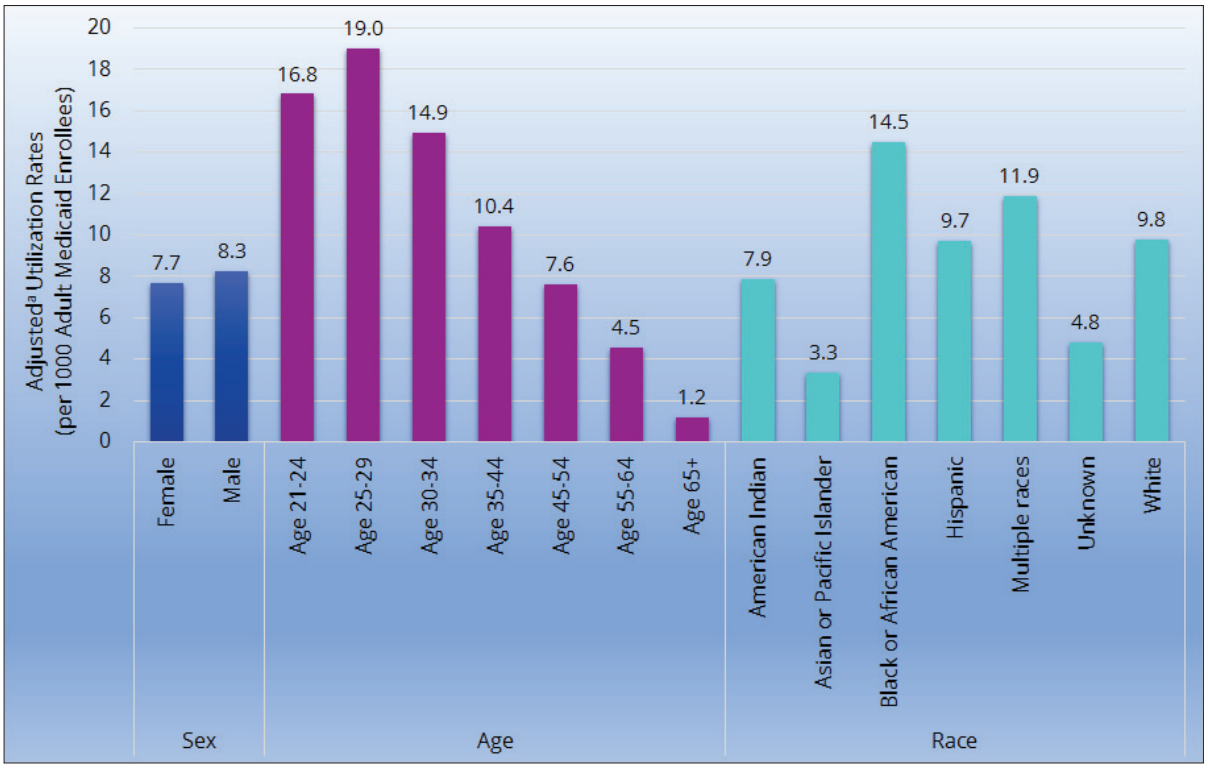
***Table 6. Adjusted Utilization Rate of Oral Health Services in Hospital Emergency Departments Among Adult Medicaid Enrollees in New York, 2012-2013***

| Utilization of Oral Health Services by Medical Setting | Adjusted [a] Utilization Rates and 95% Confidence Interval (per 1,000 Adult Medicaid Enrollees) | | |
|---|---|---|---|
| | Mean | Standard Error | 95% CI |
| Hospital emergency departments | 8.0 | 0.6 | 6.8-9.4 |

[a] Rates and 95% confidence interval (CI) adjusted for patients' gender, age, race/ethnicity, rural status of county of residence, ratio of dentists providing services to Medicaid enrollees, and year of service, accounting for clustering by county.

During the 2-year study period, men (8.3 vs 7.7; RR=1.08), young adults 25 to 29 years of age (19.0 vs 4.5; RR=4.19), Non-Hispanic Black or African American enrollees (14.5 vs 9.8; RR=1.48), and adults of multiple races (11.9 vs 9.8; RR=1.21) had significantly (*P*<.0001) higher adjusted utilization rates (per 1000 adult Medicaid enrollees) for oral health services in hospital emergency departments compared with women, adults 55 to 64 years of age, and Non-Hispanic Whites, respectively (Figure 1).

***Figure 1. Adjusted Utilization Rates for Oral Health Services in Hospital Emergency Departments Among Adult Medicaid Enrollees by Demographic Characteristics in New York, 2012-2013***



