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Caregivers' Perspectives on Technology Solutions

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Contents

Key Takeaways

- Unpaid caregivers are essential to supporting Medicaid beneficiaries and the stability of home- and community-based programs, and, as reliance on caregivers grows, technology solutions may assist both caregivers and the individuals they support.
- From a survey of caregivers, respondents who use technology solutions reported these tools improved at least one aspect of well-being (e.g., reduced anxiety) and supported caregiving tasks such as medication management, while most respondents who did not use technology believed technology could help with at least one caregiving task.
- Respondents using technology solutions reported challenges such as technical errors and space limitations, while respondents who did not use technology solutions cited safety concerns as a potential barrier to adopting, highlighting opportunities to improve functionality.

Overview

Federal analyses have consistently found that most individuals who need long-term services and supports (LTSS) rely on family members or friends for assistance.[1]

Medicaid is the primary payer for LTSS in the United States and plays a central role in enabling individuals with disabilities and older adults to live in the setting of their choice. Home- and community-based services (HCBS) are designed to promote independence, autonomy, and community-based living, emphasizing person-centered care and full access to community life.[2] While Medicaid finances a wide range of HCBS, such as personal care services and home delivered meals, a substantial portion of care is delivered by unpaid family caregivers.

HCBS authorities, including 1915(c) waivers and other state plan options, provide states with flexibility to design services that support individuals outside institutional settings. The delivery system for LTSS can be fee-for-service (FFS) or through managed LTSS (MLTSS) plans. HCBS flexibility also allows states to incorporate technology solutions, such as environmental controls and remote supports, into HCBS benefit design to enhance independence and safety in the home. Additionally, for state Medicaid programs, unpaid caregivers are not peripheral to HCBS but rather foundational to the system's ability to support individuals in their homes and communities.

Unpaid caregivers are foundational in supporting Medicaid beneficiaries in their homes and communities.

Recognizing the central role of unpaid caregivers in sustaining HCBS, this paper presents findings from a survey examining caregivers' experiences and perspectives, with a particular focus on the role of technology solutions in supporting caregiving.

Background

Unpaid caregivers play a critical and often complex role in supporting individuals with LTSS needs.

Caregivers have many responsibilities including coordinating medical appointments, managing medications, assisting with daily living activities, supporting safety, and helping implement care plans. Research and policy analyses describe caregivers as a "hidden workforce" that supports both healthcare and social service needs, often preventing or delaying more intensive and costly services.[3]

Several trends suggest that dependence on caregivers will continue to grow.[4] Population aging, increasing prevalence of chronic conditions and disability, and persistent workforce shortages across the healthcare ecosystem all contribute to rising demand for caregivers. Simultaneously, access to covered Medicaid services varies widely across states due to differences in eligibility criteria, benefit design, and workforce capacity.[5]

These factors reinforce the role of unpaid caregivers in sustaining home and community-based care, even as states invest in strengthening the paid workforce.

At the same time, a large body of research documents significant emotional, physical, and financial strain among caregivers. Caregiver burden has been associated with higher rates of anxiety, depression, physical health challenges, and reduced workforce participation.[6] Federal policy efforts increasingly recognize caregiver well-being as a public health and health system issue.[7]

For Medicaid programs, these dynamics are directly relevant. When caregiver strain increases, there may be downstream effects on the stability of home-based care arrangements, potentially leading to greater reliance on other paid services or institutional care. As states consider strategies to support caregivers and strengthen HCBS, technology solutions may offer an opportunity to do so. Understanding caregiver experiences with these tools is therefore important to the larger sustainability of HCBS systems.

Technology solutions can enable independence for people needing assistance and improve quality of life for caregivers.

Technology Solutions in Medicaid

Technology solutions are increasingly viewed as tools to support independence and improve outcomes for individuals receiving HCBS in Medicaid.

Technology solutions broadly include devices, equipment, and software that help individuals perform activities of daily living and participate more fully in home and community life.[8] These solutions may include more traditional assistive technologies (such as mobility aids) or enabling technologies that are low-tech tools such as smart phones or high-tech tools such as automated medication dispensers.[9] Medicaid programs may cover such supports through HCBS authorities, although coverage varies across states.

