DDS Department of Developmental Services

Mathematica
Progress Together

Final Evaluation Report

Evaluation of California Department of Developmental Services' Technology Pilot

December 8, 2025

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Contents

I. Background

The California Department of Developmental Services (DDS) helps make sure people with intellectual and developmental disabilities (I/DD) get the right services and support. These services and supports must meet standards set by state laws such as the Lanterman Developmental Disabilities Services Act and the Early Intervention Services Act.

To improve how services are delivered, the California state legislature authorized the Technology Pilot under Section §4511.6 of the Welfare and Institutions Code. The Technology Pilot tests whether assistive technology, like fall sensors and automatic medication dispensers, can help people live more independently, get access to diverse services (like American Sign Language [ASL] or bilingual support), and reduce the need for in-person help when it is safe and aligned with the person's preferences. It also tests how the costs of assistive technology-assisted services compare with traditional in-person service delivery.

DDS partnered with the Alta California Regional Center and three local service providers to oversee, develop, and deliver the Technology Pilot in Northern California. The Alta California Regional Center is one of 21 nonprofit regional centers in California that help coordinate services for people with I/DD. The three service providers that delivered services include Strategies to Empower People, On My Own Independent Living Services, and East Bay Innovations.[1] Midstate Arc, an organization from central Connecticut that uses technology to support people with I/DD, shared advice and best practices with all three service providers to help guide the pilot.

A. Technology Pilot eligibility

Each of the three service providers invited up to 20 adults they serve to participate in the pilot. To be included, people needed to be able to give consent, be interested in becoming more independent, and be likely to benefit from using assistive technology. Beyond that, there were no strict rules. Providers used their judgment to decide who might be a good fit. Participation was completely voluntary, so people could choose whether to be part of the pilot.

In total, 30 people joined the pilot over time, and 28 were still active at the time of this report. People who joined the Technology Pilot could also choose whether to take part in the evaluation. All 30 participants received both verbal and written information about

[1] East Bay Innovations serves people in the geographic area supported by the Regional Center of East Bay. The Regional Center of East Bay did not partner with DDS to implement the Technology Pilot. Instead, the Alta California Regional Center supported East Bay Innovations staff during the pilot.

the evaluation from their service providers. Of these, 29 people agreed to participate and gave written consent. This report focuses on those 29 people.

B. Technology Pilot services

People who joined the Technology Pilot worked closely with their service provider to determine what kind of assistive technology might support them best. Each person had a one-on-one assessment that considered their needs, living situation, and personal preferences. This helped identify the tools that would fit their goals and daily life.

The pilot used a variety of technology tools to support independent living, such as:

- **Task reminders** to help with daily routines
- **Video modeling** to teach skills step-by-step
- **Medication management tools** to help track medication schedules and take medications on time
- **Sensors and remote support** to promote safety and provide monitoring when needed

Once a participant and their service provider chose the technology, it was set up in the participant's home. The first installations happened in January 2024, and the most recent one was completed in April 2025. Service providers customized support plans to fit each person's needs and preferences.

Many participants received remote support services. This included support such as scheduled morning check-in calls or calls in response to assistive technology alerts. The three providers began offering remote support at different times. Two providers started providing remote support as early as February 2024, with their current staff delivering this service. The third provider hired new staff for remote support. They did not begin hiring until after there was a DDS approved rate for remote support services. Participants served by that provider did not receive remote support services until December 2024. For some participants, this was 11 months after they joined the pilot and received their first technology tools.

II. Evaluation of the Technology Pilot

DDS contracted with Mathematica, an independent research organization, to evaluate the Technology Pilot. The goal of the evaluation was to see if the pilot was meeting the goals outlined by the state's Welfare and Institutions Code §4511.6. To do this, the evaluation focused on four key research questions:

1. Did the Technology Pilot support independent living by promoting autonomy and privacy, while maintaining safety and support?
2. Did the Technology Pilot increase access to diverse services, such as ASL or bilingual services?

3. Did the Technology Pilot address workforce challenges by alleviating time demands on direct support staff?
4. How did the cost of providing technology-assisted services compare with the cost of delivering services in person?

To answer these questions, Mathematica collected and studied information from several sources:

- **Interviews with service providers.** We interviewed staff from each of the three service providers twice, first at the beginning of the pilot in September 2024 and again around April 2025. The interviews were about their perspectives and experiences.
- **Interviews with participants.**[2] In March 2025, we interviewed 10 participants, including some who use ASL, to learn about their personal experiences.
- **Interviews with direct support professional (DSPs).** In July 2025, we interviewed four DSPs who provide in-person support to people in the pilot.
- **Participant surveys.** We created an online survey that was simple and accessible. Participants filled it out at two points. The first was between October 2024 and August 2025 to share experiences before and early in the pilot (referred to as "pre pilot" and "early pilot"). The second was between February and August 2025 to share experiences later in the pilot (referred to as "mid pilot").[3] Only people who completed the first survey were invited to complete the second one, which helped us learn how things changed over time.
- **Quantitative analysis.** We reviewed information from DDS, the service providers, and other public sources to understand topics like costs and service use. More details on quantitative data sources are in the Methods Appendix.