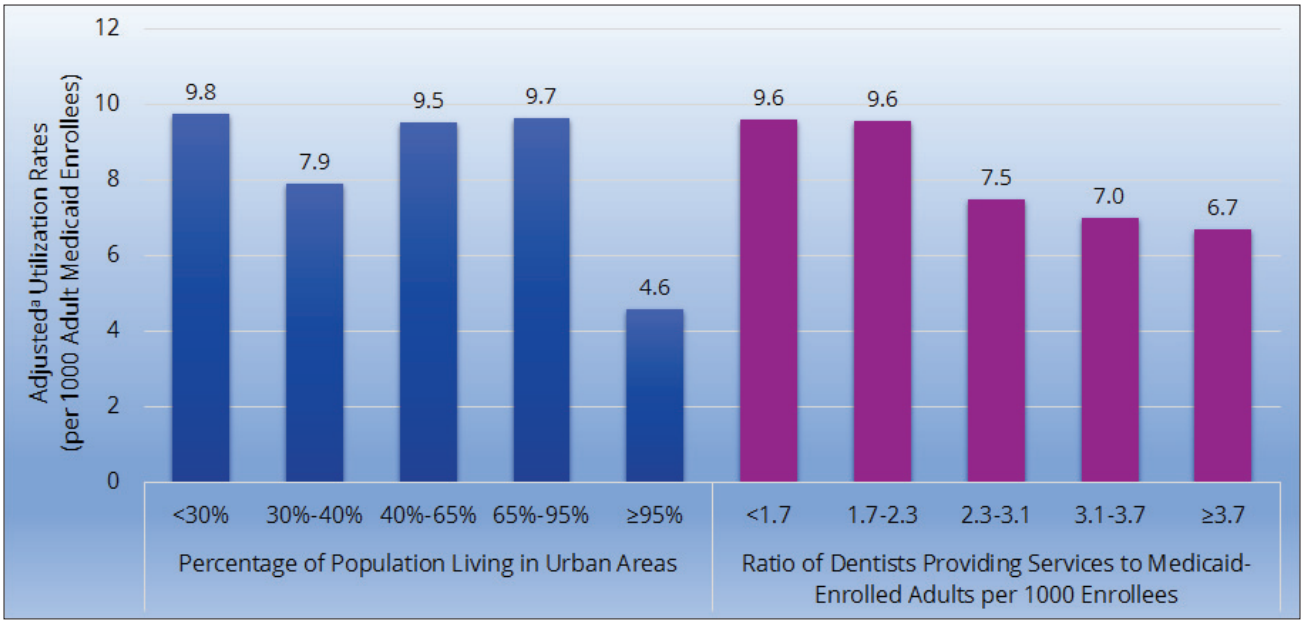

a Rates were adjusted for patients' gender, age, race/ethnicity, rural status of county of residence, ratio of dentists providing services to Medicaid enrollees, and year of service, accounting for clustering by county.

Adult Medicaid beneficiaries residing in rural counties (<65% of county population living in urban areas) and mixed urban-rural counties (65% to 95% of county population living in urban areas) had significantly (*P*<.05) higher adjusted utilization rates (per 1000 adult Medicaid enrollees) for oral health services in hospital emergency departments compared with those residing in urban counties (≥90% of county population living in urban areas) in 2012-2013 (Figure 2).

Highly rural counties (<30% of county population living in urban areas) had particularly high adjusted utilization rates for oral health services in hospital emergency departments compared with those residing in urban counties (9.8 vs 4.6; RR=2.14) during the 2-year study period (Figure 2).

Adult Medicaid beneficiaries residing in counties with lower ratios of dentists serving adults on Medicaid (<3.7 dentists per 1000 enrollees) had higher adjusted utilization rates for oral health care in hospital emergency departments compared with adults residing in counties with higher ratios of dentists serving the Medicaid population (≥3.7 dentists per 1000 enrollees) in 2012-2013; however, the difference was not statistically significant (Figure 2).

***Figure 2. Adjusted Utilization Rates for Oral Health Services in Hospital Emergency Departments Among Adult Medicaid Enrollees by County Characteristics in New York, 2012-2013***




[a] Rates were adjusted for patients' gender, age, race/ethnicity, rural status of county of residence, ratio of dentists providing services to Medicaid enrollees, and year of service, accounting for clustering by county.

**Providers of Dental Services in Dental Offices or Clinics by County**

An analysis of Medicaid utilization data by county of service (ie, location of dental provider) identified 1 county (Hamilton) with no private-practice or clinic dentists billing Medicaid for any dental services for adults in 2012-2013 (Table 7). Hamilton is a highly rural county with less than 30% of the county population residing in urban areas.

The county analysis also identified 10 counties with between 1 and 10 private-practice or clinic dentists billing Medicaid for adult dental services in 2012-2013 (Table 7). Most of these counties (n=9) were rural (<65% of county population living in urban areas), while 1 was mixed urban-rural (65% to 95% of county population living in urban areas). These counties were as follows:

- <30% of county population living in urban areas: Lewis, Chenango, Schoharie, Schuyler, Allegany
- 30% to 40% of county population living in urban areas: Washington, Franklin, Orleans
- 40% to 65% of county population living in urban areas: Seneca
- 65% to 95% of county population living in urban areas: Putnam

The number of private-practice and clinic dentists who provided dental services to adult Medicaid enrollees in 2012-2013 varied from 0 to 57 dentists in rural counties, from 9 to 363 dentists in mixed urban-rural counties, and from 155 to 2033 dentists in urban counties (Table 7). Four of the New York City boroughs had more than 1000 private-practice or clinic dentists billing Medicaid for adult dental services. These were New York, Kings, Queens, and Bronx.

The ratio of private-practice and clinic dentists who provided dental services to adult Medicaid enrollees per 1000 enrollees in 2012-2013 ranged from 0 to 7.1 dentists in rural counties, from 1.7 to 17.1 dentists in mixed urban-rural counties, and from 2.3 to 6.0 dentists in urban counties (Table 7). Five rural counties had less than 1 dentist per 1000 Medicaid enrollees: Hamilton, Chenango, Schuyler, Washington, and Seneca.

On average, during the 2-year study period, 1 dentist treated fewer than 50 Medicaid-enrolled adults in the following counties: Yates and Montgomery (rural counties), Warren and Rensselaer (mixed urban-rural counties), and New York (urban county) (Table 7). The ratio of patients per 1 private-practice or clinic dentist who provided dental services to adult Medicaid enrollees in 2012-2013 ranged from 14 in the mixed urban-rural county of Rensselaer to 909 in the highly rural county of Chenango. Three other

rural counties had dentists providing dental care to more than 250 adult Medicaid patients, on average: Schuyler, Seneca, and Washington.

Rates of utilization of oral health services in dental offices or clinics by adult Medicaid enrollees in 2012-2013 by county ranged from 17.5% in the mixed urban-rural county of Chemung to 41.5% in the urban county of Rockland (Table 7). The utilization rates were 20.0% or below (10th percentile) in 5 rural counties: Hamilton, Chenango, Schuyler, Allegany, and Steuben (counties with 0 to 13 dentists providing services to adult Medicaid enrollees) (Figure 3). The utilization rates were 32.1% or above (90th percentile) in the following 5 urban and mixed urban-rural counties, all located in downstate New York: Dutchess, Orange, Kings, Queens, and Bronx.