Existing research suggests that these technologies can support independence, safety, and functional ability for individuals receiving care. For example, the HHS Assistant Secretary for Planning and Evaluation (ASPE) has found that technology solutions can improve quality of life and reduce physical strain associated with caregiving tasks.[10] More recent policy literature highlights the role of technology solutions in improving access, care coordination, and quality within Medicaid managed care and HCBS programs.[11]

As states expand home and community-based care and seek to manage costs while improving independence and health outcomes, technology offers a potential way to extend the reach of services, enhance monitoring and communication, and support individuals in more integrated settings.[12] In addition, emerging research and state experience suggest that MLTSS

plans can play a central role in scaling technology solutions by embedding them into care planning, coordinating implementation with technology vendors, and leveraging data to monitor their impact.[13] However, despite growing interest in technology solutions, much of the existing research and policy discussion focuses on outcomes for the individuals receiving care. Less attention has been paid to the caregiver's perspective, including usability and how technology affects caregiver time, stress, and overall experience.

Previous federal research has noted that caregiver benefits, such as reduced physical strain, are often neglected when designing technology solutions within HCBS.[14] For Medicaid programs, this represents an important gap. Because family caregivers are integral to the success of HCBS, understanding how technology affects caregivers is essential to evaluating their broader impact. To better understand the role of technology in caregiving, this paper uses survey data to examine how unpaid caregivers supporting Medicaid beneficiaries perceive technology solutions, including their awareness, use, impact, and associated challenges.

Methods

This study surveyed unpaid caregivers supporting Medicaid beneficiaries about their experiences and perspectives on technology solutions.

The survey was administered online in English for three weeks in October and November 2025. It included drop down, multiple choice, and free response questions, drawn from preexisting, validated sources wherever possible.[15–17] To participate, respondents had to be at least 18 years old and an unpaid caregiver of a Medicaid beneficiary living in the community (i.e., not in a nursing home). Respondents received a $20 gift card upon completion.

Respondents provided information about their demographics, characteristics of the person they support, the caregiving tasks they perform, and the ways caregiving impacts them. If respondents supported more than one person, they were to answer about the person they had supported the longest.

Respondents were split into two cohorts: those who had utilized at least one of the five predefined technology solutions (technology users) and those who had never used any of the technologies (technology non-users) for caregiving purposes. (Table 1) Each group answered a separate set of questions about their experience and/or perspectives on technology. To compare both cohorts, chi square tests and Fisher tests (if the sample was <5) were used for categorical data and t-tests were used for numeric data.

Table 1

Five Technology Solutions Defined

	Definition	Function
Remote caregivers	Communication hubs or smart devices that monitor the home	Lets caregivers check on the person they support without being in the same place
Environmental controls	Tools operated digitally, by voice, or through adaptive switches	Adjusts lighting, temperature, and other aspects of the home
Medication dispensers	Automated containers that use smart technology to support prescription adherence	Gives reminders to the person supported and lets caregivers know when medicine is taken
Wearable technologies	Devices worn on the body, such as smartwatches or fitness trackers	Tracks health information like stress levels, activity, and sleep patterns
Induction stovetops	Stoves that directly heat cookware and have safety features	Provides safety reminders and alerts a caregiver when it is used

Limitations

All outcomes were self-reported and not independently verified. In addition, the survey was administered online in English language only through advocacy-related networks and, therefore, represents a convenience sample that may not be generalizable to all unpaid caregivers supporting Medicaid beneficiaries. However, the large national sample provides detailed insight into their experiences.

Results

Initially, 3,816 people agreed to take the survey, but 1,775 did not meet the requirements to participate, had duplicate responses, or did not complete the survey. The 2,041 complete responses make up the final study sample. Of the total sample, 1,898 (93%) were technology users and 143 (7%) were technology non-users.

Among the 2,041 caregivers, 72 percent were aged 18-39. Half reported to be White and 44 percent reported to be Black or African American. In addition, 85 percent had completed at least some college and 92 percent worked either part- or full-time. Finally, 59 percent cared for their parents/stepparents, and 29 percent cared for their grandparents.