III. Technology Pilot participation

The 29 people who took part in the evaluation received different technology devices to match their needs and preferences.

A. Technology Pilot participants

Technology Pilot participants had a variety of living arrangements. Nearly all of them (97 percent) lived in urban areas. Most lived in Supported Living Services (SLS) settings (69

[2] An independent ethics board (Health Media Labs Institutional Review Board #2704) reviewed and approved these interviews.

[3] Because some participants joined the study later than others, the timing of the surveys overlapped.

percent) and about 24 percent lived in Independent Living Services (ILS) settings.[4] A small number (7 percent) lived with a parent, family member, or guardian.

Participants in the pilot had many different types of disabilities and health conditions (see infographic). More than half (55 percent) had an intellectual disability. Many had a developmental disability such as cerebral palsy (28 percent), epilepsy (21 percent), or autism spectrum disorder (7 percent). Most people needed support with everyday tasks, such as taking their medications (76 percent).

The characteristics of participants in the pilot were different from those of the broader group served by DDS in the region, according to publicly available data.[5] For example, 59 percent of pilot participants were white, compared with 32 percent of all people served by DDS in those areas. Nearly all pilot participants (93 percent) spoke English as their main language, compared to 82 percent of all people served by DDS in the same areas. The pilot group also included a higher share of people with intellectual disabilities, cerebral palsy, and epilepsy, but fewer people with autism (DDS 2025). Because of these differences, the findings from the pilot may not fully reflect what would happen if assistive technology were offered more broadly across the region or the state.

B. Assistive technology devices

As part of the Technology Pilot, participants received a variety of devices to help them in their daily lives. The most common were safety-related devices (42 percent of all devices). These included tools like fall detection sensors and door locks. Smart home devices were also widely used (23 percent of all devices). These included voice assistants like Amazon Alexa and automatic window shades. Most of the devices (83 percent) could connect to the internet or link to other devices, making it possible to use them together in helpful ways. Some devices were simple and designed for specific tasks, like adjustable scrubbers that make cleaning easier and more comfortable.

[4] ILS generally provides supports for adults with I/DD to achieve greater independence while living in the community. SLS also supports community living and provides more intensive services than ILS.

[5] The publicly available data are from the DDS Public Comprehensive Dashboard, accessed on May 7, 2025. Available at https://www.dds.ca.gov/transparency/facts-stats/dds-comprehensive-dashboard/.

By May 2025, the 29 participants in the evaluation had received a total of 337 devices. On average, each person received about 12 devices. Some people only needed one device, while others had as many as 19 devices to support their independence. Each person's set of devices was unique and based on their own goals and preferences.

IV. Effectiveness of the Technology Pilot

Technology Pilot participants had clear gains in independent living and increased access to diverse services relevant to participants. Participation in the Technology Pilot also helped alleviate time demands on direct support staff. The cost of providing technology-assisted services, however, was slightly higher than the expected cost of providing services in person. The rest of this section describes evaluation findings in more detail, organized by research question.

A. Did the Technology Pilot support independent living by promoting autonomy and privacy, while maintaining safety and support?

This section describes how assistive technology helped maintain or increase participants' feelings of autonomy, privacy, safety, and support.

1. Autonomy

> "Before, I had 24/7 care. Now I've weaned off. I still need support, but I'm more independent. My family doesn't have to worry as much."
>
> —Technology Pilot participant

The Technology Pilot helped many participants gain autonomy and independence in their daily lives.[6] Some people used wearable devices like smartwatches and emergency pendants to support them while traveling, shopping, working, or spending time with friends. These tools gave them access to help when needed, without having a DSP nearby.

In interviews with participants, many said they felt more confident doing tasks on their own and felt more in control of their lives and daily decisions. For example, one participant and his parent shared how remote support made mornings easier. Each day, he received a quick check-in through a tablet, a text message, or his wearable device. Remote support staff would ask simple questions like whether he had taken his medication, eaten breakfast, and dressed himself. Having different ways to connect was especially helpful when he spent weekends at his parents' home. They explained that these

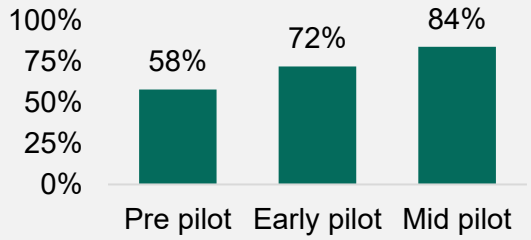
> "[Assistive technology] has been really good for clients; they've become a lot more independent, and boosted their self-esteem."
>
> —Technology Pilot participant's DSP

[6] The word "autonomy" means being able to make your own decisions and choices. "Independence" means being able to do tasks without help from others.

check-ins gave him more confidence and helped him do things on his own. DSPs also noticed that pilot participants gained independence.

