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Abstract

Despite literature that highlights the dental needs of people with intellectual and developmental disabilities (IDD), very few of these people receive adequate dental care. To determine whether Medicaid home and community-based services (HCBS) waivers address the dental-services gaps left by Medicaid state plans, this study examined the dental services proposed for fiscal year (FY) 2011 in 95 Medicaid HCBS waiver applications relating to individuals with IDD. Less than 20% of the waivers examined offered any type of dental service. This study also examined 88 FY 2010 HBCS waiver applications to determine changes from 2010 to 2011. Although increases were found from FY 2010 to FY 2011 in both spending for dental services and number of proposed participants, our results indicate that only a fraction of states are using HCBS waivers to address gaps in dental coverage for adults with IDD.

Key Words: dental services; oral health; HCBS Medicaid waivers; intellectual and developmental disabilities; preventive care

People with intellectual and developmental disabilities (IDD), approximately 1.58% of the general population (Larson et al., 2001), have great disparities in many chronic health conditions from the general population (Krahn, Hammond, & Turner, 2006). Prevention, including prevention of secondary conditions, is one important aspect of promoting the health of people with IDD, including dental health. However, because of barriers and inadequacies in the health-care system, including the lack of preventive treatment and education, many people with IDD experience dental caries (tooth decay and cavities) and periodontal disease (Anders & Davis, 2010).

Compared with children and adults without disabilities, individuals with IDD are more likely to have unmet dental needs and often receive only nonpreventive care (Iida, Lewis, Zhou, Novak, & Grembowski, 2010; Kancherla, Van Naarden Braun, & Yeargin-Allsopp, 2013; Kane, Mosca, Zotti, & Schwalberg, 2008; National Maternal and Child Oral Health Resource Center, 2011; Norwood, Slayton, Council on Children With Disabilities, & Section on Oral Health, 2013; Van Cleave & Davis, 2008; Waldman & Perlman, 2006). Adults with IDD consistently report poor dental health, including high rates of gingival disease and a higher proportion of missing and filled teeth (Cumella, Ransford, Lyons, & Burnham, 2000). In fact, Cumella et al. (2000) found using visual screening that “58% of subjects had poor oral hygiene. Just over one-third (35%) had a healthy gingival condition …[and] 25% required clinical interventions by a dentist or hygienist” (p. 48). Similarly, a noninvasive dental screening of athletes in the New York Special Olympics program revealed that 60% had fillings, 32% had signs of gingival disease, 28% had untreated caries, 9% reported oral pain, and 8% required urgent oral care (Fernandez et al., 2012). Dental records from adults with intellectual disability attending state-sponsored dental clinics in Massachusetts showed that even for those receiving oral care, 32%

had untreated caries, 80% had periodontitis, and 11% had edentulism (tooth loss; Morgan et al., 2012).

Oral-health problems have been linked with other overall health problems, including cardiovascular disease (American Dental Association [ADA], 2006; Lockhart et al., 2012), stroke (ADA, 2006), bacterial pneumonia (ADA, 2006), poor bone health (Kaye, 2007), diabetes (American Dental Hygienists' Association, 2013), and atherosclerotic vascular disease (Lockhart et al., 2012). Yet despite research documenting the poor dental health of people with IDD, they generally do not receive adequate preventive or restorative care (Owens, Kerker, Zigler, & Horwitz, 2006). Regular preventive treatment is an important part of dental care, especially for those with IDD, who may be at increased risk of not expressing their pain due to communication difficulties. Faulks and Hennequin (2000) found that only 19% of individuals with IDD in their study could express to their caretakers that they were in pain. Meanwhile, 21% participated in some form of self-harm because of the pain (Faulks & Hennequin, 2000). As a result, the lack of dental services for people with IDD can affect their quality of life as well as their overall health. In addition to pain, dental problems can lead to speech impediments, difficulty sleeping, missed school or work, and lowered self-esteem (Owens et al., 2006). These problems may be exacerbated by the lack of dental-care access across the life span (Glassman, 2005). People with IDD are less likely to receive services such as dental sealants (Owens et al., 2006) and more likely to receive tooth extractions (Anders & Davis, 2010). Tooth extraction, over other services such as restoration, is most often the form of treatment of carious (cavity-ridden) teeth (Anders & Davis, 2010). All of these issues indicate a significant need for appropriate dental services for people with IDD.

The dental issues described here can be attributed to the reduced frequency of treatment as well as the limited education dentists have regarding oral-health needs of people with IDD in the community. While in the past, people with IDD received their dental services in institutions and state facilities from in-house medical and dental employees (Waldman, Fenton, Perlman, & Cinotti, 2005), with deinstitutionalization came the need for other models of dental services. Anders and Davis (2010) found that individuals with IDD living in the community accessed dental services less frequently than those in congregate settings. Such factors led the researchers to propose the need for developing strategies to increase patient acceptance of routine periodontal and restorative dental care, to ensure that dentists and hygienists are prepared to provide this care, and to minimize the need for this care through effective prevention (Anders & Davis, 2010, p. 116).

State Oral-Health Plans

Recognizing the need for dental services for all people, states outline their oral-health goals in state oral-health plans. A review of 50 state oral-health plans revealed that while many states included preventive goals, they typically prioritized public education and community water fluoridation rather than preventive visits to a dentist. Another common goal was to increase providers, especially in rural and underserved areas. Unfortunately, very few states outlined goals to increase restorative-treatment services. Moreover, although 32 of these 50 plans did mention disability (or "special needs" or "children with special health care needs") specifically (Holtzman, Edelstein, & Frosh, 2012a), there was a tendency to focus on children and pregnant women while omitting specific plans for people with disabilities. In fact, people with disabilities are one of "the six categories least often addressed in state oral health plan goals and objectives" (Holtzman, Edelstein, & Frosh, 2012b, p. 1). Therefore, people with IDD face significant

environmental barriers related to access to dental care. The most prominent environmental barrier is the inability to find a dentist willing to treat people with IDD (Norwood et al., 2013). While this may be due to dentists' lack of knowledge about IDD, it also relates to low Medicaid reimbursement rates, which lead some dentists to not accept Medicaid as a form of payment (Norwood et al., 2013).