Among care recipients, 69 percent were 60 years or older. The most common chronic conditions among care recipients were physical disabilities (27%), aging/mobility-related concerns (26%), Alzheimer's/Dementia (19%), and mental health conditions (18%). Most lived in either the caregiver's home (51%) or their own home (47%).

Caregiving Features Among Technology Users and Non-Users

On average, respondents had been caregivers for four years, ranging from under a year to as long as 36 years. Forty-six percent of caregivers spent three or more days per week providing care. In addition, although most cared for one person, 27 percent of respondents were simultaneously caring for two or more people.

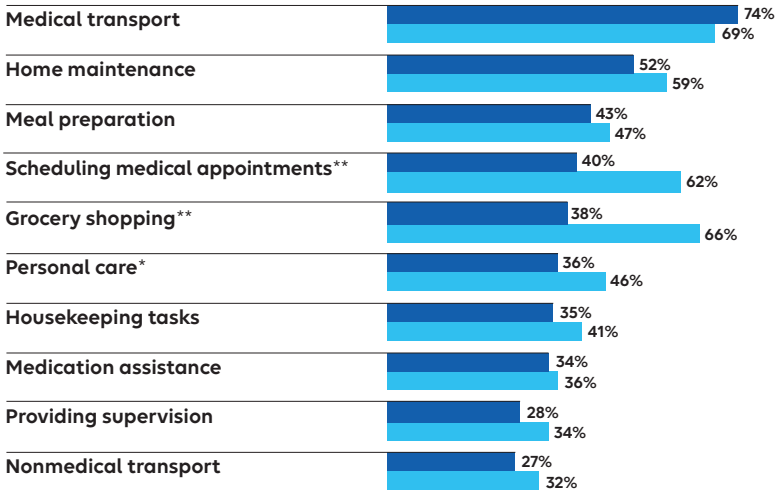
Respondents performed many care tasks, the most common being providing transportation to medical appointments. Most tasks were performed by a similar percentage of technology users and non-users. However, a larger proportion of non-users than users assisted with scheduling medical appointments (p<.001), grocery shopping (p<.001), and personal care (p<.05). (Figure 1)

Figure 1

Top 10 Most Common Caregiving Tasks, Percent of Technology Users and Non-Users

Users (n=1,898)
Non-Users (n=143)

Note. *P<.05; **P<.001. Response options were not mutually exclusive.



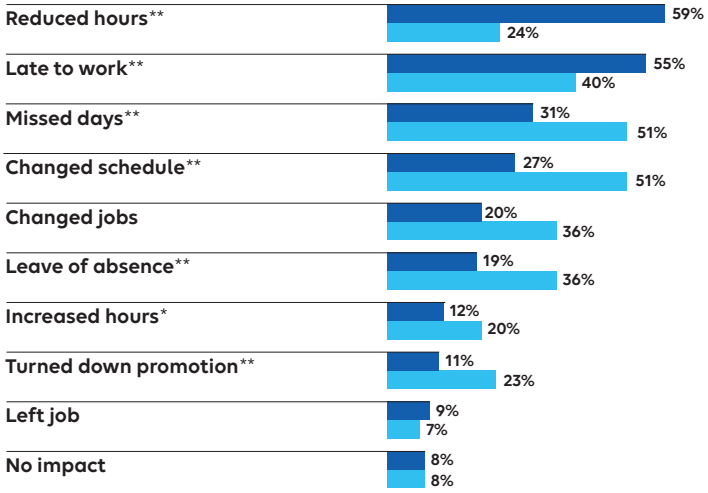
Caregiving affected both technology users' and non-users' employment schedules and advancement potential. Although users were more likely to reduce their hours or be late to work (p<.001), non-users were more likely to experience some of the most substantial impacts, such as missed days of work, schedule changes, leaves of absence, and declined promotions (p<.001). (Figure 2)

Figure 2

Top 10 Most Comment Impacts of Caregiving on Employment, Percent of Technology Users and Non-Users

Users (n=1,898)
Non-Users (n=143)