Survey results showed that participants reported feeling more autonomy during the pilot (Figure 1). Before the pilot started, 58 percent of participants said they felt autonomous. By the middle of the pilot, 84 percent felt autonomous. Survey responses also showed a small increase in overall independence: 76 percent of participants felt independent early in the pilot, compared with 79 percent at the midpoint.[7]

Figure 1. Autonomy increased



Source: Mathematica Participant Experience Surveys, Rounds 1 and 2.
Pre pilot and early pilot sample size: 23
Mid pilot sample size: 17

2. Privacy

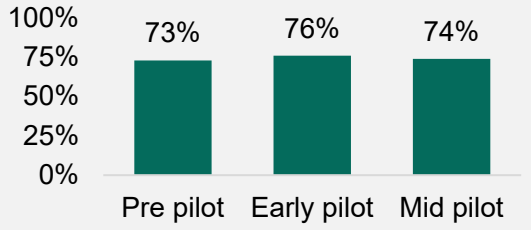
Participants said the technology also supported their sense of privacy. Before the pilot, 73 percent said they had privacy. That number stayed about the same at 76 percent early in the pilot and 74 percent at the midpoint (Figure 2).

Even though the survey suggests privacy stayed about the same, many participants told us they had more private time after receiving the technology. Tools such as sensors or remote check-ins allowed them to manage daily routines, such as bathing, dressing, and relaxing, with greater privacy and fewer interruptions. Participants and families appreciated the remote support options because they gave them a sense of safety and support without compromising privacy. They reported that the technology was responsive and discreet, helping them feel supported without feeling watched. Service providers shared that participants who reduced the amount of DSP support they received enjoyed more uninterrupted

"I don't have any DSP in the morning. It's me. I can walk out in my underwear, take a shower—not bumping into someone. I have more privacy this way."

—Technology Pilot participant

Figure 2. Privacy remained stable



Source: Mathematica Participant Experience Surveys, Rounds 1 and 2.
Pre pilot and Early pilot sample size: 23
Mid pilot sample size: 17

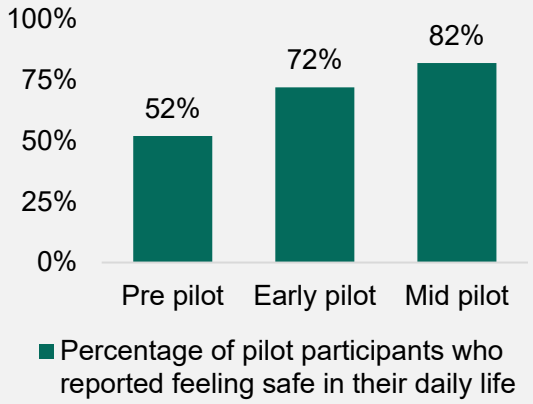
[7] Note: We did not measure independence before the pilot began.

time in their homes, which was frequently associated with increased comfort. One participant shared that the privacy from remote support technology improved the time she spent with her family. Even though she had good relationships with her DSPs, the ability to reduce DSP hours through technology allowed for more private, relaxed, and meaningful family time.

3. Safety

Through using assistive and remote support technology, the pilot helped participants feel more secure both at home and in their communities. Participants shared that their technology helped them feel safer by identifying risks early and making it easier to get help when needed. Survey results showed steady increases in feelings of safety: 52 percent of participants felt safe before the pilot, rising to 72 percent early on, and 82 percent by the midpoint (Figure 3).

Figure 3. Safety increased



Source: Mathematica Participant Experience Surveys, Rounds 1 and 2.
Pre pilot and Early pilot sample size: 23
Mid pilot sample size: 17

In interviews, participants consistently said technology helped them to be more confident being alone or without staff nearby. For example, one participant who enjoys long walks reported they could go farther than before they received their technology because they had a help button to call for assistance, if needed. Others mentioned that tools like automatic doors and motion sensors made it easier and safer to move around their homes, especially for those with mobility challenges.

> "Before, I'd forget or take the wrong pill. Now the machine tells me when it's ready and makes sure I don't miss it."
>
> —Technology Pilot participant

Technology also helped improve safety by supporting participants' daily health and medication needs. Smart medication dispensers helped ensure timely and correct medication amounts by giving reminders and locking between doses to prevent mistakes. Connected health monitors tracked things like blood pressure and oxygen levels. This helped service providers and healthcare professionals more closely monitor participants' health, creating opportunities to catch problems early and respond

> "If I get lost, I can just push the button, and [remote support] will help me find my way back. I'm not afraid to go out anymore."
>
> —Technology Pilot participant

to missed medications. Many participants said these tools helped them feel safer, without giving up their privacy.

4. Maintaining support

Even as participants became more independent, they continued to feel supported. At the midpoint of the pilot, nearly all participants said they could get the services they wanted from their provider (94 percent) and help they needed from their provider (94 percent). Just as many (94 percent) said the service provider staff were available to meet with them as often as needed.