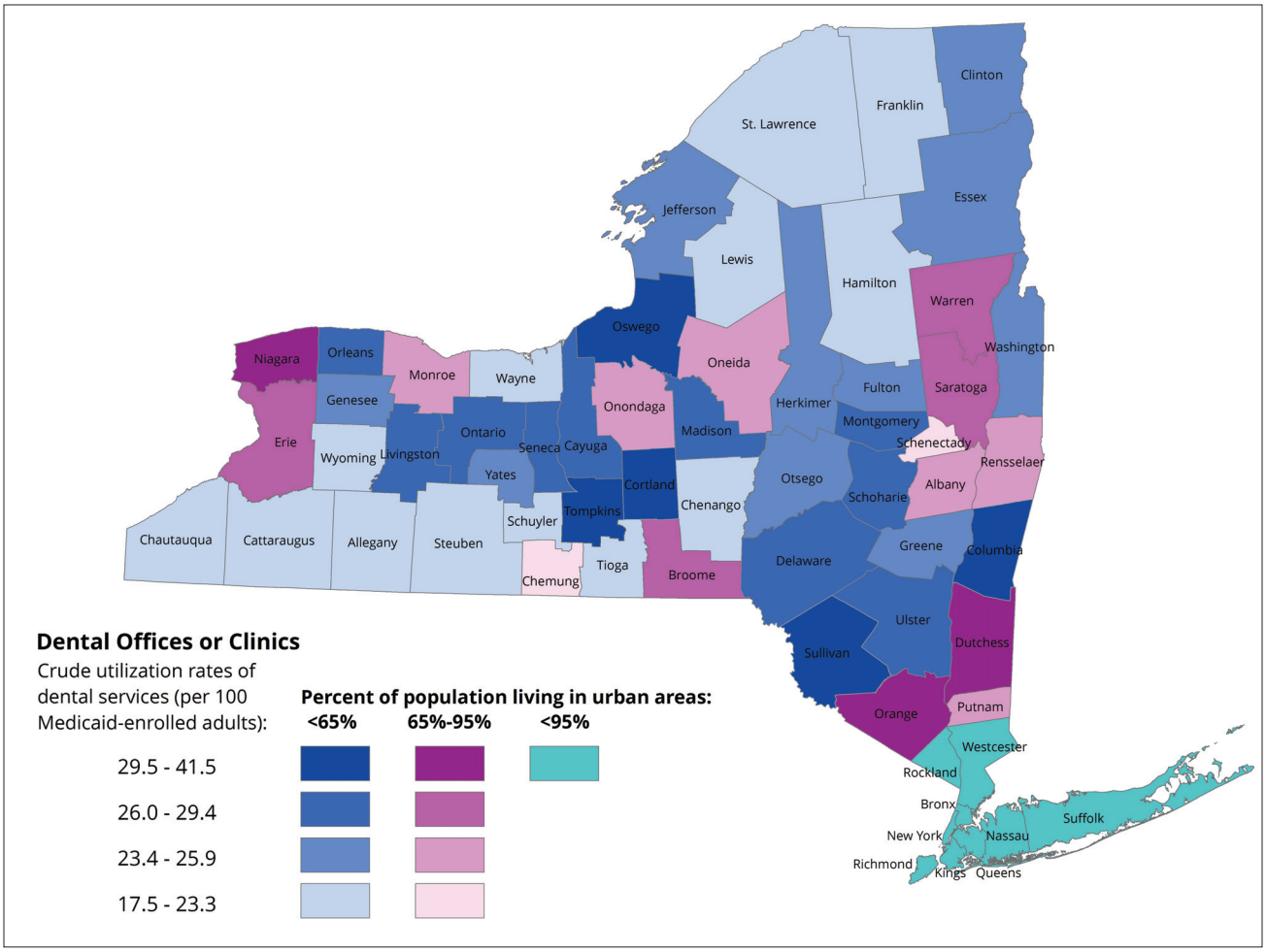
***Table 7. Analysis of Adult Medicaid Enrollees, Providers of Dental Services, and Utilization Rates for Oral Health Services in Dental Offices or Clinics by County in New York, 2012-2013***

| County (% of County Population Living in Urban Areas) | Medicaid Enrollment of Adults 21 years and Older | Dentists Providing Services to Medicaid-Enrolled Adults | | Dental Offices or Clinics | | |
|---|---|---|---|---|---|---|
| | Average Estimate (2012-2013) | Average Estimate (2012-2013) | Ratio of Dentists per 1,000 enrollees | Average Estimate (2012-2013) | Crude Utilization Rate | Ratio of Patients per One Dentist |
| **Rural counties (<30%)** | | | | | | |
| Hamilton | 447 | 0 | 0.0 | 85 | 19.0% | ~~ |
| Lewis | 3,220 | 5 | 1.6 | 712 | 22.1% | 142 |
| Chenango | 7,254 | 2 | 0.2 | 1,364 | 18.8% | 909 |
| Schoharie | 3,690 | 7 | 1.8 | 965 | 26.1% | 148 |
| Schuyler | 2,625 | 1 | 0.4 | 500 | 19.0% | 500 |
| Allegany | 6,278 | 10 | 1.6 | 1,249 | 19.9% | 125 |
| Delaware | 5,911 | 12 | 1.9 | 1,541 | 26.1% | 134 |
| Essex | 4,370 | 11 | 2.4 | 1,110 | 25.4% | 106 |
| Sullivan | 10,797 | 21 | 1.9 | 3,341 | 30.9% | 163 |
| Columbia | 6,775 | 26 | 3.8 | 2,067 | 30.5% | 81 |
| Greene | 6,054 | 14 | 2.2 | 1,564 | 25.8% | 116 |
| Yates | 2,602 | 15 | 5.8 | 636 | 24.4% | 42 |
| Otsego | 6,788 | 24 | 3.5 | 1,715 | 25.3% | 73 |
| **Rural counties (30%-40%)** | | | | | | |
| Washington | 7,271 | 7 | 0.9 | 1,767 | 24.3% | 272 |
| Tioga | 5,499 | 11 | 1.9 | 1,168 | 21.2% | 111 |
| Clinton | 11,460 | 18 | 1.6 | 2,683 | 23.4% | 149 |
| Wyoming | 3,705 | 12 | 3.1 | 794 | 21.4% | 69 |
| Franklin | 6,926 | 7 | 1.0 | 1,513 | 21.8% | 216 |
| Saint Lawrence | 15,203 | 26 | 1.7 | 3,059 | 20.1% | 120 |
| Cattaraugus | 10,473 | 24 | 2.3 | 2,115 | 20.2% | 88 |
| Oswego | 17,178 | 45 | 2.6 | 5,196 | 30.2% | 117 |
| Orleans | 5,223 | 8 | 1.4 | 1,463 | 28.0% | 195 |
| Wayne | 9,204 | 23 | 2.4 | 2,084 | 22.6% | 93 |
| Steuben | 12,433 | 13 | 1.0 | 2,457 | 19.8% | 189 |