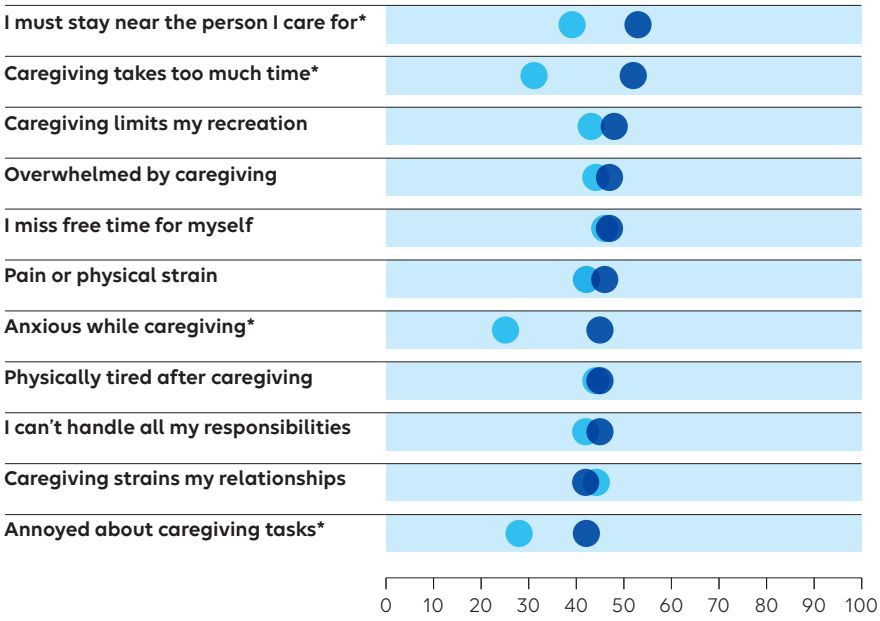
Note. *P<.01; **P<.001. Response options were not mutually exclusive.



Only 5 percent of respondents "never" felt that caregiving impacted their personal well-being. Around 40 to 50 percent of respondents reported that they always or frequently experienced various emotional, physical, and social strain due to intensity of their caregiving responsibilities. Technology users reported being more anxious while caregiving and that caregiving takes too much time. Other challenges were similar for both technology users and non-users. (Figure 3)

Figure 3

Impact of Caregiving on Well-Being, Percent of Technology Users and Non-Users Responding "Always" or "Frequently"



Users (n=1,898)
Non-Users (n=143)

Note. * P<.01.

Technology Users' Experience with Technology

Among the 1,898 technology users, the percentage who used each type of technology was:

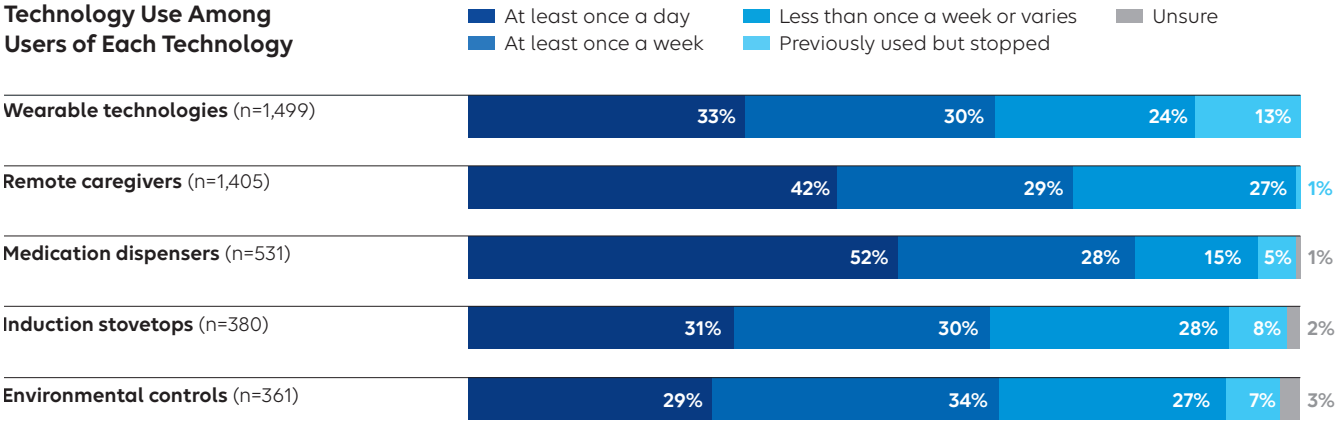
Wearable technologies	79%
Remote caregivers	74%
Medication dispensers	28%
Induction stovetops	20%
Environmental controls	19%

At least 80 percent had used at least one technology for six months or longer. Nearly half of users of wearables, remote caregiving, and medication dispensers had done so for over a year, whereas fewer users of induction stovetops and environmental controls reported using these technologies for one year or more (39% and 29%, respectively).