Medicaid

Since "adults with an intellectual disability are not a homogenous group in terms of general or dental health" (Cumella et al., 2000, p. 46), it is particularly important to pay attention to other factors that influence dental health, such as access to health-care services. People with disabilities are more likely to be on Medicaid because of links between disability and poverty (Fremstad, 2009), employment value systems, work disincentives, and need for services. Because Medicaid funds a significant portion of the supports needed by people with IDD, the purpose of this study was to examine the types of dental services available through Medicaid HCBS waivers in fiscal year (FY) 2010 and FY 2011, and the discrepancies between states in the provision of these services.

According to the 2005 Medicaid Expenditure Panel Survey (cited in Chalmers et al., 2011) there are lower oral-health utilization rates for people who are eligible for Medicaid than for those who are privately insured. This lower rate of oral-health utilization is also present in children on Medicaid. A review of children with IDD newly enrolled in Medicaid in Iowa revealed that children with IDD were 31% more likely to have a delayed first dental visit compared to children without IDD (Chi, Momany, Jones, & Damiano, 2011). A larger scale review of children with special health-care needs found that those on Medicaid were less likely to receive preventive oral health care, but rates varied widely between states (Kenney, 2009).

Medicaid across the nation does not widely cover dental care for adults, nor does it require states to provide minimum dental care for adults. Instead, states are able to determine what dental benefits are provided (Centers for Medicare and Medicaid Services [CMS], 2012). Consequently, the types of services offered by states vary widely. In their Medicaid state plans, the majority of states do not provide comprehensive dental services. Table 1 provides an overview of the dental services identified in Medicaid state plans, drawing on data from our review of the state plans and a report on state dental plans issued by the Henry J. Kaiser Family Foundation ([KFF], 2010). Less than half of states provide what would be considered a bare minimum of service—emergency dental services for adults (CMS, 2012).

HCBS waivers finance the majority of Medicaid long-term supports for people with IDD (Rizzolo, Friedman, Lulinski-Norris, & Braddock, 2013). HCBS waivers have grown as a result of deinstitutionalization initiatives as well as research documenting the significant benefits of community living and integration for people with disabilities (Lakin, Larson, & Kim, 2011; Mansell & Beadle-Brown, 2004). Using Iowa Medicaid claims data, Chalmers et al. (2011) found that approximately 65% of individuals with IDD enrolled in Medicaid in the state who had at least one dental claim were enrolled in an HCBS waiver, illustrating the importance of the HCBS waiver in providing dental care to adults with IDD in Iowa. Furthermore, 62.4% of those enrolled in an HCBS waiver in Iowa visited a dentist in the previous year (2005), 31% had one or more restorative procedures, and 16% had a more complex dental service, illustrating the need for access to dental care in this population (Chalmers et al., 2011). In another study, Moeller, Chen, and Manski (2010) found that although older adults who had access to preventive Medicaid care visited the dentist more often, they had lower dental expenses overall and fewer visits for expensive nonpreventive procedures than those who had no preventive services and

visited the dentist only for problems. Increased access to dental care appears to both reduce expenditures and improve overall oral health (Moeller et al., 2010).

As shown in the last column of Table 1, a small number of states specifically mentioned dental services in their Medicaid HCBS Section 1915(c) waiver applications to address the dental-services gaps left by state Medicaid plans. Service definitions from each HCBS waiver that provided dental services were collected and compared to determine how dental care was defined and what was provided. Analysis of the types of services offered by the waivers, the rates paid to vendors, and the variation between states and waivers was also conducted. Finally, proposed FY 2011 dental-services rates were compared to FY 2010 rates to examine allocation changes.

Methods

Methods for this study were similar to those in a study by Rizzolo et al. (2013)—in which a national study of HCBS Medicaid waiver services for people with IDD was conducted—and a study by Hall-Lande, Hewitt, and Moseley (2011), which examined HCBS Medicaid waivers that targeted people on the autism spectrum. To be included in this study, HCBS waiver applications needed to specify that the target group served by the waiver was people with intellectual and developmental disabilities—the waivers needed to include either "mental retardation" (MR), developmental disability (DD), or autism spectrum disorder. No age limitations were used.

HCBS waiver data for this study were obtained by reviewing all waiver applications that were available on the CMS Medicaid.gov website over a period of 37 months (May 2010 through May 2013). The data presented in this study represent the latest data available to the authors as of May 15, 2013. In addition to a review of these waivers available on the CMS

website, state developmental-disability agencies and division websites were reviewed. Agency staff were also contacted when the authors knew of an IDD waiver application that was unavailable online. Finally, CMS staff were contacted in attempts to obtain copies of these missing waivers. Overall waiver applications were collected from 43 states and the District of Columbia for FY 2011 (n = 95 waivers) and FY 2010 (n = 88 waivers). It should be noted that the authors were aware of but unable to access at least 11 additional waiver-program applications for waivers that were operating in the states in FY 2011, as well as 25 in FY 2010. Although these waivers are listed on the CMS Medicaid.gov website, the links to the waiver applications were broken or missing. Since they were not accessible through this method, we searched for these particular waivers on state Medicaid websites and contacted states in an attempt to access these files. If we were able to access the waiver through any of these methods, it was included in the study. Because these waiver applications were inaccessible, they (and any additional waiver applications unknown to the authors) were not included in the analysis. This must be considered when interpreting the findings.

The state fiscal years used in most waiver applications were July 1, 2009, to June 30, 2010, (i.e., FY 2010) and July 1, 2010, to June 30, 2011 (i.e., FY 2011). However, a small number of states used the federal fiscal years of October 1, 2009, to September 30, 2010, and October 1, 2010, to September 30, 2011; while other states used the 2010 and 2011 calendar years. Thus, state fiscal years for waiver applications were used to group waivers into FY 2010 and FY 2011 data. For consistency, the term *fiscal year* (FY) will be used throughout this study.

The FY 2010 and FY 2011 waiver applications were systematically examined to determine, if applicable, the dental services provided, the projected number of users, the average unit of service per user, and the average cost of each unit of service. CMS requires states to enter

this information about their services to demonstrate compliance with the cost-neutrality mandate for HCBS waivers (Rizzolo et al., 2013). States also project future waiver years' spending based on prior years' data with certain adjustments. Furthermore, states cap the number of people who may be enrolled in the waiver, and many waivers cap the maximum cost per person so that they do not exceed the cost-neutrality limit (Rizzolo et al., 2013, pp. 3–4).

Additionally, the definitions of dental services that were provided in the 2010 and 2011 waivers were analyzed to determine patterns across dental services.