*Table 7. Analysis of Adult Medicaid Enrollees, Providers of Dental Services, and Utilization Rates for Oral Health Services in Dental Offices or Clinics by County in New York, 2012-2013 (Cont.)*

| County (% of County Population Living in Urban Areas) | Medicaid Enrollment of Adults 21 years and Older | Dentists Providing Services to Medicaid-Enrolled Adults | | Dental Offices or Clinics | | |
|---|---|---|---|---|---|---|
| | Average Estimate (2012-2013) | Average Estimate (2012-2013) | Ratio of Dentists per 1,000 enrollees | Average Estimate (2012-2013) | Crude Utilization Rate | Ratio of Patients per One Dentist |
| **Rural counties (40%-65%)** | | | | | | |
| Genesee | 5,700 | 19 | 3.2 | 1,365 | 23.9% | 74 |
| Madison | 7,153 | 13 | 1.8 | 1,858 | 26.0% | 143 |
| Seneca | 3,605 | 2 | 0.6 | 971 | 26.9% | 485 |
| Cayuga | 9,045 | 30 | 3.3 | 2,421 | 26.8% | 82 |
| Livingston | 6,025 | 15 | 2.4 | 1,597 | 26.5% | 110 |
| Herkimer | 9,041 | 34 | 3.8 | 2,202 | 24.4% | 65 |
| Fulton | 8,847 | 11 | 1.2 | 2,219 | 25.1% | 211 |
| Jefferson | 13,197 | 46 | 3.4 | 3,382 | 25.6% | 74 |
| Ontario | 9,822 | 38 | 3.9 | 2,635 | 26.8% | 69 |
| Ulster | 19,844 | 40 | 2.0 | 5,222 | 26.3% | 132 |
| Cortland | 6,427 | 21 | 3.3 | 1,953 | 30.4% | 93 |
| Chautauqua | 20,743 | 43 | 2.1 | 4,795 | 23.1% | 112 |
| Tompkins | 7,949 | 31 | 3.8 | 2,499 | 31.4% | 82 |
| Montgomery | 7,997 | 57 | 7.1 | 2,302 | 28.8% | 40 |
| **Mixed urban-rural counties (65%-95%)** | | | | | | |
| Warren | 6,856 | 40 | 5.8 | 1,925 | 28.1% | 48 |
| Oneida | 33,846 | 61 | 1.8 | 8,356 | 24.7% | 138 |
| Rensselaer | 16,971 | 291 | 17.1 | 4,174 | 24.6% | 14 |
| Saratoga | 15,858 | 58 | 3.6 | 4,428 | 27.9% | 77 |
| Broome | 27,616 | 93 | 3.4 | 7,805 | 28.3% | 84 |
| Dutchess | 22,344 | 141 | 6.3 | 7,231 | 32.4% | 51 |
| Chemung | 13,013 | 23 | 1.7 | 2,277 | 17.5% | 101 |
| Niagara | 26,881 | 90 | 3.3 | 8,214 | 30.6% | 91 |
| Orange | 36,194 | 132 | 3.6 | 11,750 | 32.5% | 89 |
| Putnam | 4,009 | 9 | 2.2 | 967 | 24.1% | 107 |
| Onondaga | 54,976 | 142 | 2.6 | 13,809 | 25.1% | 97 |
| Albany | 30,826 | 124 | 4.0 | 7,649 | 24.8% | 62 |
| Erie | 113,189 | 363 | 3.2 | 32,833 | 29.0% | 91 |
| Schenectady | 19,295 | 47 | 2.4 | 4,374 | 22.7% | 93 |
| Monroe | 92,169 | 252 | 2.7 | 21,603 | 23.4% | 86 |
| **Urban counties (≥95%)** | | | | | | |
| Westchester | 85,707 | 287 | 3.3 | 25,091 | 29.3% | 88 |
| Suffolk | 126,347 | 347 | 2.7 | 37,659 | 29.8% | 109 |
| Rockland | 34,668 | 191 | 5.5 | 14,404 | 41.5% | 76 |
| Nassau | 111,820 | 518 | 4.6 | 33,151 | 29.6% | 64 |
| Manhattan | 298,449 | 1,803 | 6.0 | 88,738 | 29.7% | 49 |
| Brooklyn | 661,183 | 2,033 | 3.1 | 215,859 | 32.6% | 106 |
| Queens | 511,488 | 1,571 | 3.1 | 167,517 | 32.8% | 107 |
| Bronx | 414,820 | 1,159 | 2.8 | 135,152 | 32.6% | 117 |
| Staten Island | 67,743 | 155 | 2.3 | 19,240 | 28.4% | 125 |

*Figure 3. Utilization Rates for Oral Health Services in Dental Offices or Clinics Among Adult Medicaid Enrollees by County in New York, 2012-2013*




## Utilization of Dental Services in Hospital Emergency Departments by County

The county utilization rates for oral health services in hospital emergency departments by adult New York Medicaid enrollees in 2012-2013 ranged from 0.1% in the highly rural county of Hamilton to 4.1% in the mixed urban-rural county of Rensselaer (Table 8).