In interviews, many participants shared that they appreciated how available and flexible their DSPs were. Even though they were becoming more independent, they said it was comforting to know help was still there when needed. Some also mentioned how helpful remote support staff were. One participant said their daily morning check-in calls were not only supportive but also became a new, meaningful social connection. Together, the survey results and participant stories show that the Technology Pilot helped people feel more autonomous, independent, and private, while still giving them the safety and support they needed.

B. Did the Technology Pilot increase access to diverse services, such as ASL or bilingual services?

The Technology Pilot had some early challenges serving Deaf clients who communicate with ASL, but over time increased their access to services. The pilot was able to test technology-enabled support for ASL services, but not for bilingual services. This is because some pilot participants use ASL, but no participants spoke a primary language other than English. This section presents evidence on the pilot's observed and potential successes related to diverse language services.

1. Improving services for Deaf participants[8]

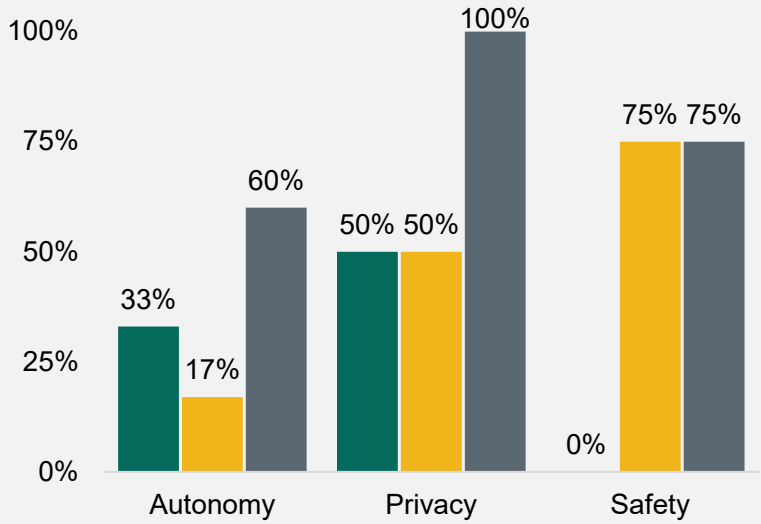
At first, the pilot faced some challenges in making technology accessible for people who are Deaf or hard of hearing. Most of the technology was designed for hearing users, and the training materials were not always easy to follow in ASL. For example, alert systems often rely on sound alarms, which led to unnecessary 911 calls when Deaf participants could not hear the audio alarms.

> "I can't always understand phone calls. But with the video phone and interpreter, I get what's going on and feel more in control."
>
> —Technology Pilot participant

[8] The pilot included a small number of Deaf participants (fewer than five people). In alignment with best practices for maintaining privacy, we do not report the number of Dead participants.

By late 2024, providers began finding ways to improve the technology. Service provider staff created custom solutions, like programming flashing lights to replace sound-based alarms. These changes took time, sometimes weeks or months, and required extra effort from staff and delayed Deaf participants' ability to effectively use the tools and technology. Even though these problems caused stress and frustration, participants said they were willing to wait for tools that met their needs.

Figure 4. Deaf participants reported stable or improved independent living outcomes



Source: Mathematica Participant Experience Surveys, Rounds 1 and 2.

Sample size: Fewer than five participants.

Once the adjustments were in place, Deaf participants shared that assistive technology helped them do daily tasks more independently and feel more confident in their homes. DSPs agreed, noting that technology made daily life easier for the Deaf participants.

Survey results also showed progress. At the start of the pilot, Deaf participants agreed with 33 percent of statements about feeling autonomous. By the middle of the pilot, that number had grown to 60 percent. They also shared that they felt more privacy and safety as they got used to using the new tools (Figure 4).

"I'm hoping that we can have more Deaf clients that can use [assistive technology]. They need this opportunity to have this technology in their homes. It makes life so much easier so they can live it independently."

—Technology Pilot participant's DSP

2. Other languages

During the pilot, all participants used either English or ASL as their main way of communicating. The pilot did not directly test technology for people who use a different primary language. Even so, service providers believed assistive technology could help support more access to services in other languages in the future. They explained that many assistive technology devices let users choose their preferred language for things

like screen displays, reminders, and voice prompts. One service provider described how an emergency maintenance worker used a translation app to communicate with a non-pilot participant who spoke Farsi. This shows how assistive tools could help remove language barriers and support more inclusive services in the future.

C. Did the Technology Pilot address workforce challenges by alleviating time demands on direct support staff?

> "We're not doing the same reminders over and over. She does it herself, and we can spend more time working on goals."
>
> —Technology Pilot participant's DSP

The Technology Pilot showed early signs of helping both participants and DSPs. Technology helped participants do more on their own, such as taking medication, planning meals, locking doors, or checking the weather. This meant DSPs did not need to help with routine tasks as often. For example, one participant used to rely on their DSPs to clean out spoiled food from the refrigerator. With food sensors in place, the participant now receives an alert when food has gone bad and can take care of it independently. This shift has helped DSPs focus on tasks like teaching new skills or providing encouragement and companionship. Some DSPs also noticed fewer conflicts, because reminders about things like taking medication could now come from the technology instead of a staff person.