Findings

Service Definitions

As shown in Table 2, of the 95 FY 2011 HCBS waivers, 18 waivers, or 19%, provided some form of dental service. Across the 18 waivers, the service titles included oral health, dental, dental services, adult dental services, and dental treatment. Six of the definitions of these services specified that these services were only applicable when they were not met through the Medicaid state plan. For example, the District of Columbia's comprehensive waiver (DC307.R02.01) specified that the dental services offered through the waiver were different in nature and scope from the state plan. South Carolina's comprehensive waiver (SC237.R04.00) definition stated that dental services "is defined and described in the approved State Plan and will not duplicate any service available to adults in the State Plan." The dental services in South Carolina's waiver are the same as those provided through the Early Periodic Screening, Diagnosis, and Treatment (EPSDT) program to children under age 21. The waiver covers these services for individuals over age 21. Tennessee's Arlington waiver (TN357.R02.01) clarified that "Dental Services are not intended to replace services available through the Medicaid State

Plan/TennCare program. All Dental Services for children enrolled in the waiver are provided through the TennCare EPSDT program."

Dental services provided in FY 2011 can generally be broken down into three categories: preventive, restorative/therapeutic, and orthodontic. Some additional service areas, such as implants, sedation, and emergency dental services, were also noted.

Preventive care. All 18 waivers, with the exception of Tennessee's statewide waiver (TN128.R04.02) and self-determination waiver (TN427.R01.00), specifically mentioned preventive care. Examples of preventive care listed in these waivers include periodic examination and diagnostic services. However, some waivers expanded their definitions to clarify what exactly was included. For example, the District of Columbia's comprehensive waiver defined preventive services to include "dental prophylaxis, topical fluoride treatment, space maintenance and sealant; restorative services including, amalgam, resin-based, inlay/onlay, crowns, and other restorative services." Conversely, Tennessee's comprehensive waiver and self-determination waiver specified that "routine dental exams and cleanings, and preventive services[,] are excluded from coverage."

Restorative/therapeutic services. Each of the 18 waivers also included some sort of restorative/therapeutic dental service(s). Although the Georgia New Options waiver (GA175.R04.01) specified that this was "limited coverage," most other waivers included a wide range of restorative/therapeutic services. For example, Texas's multiple-disabilities waiver (TX281.R03.00) defined therapeutic dental treatment as

> treatment that includes, but is not limited to, pulp therapy for permanent and primary teeth; restoration of carious permanent and primary teeth; maintenance of space; and limited provision of

> removable prostheses when masticatory function is impaired, when an existing prosthesis is unserviceable, or when aesthetic considerations interfere with employment or social development. For example, an individual who has a severe dental deformity may receive aesthetic treatment to enhance their opportunities for community integration.

Orthodontics. The District of Columbia's comprehensive waiver, as well as all three of Texas's waivers that offered dental services—its DD HCBS Waiver (TX110.R05.05), multiple-disabilities Waiver, and Community Living Assistance and Support Services (CLASS) waiver (TX221.R04.01)—specified allowances for orthodontic services. While the three Texas waivers excluded cosmetic orthodontics, they did include

> procedures that include treatment of retained deciduous teeth; cross-bite therapy; facial accidents involving severe traumatic deviations; cleft palates with gross malocclusion that will benefit from early treatment; and severe, handicapping malocclusions affecting permanent dentition with a minimum score of 26 as measured on the Handicapping Labio-lingual Deviation Index.

The District of Columbia's comprehensive waiver limited orthodontics to instances in which they were medically or habilitatively necessary. Meanwhile, Tennessee's Arlington and statewide waivers both specified that orthodontic services were excluded.

Implants. Both Colorado's comprehensive waiver (CO007.R06.00) and its Supported Living Services waiver (CO293.R03.00) allowed for implants "when the procedure is necessary to support a dental bridge for the replacement of multiple missing teeth, or is necessary to

increase the stability of dentures." However, additional implants were not allowed if the first implants failed. Similarly, smokers were not allowed implants, because smoking was said to significantly increase the rate of implant failure.

Sedation. Six waivers covered sedation services. The District of Columbia's comprehensive waiver included "anesthesia including full mouth rehabilitation or other services provided under intravenous sedation or general anesthesia." Tennessee's Arlington and statewide waivers included "intravenous sedation or other anesthesia services provided in the dentist's office by, and billed by, the dentist or by a nurse anesthetist or anesthesiologist who meets the waiver provider qualifications." Texas's multiple-disabilities and CLASS waivers allowed sedation that was necessary to perform dental treatment including nonroutine anesthesia, for example, intravenous sedation, general anesthesia, or sedative therapy prior to routine procedures. Sedation does not include administration of routine local anesthesia only. Tennessee's self-determination waiver included "intravenous sedation or other anesthesia services" only if they were provided in a dentist's office by a dentist, nurse anesthetist, or anesthesiologist.

Emergency dental services. Four waivers—the District of Columbia's comprehensive waiver, Florida's Familial Dysautonomia waiver (FL40205.R01.00), and Texas's DD HCBS waiver and multiple-disabilities waiver—offered emergency dental-care services. While the District of Columbia's comprehensive waiver only specified emergency treatment of dental pain, Florida's Familial Dysautonomia waiver's emergency dental care included "oral examinations, necessary radiographs, extractions, and the incision and drainage of an abscess." Texas's DD HCBS and multiple-disabilities waivers included procedures "necessary to control bleeding,

relieve pain, and eliminate acute infection; operative procedures that are required to prevent the imminent loss of teeth; and treatment of injuries to the teeth or supporting structures."

Other unique services. Waivers were also noted for offering unique services. For example, both Colorado's comprehensive-services and Supported Living Services waivers' definitions of dental services included payment for dental insurance. No other waivers that cover dental services mentioned providing any type of dental insurance. Another service, unique to the District of Columbia's comprehensive waiver, was home visits. If clinically necessary, the District of Columbia's comprehensive waiver allowed home visits for the performance of dental procedures. Similarly, it allowed for hospitalization when clinically necessary for the performance of dental procedures.

