A First Look at Connect Oregon Implementation

Analysis of Connect Oregon Platform Data from 2021-2022

Prepared by:

Bradley Iott, PhD, Post-Doctoral Scholar, SIREN, Center for Health and Community, University of California San Francisco

Caroline Fichtenberg, PhD, Co-Director, SIREN, Center for Health and Community and Research Scientist, Department of Family and Community Medicine, University of California San Francisco

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- Brian Wetter, VP – IT Infrastructure & Analytics, PacificSource Health Plans
- Rod Meyer, Information Systems Director, Yamhill Community Care
- Ashley Vaughn, HIT Commons Consultant, HIT Commons
- Liz Whitworth, Managing Director, OHLC

Research Collaborators:

- Laura Gottlieb, Co-Principal Investigator, UCSF SIREN
- Stephanie Fitzpatrick, Senior Investigator, Kaiser Permanente Center for Health Research
- Anne King, Associate ORPRN Director, Healthcare Initiatives, OHSU ORPRN
- Halima Montecalvo, Senior Director, Research and Evaluation, Unite Us

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1. Introduction

In October 2020, a group of Oregon Coordinated Care Organizations (CCOs), health systems, and other organizations, seeking to enable care coordination across health care and social service providers, launched the Connect Oregon referral system (additional background on the origins of Connect Oregon can be found in the Appendix). Powered by the Unite Us referral platform, Connect Oregon enables organizations to make secure, closed-loop electronic referrals to each other and to communicate about the outcomes of those referrals for clients who have consented into the platform. Over the past three years, Connect Oregon has gradually expanded across the state: Connect Oregon was available in 19 counties in 2021, in 35 counties in 2022, and in all 36 Oregon counties by early 2023. In 2022, the Oregon Health Leadership Council (OHLC) and several CCOs contracted with researchers from the Social Interventions Research and Evaluation Network (SIREN) at the University of California, San Francisco to examine the implementation of Connect Oregon to-date to identify how to continue to advance adoption of the platform. As a first step in that effort, this report presents results of analysis of Connect Oregon platform data during 2021 and 2022 to assess how the platform was used during those years and to identify patterns that can inform future adoption and implementation efforts.

2. Evaluation Goals: Better Understand How to Advance Platform Adoption

The goal of this 18-month evaluation of Connect Oregon is to examine **implementation** of the Connect Oregon technology platform to identify how to continue to advance adoption of the platform. This evaluation does not seek to understand the effectiveness of the platform in terms of impacts on client health outcomes as it is too early in the effort to assess that.

The specific goals of this report are to answer the following questions:

1. **How broadly has Connect Oregon been used to date? What kinds of organizations have been using it? Has use been similar across the state?**
2. **How many clients have been served through Connect Oregon? What are the characteristics of clients served through Connect Oregon? Are there any categories of clients who have been served less than others?**
3. **What types of resources and services have been sought through the platform?**
4. **How well has the platform been working for connecting clients to resources and services? Are there any differences in referral outcomes based on client characteristics or types of resources sought?**

Subsequent work between now and mid-2024 will examine other questions including:

5. What have been the experiences of Connect Oregon users, including community-based organizations (CBOs), CCO care coordination teams, clinical partners, and 211info Coordination Center staff?
6. What have been the experiences of clients being served through Connect Oregon?

3. Data Overview

This report summarizes results from analyses of data captured by the Connect Oregon platform from January 1, 2021 to December 31, 2022. Although the platform launched in October 2020, we chose to begin examining usage data at the beginning of 2021 to have two full years of data to examine.

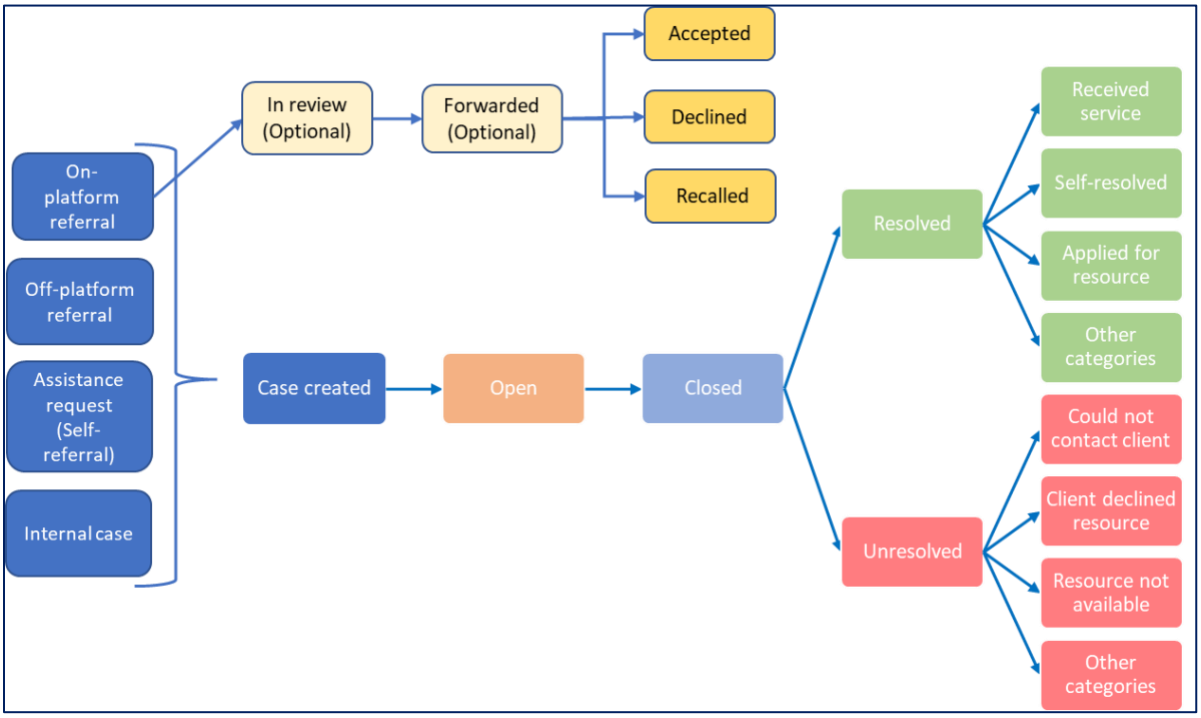
Connect Oregon captures data about clients, cases, and referrals:

- **Clients** are unique individuals who are helped in some way through Connect Oregon.
- **Cases** represent a client with a need at a particular point in time. Cases are created either when a referral is made (on- or off-platform) between organizations, when a client submits a request for assistance, or when a user creates an internal case (within their own organization) in response to a client's need for assistance.
- **Referrals** on Connect Oregon can be on-platform, meaning that a referral is made directly to the receiving organization through the platform. This enables the receiving organization to accept or decline the organization in the platform. Off-platform referrals occur when a staff member records in Connect Oregon that they referred a client to an organization that is listed in the platform's resource directory but is not accepting electronic referrals (i.e., the client was provided information via email, mail, phone, etc.).

Figure 1 illustrates the Connect Oregon case and referral workflow. After an on-platform referral is made through Connect Oregon, the receiving organization will be notified and have the opportunity to either accept or decline the referral, depending on whether the referral matches the services they offer, the client is eligible to receive the services, and the organization has the capacity to provide those services at that point in time. Receiving organizations can also forward the referral to another organization. This may happen if the receiving organization is not the right organization to provide that service or if they do not have the capacity at that point in time. Receiving organizations can also indicate that they are reviewing the referral prior to making a decision by setting the referral status to 'in review.' Once they have finished their review, the receiving organization will then accept, decline, or forward as appropriate. Referrals can also be recalled by the sending organization, if they were made in error or if they are no longer needed. Referrals will also be recalled automatically ('auto-recalled') if they are part of a group of referrals sent as a 'batch' once one of the other referrals was accepted. As action is taken for an on-platform referral, its status is updated from sent to accepted, declined, in review, forwarded, or recalled/auto-recalled. At any given point in time, referrals that are labeled as sent and in review may eventually be accepted, declined, forwarded, or recalled at a later date.

In addition, if an organization is not accepting referrals through Connect Oregon, users can send clients the information they need to contact the organization themselves. This is called an off-platform referral. No information about referral acceptance is captured in Connect Oregon for off-platform referrals but case resolution outcomes are captured.

Figure 1. Connect Oregon Case and Referral Workflow



When a case is created in Connect Oregon, its status can be open or closed. Cases are closed as 'resolved' when the staff person managing that case determines that the client has received the service or assistance they were seeking, has applied for a resource or benefit ('applied for resource'), or no longer needs assistance ('self-resolved'). Importantly, a case labeled as resolved does not always mean that a client's needs have been addressed, but only that as much as possible was done to help the client access the services or resources they were seeking. Cases are closed as unresolved when the person managing the case determines that it is not possible to help the client. Examples of situations where cases are closed as unresolved includes when it is not possible to contact a client, when the client declines a resource, and when a resource is unavailable. Open cases are those which have not yet been deemed resolved or unresolved (both resolved and unresolved cases are considered "closed").

The datasets we received from Unite Us included data about the organizations sending and receiving referrals, the services requested, when referrals or requests for assistance were made, the outcomes of referrals/assistance requests, as well as demographic information about the clients on whose behalf referrals were made. The dataset we analyzed was pulled on March 20, 2023, therefore the results we present here reflect data in the system as of that date.

This report provides data on the status of referrals as of March 20, 2023, the date the data were pulled.

In this report, we are not analyzing any of the referrals that were recalled or auto-recalled (n=2,658).

4. Results

How broadly adopted was Connect Oregon in 2021-2022?

Key Takeaways:

- A total of 1,429 organizations either sent or received a referral through Connect Oregon in 2021 and 2022, or 34% of the organizations in the Connect Oregon pipeline for participation.
- 229 organizations sent referrals through Connect Oregon in 2021 and 2022 (5% of pipeline organizations) while 1,323 organizations received referrals (31% of pipeline organizations).
- The percentage of pipeline organizations sending or receiving referrals varied from 63% in Eastern Oregon to 8% in Northern Oregon, indicating variability in levels of adoption across the state.
- Social services agencies and clinical organizations were the most common types of organizations sending referrals on the platform, while social services agencies were the most common organizations receiving referrals.
- The service types that had the most organizations receiving referrals were housing & shelter and food assistance.

Platform adoption

Connect Oregon was onboarding in 19 counties in 2021 and in 35 counties in 2022. We examined platform adoption by calculating the percent of organizations in the Connect Oregon pipeline for recruitment that either sent or received at least 1 referral during 2021-2022 (including both on- and off-platform referrals). We found that, statewide, **1,429 organizations or a third (34%)** of the organizations in the Connect Oregon pipeline either sent or received a referral during 2021-2022. This percentage varied by region from 63% in Eastern Oregon to 8% in Northern Oregon (See Figure 2 and Table 1).

Figure 2. Percent of Organizations That Were Active on Connect Oregon in 2021-2022 Among All Organizations in the Connect Oregon Pipeline

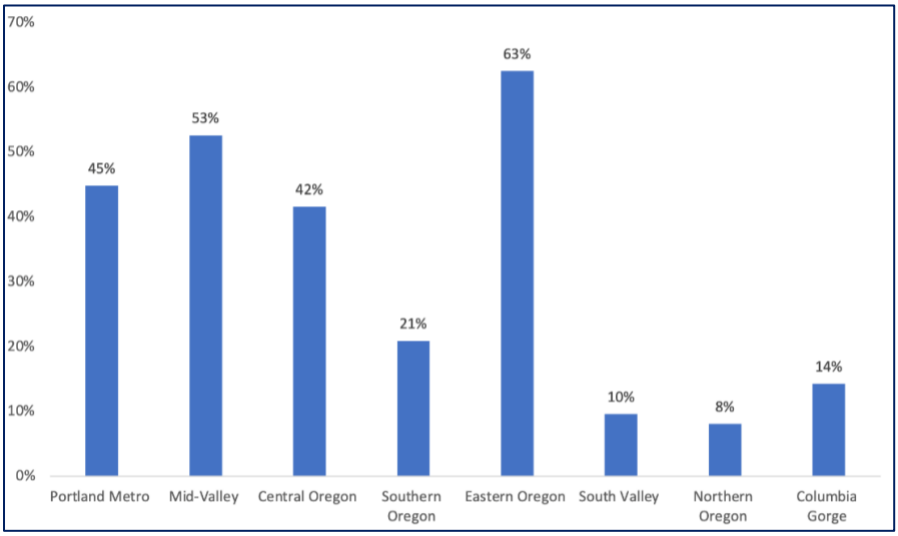


Table 1: Number of Organizations that Used Connect Oregon in 2021-2022, Overall and by Region

	Total # of Orgs*	# (%) of Orgs Active on Connect Oregon***	# of Orgs that Sent at Least 1 Referral	# of Orgs that Received at Least 1 Referral	# of Orgs that Sent & Received at Least 1 Referral
Total	4,246	1,429 (34%)	229 (5%)	1,323 (31%)	124 (3%)
Region					
Portland Metro	1,579	708 (45%)	79 (5%)	676 (43%)	45 (3%)
Mid-Valley	557	293 (53%)	55 (10%)	267 (48%)	35 (6%)
Central Oregon	149	62 (42%)	16 (11%)	56 (38%)	7 (5%)
Southern Oregon	685	143 (21%)	53 (8%)	120 (18%)	33 (5%)
Eastern Oregon^	192	120 (63%)	7 (4%)	111 (58%)	0 (0%)
South Valley	825	79 (10%)	13 (2%)	74 (9%)	4 (0.5%)
Northern Oregon	210	17 (8%)	5 (2%)	16 (8%)	0 (0%)
Columbia Gorge^	49**	7 (14%)	1 (2%)	3 (6%)	0 (0%)

*Counts provided by Connect Oregon Regional Pipeline & Partners Report, including partners who are active on Connect Oregon or in the pipeline for recruitment.

**Pipeline data not yet available. Count provided by 211info

***Sent or received (i.e., was sent) at least 1 referral in 2021-2022.

^These regions are in the early stages of onboarding. Total numbers of organizations desired on the network are not yet determined.

Types of organizations using Connect Oregon

We classified organizations using Connect Oregon into six distinct groups:

- **211info Coordination Center (n=1)—**Staffed by 211info, the Coordination Center provides referral navigation support on the Connect Oregon platform in 9/36 Oregon counties and 2 counties in southwest Washington at the time of the data pull. Organizations in these counties are able to send referrals to the 211info Coordination Center to assist clients who often have more than 1 social need.
- **Behavioral Health (n=87)—**These are organizations providing mental health, substance use, peer support, counseling, recovery and other behavioral health-related services. This category does not include county-based programs, which are noted in a separate category below.
- **CCO Care Coordination Team (n=21)—**As part of state Medicaid program requirements, each CCO in Oregon has "care coordination teams" that provide care navigation, care management, and care coordination services to members who request it and those who also fall into

"prioritized populations." These teams are starting to manage some member referrals on Connect Oregon.[1]

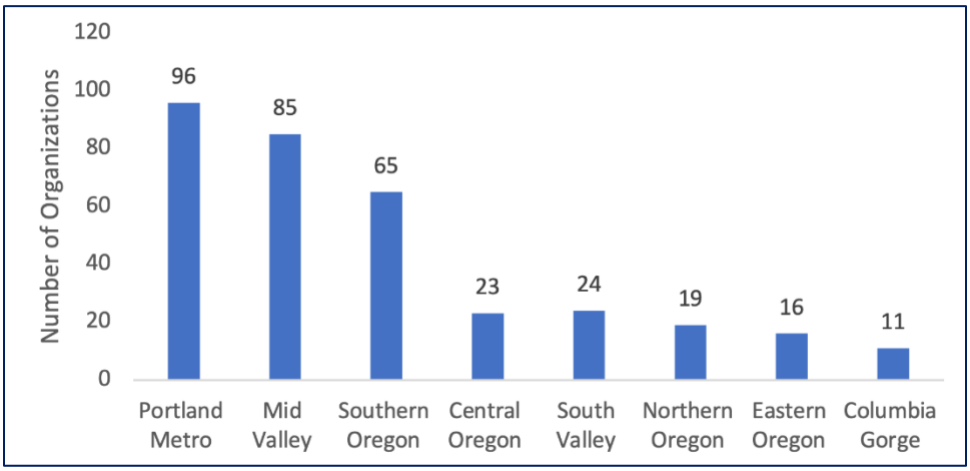
- **Clinical Partner (n=186)—**These partners include clinical practices, health system clinics, FQHCs, specialty clinics, pediatric clinics and other clinical organizations.
- **County Program (n=82)—**These include any program operated by a county, and can include health care, behavioral health, home visiting, WIC, AAA/APD/IDD, and other county programs.
- **Social Services (n=1,052)—**This is a broad group of organizations providing social services, such as food, housing, transportation, individual and family support, legal assistance, income assistance, spiritual, and other services.

