Deliverable 4.7
Summary of Improvement Project Impact on Early Intervention Referrals and Priority Early Learning Pathway Referrals

The purpose of this document is to summarize the quantitative data evaluation findings that assess the impact of the improvement pilot on:

1) Referrals to **Early Intervention (EI)**
2) Referrals to the **Priority Early Learning Pathways** identified in each community.

Deliverables 4.6, 5.3 and 5.4 provide a robust summary of the focus of implementation of referrals to EI and priority early learning pathways, key successes and barriers and implications for future efforts.

Below is an outline of the data findings presented in this summary:

Part 1: Evaluation Data Findings Based on EI Data

The goals of the improvement project with EI were to:

a) Improve the **number of best match referrals** to EI from the four primary care pilot sites.
b) Improve **the proportion of referrals able to be evaluated** from the pilot primary care sites.
c) Improve the **proportion of referrals** from the pilot primary sites **that were eligible**.

Overview of Data Provided by Northwest Regional Education Service District (NWRESD)

- Vicky Shroeder, Administrative Specialist for Northwest Regional ESD - EI/ECSE, provided OPIP with data from the centralized EcWeb system that is used by all EI contractors in the state of Oregon and maintained by the Oregon Department of Education.
- Ms. Shroeder pulled information about all referrals for children aged 0-3 that occurred during the specified time periods in Clatsop, Columbia and Tillamook County. She provided data for the baseline period (SY 16-17, SY 17-18) and then quarterly thereafter. She also provided updated information about referrals that may been in process in previous quarters.
- OPIP then cleaned the data and followed-up with Vicky, and where needed, the front-line intake staff for children whose referrals were missing key information in EcWeb that would allow for analysis of the outcome of the referral and whether it was from a pilot site. As has been noted before, previous to this project, there was inconsistent or a lack of labelling in Tillamook and Columbia counties of the specific providers who referred the child. This was a central focus of the EI data improvement efforts that began in July 2017. Therefore, all comparison data at the practice-level is from July 2017-through the end of the project.
    - OPIP conducted several steps to clean the data and create necessary analytic files.
        - This included summarizing information across different data sources for a referral source, de-duplicating referrals that existed in multiple databases as they had been in process at time of the data pull; determining if and when a child had validly been referred multiple times and should therefore have multiple referrals included; manually cleaning the open text field related to the referral source in order to identify referrals that should be attributed to the pilot primary care sites vs referrals from other physician clinics.
        - Lastly, there were two kids in the data file provided where OPIP imputed a referral date because the field was missing and unavailable. The imputation took into account information that was provided about the age of the child and the evaluation date.
    - OPIP then created several analytic variables including a variable that identified the number of referrals for a child, variables that summarize the outcome of the referral and whether a) the referral was able to be evaluated and b) if so, the outcome of the evaluation.

- OPIP created a "before" and "after" variable to assess for the impact of the improvement project. In order to make equal time periods, OPIP made the "before" SY 17-18 and the "after" is SY "18-19". Even though the training for the provider occurred in late April/early May 2018, given the time needed to set up implementation after a training and due to lower referrals and access to EI in the summer, we felt comfortable having potentially a handful of referrals informed by the intervention included in the baseline period.

EI Data: Impact of Improvement Project on Pilot Site Referrals to EI

A primary goal of improvement work with the pilot primary care sites was to improve best match referrals to EI, meaning referring the right children to EI. Therefore, the goal was not necessarily to refer more children to EI, but instead to refer more of the right children to EI. For children who would likely not be eligible for EI, the goal was instead to provide them with targeted developmental promotion and rescreening within three months.

That said, baseline data revealed that all the pilot primary care sites were **under-referring** to EI.

Therefore, a goal for the improvement work was ultimately to improve the number of referrals to EI from the pilot primary care sites.

Figure 1 below shows the change in referral numbers from **SY 17-18** (before the intervention) **to SY 18-19** (after the intervention) for each of the four primary care pilot sites.