Service Allocation

Overall, for FY 2011 HCBS waivers, less than one tenth of 1% of total funding was proposed to CMS for dental services. However, the percentage of total spending allocated to dental services in each specific waiver program in FY 2011 varied significantly, as shown in Table 2. Nine of the 18 waivers projected that they would spend less than 0.5% on dental services in FY 2011. Five of the 18 waivers projected spending of between 0.5% and 1% on dental services. Colorado's Supported Living Services waiver and Tennessee's self-determination waiver each projected 2%, Texas's multiple-disabilities waiver projected 5.13%, and Florida's Familial Dysautonomia waiver projected 9.57%. It should be noted that familial dysautonomia is often accompanied by orthodental abnormalities including

> absence of fungiform papillae and taste buds; altered taste sensation; low caries prevalence; malocclusion in the form of crowding and proportionally small jaws; delayed dental age;

> inflamed gingiva and frequent periodontal diseases; decreased response to pulp vitality tests; and self-inflicted injuries, such as Riga–Fede disease, biting of the perioral soft tissues, and intentional or accidental self-extraction of teeth. (Mass, Sarnat, Ram, & Gadoth, 1992, pp. 305–306)

The less than one tenth of 1% of total funding that was proposed to CMS for dental services in FY 2011 was slightly more than the .05% proposed in the 2010 HCBS waiver applications. However, as shown in Tables 2 and 3, only 16 waivers were common across FY 2011 and FY 2010. Two newly authorized (in 2011) waivers—Tennessee's Arlington and statewide waivers—both included dental services.

When looking at changes in proposed funding from FY 2010 (see Table 3) to FY 2011 (see Table 2) within the 16 waiver programs that specifically mentioned dental services common to both years, Figure 1 shows that no waivers that provided dental services in FY 2010 projected reduced spending for FY 2011. Four states had no change in projected dental spending, nine states projected increased dental spending of less than 6.5%, and four proposed an increase in dental spending between 12% and 14.6%. Table 4 provides additional detail about changes in projected costs by waiver programs from FY 2010 to 2011.

In terms of the number of unduplicated participants served, the total estimated number across the 16 waivers increased by 2,881, or an average of 4.83%. As shown in Figure 2, seven states proposed no change in the number of participants they provided dental services to. Six states projected increases between 2.5% and 7.25% in the number of participants. Two states proposed increases between 12% and 14.5% in the number of participants. One state proposed a 30% increase in the number of participants. Meanwhile, Georgia's comprehensive-supports

waiver (GA.0323.90.R1.02) reduced its projected number of total unduplicated participants receiving dental services by 2,504—an 80.88% proposed reduction. For more information about these changes in participants per state, see Table 4.

Overall, however, despite the increases in funding projected for FY 2011, less than 1.5% of people receiving HCBS waiver services in the 18 waivers analyzed were projected to receive dental services from these waivers.

Discussion

This study presented data and analysis on the number of states providing dental services within the Medicaid HCBS waiver program, the types of services provided, the projected number of recipients, and the proposed spending for these services. Oral health care is important because dental problems are linked with other diseases (ADA, 2006; Kaye, 2007; Lockhart et al., 2012) and lead to many secondary conditions for people with IDD (Owens et al., 2006). In addition to promoting health, comprehensive dental care also saves on costs (Moeller et al., 2010). Previous research has shown that Medicaid state plans do not provide comprehensive dental services for adults with IDD. Our study found that HCBS waivers are not filling the gap in dental care in most states for people with IDD. Spending across the states was low and targeted only a fraction of waiver recipients when dental services were even offered.

Specifically, of the 95 FY 2011 waiver applications examined, only 18 waivers offered dental services. Of these 18 waivers, all offered restorative/therapeutic services such as fillings or dentures. Sixteen of the 18 offered preventive care such as dental exams and diagnostic services. A third of the waivers offered sedation, while less than a quarter offered orthodontic services. Two of the eighteen (both in one state) offered implants, one reimbursed for dental insurance, and one covered home visits. A third of the waivers (6 of 18) supplemented dental

services covered through their state's Medicaid plan, and one state used a waiver to cover young adults that were aging out of EPSDT-covered dental care. However, despite the coverage provided by these 18 waivers, they represent a minority of waiver applications, indicating significant barriers to access to dental care for people with IDD who are served by waiver programs.

Further, although we found increases in both proposed spending on dental services and number of anticipated participants from FY 2010 to FY 2011, proposed spending for dental services was low when compared to other services. States that included dental services in their waiver typically budgeted 1.35% of total spending for adult dental care. Furthermore, in the 18 waivers that offered dental services, less than 2% of waiver recipients were projected by the states to receive dental care.

Overall, in a few states HCBS waivers were working to fill in gaps in dental services left by Medicaid state plans (see Table 1). It is unclear, however, why more states are not using HCBS waivers to address gaps in dental care. States may possibly view dental services as a less pressing need than other supports when determining what to offer through the HCBS waiver while still meeting the cost-neutrality test. Some states are negotiating with managed-care organizations to provide oral-health services and supplies and to enhance provider education to treat people with IDD (Snyder, 2009). Managed-care organizations "have flexibility that fee-for-services Medicaid programs often do not" (Snyder, 2009, p. 2). As states begin to move towards managed0care models, they may find increased opportunities to negotiate dental services for people with IDD.

Limitations

A major limitation of the study was the lack of accessibility of some waiver applications. The authors are aware of at least 11 other FY 2011 and 25 other FY 2010 waiver applications that were not publicly available for examination (see Methods). The effect these waivers would have had on our data on the nature of dental services is unknown; it is possible that the states concerned were also providing dental services. This must be considered in interpreting our findings and in future research. Further, in terms of the analysis of spending on dental services, the current study was based on state projections of spending made to the federal government. Because the proposed spending was based on previous years' actual utilization, we believe it is a reasonably accurate proxy of IDD waiver services and commitments in the states to dental care; however, the fact that it is projections must be considered in interpreting our findings.