Organizations sending referrals

A total of **229 unique organizations** sent at least 1 referral through Connect Oregon in 2021-2022, or 5% of organizations in the pipeline. That percentage ranged from 2% in Northern Oregon and Columbia Gorge to 11% in Central Oregon (Figure 3).

Portland Metro, Mid Valley, and Southern Oregon had the largest number of organizations sending referrals (96, 85, and 65, respectively), while remaining regions had between 11-24 unique organizations sending referrals.

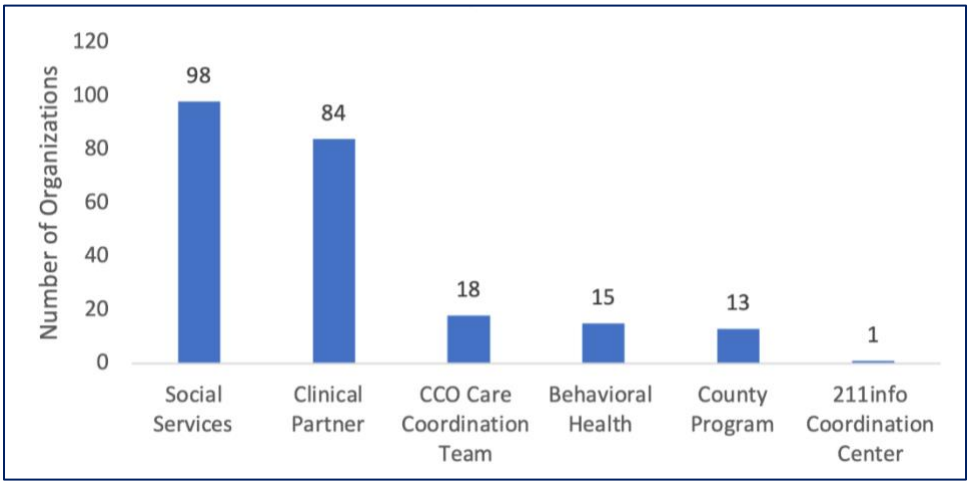
Figure 3: Number of Referral Sending Organizations Per Region



As the figure below shows, most of the organizations that sent referrals were social services agencies (98 unique organizations, 43% of all organizations that sent a referral) and clinical partners (84 unique organizations, 37% of all organizations).

[1] We realized at the last minute that Umpqua Health Newton Creek is included in the CCO Care Coordination category instead of the clinical provider category. We do not believe this affects the results in any meaningful way. Next year's report will include this organization in the correct category.

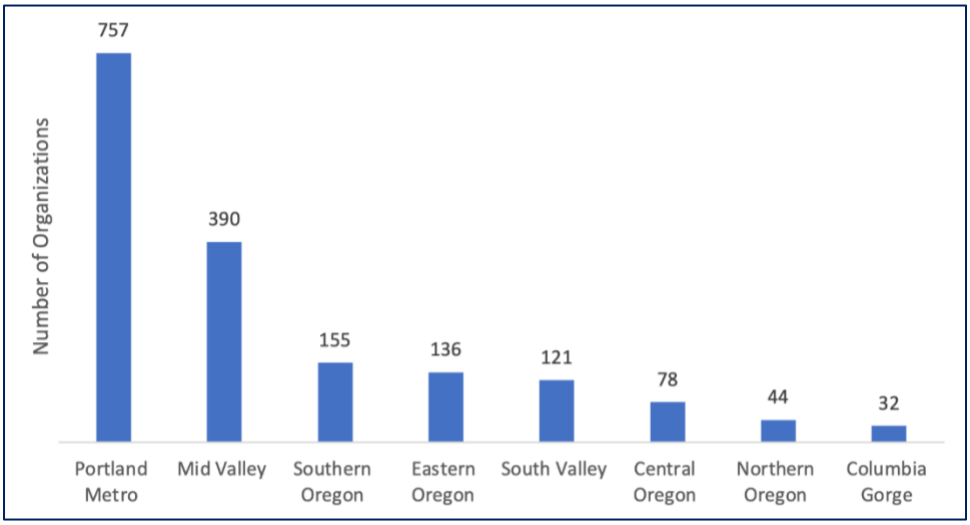
Figure 4. Number of Referral Sending Organizations by Type



Organizations receiving referrals

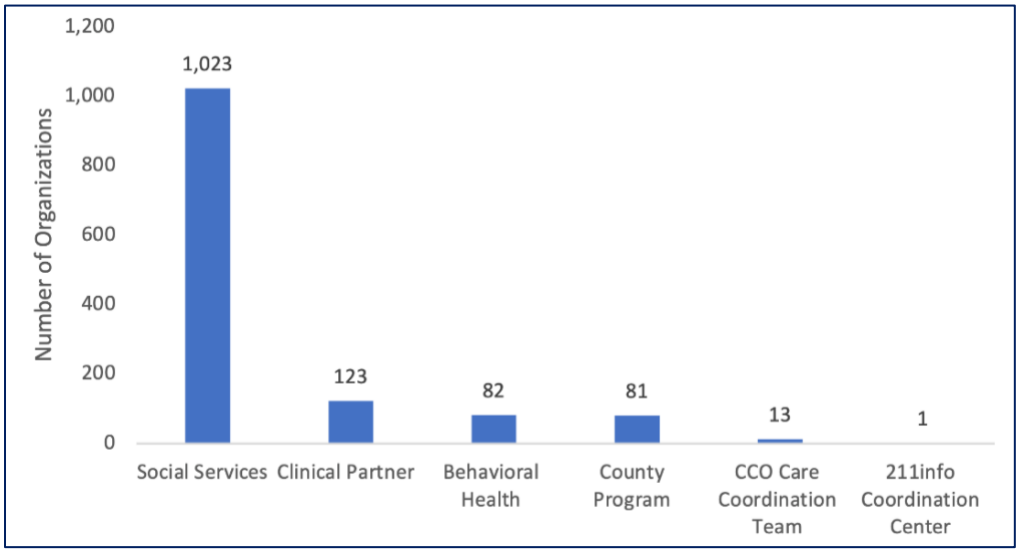
On-platform and off-platform referrals were sent to a total of 1,323 unique organizations in 2021 and 2022, or 31% of organizations in the database. That percentage ranged from 6% in Columbia Gorge to 58% in Eastern Oregon (Figure 5). Portland Metro and Mid Valley had the largest number of organizations receiving referrals (757 and 390, respectively), while remaining regions had between 32-155 unique organizations receiving referrals.

Figure 5. Number of Referral Receiving Organizations per Region



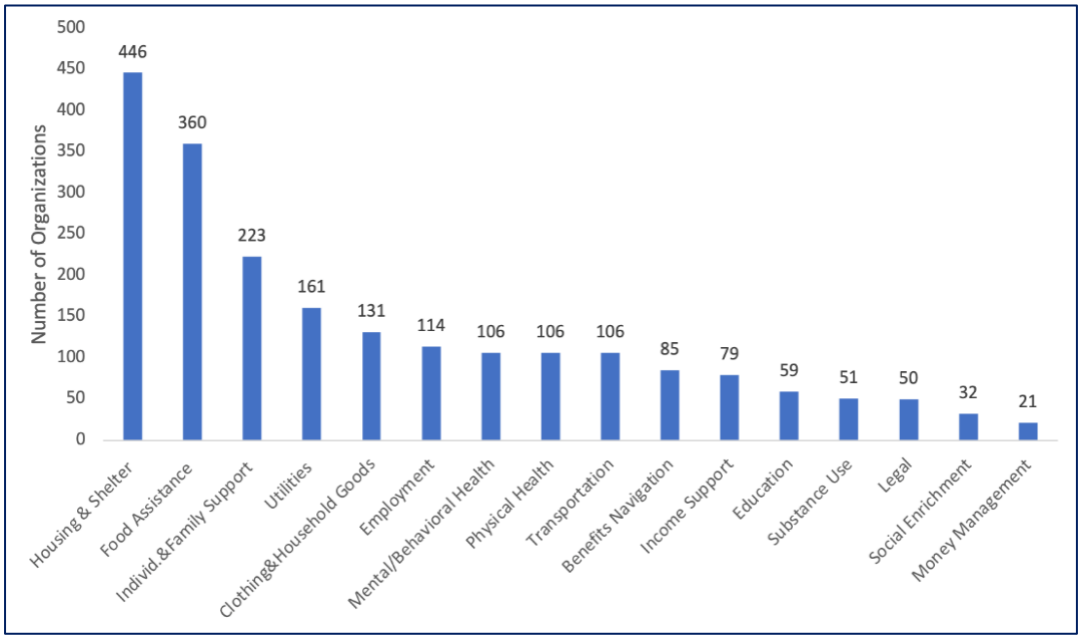
As seen in Figure 6, social services agencies were the most common type of organization to receive referrals on Connect Oregon (1,023 unique organization, or 77% of organizations to whom referrals were sent).

Figure 6. Number of Referral Receiving Organizations by Type



The Unite Us technology categorizes referral and case data across 20 parent sector-types (or, "service types" such as food assistance, utilities, etc.). As seen in Figure 7, the service types that had the most organizations receiving referrals in the network were housing & shelter and food assistance.

Figure 7. Number of Referral Receiving Organizations for Each Service Type



Who was served through Connect Oregon in 2021-2022?

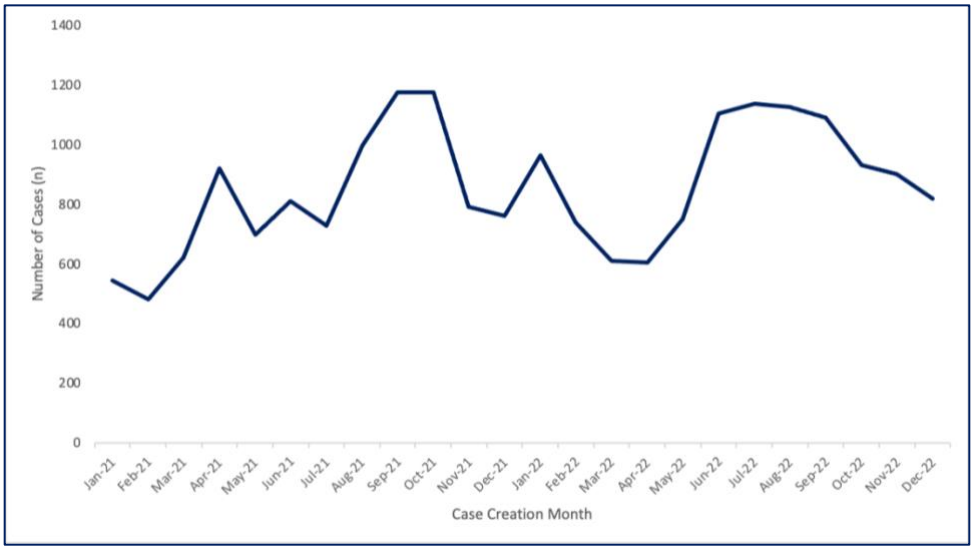
Key Takeaways:

- A total of **11,677 clients** were served through Connect Oregon during 2021-2022, representing **just under 1% of Oregon's Medicaid enrollment** as of January 2022 (the midpoint of the evaluation period). Using data on the prevalence of needs among Oregon's Accountable Health Communities, we estimate that **this may represent 2.5% of OHA enrollees who might have a social need and want assistance with that need.**
- **20,464 cases**, each representing a client with a need at a particular point in time, were created in 2021-2022.
- Case volume fluctuated across these 2 years, with peaks in April 2021, the fall of 2021, January 2022, and the summer of 2022.
- A total of **20,896 referrals** were made through Connect Oregon during 2021 and 2022.

Between January 1st, 2021 and December 31st, 2022, a total of **11,677 unique clients** were served on Connect Oregon through **20,464 cases**. (Cases represent a client with a need(s) at a particular point in time. Cases are created either when a referral is made (on or off platform), when a client submits a request for assistance, or when a user creates an internal case in response to a client's need for assistance.) Seventy percent of clients had only one case on Connect Oregon during 2021-2022, while 15% had 2 cases, and another 15% had three or more cases.

The figure below shows the number of cases created in Connect Oregon per month, showing that the number of cases per month fluctuated from 480/month in February 2021 to 1,175/month in October 2021, with major peaks in September/October 2021 and the summer of 2022. These peaks align with new workflows using Connect Oregon (e.g., COVID Wrap Around support in Summer 2021) and new CCOs and community partners joining the network over time.

Figure 8. Number of Cases per Month*



* This excludes deferred cases, cases for wellness, sports & recreation, entrepreneurship, and spiritual enrichment services, cases among those whose age was out of bounds, and cases for those who were missing data about region or where outside of Oregon.

A total of **20,896 referrals** were made through Connect Oregon during 2021 and 2022. 1,799 cases (9%) lacked an associated referral, meaning that they were assistance requests or created by a user in response to a client's need for assistance. Of the cases with referrals, only 12.4% had more than one referral. Most referrals (82.4%) were sent to on-platform partners, while 17.6% were off-platform referrals, i.e., referrals made outside the platform but documented in the platform.

Table 1 summarizes the numbers of clients, cases, and referrals by age, gender, race/ethnicity, and region (based on the client's address), as well as estimated rates of Connect Oregon use. Using Medicaid enrollment in January 2022 as a denominator, we estimate that **just under 1% of the total Oregon Medicaid (OHA) population had a case created in Connect Oregon during 2021 and 2022**. Because not all Medicaid enrollees experience social needs and desire assistance, we further refined our estimate of the reach of the platform in 2021-2022 based on data from OHA's Accountable Health Communities (AHC) Program. Between January 1, 2019 and January 31, 2022, 47% of individuals screened as part of the AHC program had at least one social need, and 77% of those offered navigation agreed to receive it.[2] Applying these percentages to the January 2022 Medicaid enrollment count, we estimate that 1,284,101*.47*77 = 464,716 OHA enrollees might experience a social risk and be interested in navigation assistance for that social risk. Using this number as a denominator indicates that **clients served through Connect Oregon in 2021-2022 might constitute an estimated 2.5% of OHA enrollees who have a social need and want assistance with it**. These are only estimates as we do not have definitive data about the percent of OHA enrollees who would benefit from Connect Oregon services. In addition, it is possible that some of those served through Connect Oregon are not OHA enrollees.

Using overall OHA enrollee characteristics as a comparison, the following demographic trends emerged (see Table 2):

- **Age:** Clients over age 65 were nearly twice as likely to be served through Connect Oregon as adults 18-65, while children were two-thirds less likely to be served through Connect Oregon than adults 18-65.
- **Gender/Gender identity:** Women were 50% more likely to have cases in Connect Oregon than men. Gender information was missing for 27% of clients.
- **Race/Ethnicity:** Race/ethnicity was missing for 59% of Connect Oregon clients. Among those for whom race/ethnicity information was available, Native Hawaiian/Pacific Islanders and Black individuals were the most likely to be served through Connect Oregon. American Indian/Alaska Native, Asian and white individuals were the least likely to have Connect Oregon cases.
- **Region:** The Portland metro area had the largest number of clients, although as compared to the number of OHA enrollees by region, Central Oregon had the highest ratio of clients to enrollees, followed by Mid Valley. (Of note, regions started using Connect Oregon at different points in time. Regions are ordered in the table below based on when they started using Connect Oregon, with Portland metro being the first, and Columbia Gorge being the most recent. See Appendix for detail on CCO geographic footprints and Connect Oregon regions used in this report.)