The adult Medicaid enrollees in 4 rural counties (Chenango, Schuyler, Clinton, and Ulster) and in 2 mixed urban-rural counties (Albany and Schenectady) had utilization rates of 2.6% or above (90th percentile) for dental services in hospital emergency departments (Table 8, Figure 4). The utilization rates were 0.4% or below (10th percentile) in 2 rural counties (Washington and Livingston), in 1 mixed urban-rural county (Warren), and in 2 urban counties (Kings and Bronx).

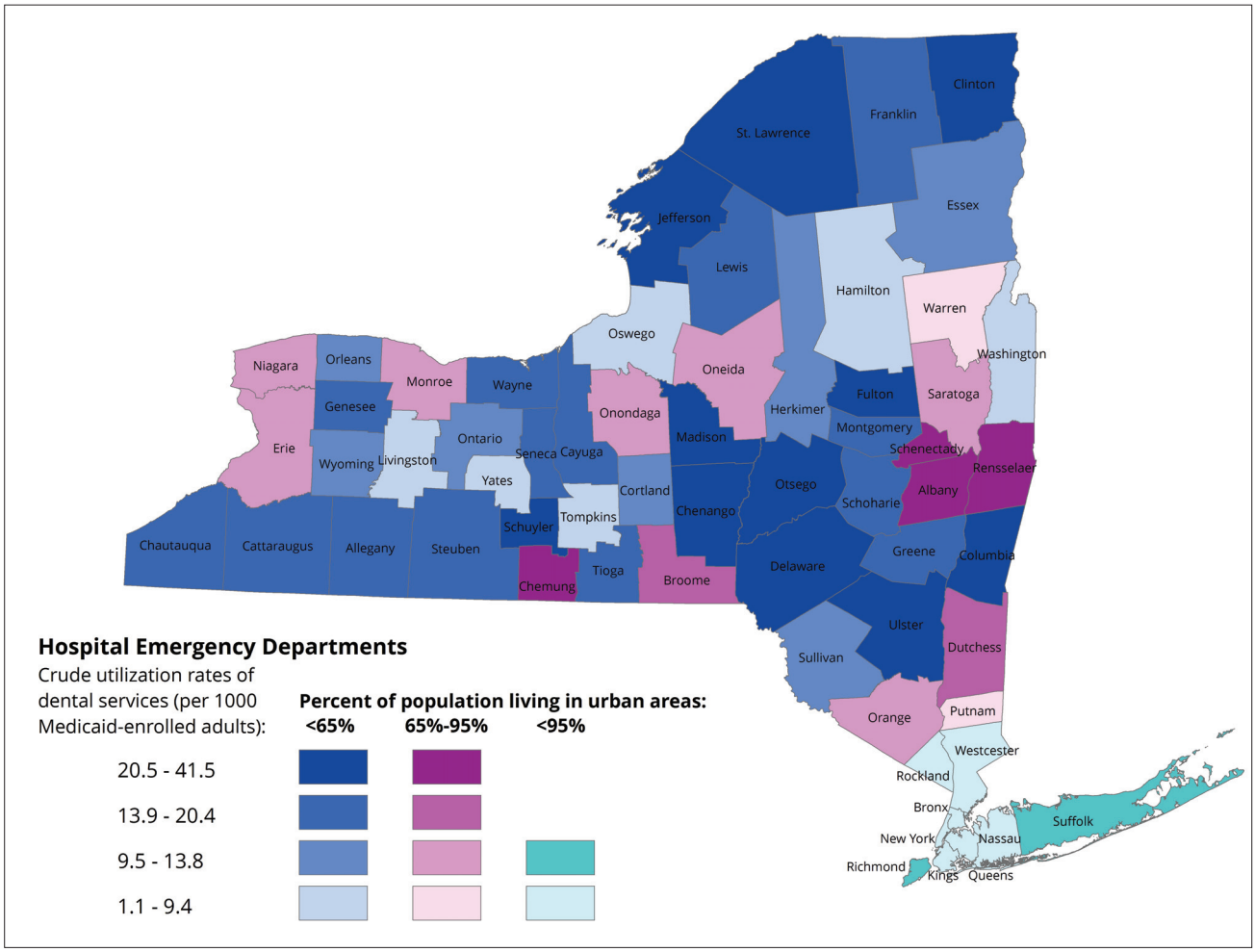
*Table 8. Analysis of Utilization Rates for Oral Health Services in Hospital Emergency Departments Among Adult Medicaid Enrollees by County in New York, 2012-2013*