For some participants, technology has reduced the need for in-person support during certain times, especially overnight. According to the service providers, 12 of the 29 participants had a reduction in DSP hours since starting to receive remote services. Tools like fall sensors, help buttons, and smart home alerts provide an added layer of safety and security for both participants and their families, even when staff are not physically present. Any changes to in-person support were made thoughtfully. In these cases, providers worked with participants to ensure they felt confident using the technology and had reliable backup options, such as on-call staff or emergency response systems, available at all times.

For people with more complex needs, technology did not always replace in-person support. For some, providers reported that it helped maintain existing support levels and prevent the need for more intensive care.

DSPs shared that participating in the pilot did not add to their workload or create stress. Supporting participants with tasks like using their devices or connecting to technical assistance felt like a natural extension of the coaching and problem-solving they already provide to promote independence. Whether or not participants reduced their in-person support hours, DSPs were satisfied with how the pilot made their daily tasks easier, improved participants' emotional health, and even eased some of the DSPs' own worries about the people they support.

D. How did the cost of providing technology-assisted services compare with the cost of delivering services in person?

During the 11 months after pilot participants began using technology with remote support, the overall cost of these services was slightly higher than what we expected in-person support would have cost during the same time (Figure 5). We estimate the total cost of technology-assisted services to be 11 percent higher than the projected in-person service delivery costs during that time. We focus on SLS and ILS claims costs as the measure of in-person service costs available before and during the pilot. These estimates are based on data for 14 participants who had complete claims information 11 months after remote support began.[9]

We cannot know what the exact in-person support costs would have been if participants had not joined the Technology Pilot. To estimate these costs, we assumed that in-person service costs would continue to rise at the same rate observed during the 11 months before the pilot. In Figure 5, the solid blue line on the left represents actual in-person service costs before the pilot. The dotted blue line on the right represents the projected in-person service costs. The red line on the right shows the actual costs of technology-assisted service provision in the 11-month period after remote support began. More details are included in the Methods Appendix.

There are a few reasons why the cost of technology-assisted services could be lower than in-person services in the future:

- Providers needed time to hire new staff and learn how to select, set up, and support participants' use of technology. While providers were themselves learning, their early guidance and support to help participants learn new technology was somewhat limited. Over time, this improved.
- Participants needed time to get used to their new assistive technology. Over time and with support from providers and DSPs, participants became more comfortable.

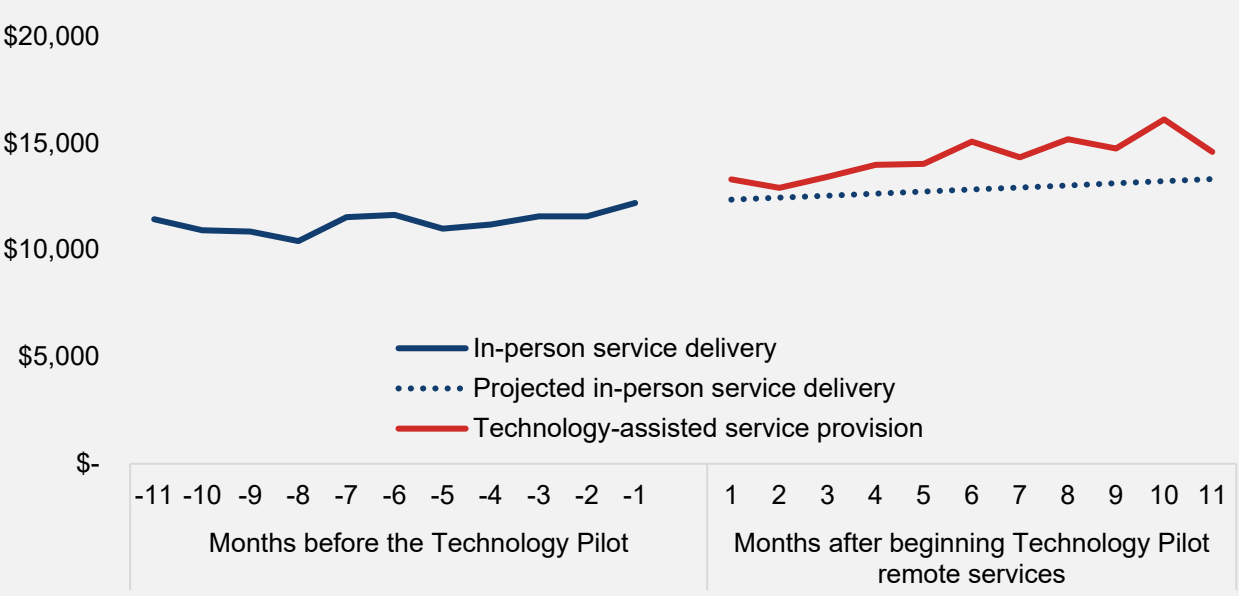
It is also important to note that we do not have complete cost data. The estimates are based on costs for 14 of the 29 participants, because complete claims data were not available for everyone in the 11 months after beginning remote support.[10] With a relatively small sample, one person's unique experience could have an effect on the overall results. This could make the results less likely to reflect the experiences of a larger group. In addition, it is possible for providers to submit claims to DDS for several

[9] Participants were excluded from these estimates if they did not have 11 months of claims data available after starting remote support.