[2] Personal communication from Anne King, OHSU.

Table 2. Numbers and Rates of Connect Oregon Clients, Cases, and Referrals Overall and by Age, Gender, Race/Ethnicity, and Region, from 1/1/2021 to 12/31/2022

	January 2022 Medicaid Enrollees*	# (%) of Clients	Clients as a % of Medicaid Enrollees	# of Cases	# of Cases/ 100 Medicaid Enrollees	# of Referrals	# of Referrals/ 100 Medicaid Enrollees
Total	1,284,101	11,677 (100%)	0.9%	20,464	1.59	20,896	1.63
Age							
0-17 years	480,672	1,374 (12%)	0.3%	2,256	0.47	2,362	0.49
18-65 years	803,429	8,993 (77%)	1.1%	15,927	1.98	16,093	2.00
65+ years	65,113	1,310 (11%)	2.0%	2,281	3.50	2,440	3.75
Gender							
Female	673,472	5,270 (45%)	0.8%	10,078	1.50	10,701	1.59
Male	610,629	3,263 (28%)	0.5%	6,005	0.98	6,301	1.03
Non-Binary/Other	NA	37 (<.001%)	NA	92	NA	73	NA
Not Available	NA	3,107 (27%)	NA	4,289	NA	3,821	NA
Race/Ethnicity							
White	594,741	2,819 (24%)	0.5%	5,470	0.92	5,820	0.98
Hispanic or Latino	157,919	1,128 (10%)	0.7%	2,518	1.59	2,617	1.66
Black or African American	40,686	462 (4%)	1.1%	1,335	3.28	1,333	3.28
Asian	35,209	140 (1%)	0.4%	245	0.70	247	0.70
Native Hawaiian/Pacific Islander	10,050	147 (1%)	1.5%	263	2.62	321	3.19
American Indian/Alaska Native	30,011	88 (1%)	0.3%	189	0.63	182	0.61
Other/Not Available	415,485	6,893 (59%)	1.7%	10,444	2.51	10,376	2.50
Region							
Portland Metro	469,084	5,157 (44%)	1.1%	10,047	2.14	10,752	2.29
Mid Valley	259,553	3,163 (27%)	1.2%	4,912	1.89	4,956	1.91
Central Oregon	75,504	1,413 (12%)	1.9%	2,045	2.71	1,851	2.45
Southern Oregon	226,797	1,374 (12%)	0.6%	2,016	0.89	1,921	0.85
Eastern Oregon	73,905	123 (1%)	0.2%	713	0.96	709	0.96
South Valley	123,388	385 (3%)	0.3%	608	0.49	568	0.46
Northern Oregon	36,843	49 (<.001%)	0.1%	91	0.25	89	0.24
Columbia Gorge	17,088	13 (<.001%)	0.1%	32	0.19	50	0.29

*OHP enrollment in January 2022 (those enrolled in physical health via OHP & CAK/HOP) was used as the denominator for rate calculations as it was the mid-point in the 2021-2022 time period.

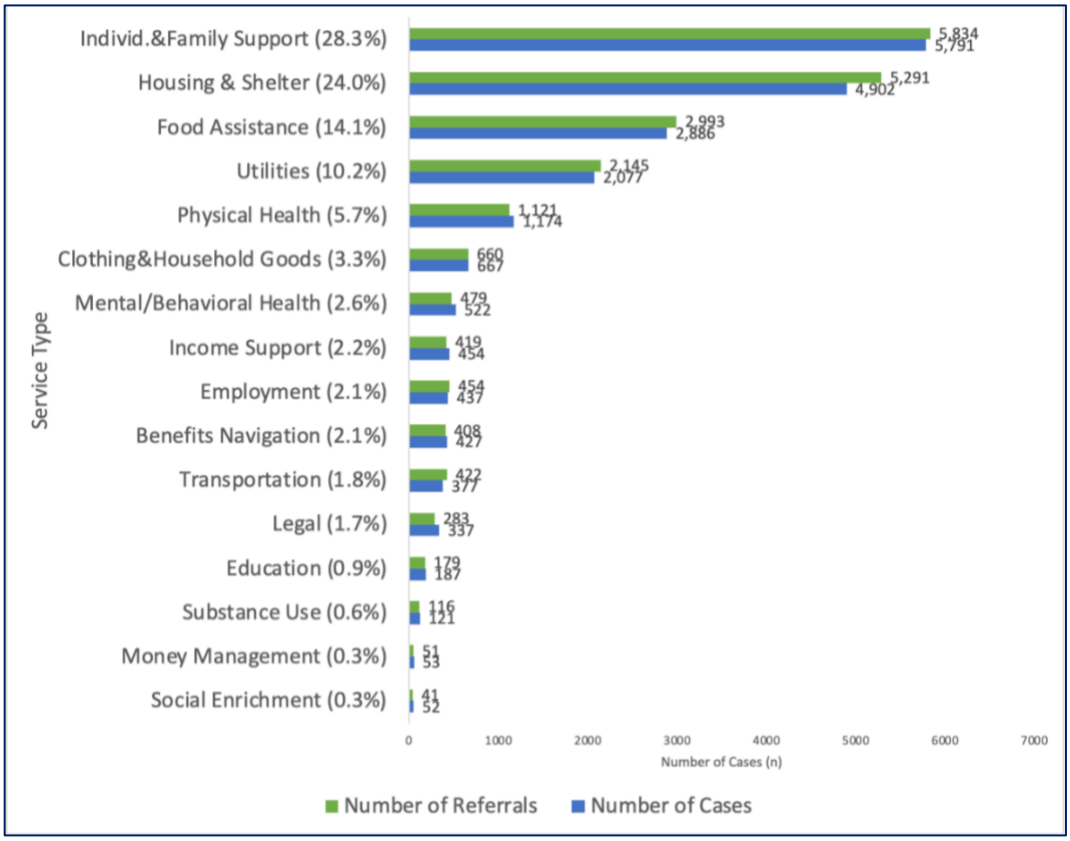
What services were clients referred to?

Key Takeaways:

- The 4 most common services that clients requested or were referred to were Individual & Family Supports, Housing & Shelter, Food Assistance, and Utilities. These 4 service categories constituted 75% of cases and 78% of referrals.
- The most common service types fluctuated over time.

The following figure shows the number of cases and referrals by the type of service requested or referred to. The most common type of service among cases in 2021 and 2022, accounting for 28.3% of cases and 27.9% of referrals, was **Individual & Family Support**, a category that includes 20 sub-categories of services (see box). Most of these cases (87%) were for Family Support Home Visiting Programs. Other prevalent service types were **Housing & Shelter** (24.0% of cases and 25.4% of referrals), followed by **Food Assistance** (14.1% of cases, 14.3% of referrals), and **Utility Assistance** (10.2% of cases, 10.3% of referrals). **Together these 4 categories accounted for 75% of cases and 78% of referrals.** [Note: The graphs below as well as subsequent analyses do not show data for cases (and associated referrals) for service types with fewer than 50 cases during our study period: Wellness (28 cases), Sports & Recreation (20), Entrepreneurship (9), and Spiritual Enrichment (2).]

Figure 9. Number of Cases and Referrals by Service Type



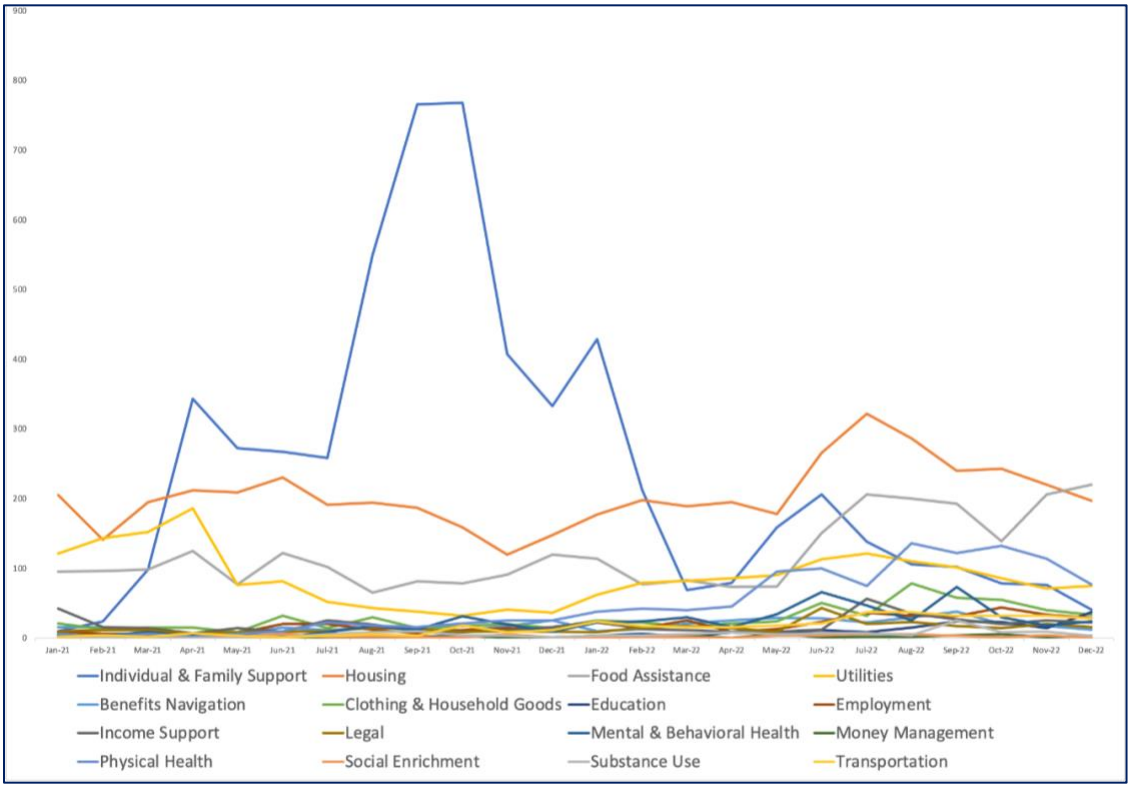
Box: Service Subtypes for Individual and Family Support

- Adult Day Programs
- Animal Services
- Caregiving Services
- Child Care
- Companionship and Socialization Support
- Developmental Delay & Disability Support
- Environmental Modifications/Accessibility
- Family Support Home Visiting Programs
- Holiday Programs
- Interpretation Services
- Life Coaching
- Life Skills Training and Support
- Mentoring
- Parenting Education
- Peer Support
- Pregnancy/Birthing/Postpartum Support and Infant Wellness
- Respite Care
- Service Animals
- Social Services Case Management
- Support Groups

Have service types changed over time?

The figure below shows cases by service type by month. Case numbers for most categories of services have held fairly steady during 2021 and 2022. The one exception is individual & family support, which mostly occurred from March 2021 to February 2022 then dropped to much lower levels after that (partially due to a COVID Wrap Around Services workflow in place in three counties).

Figure 10. Number of Cases by Service Type Over Time



How often are referrals accepted?

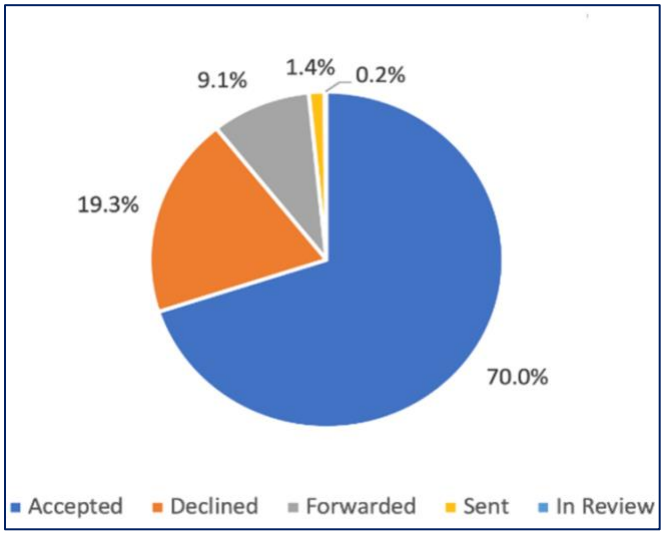
Key Takeaways:

- 70% of on-platform referrals made in 2021 and 2022 were accepted by March 20, 2023, while 19% were declined and 9% were forwarded.
- All but 2% of referrals had been acted on.
- The number of accepted referrals decreased over the 2-year period while declined and off-platform referrals grew.

The next figure shows the status of on-platform referrals created during 2021 and 2022 based on the referral status as of March 20, 2023. This figure shows that:

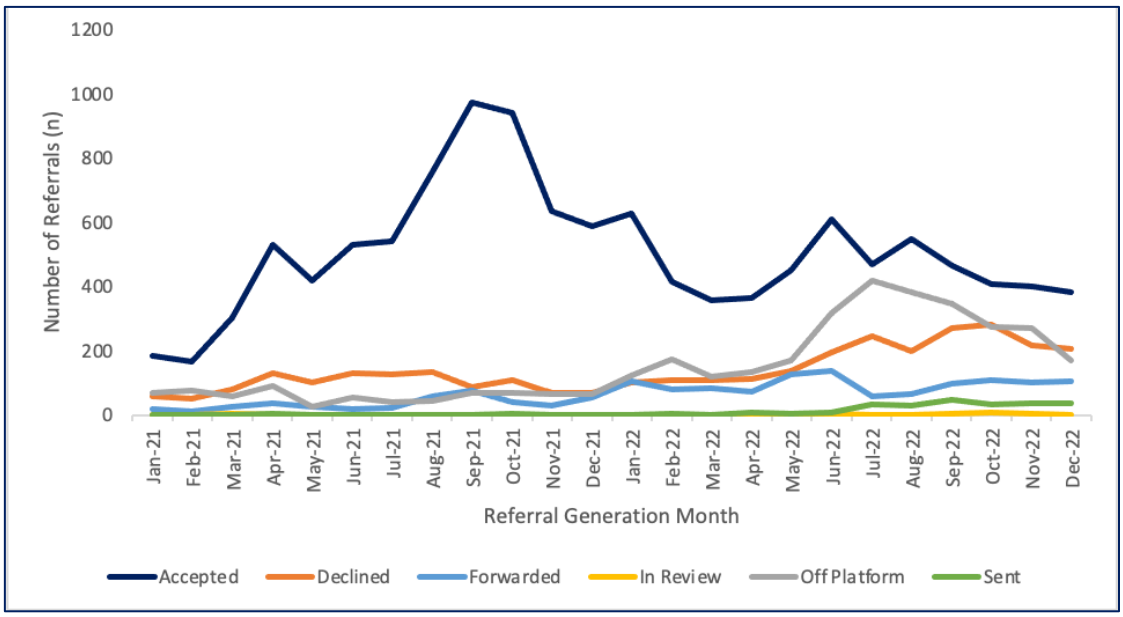
- Nearly 7 in 10 (70%) on-platform referrals made in 2021 and 2022 had been accepted by March 2023.
- Just under 1 in 5 (19.3%) on-platform referrals had been declined;
- Less than 1 in 10 (9.1%) had been forwarded;
- Less than 2% remained either unacted on (sent) or in review.