Figure 1: Referrals from the Pilot Primary Care Sites Before & After Implementation

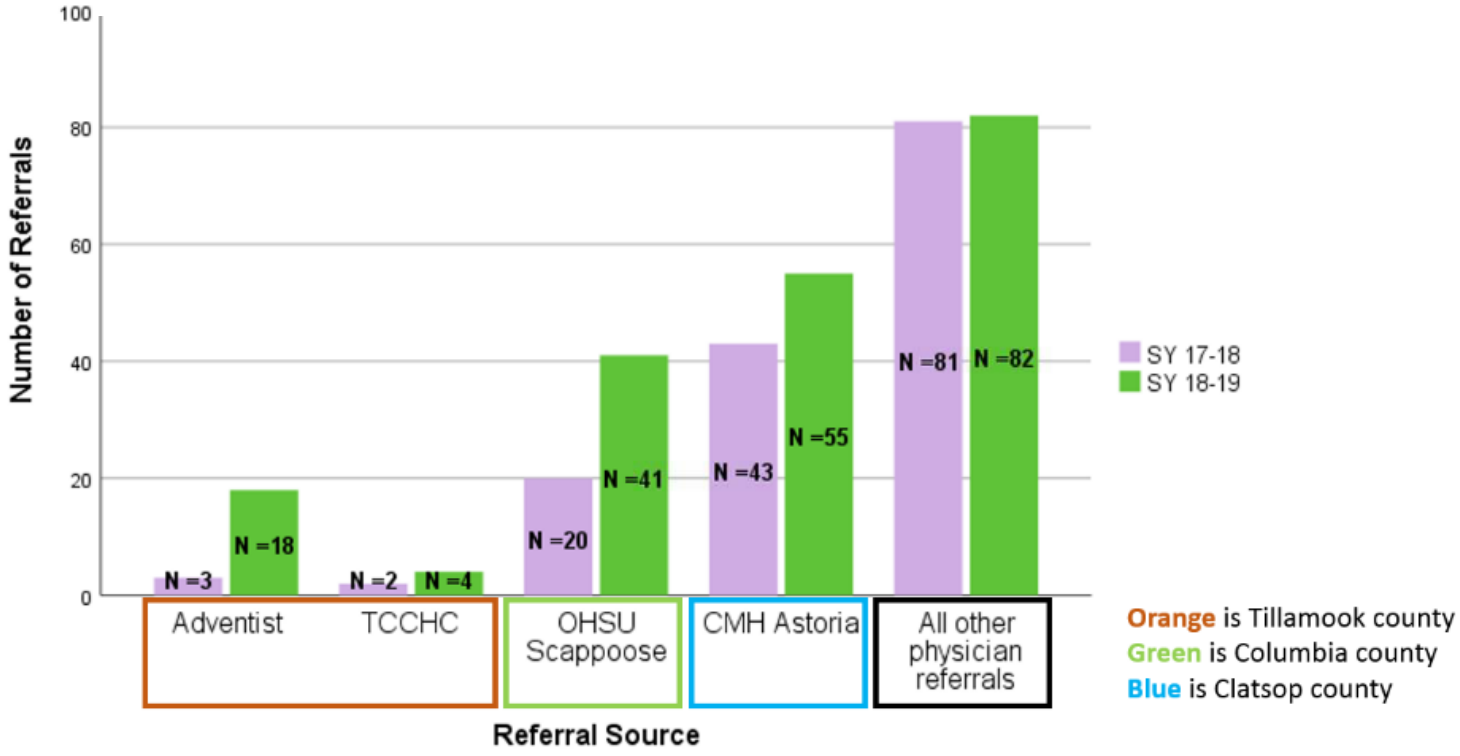
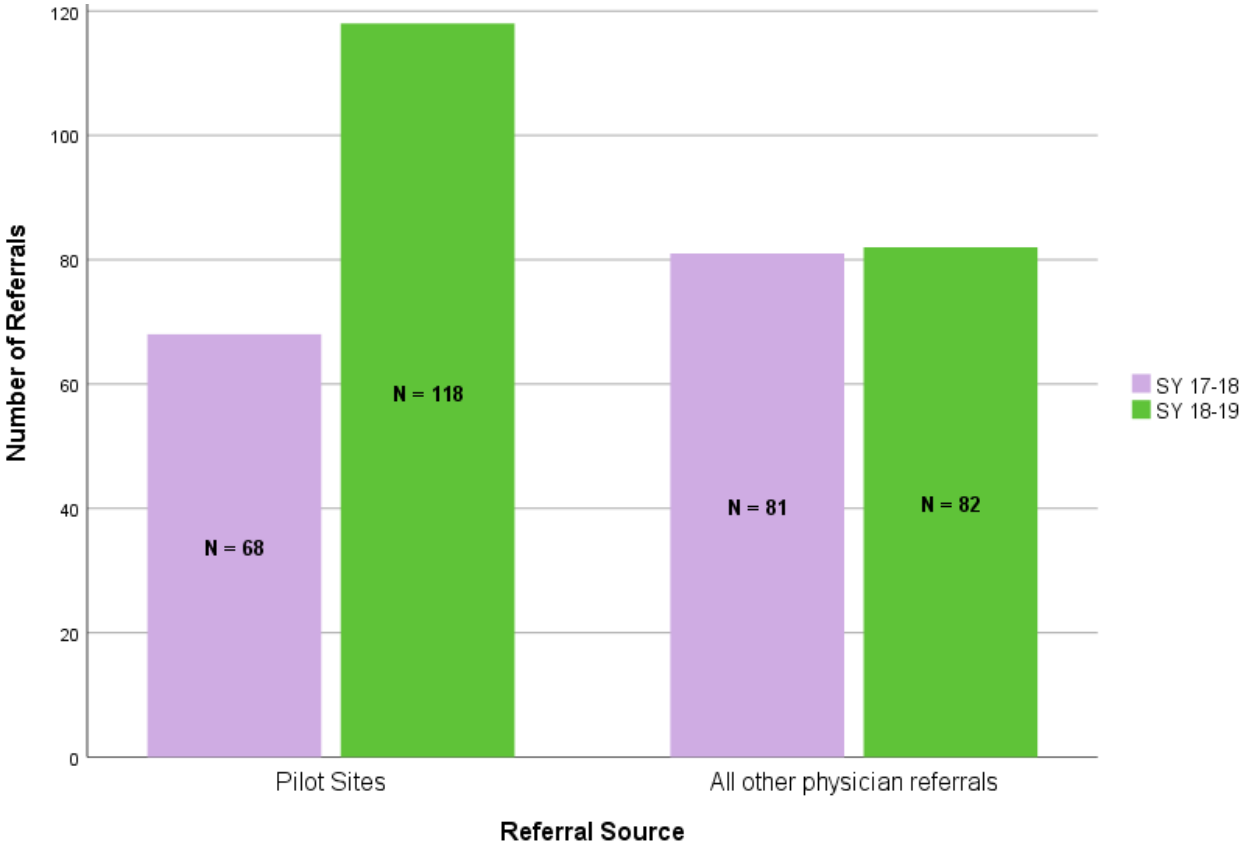