[10] The 14 participants included in the cost analysis in Figure 5 have monthly technology-related costs that are about $60 higher than for the overall pilot population of 29 participants. Technology-related costs include technology devices, subscriptions, and remote support costs.

months after they delivered the services. This means that the analysis may not include all service costs. As such, these findings should be interpreted with care.

Figure 5. Monthly service costs during the study period



Source: Mathematica analysis of California Department of Developmental Services' Purchase of Service claims data for SLS and ILS, and technology-assisted service provision cost data from Strategies to Empower People, On My Own Independent Living Services, and East Bay Innovations.
Note: The sample includes 14 Technology Pilot participants.

1. Technology device and service costs

For technology-assisted services to cost less than in-person support, the cost of technology devices and services needs to be balanced by a decrease in DSP in-person service costs. The average technology-related cost for all 29 pilot participants was $1,828 per person per month. The costs include the devices themselves, monthly subscriptions (including for wireless internet), and remote support services.

- The average combined cost of all devices provided during the pilot was $135 per participant per month.[11] Devices ranged from more costly items like smart devices to more affordable items like charging blocks and power strips.
- Subscriptions were $19 per participant per month, on average. Nearly 40 percent of participants had no subscription costs.

[11] To calculate the monthly cost for technology devices, we divided the total device cost by 48. This assumes that devices last for 48 months (four years).

- Remote support was the largest expense at $1,674 per participant per month, on average. These costs ranged from $0 to $4,882. Ten percent of participants did not use remote support services.

For technology-assisted services to cost less than in-person support, the monthly cost of direct SLS and ILS staff support would need to be at least $1,828 lower per person. To better understand this, we estimated the cost of direct SLS and ILS support. For the 14 participants included in the cost analysis, SLS and ILS cost about $380 lower per participant per month after starting remote services. Although this is notable, these savings were not enough to fully offset the $1,828 per month average cost of technology supports.

Providers also noted that remote support helped fill service gaps for some participants. In these cases, the technology gave participants access to support they did not have before.

2. Changes in serious incidents reported

Beyond the direct costs of technology-assisted services, the Technology Pilot also has the potential to save money for the state of California by reducing healthcare costs for participants supported by the state's Medicaid program, Medi-Cal. Regional centers are required to track data on serious health events, such as medical emergencies, medication errors, or mental health crises. We reviewed these data to see if there were any changes in serious health events, which might also reduce Medi-Cal costs.

In the 11 months before technology was installed, providers reported 41 serious incidents among pilot participants. In the 11 months after remote support began, that number dropped to 19 incidents, which is less than half the number of serious incidents from the period before the pilot. The most notable change was in medication errors, which fell from 19 incidents before the pilot to five incidents afterward. Many participants and providers linked this improvement to the new medication support devices, which reminded people to take their medications on time and helped prevent mistakes. Although we do not have complete information on the costs of these incidents, averting medical emergencies can prevent high-cost acute care services like emergency department visits or hospitalizations and, more importantly, improve health and safety for participants.

3. Analysis expanding the cost analysis to all DDS claims

In Figure 5, we compared the costs of technology-assisted services with the costs of SLS and ILS, because those are the services most related to in-person support. Both service providers and Alta California Regional Center staff agreed that SLS and ILS were the best focal points for the evaluation.

To understand how service use beyond SLS and ILS may have changed, we reviewed the costs of all DDS services for pilot participants. These include SLS and ILS costs as

well as other costs including but not limited to use of the activity center, adult development center, community integration training program, and transportation services. The results (not shown) were very similar to the findings in Figure 5. On average, the cost of all DDS services provided during the first 11 months of the pilot were about 14 percent higher than the projected cost of all services from the period before joining the pilot. One likely reason is that pilot participants started using more community-focused services, such as supported employment, once they had access to new technology.

V. Conclusion

DDS launched the Technology Pilot to explore how new assistive technology tools could support people with I/DD in living more independently, safely, and on their own terms. Over the course of the pilot, participants, service providers, and DSPs shared their experiences, highlighting both the benefits and the challenges of using technology in daily life. This section summarizes what we learned and key considerations for expanding the use of assistive technology across California.

A. Summary of findings

The Technology Pilot showed that assistive technology can make a meaningful difference in people's daily lives. Many participants reported feeling more confident and independent in their daily routines because they could rely on technology tools. For example, they reported taking medications, cooking, and going out in the community with the support of smartwatches, fall sensors, help buttons, and video check-ins. These supports gave participants a sense of safety and security, knowing help was available when needed, while also respecting their privacy.

Deaf participants also experienced improvements during the Technology Pilot, but with a delay. There were challenges at first, especially in adapting tools for Deaf participants. Over time, providers developed creative solutions such as visual alerts to make technology more accessible.