Implications for Community Inclusion

To promote valued outcomes from living in the community, appropriate services and supports—including those related to dental health—must be provided for people with IDD. States need to develop community infrastructure to support individuals with IDD living in the community, including training and supports for health providers, including dentists. Some states, such as New Mexico and Pennsylvania, provide financial incentives to dentists who treat individuals with IDD, though states still struggle with a shortage of dentists trained to treat this population (Snyder, 2009). Further, dental health is affected by other factors, such as diet. As noted by Dye et al. (2004) and Rugg-Gunn, Hackett, Appleton, Jenkins, and Eastoe (1984), poor dietary habits can contribute to dental-health problems, and many people with IDD in the community have been found to experience poor nutrition (Marks, Sisirak, Heller, & Wagner, 2010). Although Marks et al. (2010) found that health-promotion education programs can reduce poor eating habits and increase knowledge of oral hygiene, these programs are still expanding,

and strategies for integrating them into community supports are still developing (Marks & Heller, 2003). True community participation and integration for people with IDD cannot be fully achieved until “they are not constrained by poor health and can command the necessary resources and power to change conditions affecting their health status” (Marks & Heller, 2003, p. 206). By covering dental services in the HCBS waivers, states are proactively addressing this critical need to access in the community. But work is needed to ensure that all people with IDD have access to preventive, and all other necessary, dental services in inclusive communities.

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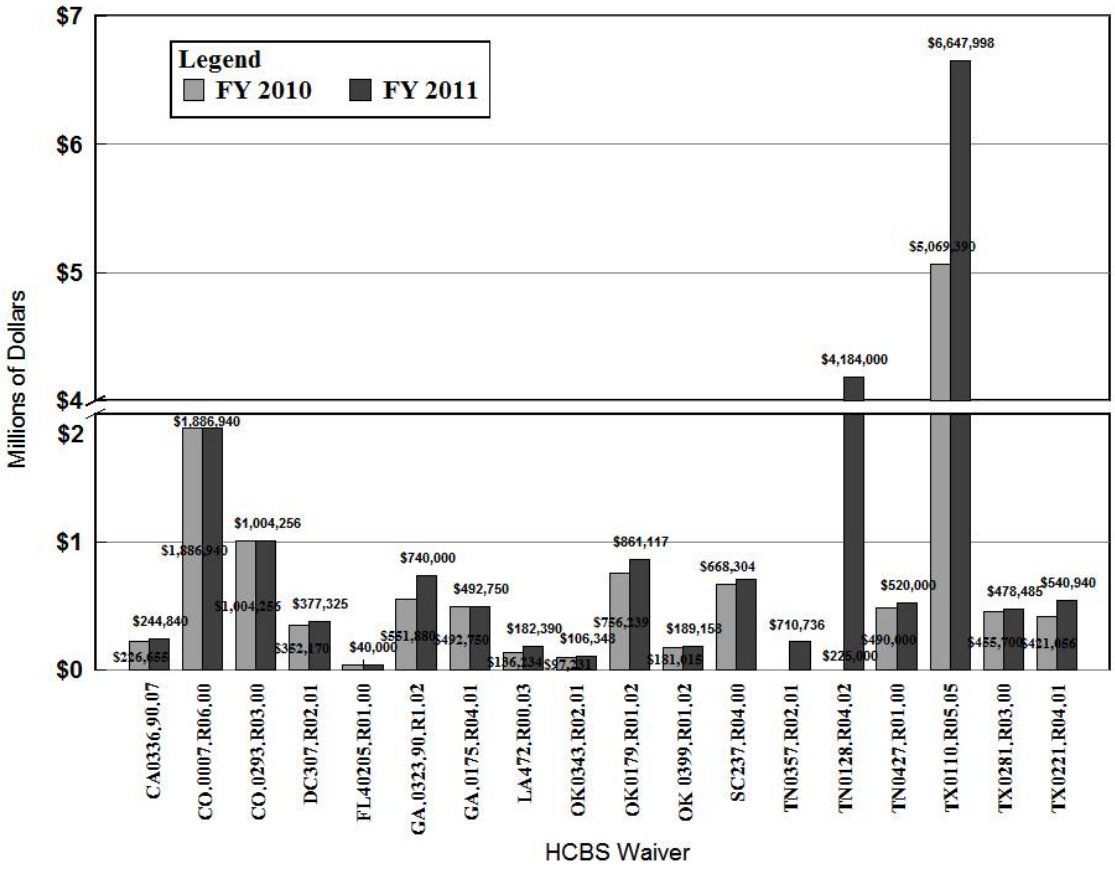
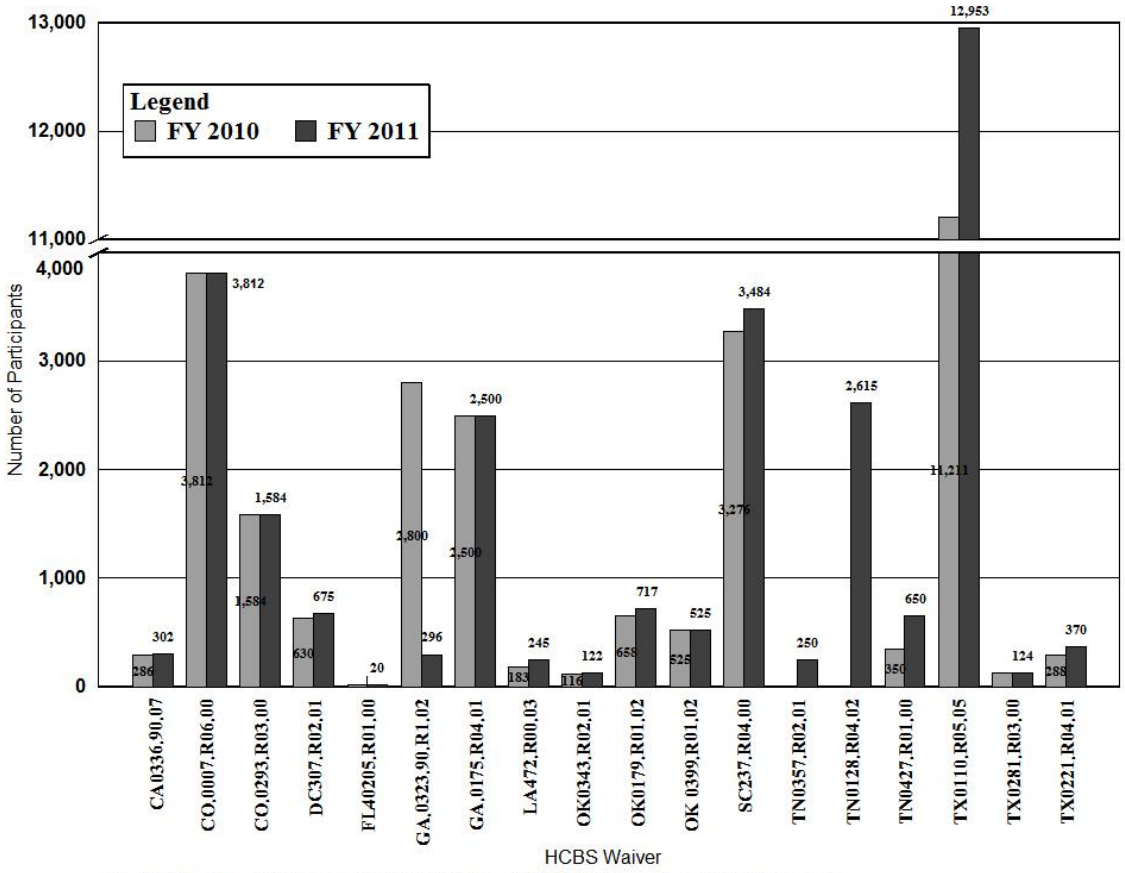


Note. We did not have FY 2010 data for TN037.R01.01 or TN0128.R04.02 so only the FY 2011 data is shown.