Figure 2 shows the change in referral numbers across all the pilot primary care sites in **SY 17-18** (before the intervention) **to SY 18-19** (after the intervention) as comparted to other physician referrals.

Figure 2: Overall Referrals from Pilot Primary Care Sites Before & After Implementation as Compared to Other Physician Referrals



- **Improvements were observed in the referral numbers** across all of the four pilot primary care sites.
- It should be noted that based on the primary care evaluation data, the number of referrals from OHSU Scappoose should be higher than is indicated in the EI data. As was noted in other deliverables, OHSU Scappoose used the parent education sheet that supported shared decision making as a primary tool to guide referrals. In this sheet, parents are encouraged to contact EI directly so that they can call at a time that works for them and set up the evaluation. Columbia EI chose to label these referrals as "parent self-referral". Based on the differences between OHSU Scappoose's number of referrals to EI based on medical chart review vs. referrals in EI attributed to them, we believe that a number of referrals labelled "parent self-referral" were actually the result of OHSU Scappoose telling the parent to contact EI. The labelling and attribution therefore impacts the remaining analyses.

EI Data: Impact of Improvement Project on Referrals from the Pilot Primary Care Sites Able to be Evaluated

A second goal of the improvement project was to improve **the proportion of referrals able to be evaluated** from the pilot primary care sites. The interventions focused on enhancing parent engagement and education about EI referrals at the pilot primary care provider sites. They also focused on what to expect and a timeline of the two-way communication from EI back to the primary care provider when a referred child was unable to be contacted. Primary care sites were then trained to follow-up with the family for these children to assist EI in engaging the parent to call EI back and set up the evaluation.

Figure 3 below shows the proportion of referrals, by pilot primary care site, in **SY 17-18** (before the intervention) **to SY 18-19** (after the intervention) able to be evaluated.