Figure 11. Status of Referrals Made in 2021-2022 as of March 20, 2023



The following figure shows referral statuses over time based on when a referral was created. As the figure illustrates, the number of accepted referrals grew steadily during the first 9 months of 2021, then dropped before rising again in mid-2022. The number of declined referrals grew in the latter half of 2022. The number of off-platform referrals grew between in the spring and summer of 2022 then dropped again in the second half of 2022.

Figure 12. Referral Status Over Time



How quickly did organizations respond to on-platform referrals?

Key Takeaways:

- 62% of on-platform referrals were acted on within one day of being sent, and 86% were acted on within 5 days.
- Organizations were quicker to accept referrals than to decline them: 78% of accepted referrals were accepted within 5 days of being sent, while only 64% of declined referrals were declined within 5 days.
- Time to act on referrals varied by receiving organization and service type suggesting opportunities to identify best practices.

Using time data captured by Unite Us at different stages of the referral process, we calculated the median, average, minimum, and maximum number of days between when a referral was created and when the status of the referral changed in Connect Oregon. In this way we calculated the time from referral creation to any action taken (referral sent, in review, accepted, declined, or forwarded), to referral status being changed to in review, time spent in review, time to acceptance, time to decline, time to referral forwarded, and time to terminal action (referral accepted or declined) (Table 3).

After being created, referrals took a median of 1 day to be acted upon and 1 day to reach a terminal status. Referral acceptance occurred more quickly than declining (median = 1 day vs. 2 days). Furthermore, declined referrals had a larger range of time taken before the referral was declined than accepted referrals (0-576 days vs. 0-253 days). Referrals which were held in review remained there for a median of 8 days (range: 0-250 days). (2,915 referrals (17% of on-platform referrals made during the study period) were held in review during the referral process, including 14% of accepted referrals, 13% of declined referrals, and 50% of forwarded referrals.)

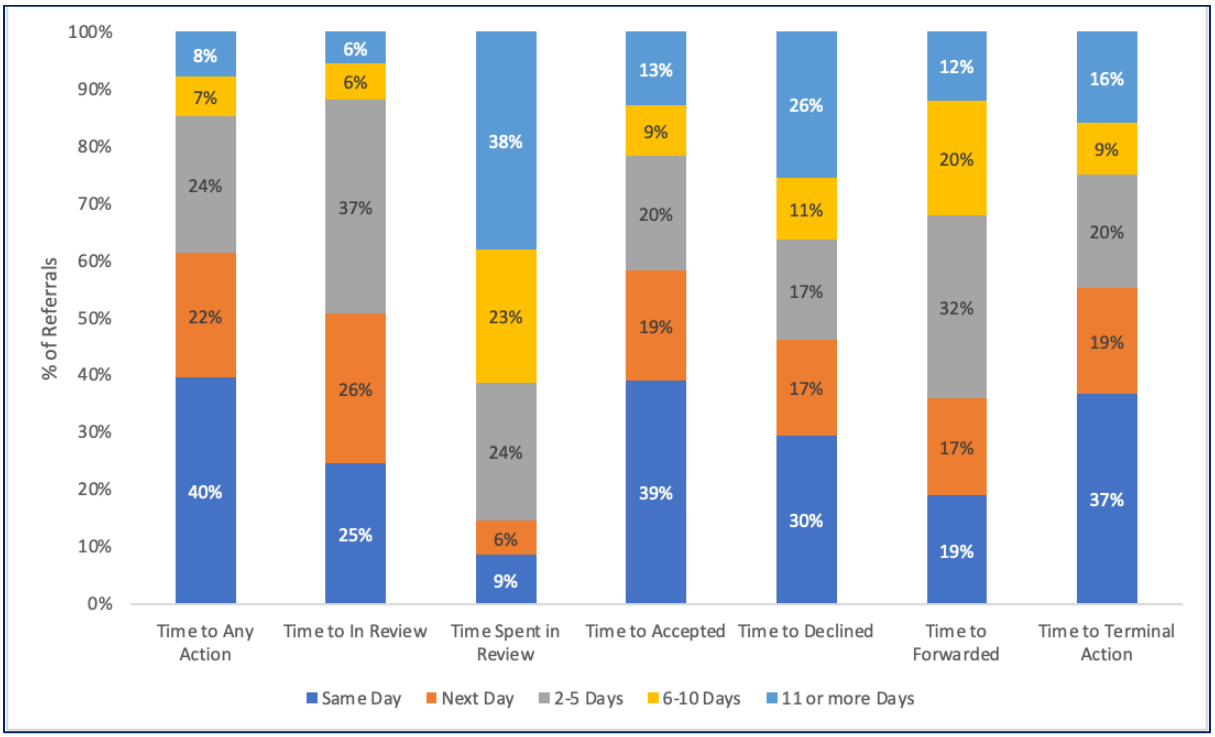
Table 3. Median, Mean, and Range of Days to Referral Status Change

	Median	Mean	Range (min-max)
Time to Any Action	1	4.7	0-576
Time to In Review	1	3.7	0-250
Time Spent in Review	8	12.3	0-250
Time to Acceptance	1	4.8	0-253
Time to Decline	2	14.9	0-576
Time to Forwarded	3	5.5	0-129
Time to Terminal Action	1	7.0	0-576

Notes: Time to any action includes sent, accepted, declined, in review, or forwarded. It does not include off platform referral statuses. Time to terminal action is time to accept or decline. 0 days to action means that the referral status changed the same day the referral was sent.

The figure below shows how the time to a given action differed based on the action. Forty percent of all referrals were acted on the day they were sent, while 22% were acted on the following day, and 24% within 2-5 days of the referral being sent. Among referrals that were accepted, 39% were accepted the day they were sent, while 30% of declined referrals were declined the day they were sent. Additionally, only 13% of accepted referrals were accepted after 11 or more days, while 26% of declined referrals took 11 or more days to be declined. Thirty-eight percent of referrals held in review were held in review for 11 or more days. Three quarters of referrals with a terminal status (referral accepted or declined) received that status in 5 days or fewer.

Figure 13. Percent of Referrals by Time to Referral Status Change



The table below shows the median number of days to a given action by the type of organization receiving the referral. The median time to any action and time to in review were similar across receiving organization, though variation in time spent in review (range = 4-11 days), as well as time to accept (range = 0-10), decline (range = 1-7), forwarding (range = 0-85), and terminal action (range = 0-8) varied across organization type. Clinical partners had the longest median time spent in review (11 days) and median time to forwarding of referrals (85 days), while CCO Care Coordination Teams had long median time spent in review, time to referral acceptance, and time to terminal action. Behavioral health and county programs had the longest time to decline (7 and 5 days, respectively).

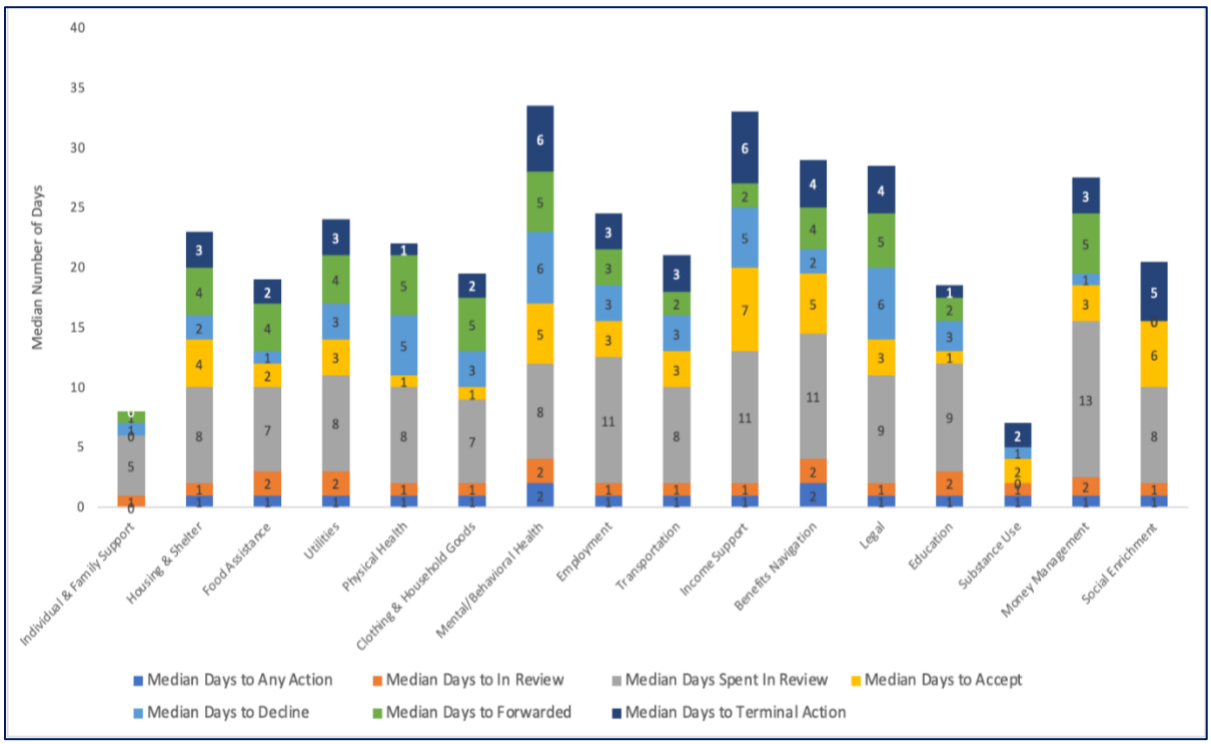
Table 4: Median Number of Days to Referral Status Change by Referral Receiving Organization Type

	Median Days to Any Action	Median Days to In Review	Median Days Spent In Review	Median Days to Accept	Median Days to Decline	Median Days to Forwarded	Median Days to Terminal Action
211info Coordination Center	1	1	8	10	2	4	8
Behavioral Health	1	1	7	1	7	NA*	1
CCO Care Coordination Team	0	0	6	0	1	NA*	0
Clinical Partner	1	2	11	1	3	85	1
County Program	1	1	4	1	5	0	1
Social Services	1	2	7	1	2	1	1

*Behavioral Health and CCO Care Coordination Teams did not forward any referrals in our sample.

The following figure shows the average time to action on a referral by service type (i.e., type of service being requested). While median time to any action and median time to in review were similar across service types, we observed variation in median time spent in review (range = 0-11 days), as well as time to accept (range = 0-7), decline (range = 0-6), forwarding (range = 0-5), and terminal action (range = 0-6). Individual & Family Support had the shortest median time to any action (0 days) and time to terminal action (0 days). The service types with the longest median time to acceptance of referrals includes Income Support, Social Enrichment, Benefits Navigation, and Mental/Behavioral Health. The service types with the longest median time to decline of referrals includes Mental/Behavioral Health, Physical Health, Legal, and Income Support.

Figure 14. Median Number of Days to Referral Status Change by Service Type



What factors are associated with whether referrals are accepted, declined, forwarded, or made off-platform?

Key Takeaways:

- Rates of referral acceptance were **similar by age, gender, and race/ethnicity** suggesting that referrals are largely managed in similar ways across demographic groups.
- Referral acceptance **varied by service type from 84% to 51%**. Referrals for physical health services, social enrichment, food assistance, education, employment, and benefits navigation had rates of acceptance above 80%.
- Service types with referral acceptance rates below 70% included money management, mental/behavioral health, income support, utilities, transportation, housing & shelter, substance use, and clothing & household goods. **These are service types where it may make sense to focus efforts to improve referral effectiveness.**
- Referral acceptance also **varied by category of organization sending and receiving referrals**. Categories of sending organizations with acceptance rates below 70% included behavioral health organizations, CCO care coordination teams, and social service organizations. Categories of receiving organizations with acceptance rates below 70% included county programs and the 211info coordination center.
- The referral **acceptance rate declined in 2022**, while rates of referrals being forwarded, declined, or made off-platform all increased during the study period.

We used regression models to assess whether referrals were handled differently based on client demographics, the service type being requested, the category of organization sending the referral, the category of organization receiving the referral, and time (by quarter). Models also adjusted for regional differences. We examined four main referral actions:

1. whether on-platform referrals were **accepted** vs. declined, forwarded, sent or in review
2. whether on-platform referrals were **declined** vs. accepted, forwarded, sent or in review
3. whether on-platform referrals were **forwarded** vs. accepted, declined, sent or in review
4. whether referrals were **off-platform** vs. on-platform

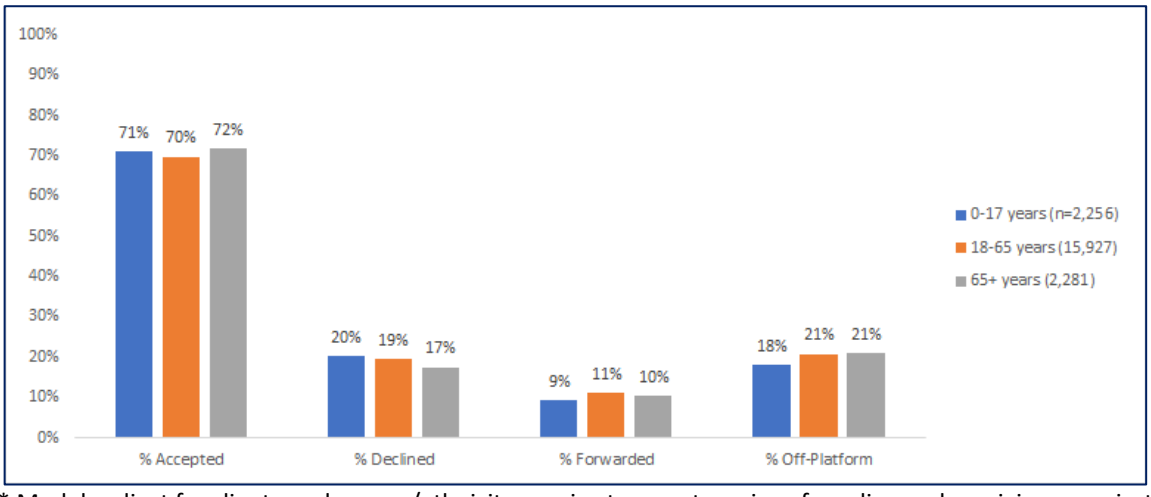
Regression modeling allowed us to estimate the percent of referrals that were accepted, declined, forwarded or off-platform based each factor of interest while controlling for the other factors. Therefore, the results below present the impacts of each factor controlling for the other factors.

Referral status by client demographics

Age

Figure 15 shows the adjusted percentages of different referral statuses by client age groupings (0-17 years, 18-65 years, or older than 65). This shows that, adjusting for gender, race/ethnicity, type of service requested, category of organization sending and receiving the referral, time and region, the percent of referrals that were accepted, declined, forwarded, or made off platform was similar across age groups.

Figure 15. Adjusted* Percentages of Referrals that Were Accepted, Declined, Forwarded, or Made Off-Platform, by Age Groupings

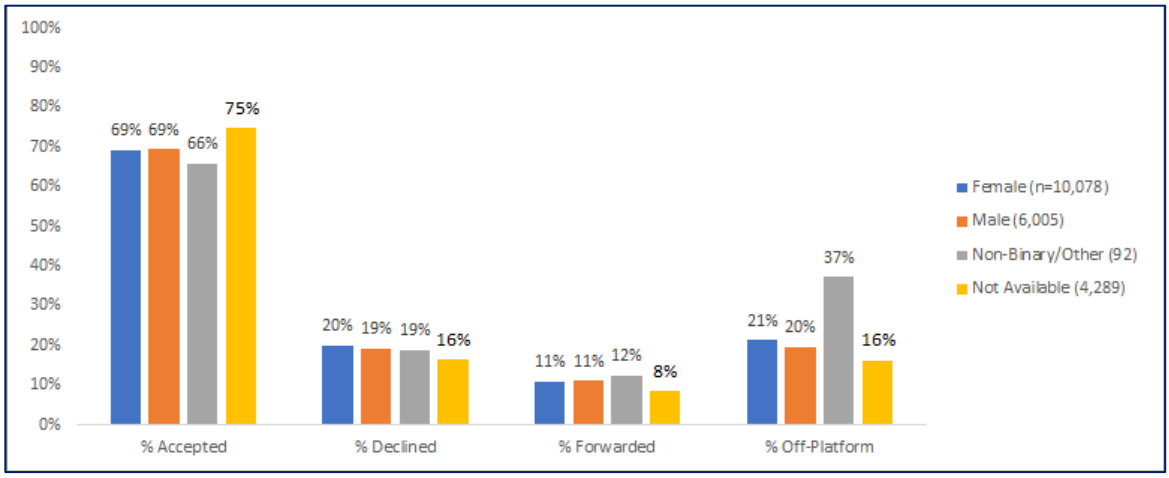


* Models adjust for client gender, race/ethnicity, service type, categories of sending and receiving organizations, quarter when referral was created, and region of client residence.