| County (% of County Population Living in Urban Areas) | Medicaid Enrollment of Adults 21 Years and Older | Hospital Emergency Departments | |
|---|---|---|---|
| | Average Estimate (2012-2013) | Average Estimate (2012-2013) | Crude Utilization Rate |
| **Rural counties (<30%)** | | | |
| Hamilton | 447 | 1 | 0.1% |
| Lewis | 3,220 | 63 | 2.0% |
| Chenango | 7,254 | 216 | 3.0% |
| Schoharie | 3,690 | 72 | 1.9% |
| Schuyler | 2,625 | 69 | 2.6% |
| Allegany | 6,278 | 92 | 1.5% |
| Delaware | 5,911 | 123 | 2.1% |
| Essex | 4,370 | 53 | 1.2% |
| Sullivan | 10,797 | 115 | 1.1% |
| Columbia | 6,775 | 164 | 2.4% |
| Greene | 6,054 | 89 | 1.5% |
| Yates | 2,602 | 24 | 0.9% |
| Otsego | 6,788 | 153 | 2.3% |
| **Rural counties (30%-40%)** | | | |
| Washington | 7,271 | 14 | 0.2% |
| Tioga | 5,499 | 76 | 1.4% |
| Clinton | 11,460 | 294 | 2.6% |
| Wyoming | 3,705 | 49 | 1.3% |
| Franklin | 6,926 | 108 | 1.6% |
| Saint Lawrence | 15,203 | 385 | 2.5% |
| Cattaraugus | 10,473 | 156 | 1.5% |
| Oswego | 17,178 | 140 | 0.8% |
| Orleans | 5,223 | 69 | 1.3% |
| Wayne | 9,204 | 185 | 2.0% |
| Steuben | 12,433 | 241 | 1.9% |
| **Rural counties (40%-65%)** | | | |
| Genesee | 5,700 | 116 | 2.0% |
| Madison | 7,153 | 173 | 2.4% |
| Seneca | 3,605 | 66 | 1.8% |
| Cayuga | 9,045 | 156 | 1.7% |
| Livingston | 6,025 | 24 | 0.4% |
| Herkimer | 9,041 | 95 | 1.0% |
| Fulton | 8,847 | 181 | 2.0% |
| Jefferson | 13,197 | 329 | 2.5% |
| Ontario | 9,822 | 93 | 0.9% |
| Ulster | 19,844 | 514 | 2.6% |
| Cortland | 6,427 | 63 | 1.0% |
| Chautauqua | 20,743 | 416 | 2.0% |
| Tompkins | 7,949 | 60 | 0.8% |
| Montgomery | 7,997 | 122 | 1.5% |

*Table 8. Analysis of Utilization Rates for Oral Health Services in Hospital Emergency Departments Among Adult Medicaid Enrollees by County in New York, 2012-2013 (Cont.)*

| County (% of County Population Living in Urban Areas) | Medicaid Enrollment of Adults 21 Years and Older | Hospital Emergency Departments | |
|---|---|---|---|
| | Average Estimate (2012-2013) | Average Estimate (2012-2013) | Crude Utilization Rate |
| **Mixed urban-rural counties (65%-95%)** | | | |
| Warren | 6,856 | 11 | 0.2% |
| Oneida | 33,846 | 452 | 1.3% |
| Rensselaer | 16,971 | 704 | 4.1% |
| Saratoga | 15,858 | 182 | 1.1% |
| Broome | 27,616 | 395 | 1.4% |
| Dutchess | 22,344 | 366 | 1.6% |
| Chemung | 13,013 | 330 | 2.5% |
| Niagara | 26,881 | 306 | 1.1% |
| Orange | 36,194 | 492 | 1.4% |
| Putnam | 4,009 | 38 | 0.9% |
| Onondaga | 54,976 | 718 | 1.3% |
| Albany | 30,826 | 1,131 | 3.7% |
| Erie | 113,189 | 1,540 | 1.4% |
| Schenectady | 19,295 | 616 | 3.2% |
| Monroe | 92,169 | 1,271 | 1.4% |
| **Urban counties (≥95%)** | | | |
| Westchester | 85,707 | 570 | 0.7% |
| Suffolk | 126,347 | 1,428 | 1.1% |
| Rockland | 34,668 | 173 | 0.5% |
| Nassau | 111,820 | 849 | 0.8% |
| Manhattan | 298,449 | 2,110 | 0.5% |
| Brooklyn | 661,183 | 2,392 | 0.4% |
| Queens | 511,488 | 1,361 | 0.5% |
| Bronx | 414,820 | 1,690 | 0.3% |
| Staten Island | 67,743 | 742 | 1.1% |

*Figure 4. Utilization Rates for Oral Health Services in Hospital Emergency Departments Among Adult Medicaid Enrollees by County in New York, 2012-2013*



# LIMITATIONS

There are several inherent limitations in using administrative claims data for purposes other than those for which they are intended. While claims data are an excellent resource by which to measure utilization of services, reporting requirements are specific and designed to capture a patient encounter with a provider. Dental claims data do not always contain the necessary detail to understand the full scope of services or the severity of the oral health condition.

It should be emphasized that these study findings are generalizable only to adults with Medicaid insurance in New York and may not necessarily apply to adults insured under Medicare, those who are privately insured, or those without insurance.

# DISCUSSION

**Medicaid Dental Insurance Benefit for Adults in New York**

In 2012-2013, the New York Medicaid program offered extensive dental coverage, including all oral health service categories, without annual spending limits, for adult enrollees 21 years of age and older,[3,4] including:

- Oral examinations: routine dental examinations, radiographs
- Preventive services: prophylaxis including teeth cleanings, fluoride application, sealants
- Basic and advanced restorative services: fillings, crowns, endodontic therapy (root canals)
- Periodontal services: periodontal surgery, scaling, root planning (cleaning below the gum line)
- Prosthodontics services: full or partial dentures
- Oral surgery services: non-emergency extractions, other oral surgical procedures

**Utilization Patterns for Dental Services Among Adults With Medicaid Dental Insurance in New York**

Approximately 1 in 5 adults aged 21 years and older in New York had a Medicaid dental benefit during all or part of the 2-year period of 2012-2013. Enrollment rates were highest for women; adults aged 21 to 24 years; and Hispanics, Non-Hispanic Asians, Native Hawaiians and other Pacific Islanders, and other races.

Nearly one-third of adult Medicaid enrollees in New York received at least one dental service in a dental office or clinic during 2012-2013. Men, adults 65 years of age and older, and Non-Hispanic American Indians had the lowest utilization rates for dental services in dental offices or clinics. Three-fourths of dentists providing services to New York Medicaid-enrolled adults were located in urban counties. Therefore, it is not surprising that Medicaid-enrolled adults living in rural counties, particularly where less than 30% of the county population lived in an urban area, had the lowest utilization rate for oral health services in dental offices or clinics during the 2-year study period.