Figure 3: Proportion of Referrals from Pilot Sites able to be evaluated

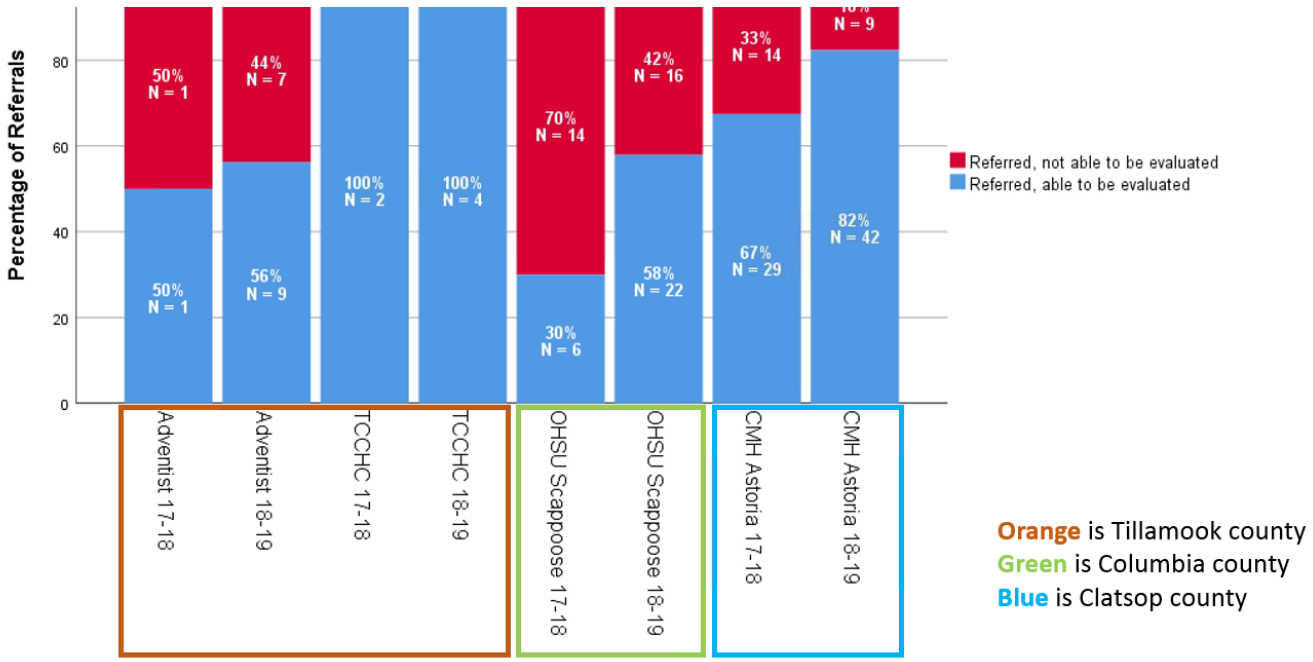
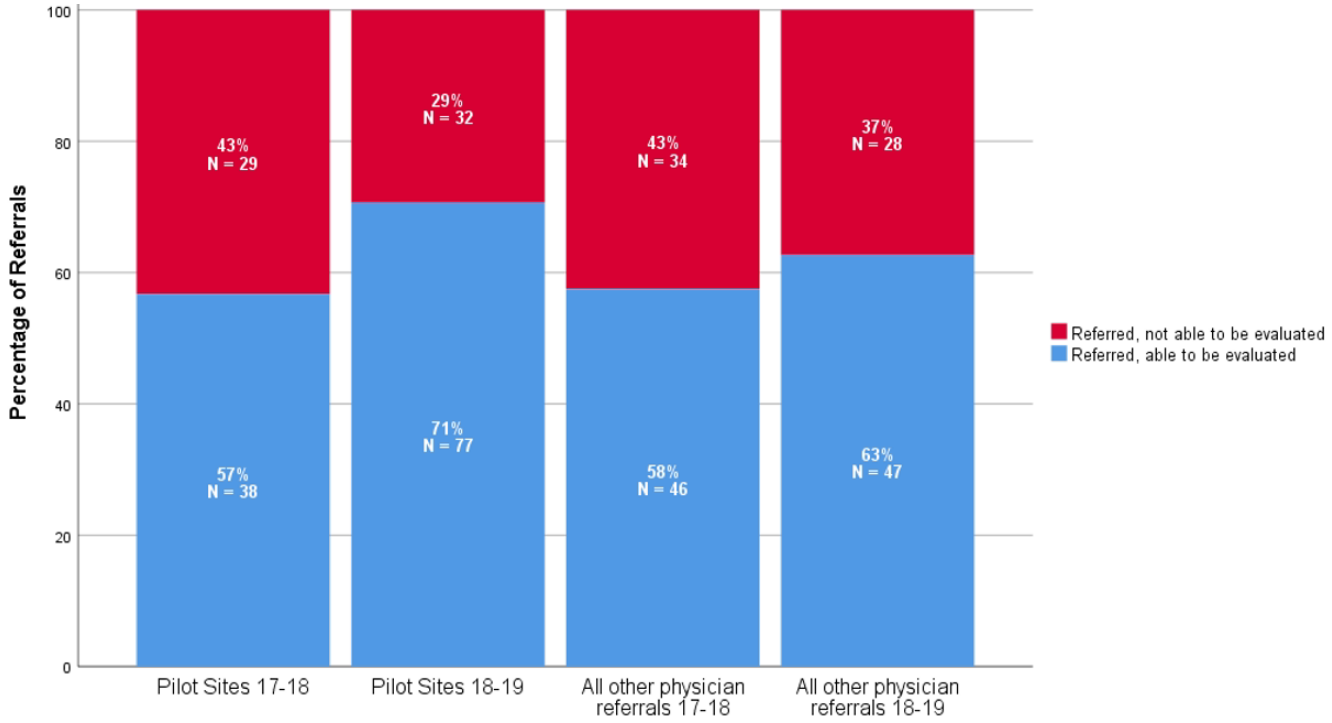