Gender

There were also only small differences in the likelihood of referrals being accepted, declined or forwarded by gender (see below). However, non-binary or other gender clients were nearly twice as likely to be given off-platform referrals as individuals who identified as female or male or for whom gender information was not available.

Figure 16. Adjusted* Percentages of Referrals that Were Accepted, Declined, Forwarded, or Made Off-Platform, by Gender

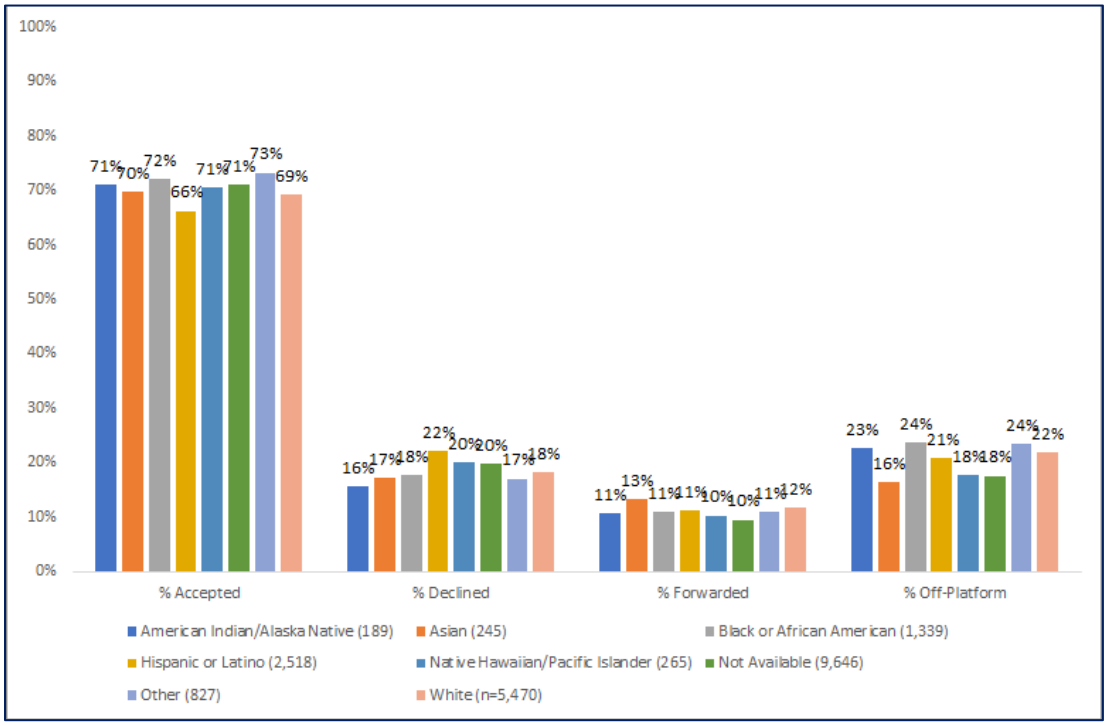


* Models adjust for client age, race/ethnicity, service type, categories of sending and receiving organizations, quarter when referral was created, and region of client residence.

Race/Ethnicity

Differences in the referral status by race/ethnicity were also relatively small, with most groups having an adjusted probability of a referral being accepted between 69% and 73%. However, the one group that stood out was Latinos, who had a somewhat lower % accepted (66%) and higher % declined (22%).

Figure 17. Adjusted* Percentages of Referrals that Were Accepted, Declined, Forwarded, or Made Off-Platform, by Race/Ethnicity



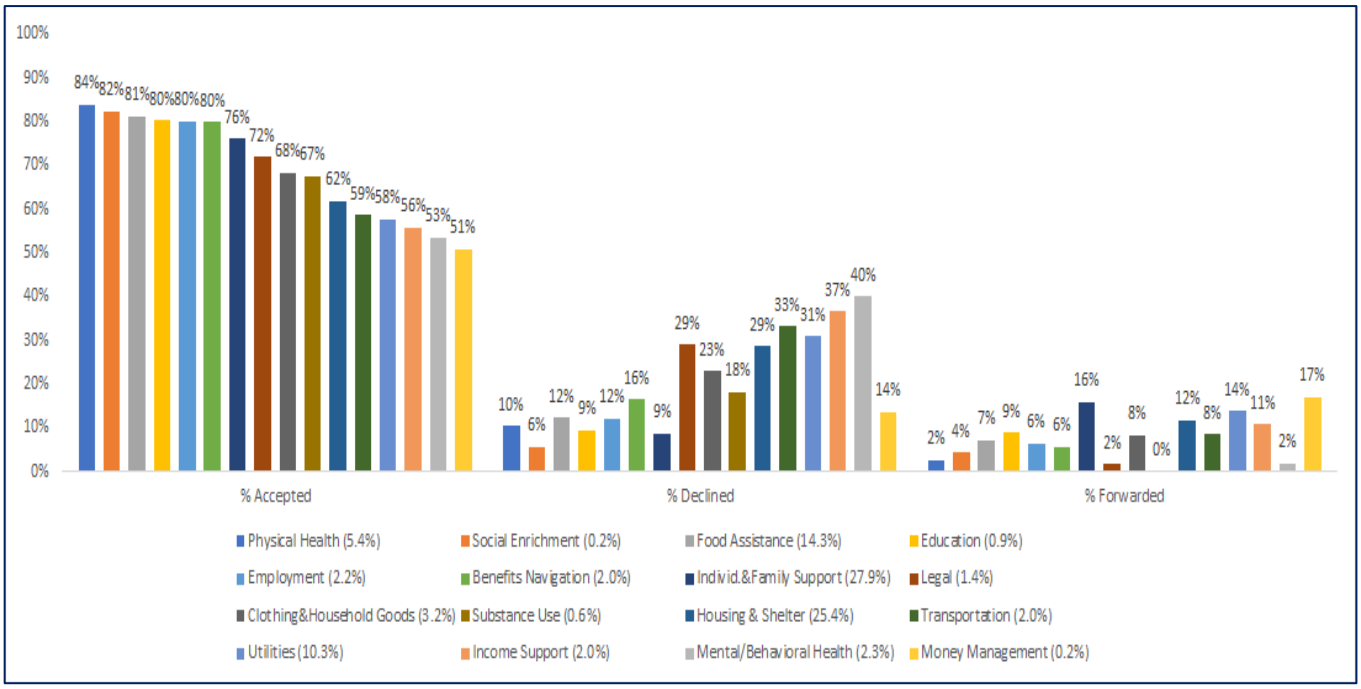
* Models adjust for client age, gender, service type, categories of sending and receiving organizations, quarter when referral was created, and region of client residence.

Referral status by service type

After adjusting for client demographics (age, gender, race/ethnicity), client region, category of sending and receiving organization (social services, clinical care, etc.), and the quarter when the referral was initiated, the likelihood that a referral was accepted, declined, or forwarded is shown in Figure 18. **Referrals for physical health services, social enrichment, food assistance, education, employment, and benefits navigation all had rates of acceptance above 80%.**

Referrals for other service types ranged from 76% to 51%. Service types with referral acceptance rates below 70% included money management, mental/behavioral health, income support, utilities, transportation, housing & shelter, substance use, and clothing & household goods. These may be service types where it may make sense to focus efforts to improve referral effectiveness.

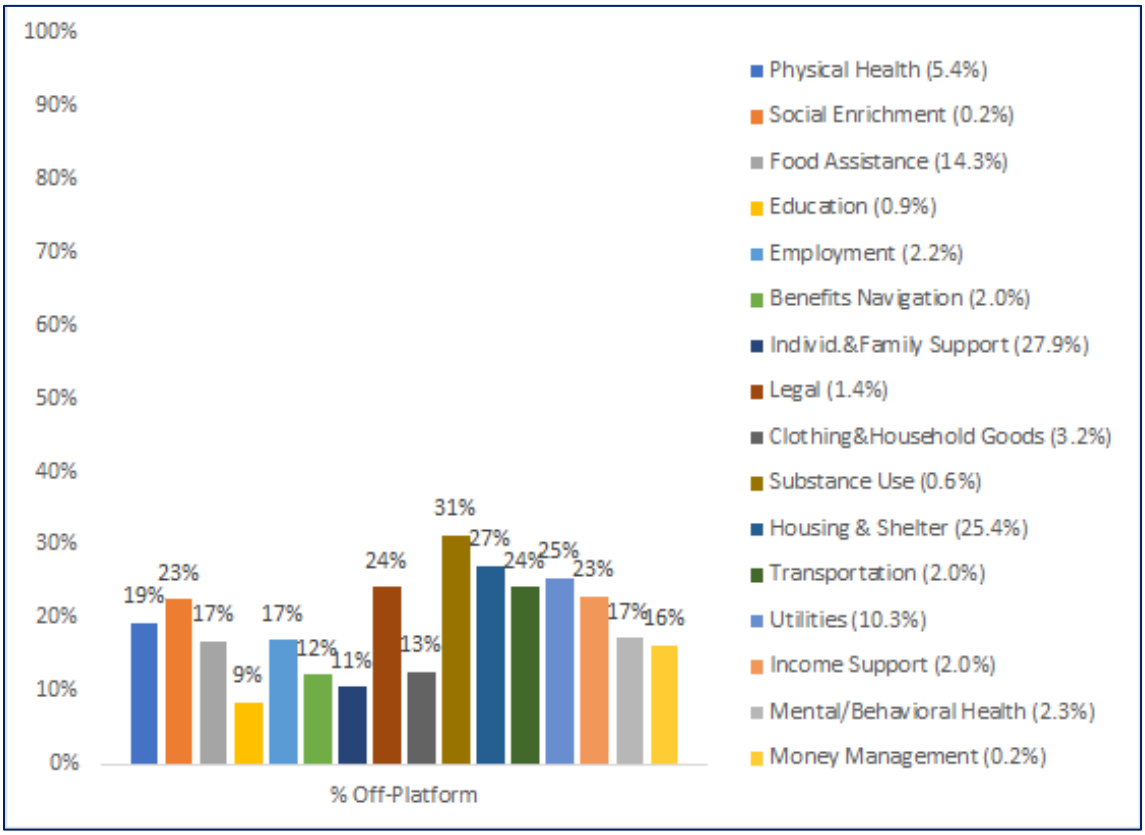
Figure 18. Adjusted* Percentages of Referrals that Were Accepted, Declined, or Forwarded, by Service Type



* Models adjust for client age, gender, race/ethnicity, categories of sending and receiving organizations, quarter when referral was created, and region of client residence.

The adjusted likelihood of referrals being made off-platform was highest for substance use services (31% off vs. on platform), housing/shelter (27%), utilities (25%), transportation (24%), legal (24%), income support services (23%), and social enrichment (23%) (next Figure). In contrast, the adjusted likelihood of referrals being off vs. on platform were lowest for education services (8.5%), individual & family supports (11%), benefits navigation (12%), clothing & household goods (13%). Physical health (19%), mental/behavioral health (17%), employment (17%), food assistance (17%), and money management (16%) fell in the middle.

Figure 19. Adjusted* Percentages of Referrals that Were Made Off-Platform, by Service Type



* Models adjust for client age, gender, race/ethnicity, categories of sending and receiving organizations, quarter when referral was created, and region of client residence.

Referral status by category of sending organization

As shown in the following figure, **among different categories of organizations sending referrals, the highest probability of referral acceptance was for referrals sent by:**

- County programs (91% adjusted probability of acceptance),
- 211info Coordination Center and by clinical organizations (70%),
- Social service organizations (64%),
- CCO Care Coordination teams (60%),
- Behavioral health organizations (56%).

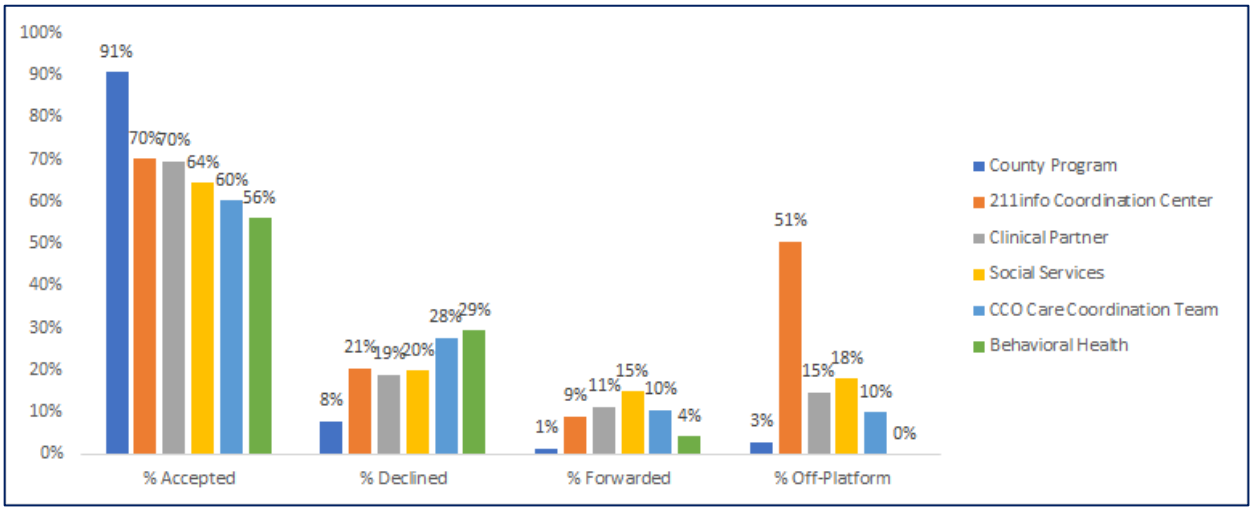
The likelihood of referrals being declined ranged from 8% for referrals sent by county programs to 29% for referrals sent by behavioral health organizations.

The adjusted probability of a referral being forwarded was highest for referrals sent by:

- Social service organizations (15%),
- Clinical organizations (11%),
- CCO Care Coordination teams (10%),
- 211info Coordination Center (9%),
- Behavioral health organizations (4%),
- County programs (1%).

Considering off vs. on platform referrals, 211info Coordination Center staff were the most likely to record off-platform referrals: An estimated 51% of the referrals made by 211info Coordination Center staff in Connect Oregon were off-platform referrals. In contrast, other categories of sending organizations had adjusted percentages of sending off-platform referrals ranging from 0% to 18%.

Figure 20. Adjusted* Percentages of Referrals that Were Accepted, Declined, Forwarded, or Made Off-Platform by Category of *Sending* Organization



* Models adjust for client age, gender, race/ethnicity, service type, category of receiving organization, quarter when referral was created, and region of client residence.