More than half of technology users used at least one technology weekly, and more than 29 percent used at least one technology daily. Medication dispensers represented the technology with the most frequent use, with over half using them daily. (Figure 4)

Figure 4

Frequency of Technology Use Among Users of Each Technology

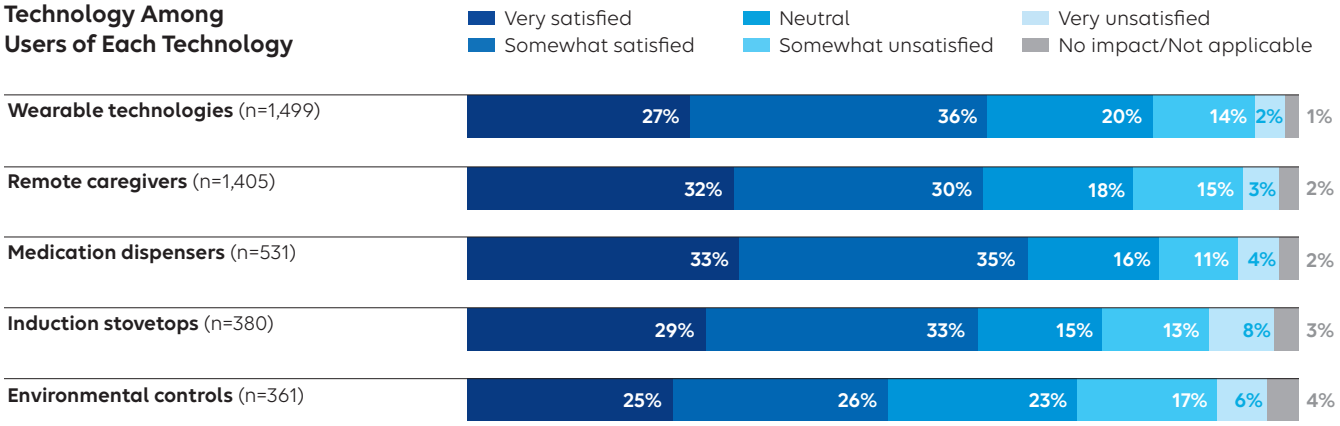


Note. Percentages may not total 100% due to rounding.

Technology users were most satisfied with medication dispensers with 68 percent reporting being very or somewhat satisfied. Over 60 percent of wearable technology, induction stovetop, and remote caregiver users also reported being very or somewhat satisfied. Environmental controls users had the least satisfaction, with 51 percent being either somewhat satisfied or very satisfied. (Figure 5)

Figure 5

Satisfaction with Technology Among Users of Each Technology



Note. Percentages may not total 100% due to rounding.

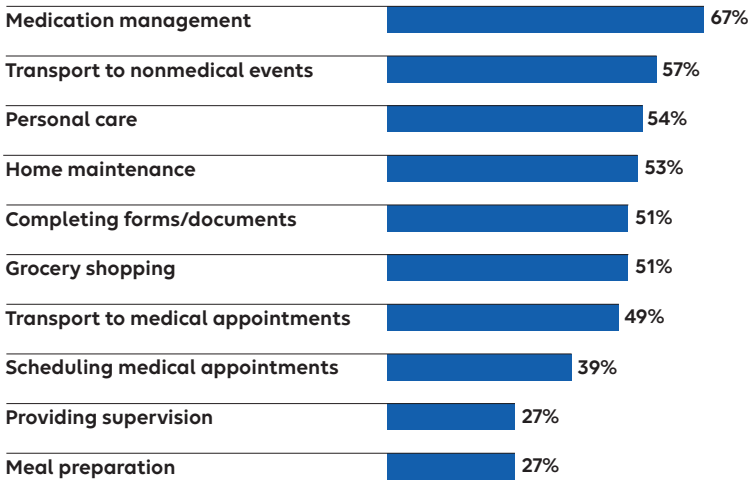
Technology positively impacted at least one aspect of well-being for 98 percent of users. Although the most common selection was saving time dedicated to caregiving (80%), a much lower percentage reported that technology increased their free time (30%) or time for work/volunteer activities (15%), suggesting the time they saved went towards other responsibilities. Technology also provided emotional benefits, with 73 percent feeling less anxious and 61 percent less overwhelmed by caregiving. Finally, 67 percent felt less need to stay nearby the person they support, and 62 percent felt that, with technology, they did not have to provide as many cues/directions to the person they support.