Figure 1. Estimated total dental services spending per Waiver by fiscal year



Note. We did not have FY 2010 data for TN037.R01.01 or TN0128.R04.02 so only the FY 2011 data is shown.

Figure 2. The number of participants estimated to receive dental services per Waiver per fiscal year

Table 1

Location of State Dental Coverage for Adults with I/DD in the Community in FY 2010 or FY 2011

State	State Medicaid plan	HCBS waiver(s) including dental services	HCBS waiver(s) not including dental services
Alabama	None (EPSDT under 21 only)		AL0001.R06.01 AL391.R02.00
Alaska	Limited to emergency care to treat pain or infection; routine diagnostic examination and radiographs; preventive care; certain endodontic services; periodontics; prosthodontics; oral surgery; professional consultation; and dentures. $1,150 annual cap		AK260.R03.02
Arizona	Limited to elimination of oral infections and disease, which includes dental cleanings, treatment of periodontal disease, medically necessary extractions, and the provision of simple restorations as a medically necessary prerequisite to organ transplantation; and prophylactic extraction of teeth in preparation for radiation treatment for cancer of the jaw, neck, or head		
Arkansas	Limited to $500 annual cap; one set of dentures per lifetime		AR0188.R04.03
California	None (must be placed in a rehabilitative facility, nursing facility, or an Intermediate Care Facility for persons with Developmental Disabilities)	CA0336.90.07	
Colorado	Limited to emergency treatment; procedures for concurrent medical condition including clinical oral evaluations, radiographs, tests and laboratory examinations, periodontal and nonperiodontal surgical procedures, extractions, biopsy, removal of lesions, tumors, cysts, and neoplasms, treatment of fractures, management of temporomandibular-joint dysfunction, repair procedures, anesthesia, and professional consultation	CO.0007.R06.01 CO.0293.R03.01	CO0434.R01.01 CO0305.R03.00 CO4180.R03.02

Connecticut	"Periodontal and fixed bridges not covered, frequency of x-rays limited by type" (KFF, 2010, row 9)		CT0437.R01.01 CT426.90
Delaware	None (Under 20 years old only)		DE0009.06.00
Florida	Limited to one set of dentures or partial dentures and their upkeep; surgery for injury or disease; and emergency dental services	FL40205.R01.00	FL294.R03.02
Georgia	Limited to diagnostic radiographs; emergency examination; oral and maxillofacial surgery; anesthesia; and hospital admissions when approved	GA.0323.90.R1.02 GA.0175.R04.01	
Hawaii	Limited to emergency treatment (pain relief, elimination of infection, and treatment of injury)		
Idaho	Limited to basic dental care including diagnostic, preventive, restorative, and prosthodontic services		ID0076.R04.04
Illinois	"Coverage limited to exams and x-rays necessary to access oral health, to diagnose oral problems and to develop a treatment plan" (KFF, 2010, row 17)		IL473.R01.00 IL464.R01.00 IL0350.R02.01
Indiana	"$600 maximum benefit/year included with denture services, exam and cleaning 1/year (2/year for nursing facility residents), frequency of x-rays limited by type, periodontia limited, second opinions required for specified procedures" (KFF, 2010, row 18)		IN4151.R04.00 IN0378.R02.01 IN387.R02.00

Iowa	Limited to preventive services including oral prophylaxis, topical application of fluoride, and pit and fissure sealants; diagnostic services including oral evaluation every 6 months, a full-mouth radiograph survey consisting of a minimum of 14 periapical films and bitewing films once every 5 years, supplemental bitewing films once every 12 months, and other films and radiographs when medically necessary; restorative services including treatment of caries, amalgam alloy and composite resin-type filling materials, and crowns; periodontal services including full-mouth debridement once every 24 months; endodontal services when there is a good prognosis for maintenance; orthodontic services for a severe malocclusion; and prosthetic services including immediate dentures, partial dentures, and replacement dentures	IA0242.R04.01
Kansas	Limited to orcantral fistula closure; unilateral radical antrotomy; biopsy of oral tissue; radical excision of lesion; excision of tumors; removal of cysts and neoplasms; partial ostectomy, guttering, or saucerization; surgical incision for drainage of abscess, removal of foreign bodies, skin, subcutaneous areolar tissue, metal plates, screws or wires, sequestrectomy for osteomyelitis, and maxillary sinusotomy for removal of tooth fragment or foreign body; treatment of fractures; closed reduction of dislocation, limitation of motion and related injections; sutures; oral skin grafts; frenulectomy; excision of periocornal gingiva; sialolithotomy; excision of salivary gland; sialodochoplasty; closure of salivary fistula; emergency tracheotomy; first 30 minutes of general anesthesia, including materials and apparatus; each additional 15 minutes of general anesthesia, including materials and apparatus; consultation provided by dentist or physician; and house/extended-care-facility call including visits to nursing homes, long-term care facilities, hospice sites, institutions, etc.	KS0224.R04.02 KS0476.R00.01