Referral status by category of receiving organization

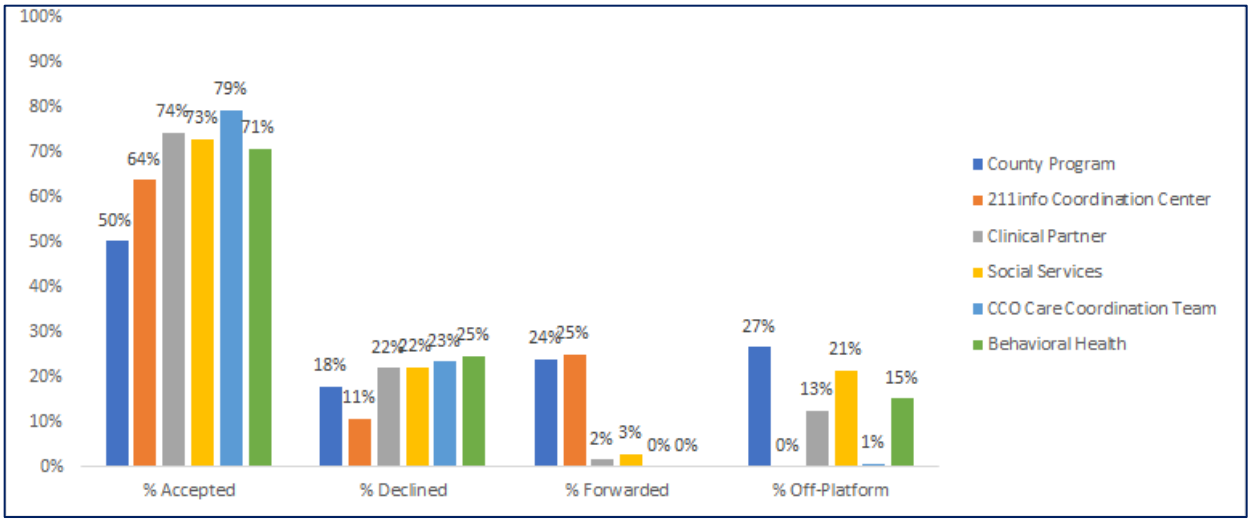
Comparing referral action based on the type of organization receiving the referral, adjusted probabilities of referrals being accepted were highest for referrals sent to:

- **CCO Care Coordination teams** (79% adjusted probability of referrals being accepted vs. declined, forwarded, in review, or not yet acted upon),
- **Clinical organizations** (74%),
- **Social Service Organizations** (73%),
- **Behavioral health organizations** (71%),
- **211info Coordination Center** (70%).
- Adjusted probabilities of acceptance were the lowest for referrals sent to **county programs** (50%).

The likelihood of referrals being declined was relatively similar for most categories of receiving organizations, ranging from 25% to 18%. The one exception was referrals to the 211info Coordination Center, which were roughly half as likely to be declined (11%) as referrals to the other types of organizations.

County programs had the highest likelihood of receiving off-platform referrals (an adjusted 27% of referrals to county programs were off-platform vs. on.) The 211info Coordination Center and behavioral health organizations did not receive any off-platform referrals, and the CCO Care Coordination teams received nearly none.

Figure 21. Adjusted* Percentages of Referrals that Were Accepted, Declined, Forwarded, or Made Off-Platform by Category of *Receiving* Organization

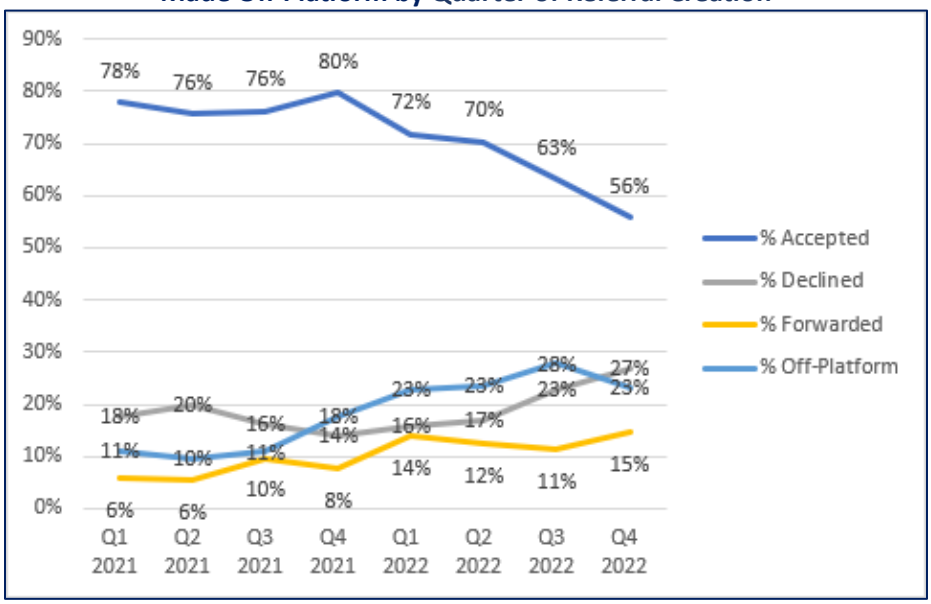


* Models adjust for client age, gender, race/ethnicity, service type, category of sending organization, quarter when referral was created, and region of client residence.

Referral status by quarter of referral creation

As the below figure shows, the adjusted referral accepted rate decreased steadily over the course of 2022 from 80% to 56%, while the declined rate increased from 14% to 27%. The forwarded rate increased slightly over the entire study period (from 6 to 15%). The off-platform rate also increased during the study period (from 10% to 23%).

Figure 22. Trends in Adjusted* Percentages of Referrals that Were Accepted, Declined, Forwarded, or Made Off-Platform by Quarter of Referral Creation



* Models adjust for client age, gender, race/ethnicity, service type, categories of sending and receiving organizations, quarter when referral was created, and region of client residence.

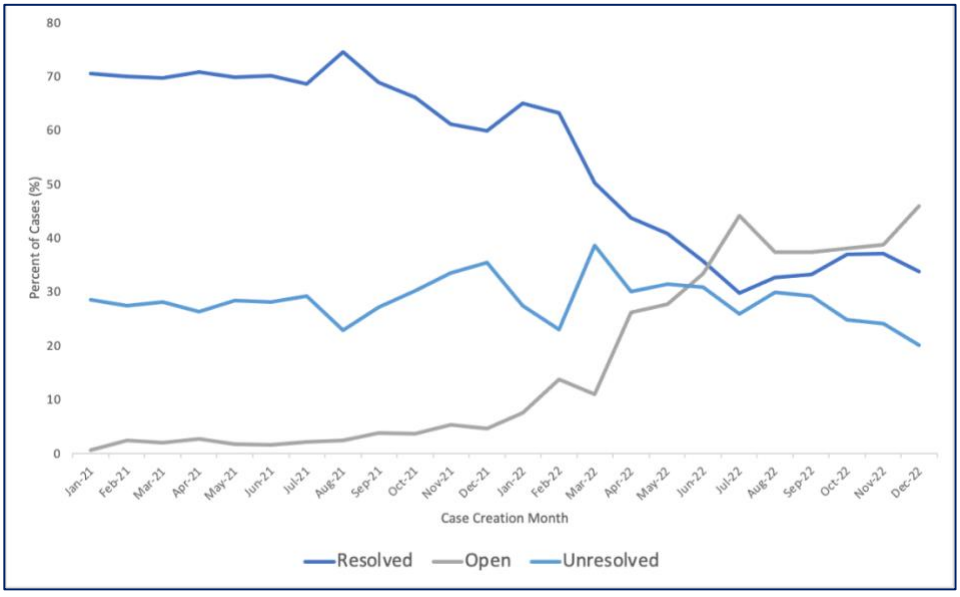
How often did Connect Oregon cases get closed with clients receiving the assistance they requested?

Key Takeaways:

- 54% of all cases created between 2021-2022 were closed as resolved by March 20, 2023 (i.e., closed because the client was deemed to have received the requested assistance or to no longer need it), while 28% were closed as unresolved (i.e., the client was deemed not to have received the assistance requested,) for an overall closure rate of 82%.
- 66% of closed cases were closed as resolved.
- The proportion of cases that were resolved decreased over time in 2021-2022 while the proportion of open cases increased.
- Case resolution varied by region, with Central Oregon having the highest proportion of resolved cases (72%) and Eastern Oregon having the lowest (16%).
- 45% of unresolved cases were due to an inability to contact the client.
- The frequent use of "Other" for case outcome descriptions (51% of resolved cases and 27% of unresolved ones) limits our ability to understand case outcomes.

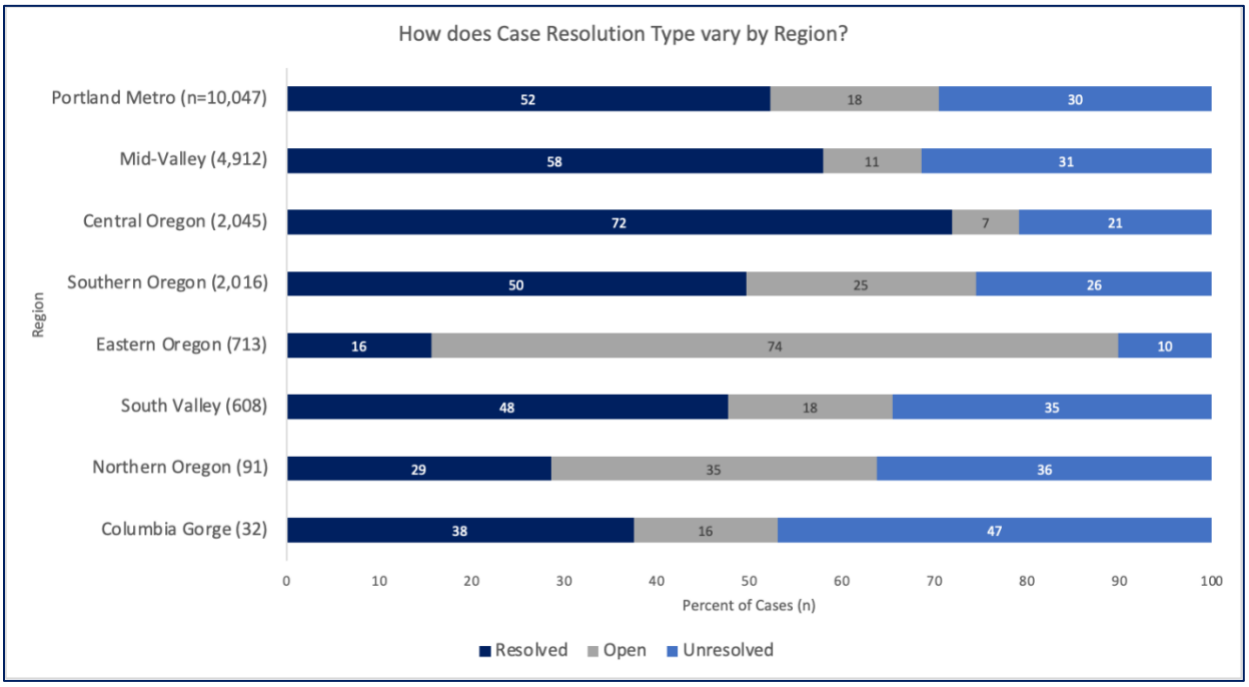
Overall, 53.9% of cases created between January 2021-December 2022 were closed as resolved by March 20, 2023; 28.2% were closed as unresolved, and 17.9% remained open. Considering just closed cases, 65.7% were resolved and 34.3% were unresolved. The figure below shows changes in the proportion of cases closed as resolved, closed as unresolved, and still open as of March 20, 2023, based on the month of case creation. Between December 2021 and July 2022, we observe a reduction in the proportion of resolved cases and an increase in the percentage of open cases.

Figure 23. Percent of Cases Closed as Resolved, Closed as Unresolved, and Still Open, by Month of Case Creation



We observed variation in case closure and resolution by region, with Central Oregon having the highest proportion of resolved cases (72%) and Eastern Oregon having the lowest (16%). Eastern Oregon had the largest proportion of open cases (74%), while other regions had fewer open cases (7-35% of cases).

Figure 24: Percent of Cases Closed as Resolved, Closed as Unresolved, and Still Open, by Region



Why were cases resolved vs. unresolved?

Case resolutions feature an accompanying outcome description. Within resolved cases there are over 225 outcome descriptions related to clients receiving resources by service type. We grouped these 225 outcome descriptions into five common categories across resolved cases: client received resource, client self-resolved, client received eligibility assistance, client or user applied for resource, and other. (Note: Other was not further specified in the data we received.)

The first pie chart below shows these outcome categories among resolved cases. The majority of resolved case descriptions (50.6%) fell in the other category. Users may select “Other” when the existing pre-specified resolution outcome options do not fit the situation at hand. In over a third of resolved cases, clients received the requested resource. The second pie chart below shows the percent of unresolved cases that fell among the seven different unresolved outcome categories. The most common reason for closing a case as unresolved was because of inability to contact the client. This occurred for 44.7% of unresolved cases. Only 8% of unresolved cases occurred because a resource was unavailable and only 5% because the client was ineligible. As with resolved cases, a large fraction of unresolved cases (27%) was also labeled as other.

Figure 25. Outcome Resolution Descriptions: Resolved Cases (n=11,019)

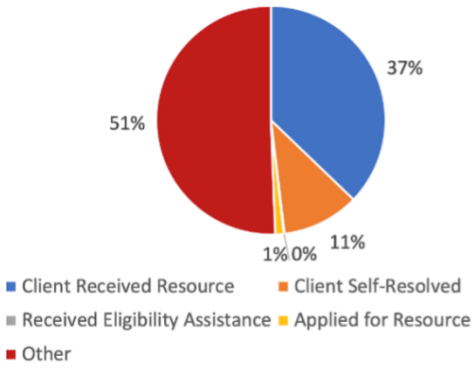
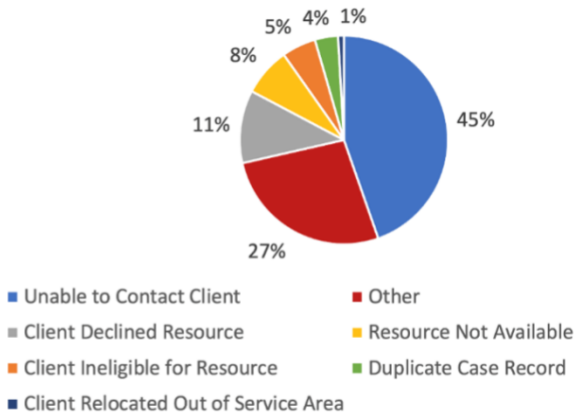


Figure 26. Outcome Resolution Descriptions: Unresolved Cases (n=5,774)



What factors are associated with case closure and case resolution?

Key Takeaways:

- Case closure rates were slightly higher for children and clients with missing race/ethnicity information, and lower for non-binary or other gender clients but differences were small.
- **Clients who were Black or African American, Hispanic or Latino, or Asian had somewhat higher probabilities of case resolution**.
- No differences were seen in case resolution rates by age or gender.
- **Case closure and case resolution varied by service type and by category of managing organization.** Service types with case resolution rates below 50% included substance use, legal, and mental/behavioral health. Among the 4 most commonly requested service types, housing & shelter and utilities had lower resolution rates: 59% for housing and 62% for utilities, vs. 72% for food assistance and 74% for individual & family support.
- **The case closure rate decreased between 2021-2022 from 97% to 64%.**

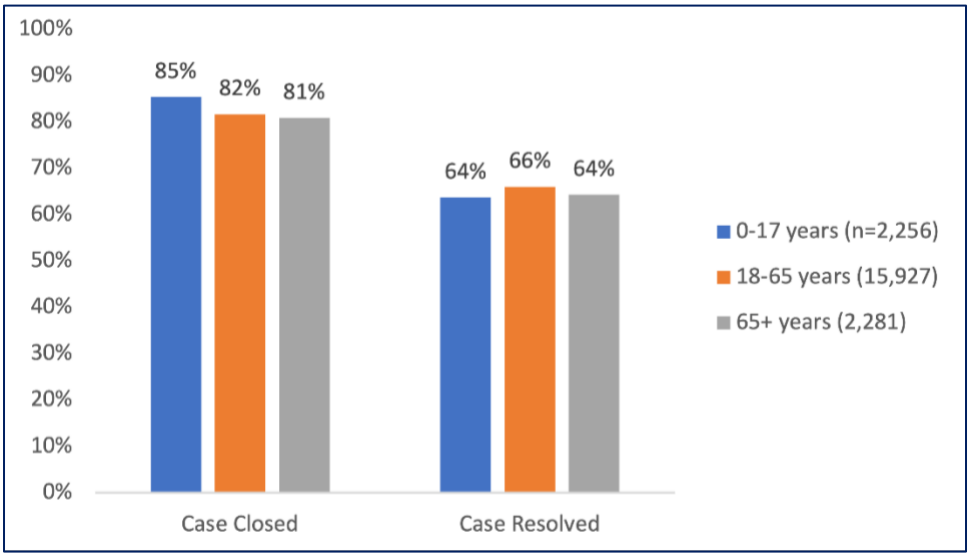
Next, we used logistic regression models to identify factors associated with whether cases were closed by March 20,2023 and, if closed, whether they were closed as resolved or unresolved. In the analysis of closure rates, all cases were included. In the analysis of resolved cases, we restricted our analysis to closed cases. The results below are from models that adjust for all of these factors at the same time, therefore results provide the impact of each factor, controlling for all of the others.