Figure 4 shows the proportion of referrals, across all the pilot primary care sites, in **SY 17-18** (before the intervention) **to SY 18-19** (after the intervention) able to be evaluated comparted to all other physician referrals.

Figure 4: Proportion of Referrals from Pilot Sites able to be Evaluated as Compared to Other Physician Clinics



- The **improvement project resulted in an increase in the proportion of referrals able to be evaluated** in the pilot primary care sites.

EI Data: Impact of Improvement Project on Referrals from the Pilot Primary Care Sites for Children Found Eligible

A third goal of the improvement project was to improve **the proportion of referrals able to be evaluated** from the pilot primary care sites that **were subsequently found eligible**. The interventions focused on training the primary care providers on the medical decision tree and best match referrals to EI, meaning children with levels of delay that may make them more likely to be eligible. Secondly, the intervention focused on training the pilot primary care sites on the Physician Statement of the Universal Referral Form and children who, via the Oregon Administrative Rules (OAR) for ODE are eligible for EI due to medical and developmental social risk factors.

Figure 5 shows the proportion of referrals, by pilot primary care site, in **SY 17-18** (before the intervention) **to SY 18-19** (after the intervention).

Figure 5: Proportion of Referrals from Pilot Sites Evaluated and Eligible Between Baseline and Follow- Up Periods.