Although the New York Medicaid program offered an extensive dental benefit for adults with Medicaid, more than 25,000 adult enrollees received at least one service for oral health–related problems in hospital emergency departments in 2012-2013. Several studies have indicated that the populations most likely to have emergency department dental visits include adults who are either insured by Medicaid or uninsured.[5-10] It is important to recognize the wide state-to-state variation in adult Medicaid dental benefit coverage and its impact on where Medicaid patients receive oral health services.[1,3,11-13]

The state utilization rate for dental services in hospital emergency departments among adult Medicaid enrollees, adjusted for patients' demographics and county characteristics, was 8.0 per 1000 adult Medicaid enrollees during the 2-year study period. Emergency department visits for nontraumatic dental problems are on the rise nationwide.[6,8-10,14] It is widely recognized that the provision of dental services in medical settings (including hospital emergency and outpatient departments) tends to be costlier and less effective than services provided by oral health providers in ambulatory settings.[7,11,15,16]

Men, young adults, Non-Hispanic Blacks or African Americans, and individuals living in rural or mixed urban-rural counties had significantly higher adjusted utilization rates for dental services in hospital emergency departments compared with women, adults aged 55 to 64 years, and Non-Hispanic Whites in 2012-2013. The adjusted utilization rates for oral health services provided in hospital emergency departments were also higher for adult beneficiaries residing in rural counties and mixed urban-rural counties compared with those living in urban counties. Counties with lower ratios of dentists providing services to Medicaid-enrolled adults generally had higher utilization rates for dental services in emergency departments than those residing in counties with higher ratios; however, this difference was not statistically significant.

The number of private-practice or clinic dentists who provided dental services to adult Medicaid enrollees during the 2-year study period varied from 0 (in 1 county) to more than 1000 (in 4 New York City counties/boroughs). Eleven rural counties and 1 mixed urban-rural county had 10 or fewer private-practice or clinic dentists billing Medicaid for adult dental services, and 5 of the 11 rural counties had less than 1 private-practice or clinic dentist who provided dental services to Medicaid enrollees per 1000 Medicaid-enrolled adults in 2012-2013.

The ratio of adult Medicaid patients per 1 private-practice or clinic dentist ranged from 14 in Rensselaer County to 909 in Chenango County during the 2-year study period, with 4 rural counties (Chenango, Schuyler, Washington, and Seneca) having private-practice or clinic dentists providing dental care to more than 250 Medicaid-enrolled adults, on average, during the 2-year study period.

County utilization rates for oral health services in dental offices or clinics by adult Medicaid enrollees in 2012-2013 ranged from 17.5% in Chemung County to 41.5% in Rockland County. Utilization rates for oral health services in dental offices or clinics were lowest in 5 rural counties (Hamilton [19.0%], Chenango [18.8%], Schuyler [19.0%], Allegany [19.9%], and Steuben [19.8%]) and in 1 mixed urban-rural county (Chemung [17.5%]).

County utilization rates for oral health services in hospital emergency departments by adult Medicaid enrollees in 2012-2013 ranged from 0.1% in Hamilton County to 4.1% in Rensselaer County. Adult

Medicaid enrollees in 4 rural counties (Chenango [3.0%], Schuyler [2.6%], Clinton [2.6%], and Ulster [2.6%]) and in 3 mixed urban-rural counties (Rensselaer [4.1%], Albany [3.7%], and Schenectady [3.2%]) had the highest utilization rates for dental services in hospital emergency departments in the state.

# CONCLUSIONS

The findings from this study of Medicaid claims data in New York describe differences in the utilization of oral health services by Medicaid beneficiaries. The data appear to mostly validate existing national literature describing the demographics of patients on Medicaid, the low rates of utilization of oral health services among enrollees, and the use of emergency departments by some for ambulatory care–sensitive dental conditions. People living in rural or mixed urban-rural areas in New York exhibited higher rates of emergency department use than those in urban areas, as did men, underrepresented minorities, and younger adults. Women, non-Hispanic Whites, and middle-aged and older adults exhibited more appropriate care-seeking behaviors by using dental offices and clinics for oral health services.

Rural areas generally have fewer dentists per population than more populous counties, which limits the availability of dental services in private dental practices, especially for the Medicaid insured. Chenango County had the highest number of Medicaid-enrolled patients per Medicaid treating dentist in the state, at 909 patients per dentist; at the same time, the utilization of oral health services by Medicaid beneficiaries in that county was the lowest in the state, at 18.8%.

However, the findings also suggest that broad generalizations about differences in availability and utilization of oral health services for Medicaid beneficiaries in rural areas are not possible. These data show variations in rates of oral health services utilization that suggest that oral health delivery systems differ by locale, even in rural areas of New York. Differences among the small number of dentists in rural areas willing to treat Medicaid-insured adults can have a substantial impact on the local population and the availability of oral health services. Thus, strategies selected to address the barriers to accessible oral health services for Medicaid enrollees must consider the characteristics of local communities and the specific needs of the population in each.

For instance, in rural Seneca County, where there were 485 patients enrolled in Medicaid per Medicaid-participating dentist (determined by the number of dentists in the county billing for a Medicaid service in 2012-2013), 26.9% of adults received an oral health service in the 2-year study period. In contrast, in Genesee County, where there were only 74 Medicaid-enrolled patients per Medicaid-participating dentist, only 23.9% of the Medicaid-enrolled population received an oral health service. These data indicate that although there were fewer dentists available to patients in Seneca County, those dentists were treating more Medicaid-enrolled patients than in Genesee County, where there was a greater supply of dentists.

Utilization of emergency departments for treatment of dental conditions also varied across New York. The Capital District—inclusive of Albany, Rensselaer, and Schenectady Counties—exhibited the highest rates

of emergency department utilization among Medicaid beneficiaries in the state. At the same time, there were more dentists per Medicaid enrollee in Rensselaer County than in any other county in the state. These findings suggest a lack of oral health literacy and understanding of appropriate care-seeking behaviors among enrolled populations that might be addressed through community education. Dental complaints are best addressed in dental offices and clinics, which are better equipped to address dental problems than emergency departments.