Kentucky	Limited to oral exams; emergency visits; X-rays; extractions; and fillings		KY314.R03.00
Louisiana	Limited to exams and X-rays only with denture construction	LA472.R00.03	LA0401.R01.08 LA361.R02.01 LA0453.R01.00
Maine	"Limited to trauma care, diagnostic procedures and treatment for acute conditions, and emergency treatment for relief of pain and infection" (KFF, 2010, row 24)		ME0159.R05.00
Maryland	"Limited to trauma care and emergency treatment rendered in a hospital emergency department" (KFF, 2010, row 24)		MD23.R05.04 MD0339.R02 MD0424.R01.02
Massachusetts	"Limited to diagnostic and preventive services, extractions, emergency visits and some oral surgery; limits do not apply to certain developmentally disabled adults" (KFF, 2010, row 25)		MA0064.92.R4 MA.40207 MA0828.R00.00 MA0826.R00.00 MA0827.R00.00
Michigan	Limited to diagnostic and therapeutic services to treat conditions relating to a specific medical problem; emergency treatment; examinations and preventive and therapeutic services for relief of pain and infections; and adjustments and repair to dentures		
Minnesota	Limited to periodic oral evaluation once per year; comprehensive oral evaluation every 5 years; bitewing X-rays one series per year; periapical X-rays; panoramic X-rays once every 5 years; prophylaxis once per year; fluoride varnish once per year; fillings; root canals for anterior and premolar teeth; full-mouth debridement once per 5 years; removable partial and full dentures once every 6 years; palliative treatment and sedative fillings for relief of pain; and surgical services limited to extractions, biopsies, and incision and drainage		MN0061.90.R3.09
Mississippi	Limited to care that is adjunct to treatment of a medical or surgical condition; and emergency dental extractions and treatment. Limited to $2,500 per year		MS0282.R03.00

Missouri	"Limited to trauma care related to facial injury or treatment of health-impacting disease or medical condition" (KFF, 2010, row 30)	MO0698.R00.00 MO40185.R03.00 MO40190.R03.00 MO178.R05.00 MO0404.R01.00
Montana	Limited to diagnostic and preventive dental services; restoration; endodontic services; periodontal services; crowns; and orthodontic services for cases involving anomalies or syndromes	MT208.R04.02 MT0371.R02.02 MT667.R00.01
Nebraska	Limited to diagnostic services; yearly exams; and preapproved periodontal treatment. $1,000 annual cap	NE40660.R00.00 NE4151.R04.02 NE394.R02.00 NE396.R02.00
Nevada	Limited to emergency care only	NV0125.R05.02
New Hampshire	"Limited to trauma care and emergency treatment for relief of pain and infection" (KFF, 2010, row 34)	NH0053E.90.R3
New Jersey	"Exam and cleaning 2/year, frequency of x-rays limited by type" (KFF, 2010, row 35)	NJ0031.R01.00 NJ03.R04
New Mexico	"Exam and cleaning 1/year, frequency of x-rays limited by type, specified limit on endodontic, periodontic and restorative services; [Traditional Medicaid beneficiaries] benefit limited to emergency treatment for relief of pain and infection and includes oral surgery" (KF, 2010, row 36)	NM0448.R01.00
New York	Limited to dental-clinic visits	NY40200.R02.00 NY40176.R03.00 NY0238.R04.00 NY470.R01.00
North Carolina	Limited to routine dental examinations and screenings; dentures, orthodontic services, periodontal services, and complex surgical procedures; emergency services; endodontic treatment for anterior teeth; full-mouth X-rays every 5 years; and replacement of dentures every 10 years	NC0662.R00.02 NC0663.R00.02

North Dakota	"Exam and cleaning 1/year, frequency of x-rays limited by type" (KFF, 2010, row 29)		ND0842.R00.00 ND0421.R01.00 ND0037.R06.02
Ohio	Limited to one annual routine exam and cleaning; X-rays; oral-surgery services; simple and complex extractions; fillings; denture services; crowns, posts, and related services; general anesthesia; periodontics; orthodontics; and endodontics		OH380.90 OH231.R03.00 OH383.R02.00
Oklahoma	"Limited to emergency extractions and smoking cessation counseling only" (KFF, 2010, row 42)	OK0343.R02.01 OK0179.R01.02 OK0399.R01.02	OK0351.R02.01
Oregon	Limited to preventive services; diagnostic services that are dentally necessary; restorative services; periodontal maintenance; removable prosthodontics; endodontics; surgery; and adjunct services		OR0117.R04.06 OR375.R02.04 OR40194.R02.00
Pennsylvania	"Exam and cleaning 2/year" (KFF, 2010, row 44)		PA0147.R04.00 PA354.R02.02 PA593.R00.04
Rhode Island	"Orthodontia not covered" (KFF, 2010, row 45)		
South Carolina	None (EPSDT under 21 only)	SC237.R04.00	SC0456.R01.00 SC0676.R00.00
South Dakota	Limited to routine and preventive services twice a year; restorative services (including restoration by filling, crowns, emergency treatment, oral surgery, general anesthesia, or sedation); endodontic services (root-canal therapy on anterior teeth or retreatments on anterior teeth); periodontal services; and major services (buildups, posts, and cores, recementation of cast restorations, and permanent crowns). $1,000 annual cap		SD0044.R06.00 SD338.R02.01
Tennessee	None (Kaiser Family Foundation, 2010, row 48)	TN0357.R02.01 TN0128.R04.02 TN0427.R01.00	
Texas	None (EPSDT under 21 only)	TX0110.R05.05 TX0281.R03.00 TX0221.R04.01	

Utah	Limited to emergency services only (diagnostic exams, X-rays, incision and drainage of abscess, and extractions for erupted teeth)		UT158.R05.00
Vermont	Limited to nonsurgical treatment of temporomandibular-joint disorders; and coverage of prophylaxis every 6 months. $495 annual cap		
Virginia	"Limited to medically necessary oral surgery and associated diagnostic services" (KFF, 2010, row 53)		VA358.R02.01 VA430.R01.00 VA0372.R02.05
Washington	Limited to preventive care; treatment including crowns, restorations, endodontics, and periodontics; behavior management; complete dentures every 5 years; and partial dentures every 5 years		WA40669.R00.00
Washington, DC	Limited to general dental examinations and routine maintenance every 6 months; surgical services and extractions; emergency care; and fillings	DC307.R02.01	
Wisconsin	Limited to basic diagnostic services, preventive services, restorative services, endodontic services, periodontic services, fixed and removable prosthodontic services, oral and maxillofacial surgery services, and emergency treatment of dental pain		WI0229.R04.00 WI0484.R01.00 WI0368.R02.00
Wyoming	Limited to emergency conditions and relief of pain		WY0226.R04.02 WY0253.R04.00

Note. Unless otherwise noted, the state Medicaid-plan information is from our review of state Medicaid plans and amendments.