Technology helped with many different caregiving responsibilities. Of all the support tasks respondents were asked about, six tasks were improved by technology for over half of users. The most common task was medication management, with 67 percent of technology users finding that technology supported this task. (Figure 6)

Figure 6

Top 10 Most Common Tasks Improved by Technology, Percent of Technology Users

Note. Response options were not mutually exclusive.

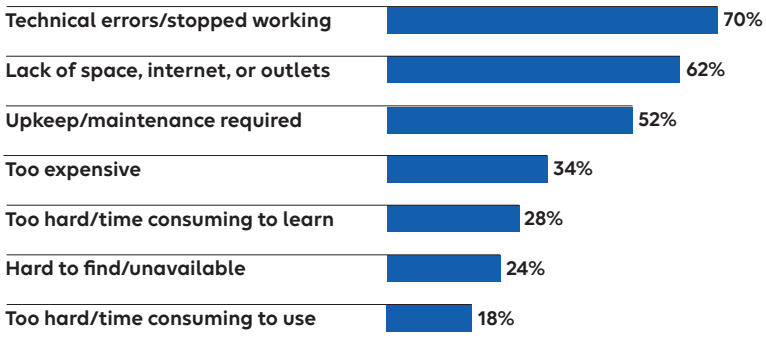


The challenges most often experienced by technology users were related to general functionality. Notably, 70 percent of technology users experienced technical errors, 62 percent struggled with the physical requirements (e.g., storage space, internet connection), and 52 percent had challenges with required upkeep. (Figure 7)

Figure 7

Types of Technology Challenges Experienced, Percent of Technology Users

Note. Response options were not mutually exclusive.



The next most common barriers related to lack of access and support. Cost, specifically, was a challenge for 34 percent of technology users. Others had difficulty finding available technology and some also found technology too difficult or time consuming to learn to use.

Technology Non-Users' Perspectives on Technology

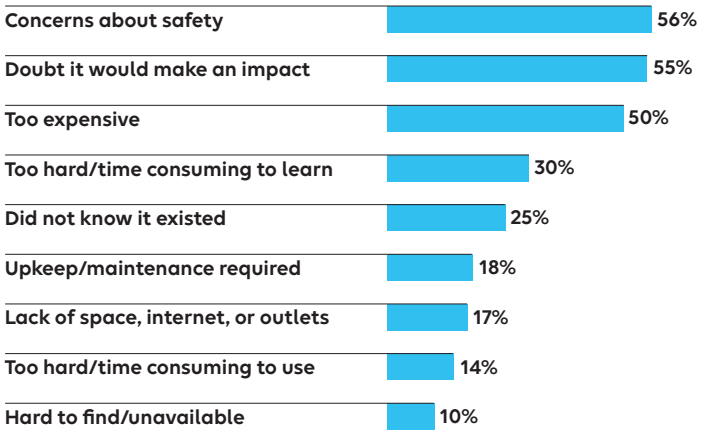
Similar to technology users' concerns, the most common reasons that non-users had not adopted technology related to overall function, followed by lack of access and support. First, concerns with safety were a barrier for 56 percent of non-users, and 55 percent doubted it would make an impact. Next, technology was too expensive for half of non-users, and 30 percent found technology too difficult or time consuming to learn. A quarter were also unaware these technologies existed.