New York is among the states with the most generous dental benefits for Medicaid-enrolled adults in the nation. Nevertheless, only about one-fourth of Medicaid beneficiaries received any oral health service in the 2-year period assessed in this study. This suggests that the population would benefit from improved oral health literacy and education on the importance of maintaining oral health, and also that greater engagement of oral health professionals with the Medicaid program should be encouraged.

# References

# REFERENCES


1. Wall TP. *Dental Medicaid—2012*. Dental Health Policy Analysis Series. Chicago, IL: American Dental Association; 2012. http://www.aapd.org/assets/1/7/ADA-2012_Medicaid_Report.pdf. Accessed December 14, 2016.

2. Hinton E, Paradise J. Access to dental care in Medicaid: spotlight on nonelderly adults. Kaiser Commission on Medicaid and the Uninsured Issue Brief. March 2016. http://kff.org/medicaid/issue-brief/access-to-dental-care-in-medicaid-spotlight-on-nonelderly-adults. Accessed December 14, 2016.

3. Medicaid and CHIP Payment and Access Commission (MACPAC). Medicaid coverage of dental benefits for adults. In: *Report to Congress on Medicaid and CHIP*. June 2015. https://www.macpac.gov/wp-content/uploads/2015/06/Medicaid-Coverage-of-Dental-Benefits-for-Adults.pdf. Accessed December 14, 2016.

4. Chazin S, Guerra V, McMahon S. Strategies to improve dental benefits for the Medicaid expansion population. Center for Health Care Strategies, Inc., Policy Brief. February 2014. http://www.chcs.org/media/CHCS-Revised-Adult-Dental-Benefits-Brief__021214.pdf. Accessed December 14, 2016.

5. DeLia D, Lloyd K, Feldman CA, Cantor JC. Patterns of emergency department use for dental and oral health care: implications for dental and medical care coordination. *J Public Health Dent*. 2016;76(1):1-8.

6. Lewis CW, McKinney CM, Lee HH, Melbye ML, Rue TC. Visits to US emergency departments by 20- to 29-year-olds with toothache during 2001-2010. J Am Dent Assoc. 2015;146(5):295-302.

7. Allareddy V, Rampa S, Lee MK, Allareddy V, Nalliah RP. Hospital-based emergency department visits involving dental conditions: profile and predictors of poor outcomes and resource utilization. *J Am Dent Assoc*. 2014;145(4):331-337.

8. Wall T, Nasseh K. Dental-related emergency department visits on the increase in the United States. American Dental Association Health Policy Institute Research Brief. May 2013. http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0513_1.pdf. Accessed December 14, 2016.

9. Lee HH, Lewis CW, Saltzman B, Starks H. Visiting the emergency department for dental problems: trends in utilization, 2001 to 2008. *Am J Public Health*. 2012;102(11):e77-e83.

10. Okunseri C, Okunseri E, Thorpe JM, Xiang Q, Szabo A. Patient characteristics and trends in nontraumatic dental condition visits to emergency departments in the United States. *Clin Cosmet Investig Dent*. 2012;4:1-7.

11. Wall T, Nasseh K, Vujicic M. Majority of dental-related emergency department visits lack urgency and can be diverted to dental offices. American Dental Association Health Policy Institute Research Brief. August 2014. http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0814_1.pdf. Accessed December 14, 2016.

12. Nasseh K, Vujicic M. Dental benefits continue to expand for children, remain stable for working-age adults. American Dental Association Health Policy Resources Center Research Brief. October 2013. http://www.ada.org/~/media/ADA/Science%20and%20Research/Files/HPRCBrief_1013_3.pdf. Accessed December 14, 2016.

13. Choi MK. The impact of Medicaid insurance coverage on dental service use. *J Health Econ.* 2011;30(5): 1020-1031.

14. Seu K, Hall KK, Moy E. Emergency department visits for dental-related conditions, 2009. Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project Statistical Brief #143. November 2012. https://www.hcup-us.ahrq.gov/reports/statbriefs/sb143.pdf. Accessed December 14, 2016.

15. Nasseh K, Vujicic M, Romaine D. Diverting emergency department dental visits could save Maryland's Medicaid program $4 million per year. American Dental Association Health Policy Institute Research Brief. November 2014. http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1114_2.pdf. Accessed December 14, 2016.

16. Pew Center on the States. A costly dental destination: hospital care means states pay dearly. Pew Children's Dental Campaign Issue Brief. February 2012. http://www.pewtrusts.org/~/media/assets/2012/01/16/a-costly-dental-destination.pdf. Accessed December 14, 2016.

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As deputy director of OHWRC, Ms. Langelier assists the Director in preparation of all research projects and reports and in the OHWRC's dissemination activities. Ms. Langelier has served as a program research specialist at the Center for Health Workforce Studies (CHWS) for 13 years, where she has been responsible for supervising staff and coordinating of all aspects of project workflow. During her tenure, Ms. Langelier has been lead staff or the principal investigator on numerous research projects about the allied health and oral health workforce.

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With a background as a medical doctor and 15 years of experience in environmental health sciences in the US and internationally, Dr. Surdu has gained advanced knowledge and research expertise in the field of public health and research methodologies. She has contributed to the development and implementation of epidemiologic studies, as an investigator and in leadership positions, to a variety of local and regional programs supported by the US National Institute of Health (NIH), the US Environmental Protection Agency (EPA), the European Union (EU), the World Health Organization (WHO), and other organizations.

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Jean Moore serves as director for OHWRC, playing a key role in the dissemination of information regarding the OHWRC, its activities, and the outcomes of its work. Dr. Moore brings over 16 years of experience as a health workforce researcher. For the past 12 years, Dr. Moore has also been the director of CHWS at the University at Albany.

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