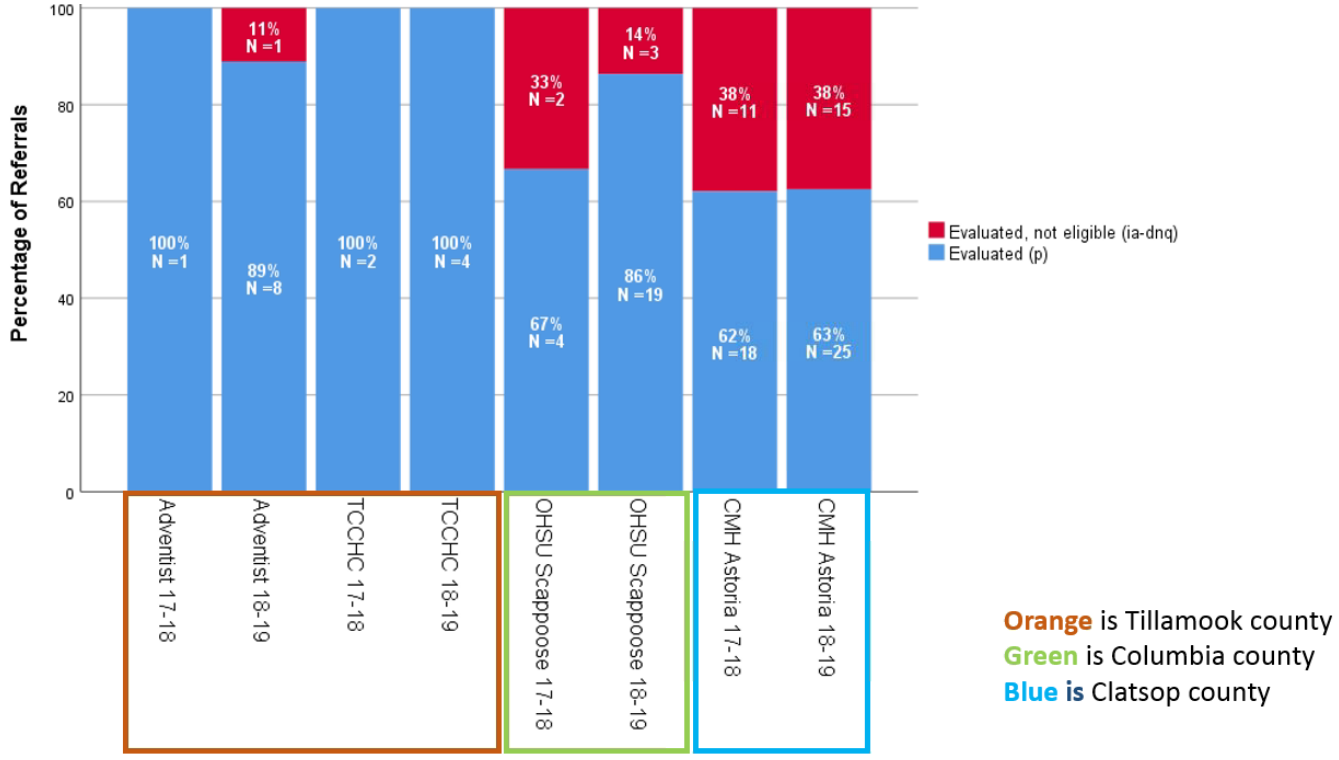
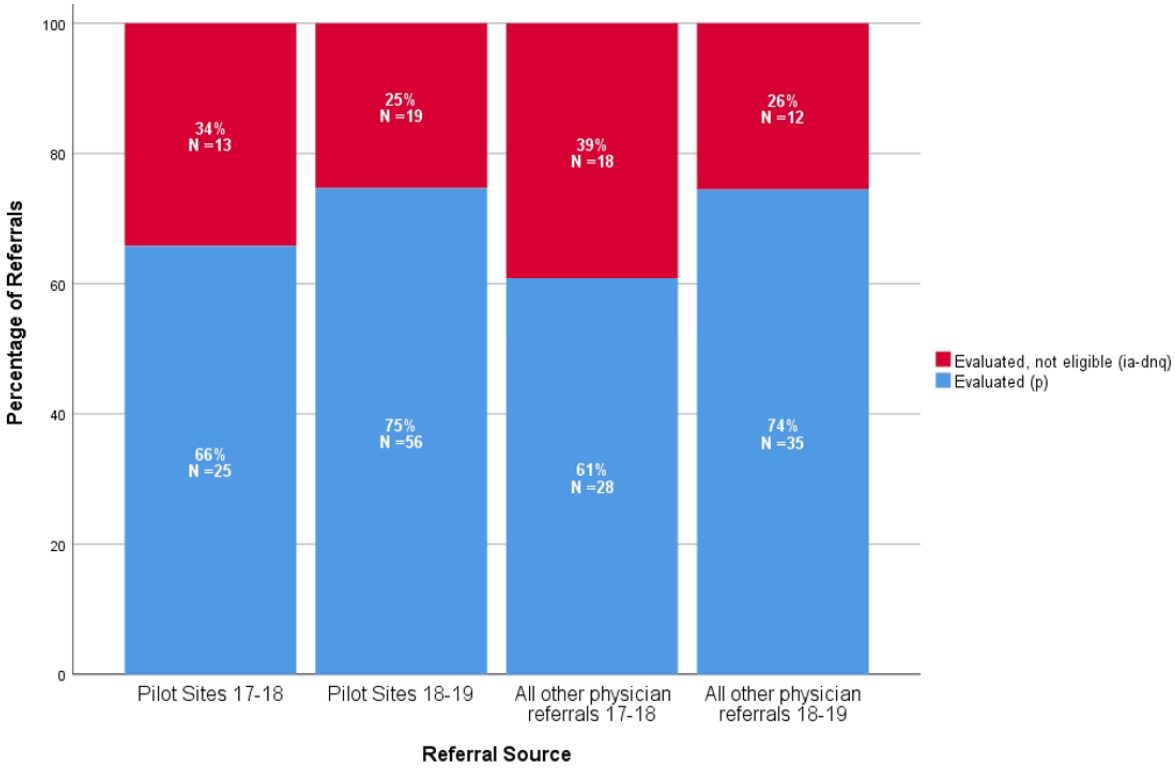