Compared to technology users, technology non-users were far less concerned with the actual requirements to use technology. This perhaps reflects their lack of experience and understanding regarding the logistics of technology solutions. In addition, upkeep/maintenance was only a barrier for 18 percent of non-users, and physical requirements were a concern for 17 percent. Similarly, only some found technology too difficult or time consuming to use (14%) or find (10%). (Figure 8)

Figure 8

Barriers for Not Adopting Technology, Percent of Technology Non-Users

Note. Response options were not mutually exclusive.



Interest in technology solutions was high. Among the 143 non-users, 78 percent expressed an interest in trying at least one technology. More specifically, the proportion interested in trying each type of technology was:

Medication dispensers	63%
Environmental controls	61%
Wearable technologies	50%
Remote caregivers	47%
Induction stovetops	34%

This interest stemmed from technology non-users' beliefs that technology could help with many different aspects of caregiving. Overall, 92 percent felt technology could help with at least one support task. Most commonly, 77 percent reported that technology could help with medication management, 75 percent with home repairs or maintenance, and 74 percent with housekeeping tasks.

Policy Considerations

Findings from this survey highlight both the potential of technology solutions to support caregiving and the challenges that must be addressed to scale adoption within Medicaid LTSS programs.

While caregivers report meaningful benefits from technology such as reduced time burden and improved well-being, barriers related to access, usability, and trust remain. Notably, while technology users were more likely to report reduced hours or being late to work, non-users were more likely to experience more significant employment disruptions, including missed days, schedule changes, leaves of absence, and declined promotions, suggesting that access to technology may help mitigate more severe workforce impacts.

As states continue to expand, or consider implementing, technology solutions through HCBS, policy and operational considerations emerge:

Incorporate caregiver measures into quality strategies.

Given the central role of caregivers in sustaining HCBS systems, states may consider incorporating caregiver experience (such as burden and satisfaction) into quality measurement and reporting. Doing so would align with broader federal efforts to better understand caregivers' needs. This may also inform continuous improvement in HCBS programs, ensuring affordable access to the right technology solutions (and required accessories) for caregivers' and care recipients' individual needs.

Invest in training and support.

Successful adoption of technology depends on the ability of both caregivers and beneficiaries to use these tools effectively. Structured onboarding may help address usability concerns and improve confidence in technology solutions. Separately, to navigate the glitches that most technology users experience, caregivers may benefit from ongoing technical support.

Address adoption barriers.

Despite strong interest, caregivers reported concerns related to safety, usability, and the impact of technology, as well as challenges navigating access pathways. States and MLTSS plans may consider simplifying access to technology solutions through clearer referral pathways, streamlined procurement processes, and stronger engagement with technology vendors to ensure solutions meet beneficiary and caregiver needs.

Prioritize high-impact use cases.

Initial efforts to scale technology may be most effective when focused on areas with demonstrated caregiver interest and potential for impact, such as medication management and home safety as reported above. Targeted implementation can help build evidence, refine operational approaches, and support broader adoption over time.

Clarify coverage and benefit design.

States may consider more clearly defining and funding technology solutions as distinct HCBS benefits tied to person-centered care planning. Greater clarity in coverage, eligibility, and service definitions can help reduce variability across programs and support more consistent adoption.

Leverage and partner with MLTSS plans.

MLTSS plans offer a critical pathway for advancing technology solutions within HCBS. Unlike traditional fee-for-service systems, they have greater flexibility to integrate services, align incentives, and invest in innovative approaches. Through person-centered care planning, plans can assess caregiver needs—in conjunction with beneficiary needs and experiences—and identify appropriate technology supports, while Medicaid agencies can use managed care contracting and quality strategies to incentivize adoption and improve access, care coordination, and health outcomes.

Conclusion

Caregivers play a central role in sustaining Medicaid HCBS, highlighting the opportunity for technology solutions to support daily caregiving tasks and enhance independence, while also improving safety for the caregiver and care recipient.

Through thoughtful benefit design, Medicaid programs can better integrate these technology tools to address caregiver needs and improve the overall caregiver experience. Ensuring that HCBS more effectively support caregivers will be critical to maintaining stable care for beneficiaries to live in their homes and communities.

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Endnotes

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