DSPs emphasized that using technology with participants did not increase their workload. They shared that teaching and supporting people with their devices felt like a natural part of the coaching they already do to encourage independence. Many DSPs reported that technology made daily tasks easier for participants and helped reassure them that their client always had support available when needed. Technology paired with remote support also has the potential to decrease workforce demands. This is because DSP staff usually provide services to just one client at a time, while remote support staff can support many clients at once.

For some participants, technology made it possible to safely reduce in-person support at certain times, especially overnight. Any changes to staffing were made only after careful planning and with backup options, such as on-call staff or emergency response

systems. For people with more complex needs, technology did not replace direct support. In some cases, providers reported that it reduced the need for more intensive service levels.

The pilot found that technology-assisted services were about 11 percent more expensive than the projected cost of traditional in-person services during the first 11 months of remote support. With more time and experience, it is possible that the cost of technology-assisted services could become less expensive than in-person support in the future. It is also possible that technology-assisted services reduce Medi-Cal costs through reductions in serious incidents experienced by participants.

B. Considerations for statewide expansion

The early results of the Technology Pilot suggest that assistive technology can strengthen independence, support safety and privacy, and ease pressures on direct support staff. As DDS considers expanding this approach across the state, several priorities stand out:

- **Accessibility for all communities.** Most participants in the pilot spoke English and lived in urban areas. To ensure equity, future efforts should expand technology and training for people who use other languages, including ASL, and for those in rural communities.
- **Thoughtful transition planning.** Any reduction in in-person support must be guided by each participant's goals, comfort level, and safety. Backup systems, such as on-call staff and emergency response options, are essential.
- **Scaling services.** Expanding access to assistive technology statewide requires initial investments and intentionality. Existing service providers may need to coordinate services for more clients. Other service providers will need training and peer support to learn from the pilot efforts.

With careful planning and a strong focus on accessibility, the Technology Pilot demonstrates that assistive technology can expand opportunities for Californians with I/DD to live more independently, while also supporting the well-being of the DSP workforce.

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Appendix

Methods

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Data sources

Client Master File. The California Department of Developmental Services (DDS) Client Master File (CMF) contains demographic information for people receiving DDS-funded services. CMF data include individual characteristics such as race, ethnicity, age, living situation, and primary language.

Client Development Evaluation Report. The DDS Client Development Evaluation Report (CDER) contains information on medical diagnoses, daily living skills, behavioral challenges, and outcomes. Regional centers update this report at least annually for clients who live in the community and are waiver eligible. For other clients living in the community, they must update the CDER at least every three years or when there is a significant change in capabilities. More information about the CDER is publicly available at https://www.dds.ca.gov/transparency/cder/.

Purchase of Service Claims. Purchase of Service (POS) data contain information about the date, monetary amount, and type of DDS service provided to clients. DDS provided POS data for Technology Pilot participants for all claims between December 1, 2022, and July 31, 2025.

Special Incident Reporting database. The Special Incident Reporting (SIR) database contains adverse events in DDS clients' lives. These may include incidents of suspected abuse, serious injury or accident requiring medical attention, unplanned hospitalization, missing persons, mental health crises, and medication errors that occurred while a person was receiving services from DDS. DDS provided SIR data for Technology Pilot participants for incidents occurring between January 1, 2023, and April 30, 2025.

DDS Comprehensive Public Dashboard. The DDS Comprehensive Public Dashboard provides information on the full DDS caseload, including demographics and diagnoses. We used data from this dashboard to describe the broader DDS population and compare it to pilot participants. More information on this dashboard is publicly available at https://www.dds.ca.gov/transparency/facts-stats/dds-comprehensive-dashboard/.

Provider-sourced information. We collaborated with the Alta California Regional Center (ACRC) to collect information directly from service providers participating in the Technology Pilot. The service providers shared technology-related costs for each participant including:

- Cost of technology devices
- Cost of subscriptions for technology devices
- Cost of remote monitoring services by providers or third parties. This includes vendor costs for technology such as equipment, software, hardware, or tools that were purchased.

Demographics data calculations

We calculated descriptions of participant demographics and diagnoses by analyzing DDS' CMF and CDER data for Technology Pilot participants. We linked the data sources using unique client identifiers in each file. We used these data to produce statistics including race, ethnicity, age, primary language, and various diagnostic codes.

Cost analysis

Program month alignment. Providers enrolled Technology Pilot participants on a rolling basis. As a result, the date of installing the first piece of technology and the date of starting remote support varied across pilot participants.

- The earliest date a participant received technology was January 5, 2024, and the latest date was April 24, 2025.
- The earliest date remote support started for a participant was February 21, 2024, and the latest date was March 5, 2025. For some participants, there was a gap between when they received their first technology tools and starting remote support.[12]

To align the data for analysis, we assigned a program month to each Technology Pilot participant's claim. This included two periods: (1) before the participant joined the Technology Pilot and (2) after the pilot's remote support began.