Figure 6 shows the proportion of referrals, across all the pilot primary care sites, in **SY 17-18** (before the intervention) **to SY 18-19** (after the intervention) evaluated and found eligible compared to all other physician referrals.

Figure 6: Proportion of Referrals Evaluated and Eligible from the Pilot Sites able to be Evaluated as Compared to Other Referrals



- The **improvement project resulted in an increase in the proportion of referrals able to be evaluated**, or maintained high eligibility levels, in three of the four pilot sites.
    - The one site that that did not see an improvement (CMH-Astoria) in the rates was also the only site that according the medical charts saw a decrease in their follow-up related to the medical decision tree.
    - This finding didn't surprise OPIP staff as we expected their outcomes to decrease because they did not implement care aligned with the decision tree.
    - Given the panel size of CMH Astoria and their larger numbers overall, they unfortunately dominate the findings when the "across all pilot site" findings are displayed.

Part 2: Evaluation Data Findings of Referrals to Priority Early Learning Pathways

As described in Deliverable 4.6, each community selected a priority early learning pathway to pilot new referrals. Below is a summary of the number of referrals made via these new pathways.

1. **Tillamook County** prioritized referrals to **medical and therapy services** provided at Adventist Rehabilitation Center. (**Deliverable 5.4 – Part 1** provides a summary of the findings from this implementation pilot).

Tillamook County Community Health Center Referral to Adventist Rehabilitation for Medical Therapy Services for:	Time Period		
	Baseline (1 year)	Post Training (1 yr 3 months)	Δ in Referral
OT/PT	0	2	↑
Speech Therapy	4	4	---

- The follow-up data collection showed that there have not yet been significant improvements in the numbers of children referred from TCCHC to Adventist Rehabilitation Center based on the delays identified on the ASQ. That said, other practice-level data from TCCHC reveals that more children overall have been referred to Adventist Rehabilitation Center using the referral form.
- The facilitated conversations between the front-line staff at TCCHC and Adventist Rehabilitation were reported by both parties to improve their shared understanding about each other and supportive of increasing trust and collaboration. Both parties reported that the training and new awareness of coverage was invaluable.
- While these services are now covered, there is still a lack of robust personnel available to meet the need that is likely in the community. There is likely a need for services for non-English speaking patients.

2. **Clatsop County and Tillamook County** piloted models around a **listserv** meant to provide connections to and opportunities to ask about potential **best match services available within in the local early learning community**. **Deliverable 5.4 – Part 2** provides a summary of the findings from this implementation pilot.

- In Tillamook County, no referrals or requests were submitted to the county-level listserv.
- In Clatsop County, no referrals or requests were submitted to the county-level listserv.

3. **Columbia County** also chose to pilot connections to a centralized platform of early learning providers, but leveraged an already existing online platform maintained by the

Community Action Team. **Deliverable 5.4 – Part 2** provides a summary of the findings from this implementation pilot.

- In Columbia County, two referrals were made by a OHSU Scappoose provider that was informed by the training. That said, neither referral was a young child with developmental delays.

4. **Clatsop County** chose to pilot improved pathways to **specialty mental health**. As noted in previous progress reports however, as part of the work to develop the pilot it became clear that significant work was needed to build the systems and processes by which a child would get to specialty mental health and significant training was needed that went beyond the scope of this CPCCO grant funding. OPIP subsequently received funding from Greater Oregon Behavioral Health, Inc. (GOHBI) to develop the needed tools and processes and to conduct the needed trainings on these new tools.

    - Since May 2019 - July 2019, there were eight referrals from Clatsop County Early Intervention to Clatsop Behavioral Health. Previous to this project, EI had no way to refer children and therefore had not done so previously.