Case closure and resolution by demographics

Age

In the figure below, we observe a statistically significantly higher probability of children having a closed case than non-elderly adults, but the difference was small: 85% closed vs. 82%. In terms of rates of closed cases being resolved, we observed similar predicted probabilities of resolved vs. unresolved cases across all client age groups.

Figure 27: Adjusted* Probabilities of Case Closure and Resolution by Age

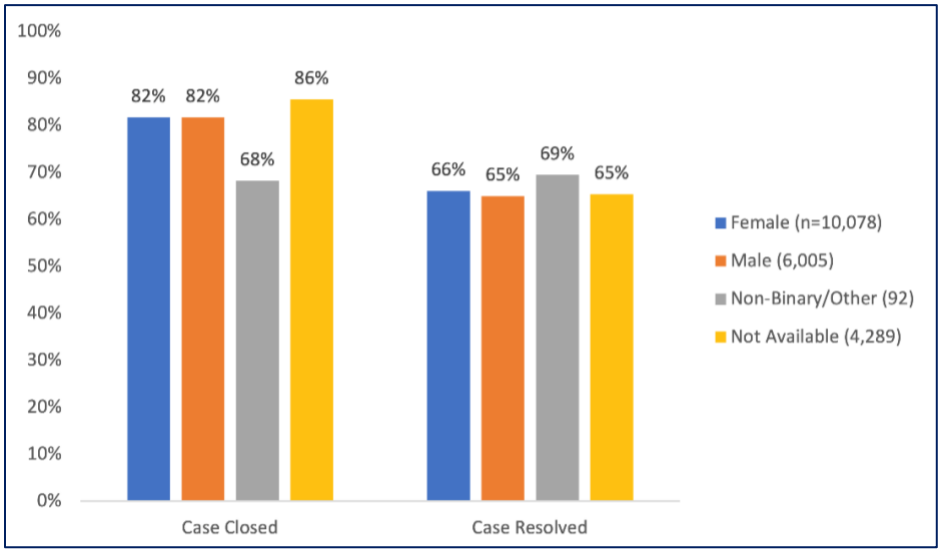


* Models adjust for client gender, race/ethnicity, service type, categories of managing organizations, quarter when case was created, and region of client residence.

Gender

We observe similar probabilities of case closure between female and male clients, though clients identifying as non-binary or other gender identities had lower probabilities of case closure than other clients. Those whose gender information was not available had a higher probability of case closure relative to other clients. For case resolution, we observe similar probabilities across all gender categories.

Figure 28. Adjusted* Probabilities of Case Closure and Resolution by Gender

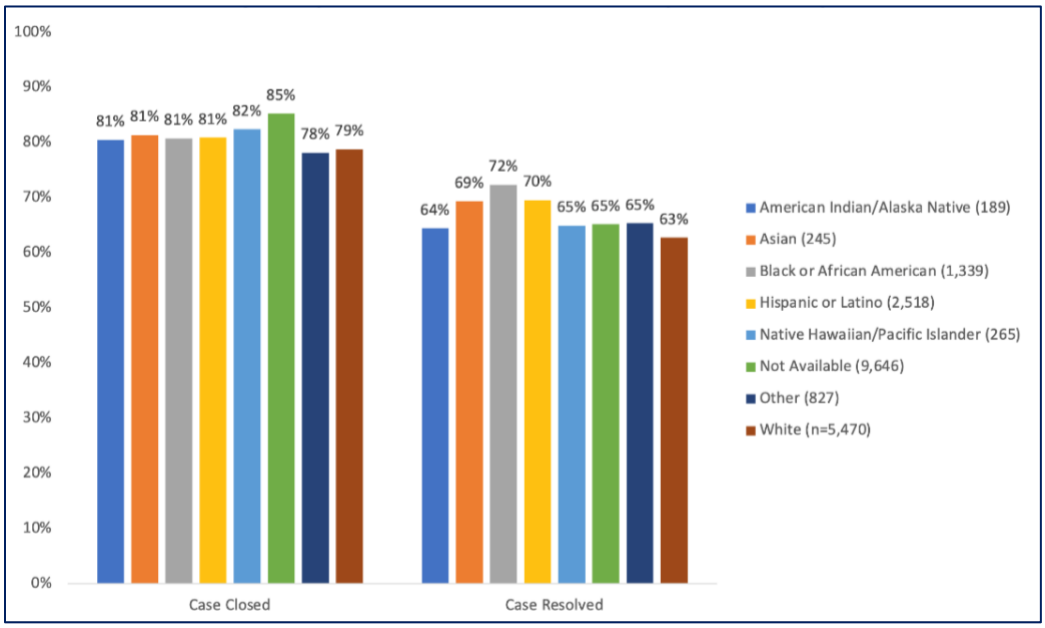


* Models adjust for client age, race/ethnicity, service type, categories of managing organizations, quarter when case was created, and region of client residence.

Race/Ethnicity

Relative to white clients, clients who were missing race/ethnicity information had a slightly higher probability of case closure. Clients who were Black or African American, Hispanic or Latino, or Asian had a somewhat higher probability of case resolution.

Figure 29. Adjusted* Probabilities of Case Closure and Resolution by Race/Ethnicity



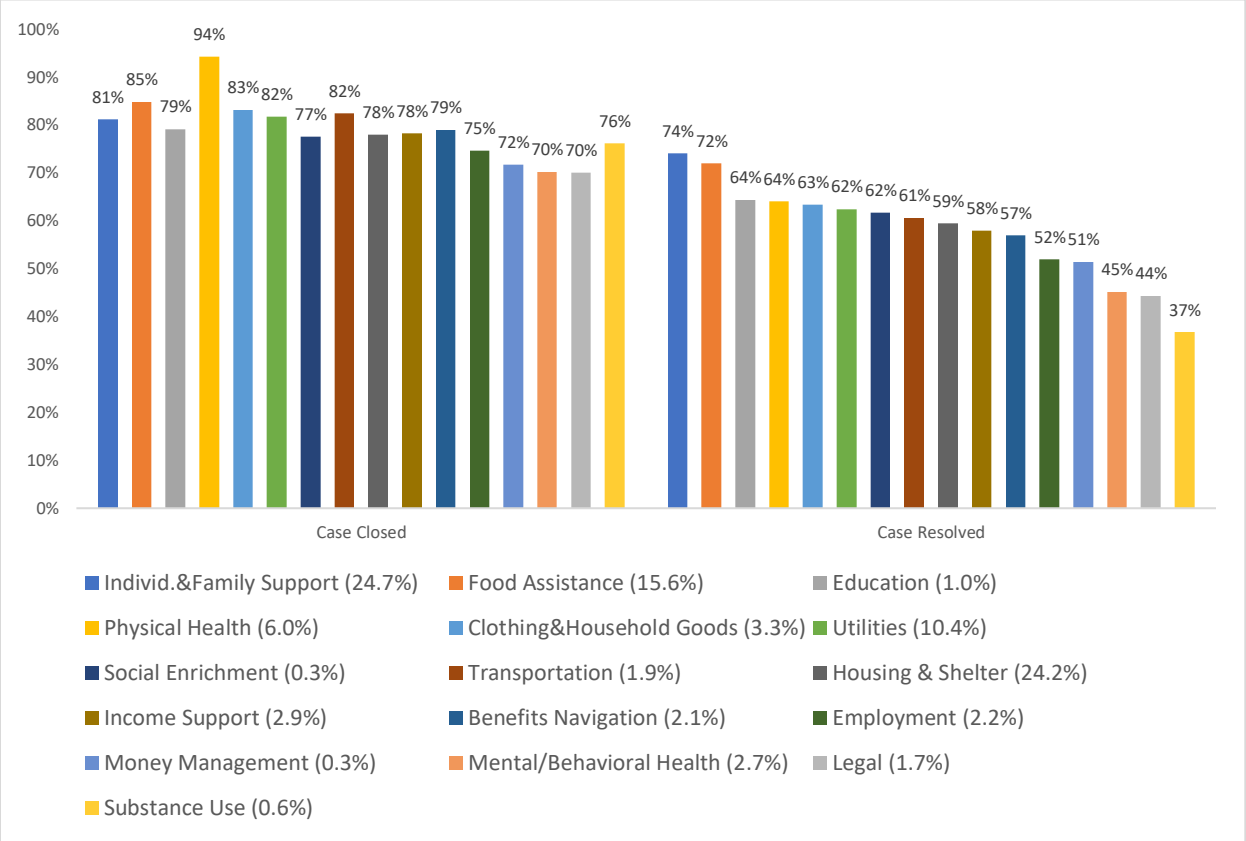
* Models adjust for client age, gender, service type, categories of managing organizations, quarter when case was created, and region of client residence.

Case closure and resolution by service type

Next, we explored whether case closure or resolution varied based on the types of services requested. We found that cases involving physical health were the most likely to be closed, while those for housing and shelter, employment, mental/behavioral health, legal services, and substance use were less likely to be closed.

Cases for individual and family support had the highest resolution rate (among closed cases), followed by food assistance cases. Relative to individual and family support, several service types were less likely to be resolved, including education, physical health, clothing and household goods, utilities, transportation, housing and shelter, income support, employment, money management, mental/behavioral health, legal services, and substance use.

Figure 30. Adjusted* Probabilities of Case Closure and Resolution by Service Type

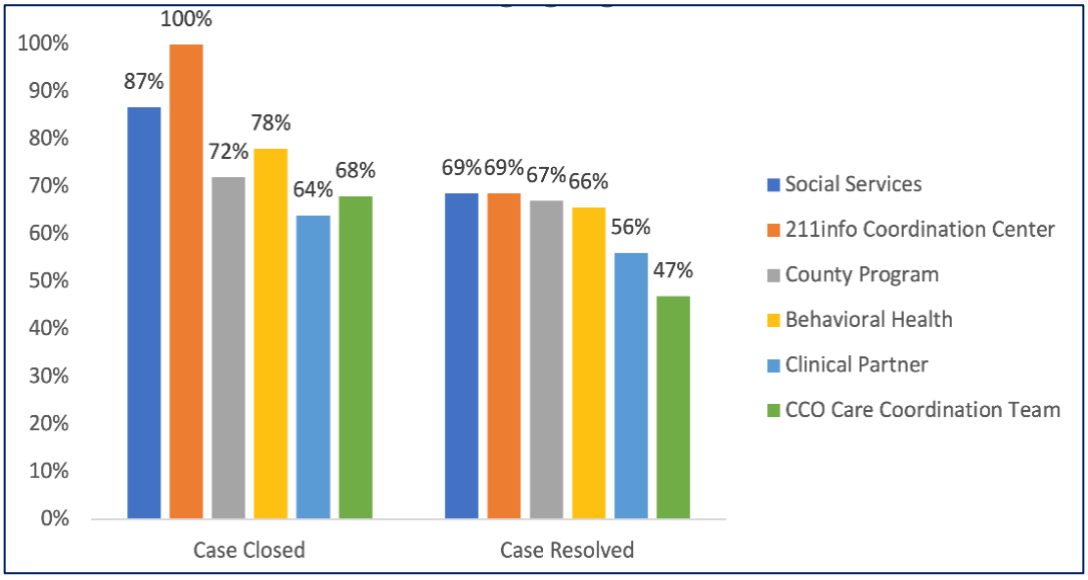


* Models adjust for client age, gender, race/ethnicity, categories of managing organizations, quarter when case was created, and region of client residence.

Case closure and resolution by category of managing organization

Relative to social services agencies, cases managed by county programs, behavioral health, clinical partners, and CCO care coordination teams were less likely to be closed. Cases managed by 211info Coordination Center were significantly more likely to be closed than those managed by social services agencies. Cases managed by social services agencies were more likely to be resolved than those by clinical partners and CCO care coordination teams.

Figure 31. Adjusted* Probabilities of Case Closure and Resolution by Category of Organization Managing the Case

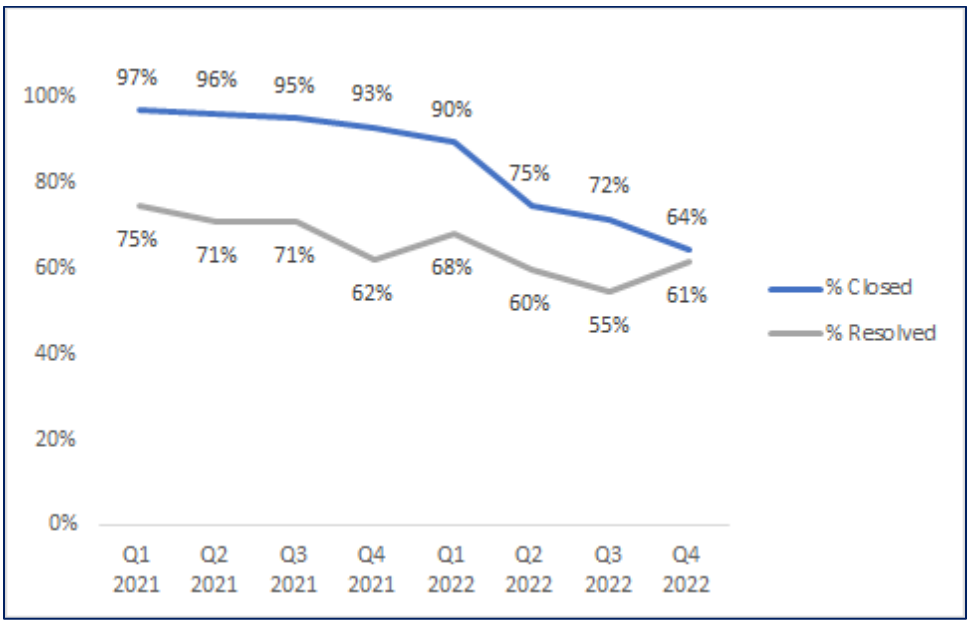


* Models adjust for client age, gender, race/ethnicity, service type, quarter when case was created, and region of client residence.

Case closure and resolution by quarter of case creation

Paralleling referral status trends, the adjusted case closure rate decreased steadily over the study period from 97% to 64%, while the adjusted case resolution rate (vs. unresolved) decreased from 75% to 61%.

Figure 32. Adjusted* Probabilities of Case Closure and Resolution by Quarter of Case Creation



* Models adjust for client age, gender, race/ethnicity, service type, categories of managing organizations, and region of client residence.