- Months before the Technology Pilot: We assigned program month -1 to all service claims occurring 30 days before a participant's initial technology installation date. We assigned program month -2 for all service claims occurring 31 to 60 days before the initial installation. We repeated this process for 12 program months before the installation date for the first piece of technology.
- Months after beginning remote support: We considered the first day of the Technology Pilot to be the first day that a participant both (a) had their technology devices installed and began remote support. We assigned program month 1 to all service claims occurring 30 days after that date. We assigned program month 2 for all service occurring 31 to 60 days after that date. We repeated this process for the next 12 program months.

Sample selection. After we aligned the data for analysis, we reviewed the number of program months available for each participant. The goal was to select a sample that

[12] As described in the report, the three providers began offering remote support at different times. Two providers started providing remote support as early as February 2024, with their current staff delivering this service. The third provider hired new staff for remote support. They did not begin hiring until after there was a DDS approved rate for remote support services. Participants served by that provider did not receive remote support services until December 2024.

included the most participants for the longest period. For the months after beginning remote support, data availability included the following:

- 23 participants had six months of data after beginning remote support.
- 15 participants had nine months of data after beginning remote support.
- 14 participants had 11 months of data after beginning remote support.
- 8 participants had 12 months of data after beginning remote support.

To balance the sample size with the length of the analysis period, we based our analysis on the 14 participants with 11 months of claims data available after remote support began. Providers shared that participants and staff needed time to get used to the assistive technology. We discussed the analysis period with DDS and ACRC staff, who agreed that six months was too short of an analysis period.

Of the 14 participants we included in the cost analysis, most had 11 consecutive months of claims data before the installation date of the first piece of technology. Three participants were missing one month of data before the Technology Pilot, and one participant was missing two non-consecutive months of data.

Estimated costs related to technology and remote support. Service providers shared the cost of technology devices, monthly subscriptions, and remote support provision during the pilot.

- To calculate the average monthly cost of technology devices for each person, we assumed that technology would last four years. We based this on industry sources reporting on the life spans of consumer products. (For additional details, see Consumer Technology Association and Quantum Lifecycle.) To apply this, we divided the total cost of technology for each participant by 48.
- Service providers reported the total cost of monthly subscriptions for each person. Subscription costs include wireless internet for some participants.
- Service providers had different approaches to delivering and tracking remote support costs. Some providers conducted remote support among their existing staff, some hired new staff for this role, and some contracted this role to another organization. Providers tracked remote support costs in units of hours or dollars, depending on the mode of service delivery. For the cost analysis, we used existing dollar amounts for remote support when made available by providers. For remote support services tracked in hourly units, we estimated costs using a rate proposed by providers to be feasible with program expansion. Based on conversations with ACRC and service providers, we assumed that remote support was conducted at a ratio of one staff to five or more participants, which is the lowest possible cost to DDS for remote support. We then multiplied hours of remote support by the proposed hourly rate for remote support. This produced a monthly total cost for remote support services for each client.

Average cost per sample month. For each month in the period before the Technology Pilot, we calculated the costs of delivering in-person services as the average claims cost across the 14 participants with claims during that period.[13]

We calculated the costs of providing technology-assisted services as the total cost for the months after beginning Technology Pilot:

- For each month after beginning remote support, we calculated the average claims costs across the 14 participants with claims.
- For this period, we also added the average monthly technology costs for the 14 participants in the sample to the average monthly claim costs.

Estimated cost of projected in-person service delivery. We cannot know what the exact in-person support costs would have been if participants had not joined the Technology Pilot. To estimate these costs, we assumed that in-person service costs would continue to grow at the same rate observed during the 11 months before the pilot. We calculated this growth rate to be 0.91 percent. This means that if services cost $100.00 in March, we would expect services in April to cost $100.91, $101.83 in May, and so on.

We also accounted for the period between the initial installation of the technology and starting remote support. For the 14 people in our cost analysis, this time period was 0.7 months, on average.[14]

- This approach starts with the average cost across all 14 participants in the month before starting the Technology Pilot (program month -1, as described in the 'Program month alignment' section above).
- We then multiplied the average cost in program month -1 by the rate of growth observed in the 11-month period before the Technology Pilot (0.91 percent) for a partial month (0.7 months[15]) plus a full month. This rate is 1.56 percent.
- To estimate the growth in cost for each subsequent month, we multiplied the average cost for the previous month by the growth rate observed in the 11-month period before the Technology Pilot (0.91 percent).

[13] We calculated this average among all participants with a claim cost for that program month.

[14] For the 14 participants included in the cost analysis, the average time between first receiving technology and the start of remote support was 21 days (or 0.7 months). Note that for the larger group of 28 pilot participants, the average time between first receiving technology and the start of remote support was longer: 73 days.

[15] As noted above, the partial month accounts for the average time between initial installation of the technology and starting remote support.

SIR analysis. We counted the number of incidents occurring during the 330 days before the date of installing the first piece of technology. We then counted the number of incidents occurring in the 330 days starting the day remote support began.

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