Table 2

FY 2011 HCBS Waiver Dental Services

State	Waiver number	Service title	Unit	Average unit cost	Total cost	Percentage of total waiver spending
California	CA0336.90.07	Oral health	Visit	$811	$244,840	0.00%
Colorado	CO.0007.R06.00	Dental services	Visit	$495	$1,886,940	0.66%
Colorado	CO.0293.R03.00	Dental services	Visit	$634	$1,004,256	2.00%
Florida	FL40205.R01.00	Adult dental services	1	$500	$40,000	9.57%
Georgia	GA.323.R03.01	Adult dental	Procedure	$500	$740,000	0.23%
Georgia	GA.0175.R04.01	Adult dental services	Procedure	$39	$492,750	0.55%
Louisiana	LA472.R00.03	Dental	Procedure	$149	$182,390	0.71%
Oklahoma	OK0343.R02.01	Dental services	Visit	$133	$106,348	0.30%
Oklahoma	OK0179.R01.02	Dental services	Visit	$120	$861,117	0.30%
Oklahoma	OK0399.R01.02	Dental services	Visit	$120	$189,158	0.16%
South Carolina	SC237.R04.00	Adult dental services	Visit	$102	$710,736	0.24%
Tennessee	TN0357.R02.01	Dental services	Procedure	$100	$225,000	0.42%
Tennessee	TN0128.R04.02	Adult dental services	Procedure	$100	$4,184,000	0.78%
Tennessee	TN.0427.R01.03	Adult dental services	Procedure	$100	$520,000	2.03%
Texas	TX0110.R05.05	Dental treatment	Visit	$257	$6,647,998	0.74%
Texas	TX0281.R03.00[a]	Dental treatment	Treatment	$2,756	$341,775	3.66%
Texas	TX0281.R03.00[a]	Sedation for dental treatment	Treatment	$1,103	$136,710	1.46%
Texas	TX0221.R04.01	Dental services	Item	$731	$540,940	0.22%
Washington, DC	DC307.R02.01	Dental	Service	$559	$377,325	0.23%

[a]This waiver is listed twice because Texas reports dental services for treatment and sedation separately.

Table 3

FY 2010 HCBS Waiver Dental Services

State	Waiver number	Service title	Unit	Average unit cost	Total cost	Percentage of total waiver spending
California	CA0336.90.07	Oral health	Visit	$793	$226,655	0.01%
Colorado	CO.0007.R06.00	Dental services	Visit	$495	$1,886,940	0.66%
Colorado	CO.0293.R03.00	Dental services	Visit	$634	$1,004,256	2.02%
Florida	FL40205.R01.00	Adult dental services	1	$500	$40,000	9.57%
Georgia	GA.0323.90.R1.02	Adult dental	Procedure	$39	$551,880	0.24%
Georgia	GA.0175.R04.01	Adult dental	Procedure	$39	$492,750	0.55%
Louisiana	LA472.R00.03	Dental	Procedure	$149	$136,234	0.69%
Oklahoma	OK343.R02.01	Dental	Visit	$128	$97,231	0.30%
Oklahoma	OK179.R01.02	Dental services	Visit	$115	$756,239	0.30%
Oklahoma	OK399.R01.02	Dental	Visit	$115	$181,015	0.16%
South Carolina	SC237.R04.00	Adult dental	Visit	$102	$668,304	0.24%
Tennessee	TN0427.R01.00	Adult dental	Procedure	$100	$490,000	1.81%
Texas	TX0110.R05.00	Dental treatment	Visit	$226	$5,069,390	0.63%
Texas	TX0281.R03.00[a]	Dental treatment	Treatment	$2,625	$325,500	3.69%
Texas	TX0281.R03.00[a]	Sedation for dental treatment	Treatment	$1,050	$130,200	1.48%
Texas	TX0221.R04.01	Dental services	Item	$731	$421,056	0.21%
Washington, DC	DC307.R02.01	Dental	Service	$559	$352,170	0.24%

[a]This waiver is listed twice because Texas reports dental services for treatment and sedation separately.

Table 4

Changes Between FY 2010 and FY 2011

State	Waiver number	Service title	Unit	Change in participants	Percentage change	Increase in total cost	Percentage change
California	CA0336.90.07	Oral health	Visit	16	2.72%	$18,185	3.86%
Colorado	CO.0007.R06.00	Dental services	Visit	0	0.00%	$0	0.00%
Colorado	CO.0293.R03.00	Dental services	Visit	0	0.00%	$0	0.00%
Florida	FL40205.R01.00	Adult dental services	1	0	0.00%	$0	0.00%
Georgia	GA.0323.90.R1.02	Adult dental	Procedure	−2,504	−80.88%	$188,120	14.56%
Georgia	GA.0175.R04.01	Adult dental services	Procedure	0	0.00%	$0	0.00%
Louisiana	LA472.R00.03	Dental	Procedure	62	14.49%	$46,156	14.49%
Oklahoma	0343.R02.01	Dental services	Visit	6	2.52%	$9,117	4.48%
Oklahoma	0179.R01.02	Dental services	Visit	59	4.29%	$104,878	6.48%
Oklahoma	OK 0399.R01.02	Dental services	Visit	0	0.00%	$8,143	2.20%
South Carolina	SC237.R04.00	Adult dental services	Visit	208	3.08%	$42,432	3.08%
Tennessee[a]	TN0357.R02.01	Dental services	Procedure	N/A	N/A	N/A	N/A
Tennessee[a]	TN0128.R04.02	Adult dental services	Procedure	N/A	N/A	N/A	N/A
Tennessee	TN0427.R01.00	Adult dental	Procedure	300	30.00%	$30,000	2.97%
Texas	TX0110.R05.05	Dental treatment	Visit	1,742	7.21%	$1,578,608	13.47%

Texas	TX0281.R03.00[b]	Dental treatment	Treatment	0	0.00%	$16,275	2.44%
Texas	TX0281.R03.00[b]	Sedation for dental treatment	Treatment	0	0.00%	$6,510	2.44%
Texas	TX0221.R04.01	Dental services	Item	82	12.46%	$119,884	12.46%
Washington, DC	DC307.R02.01	Dental	Service	45	3.45%	$25,155	3.45%

[a]FY 2010 was not available to these authors. [b]This waiver is listed twice because Texas reports dental services for treatment and sedation separately.