5. Implications for continued implementation efforts

This analysis the first two full years of implementation of Connect Oregon found that the platform was used by a third of organizations that are being targeted for participation, indicating that the platform has reached a meaningful number of organizations, and that **engagement efforts need to continue in order to have broader adoption, particularly in South Valley, Northern and Southern Oregon, and Columbia Gorge, where rates of adoption are the lowest**. At the same time, the low estimated percentage of potential clients who were served through Connect Oregon (2.5%) indicates that, although a good number of organizations are using the platform, in 2021-2022, they were not using it very much. This suggests that, in addition to increasing the number of organizations using the platform, **implementation efforts should also focus on making the platform a part of common referral workflows for organizations as well as easier and more valuable to use for existing users**. The evaluation team is currently conducting qualitative research with existing users to better understand how to best support organizations to use the platform.

Among those who are using it, **the platform in its first two years of implementation seems to have worked well for facilitating referrals and access to needed resources.** We found a high average referral acceptance rate (70%) for on-platform referrals. We also found that response times for on-platform referrals were quick, with more than 6 out of 10 referrals acted on within 1 day of being sent. Case closure rates were also high (82%) and, among closed cases, two-thirds were closed as resolved, meaning the client received the assistance they were seeking.

We also found relatively few disparities in use of the platform, referral acceptance rates, or rates of case closure and resolution for clients belonging to racial, ethnic or gender groups that experience racism or discrimination. For case resolution in fact, rates were higher for Black or African American, Hispanic or Latino, and Asian clients than for white clients. The exceptions included lower use rates with Asian and Indigenous clients and a slightly lower referral acceptance rate for Latino clients. We also observed a higher probability of off-platform referrals and a lower case closure rate for on-platform referrals for clients with non-binary genders (although this was based on a very small number of clients (37)).

However, **race/ethnicity data was missing 57% of clients, and gender data for 27%**, limiting the ability to conduct the analyses necessary to ensure that Connect Oregon use is equitable for all demographic groups. Despite this, clients for whom demographic data was not available did not appear to have a lower likelihood of having referrals accepted or cases resolved. While this suggests that clients with missing data are not being underserved by the platform (i.e., not having a lower likelihood of referral acceptance or case resolution), continued operation and evaluation of Connect Oregon may be enhanced with a more complete understanding of client demographics. Leveraging existing demographic datasets for integration, rather than adding to the workflow of CBOs, clinical partners, and clients themselves, may be an avenue to explore.

At the same time, referral acceptance as well as case closure and resolution rates all dropped during the two-year period. **This suggests the need to continue providing ongoing support to users and organizations, especially as more organizations are being brought into the network.**

The wide variation in referral acceptance and case closure and resolution by service type and category of sending and receiving organization provides **opportunities to identify and help spread practices that facilitate effective platform use.** In addition, our analyses identified the following service types as those with low referral acceptance and/or low case resolution: money management, mental/behavioral health,

income support, utilities, transportation, housing & shelter, substance use, legal, and clothing & household goods. **These are service types where it may make sense to focus efforts to improve referral effectiveness and case resolution.** Training and support for staff using Connect Oregon may aid in ensuring that referrals are sent to the appropriate organizations (thereby increasing referral acceptance) and that case resolutions are documented on the platform. In particular, training related to the use of default case outcome descriptions may increase their utilization, decreasing the use of free-text documentation and creating opportunities to better track client outcomes.

6. Future analyses and evaluation activities

In 2024, we will use an additional year of Connect Oregon data to update the analyses in this report and further explore trends in referral and case outcomes across demographic groups, service types, organization characteristics, and regions. We will update trend analyses and further explore Connect Oregon's performance on network standards (i.e., time to referral acceptance, case closure, and case outcomes.)

Plans for ongoing qualitative research to characterize user and client experiences. Focus groups were conducted with CCO Care Coordination teams and the 211info Coordination Center staff over the summer of 2023. Focus groups with CBOs and clinical providers, as well as interviews with clients will be conducted in the fall of 2023 and winter 2024. In addition, a survey of Connect Oregon users will be conducted in winter 2024.

Results of these additional analyses will be published in summer 2024.

7. Appendices

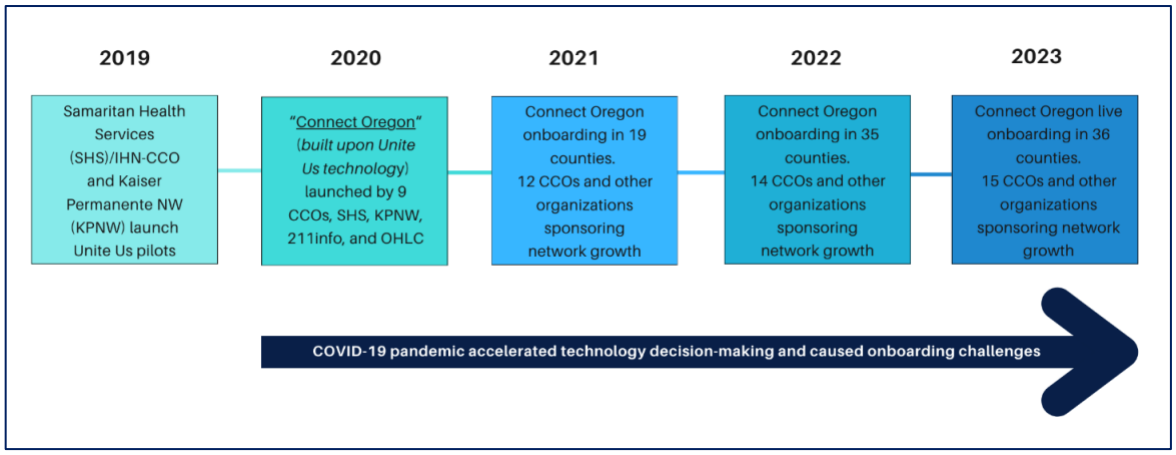
Background and origins of Connect Oregon Network

The Oregon health care community has a history of collaboration around strategic initiatives, including efforts to reduce early elective newborn deliveries, advanced care planning education and conversations, reducing ineffective and low value care, and administration simplification efforts. The Oregon Health Leadership Council (OHLC) has facilitated many of these initiatives with the support of its members, which include the major commercial, Medicare, and Medicaid health plans, acute care hospitals, and health systems across the state. With the advent of Oregon's Medicaid reform in 2012 and the development of the Coordinated Care Organization (CCO) model (akin to ACOs for Medicaid), physical, behavioral, and oral health providers developed new models of care delivery to improve health and maintain cost growth for the Medicaid population. Leveraging the federal Health Information Technology for Economic and Clinical Health (HITECH) Act funding from 2009-2021, Oregon initiated a series of health information technology (HIT) investments to support broader health care transformation, which led in part to the creation of a HIT funding "utility model." This model, developed to launch a statewide hospital event notification system, evolved into a formal public/private partnership to advance HIT across the state. The partnership known as "HIT Commons" is permitted by Oregon statute and jointly managed by the Oregon Health Authority (OHA, the state's Medicaid and Public Health agency) and OHLC (a private sector, voluntary statewide collaborative organized as a 501c(6)). In 2019, HIT Commons initiated exploration of social determinants of health (SDOH) technology strategies and emerging tools to facilitate "community information exchange" (CIE)—to enable care coordination across health care and social service providers.

As the COVID-19 pandemic emerged, OHA workgroups, task forces, and other advisory bodies not directly related to the pandemic were suspended to allow resources to be dedicated to COVID response. HIT Commons, given its partnership with OHA, formally suspended its development work in CIE technology systems and structures. As was the case nationwide, social needs in Oregon skyrocketed in the early days of the pandemic. Oregon's 211info call center experienced a tripling in call volumes overnight, with high volumes persisting throughout the pandemic and during Oregon's historic wildfire season of 2020. As OHA and front-line providers were heads-down on COVID response, private sector health systems (led by Samaritan Health Services and Kaiser Permanente) and health plans—primarily those plans with Medicaid CCO lines of business—accelerated their interest in addressing social needs and recognized the value of statewide alignment as a strategy for reducing change management burden on community-based organizations (CBOs).

At the request of its members, OHLC facilitated a process to review, vet, and select a technology vendor to implement closed-loop referrals, i.e., electronic referrals between health care and social service organizations. Given the pace of efforts to address SDOH at the national, state, and local levels, and in recognition of a quickly developing CIE footprint in Oregon, OHLC and its partners leveraged existing resources and efforts in its selection of a technology vendor. Further, OHLC facilitated six "CIE Whiteboard Sessions" (in person, and then virtually) from October 2019-October 2020 for discussion, engagement, and continual feedback on CIE systems and vendors. The year-long process led to the launch of "Connect Oregon" (powered by Unite Us technology) in October 2020. Health care partners contracted directly with Unite Us to build the Connect Oregon network over time across 21 out of 36 Oregon counties. By early 2023, the Connect Oregon Network expanded and was available in all 36 counties in the state.

Appendix Figure 1. Connect Oregon CIE History



While each partner in the growing Connect Oregon Network brings unique interest and goals for the work, the overall goals of early sponsors of the initiative were to:

- Begin to address widespread social needs in Oregon through coordinated technology infrastructure that could be leveraged for longer-term social health and health equity goals.
- Use the unique moment of the COVID-19 pandemic for alignment and accelerated decision-making on closed-loop referral technology systems.
- Build on Oregon's history of collaboration around statewide clinical and health IT initiatives.
- Take a "learn as you go approach" that recognizes that building new systems and models of care takes time and requires ongoing effort to adopt, optimize, and evaluate the initiative.

Connect Oregon is built on Unite Us technology, which is supported by an Oregon-based Unite Us team. Funding for Connect Oregon is sponsored by Samaritan Health Services and InterCommunity Health Network CCO (IHN-CCO), Kaiser Permanente, Central Oregon Health Council, PacificSource, CareOregon, Columbia Pacific CCO, Jackson Care Connect, Health Share of Oregon, AllCare Health, EOCCO, Yamhill Community Care, Advanced Health, the Oregon Department of Human Services– Office of Resilience and Emergency Management, and OptumCare. 211info's statewide Resource Directory is the integrated directory in the Connect Oregon platform and 211info also serves as the network's coordination center (proving short-term care navigation services) in over a dozen counties in Oregon. The Oregon Health Leadership Council (OHLC) is a statewide convener for the network.

As of mid-2023, over 1,000 organizations participate as referral partners on the network, including social service agencies and community-based organizations, care coordination teams, county programs, behavioral health agencies, clinical providers, and others. Closed-loop referrals are supported on Connect Oregon across many sectors, including, housing, food, transportation, income assistance, behavioral health, childcare, early learning, K-12, clothing and household items, employment, legal services among others.

With Connect Oregon entering its third year of implementation, sponsoring partners were eager to better understand how implementation is going and to identify strategies to support continued implementation. Throughout 2022, sponsors engaged in planning discussions with the UCSF SIREN evaluation team to develop an 18-month implementation evaluation of Connect Oregon. Funding was coordinated across nine organizations and contracting was executed in late 2022. The evaluation kicked off in January 2023 and will be completed in summer2024.

Data analysis details

Data for this analysis come from the Unite Us' deidentified case-level, referral-level, and client-level datasets. On the Unite Us platform, a case represents a client's social need. Cases are created at the beginning of the client journey on the platform, such as when an assistance request[3] form is completed by a client, when a referral is sent from one organization to another, or when an organization assigns a case to a client they are working with.

To simplify data analysis, we combined Unite Us' race and ethnicity variables to create a combined race/ethnicity variable. For clients not identifying as Hispanic or Latino, their selected value for race was carried forward into the new race/ethnicity variable. For clients who identified as Hispanic or Latino, "Hispanic or Latino" became the new value of the race/ethnicity variable. We removed any clients whose age was considered out of bounds by Unite Us (n=16 clients). We removed any case occurring in Washington state or with missing region information (n=7 clients).

In the referral-level analysis, we removed recalled and auto-recalled referrals from the analytic sample.

In the case-level analysis we removed cases with a "deferred" status, as this was considered an artifact of an older UU data infrastructure.

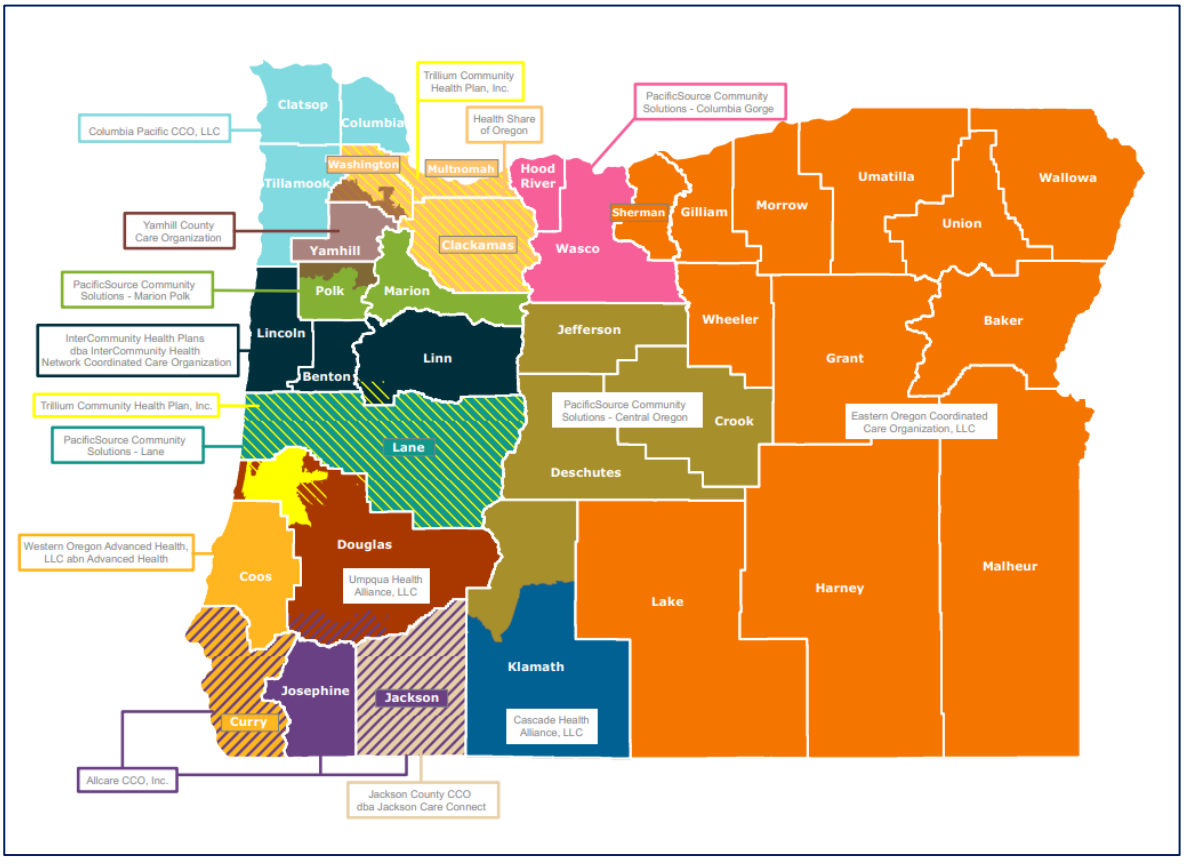
[3] An assistance request is created when a client fills out a form on Connect Oregon requesting assistance for a given need or set of needs.

For all analyses, we removed those cases and referrals for service types with fewer than 50 cases during our study period: Wellness (28), Sports & Recreation (20), Entrepreneurship (9), and Spiritual Enrichment (2).

CCO service areas and Connect Oregon regions

Using the CCO Services Areas per Oregon Health Authority contracting, (see Appendix Figure 2 below), Connect Oregon organized regions for implementation mirroring the CCO Service Areas (see Appendix Figure 3 below) to help monitor adoption and spread of the network in CCO market areas. The Connect Oregon Network Regions shown in Appendix Figure 3 are those used to summarize regional results in this report.

Appendix Figure 2. Coordinated Care Organization 2.0 Service Areas



Appendix Figure 3. Connect Oregon Network Regions