

Improving Access to *Early On*® Michigan Through a Technology & Information Intervention

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Executive Summary

Led by the Michigan Department of Lifelong Education, Advancement, and Potential (MiLEAP), Michigan's *Early On* program is a statewide early intervention system that provides services for families with children from birth to age 3 who have developmental delays or are at risk of developmental delays due to a medical condition. In Michigan, only an estimated one-third of eligible children receive *Early On* services.¹ While anyone can submit a referral to *Early On*, physician referrals are particularly important, as physicians can identify potential risk factors among their young patients and are generally more aware of *Early On* than new parents. However, the current physician referral process is inefficient, requiring physicians to exit their electronic medical record system (EMR) portal and open a web browser to access the *Early On* referral form, disrupting the workflow and consuming valuable time of families.

To streamline the physician referral pipeline, the University of Michigan Youth Policy Lab (YPL) and the Michigan Chapter of the American Academy of Pediatrics (MIAAP) partnered with large and small medical institutions across Michigan to **integrate an *Early On* eFax referral template into the existing EMR system at their clinics. This adaptation allowed the referral template to automatically populate essential health information for the child and family needed for the intake and evaluation process at *Early On*.** The technology intervention was accompanied by physician trainings about the *Early On* program and the use of the eFax template, along with quarterly learning collaborative meetings among participating clinics.

During the project period between 2023 and 2025, **nine clinics received trainings about *Early On* and successfully integrated the eFax template into their EMR systems.** Through this project, participating clinics submitted about 540 eFax referrals, with an additional 470 eFax referrals coming from clinics linked to the same hospital systems. Overall, clinic representatives reported a positive experience with the project. Additionally, the quarterly learning collaborative meetings provided a dedicated space for addressing implementation challenges and collaborating with the *Early On* team in Michigan to promote system-wide changes.

Using survey data from physicians, *Early On* providers, and families, chart reviews of well-child visits, and interviews

with *Early On* administrators, we conducted an evaluation of this project to explore implementation outcomes and intervention impacts on physicians and their referral practices to *Early On*. YPL's evaluation showed that the implementation of the eFax referral template for Michigan's *Early On* program had an overall positive effect on physician referrals for families with children experiencing development delays and increased physician understanding of the program.

Our findings offer valuable insights for policymakers, pediatric primary care providers, and early intervention professionals as they work to support families during the most crucial stage of a child's development.

Key impact findings

To measure the impact of intervention, we compared data collected in the spring and summer of 2024 from Cohort 1 clinics (who had implemented the EMR eFax template) to the same data from Cohort 2 clinics (who had not yet begun implementation). Analyzing survey responses from over 80 physicians participating in this project and administrative records submitted from participating clinics, we observed the following:

- The project had a **positive impact on physicians' self-reported frequency and methods of referring patients to *Early On*.** The eFax intervention prompted physicians to be more proactive in discussing *Early On* with families during well-child visits and in directly submitting referrals.
- The project **enhanced one component of physicians' self-reported beliefs in the social validity of *Early On*,** which refers to the acceptance, appropriateness, and effectiveness of the *Early On* program in supporting families and their children. Physicians were much more likely to agree that *Early On* is NOT too complicated for most families to understand because of the intervention.
- Despite asking physicians to include more medical and developmental information for the family in the referral form than was previously required, there is no evidence that the eFax referral system significantly increased the time needed to complete a referral to *Early On*.

- The project also **improved physicians' knowledge of key *Early On* referral features**. Because of the provided trainings, physicians were significantly more likely to know that anyone, including a family friend or a neighbor, can submit a referral to *Early On*.

These findings suggest that physicians in pediatric clinics in Michigan would likely benefit from enhancing their *Early On* referral practice by integrating the eFax template into their EMRs.

Recommendations

Moving forward, we have identified several recommendations to continue to improve access to *Early On* for Michigan children and their families:

- State-level policymakers should consider providing additional technical and financial support to facilitate broader eFax implementation across more pediatric clinics, especially among small practices.
- It is imperative to strengthen mutual understanding and facilitate cross-sector communication between *Early On* and the medical community. Local intermediate school districts (ISDs) should consider outreach efforts to engage physicians in their communities in more formal partnership. Such efforts will support families in the *Early On* system through more holistic and coordinated care, and better educate healthcare providers about the program.
- Further studies are recommended to evaluate the long-term impact of the streamlined physician referral process on families and *Early On* providers.
- To help families navigate support systems, the state should explore additional opportunities for system-to-system communication and coordination, such as using the Help Me Grow network to consolidate program information and partnering with MIAAP to support centralized data systems for data sharing and tracking across programs.

Background

The first three years of life are a critical period of cognitive and physical development. Identifying developmental delays and providing children with early intervention during this time can have significant impacts on their later educational, behavioral, health, and other life outcomes.^{2,3,4} Early intervention may offer a variety of services ranging from speech therapy or physical therapy, to any other relevant services to meet the needs of the child and the family,⁵ promote the healthy development of the child, and prevent further delays.⁶

Nationally, early intervention (EI) programs are mandated through the Part C of the Individuals with Disabilities Education Act (IDEA).⁷ All states have EI programs available for families with infants or toddlers from birth to age three, who have disabilities, established medical conditions, developmental delays, and/or who are at risk of delays. The names for these programs, eligibility criteria, services available, and details of program administration, differ from state to state.

Enrollment Gaps in Early Intervention Programs

Across the country, the prevalence of developmental delays in children is higher than previously believed and has increased over time.⁸ A study by Rosenberg et al. (2008) found approximately 13% of children in the sample under age 3 had developmental delays that could qualify them for early intervention services. That same study found that the majority of children with delays who are eligible for services do not receive them: only 10 percent of children with delays at 24 months of age actually received services.⁹ A more recent report by the Government Accountability Office (GAO) indicates, despite a steady increase in the number of children served by EI services between 2016 and 2019 on a national level, the cumulative percentage of children from birth to age two receiving Part C services throughout the year varies significantly by state, with the enrollment rate ranging from 20% to 2% of the total population under age 2.¹⁰

In Michigan, there is also a significant gap between the number of children who could qualify for EI services under IDEA Part C and those who actually receive services.

One study, which claims that Michigan has some of the broadest eligibility standards in the nation, estimated that two-thirds of Michigan children at 9 months and over half of Michigan children at 24 months are likely eligible for EI services.¹¹ This is likely an overstatement of actual eligibility, but represents the most inclusive potential population of eligible children. Despite the relatively generous eligibility criteria, the same study found that the participation rate in EI services in Michigan was less than 5%.¹² Additional findings from the GAO report revealed that approximately 6.7% of Michigan children under age 3 receive early intervention services, close to the national average of 7.1%.¹³ However, this figure could be as low as 4% according to another report released in 2023.¹⁴

Underenrollment of EI services across the nation can be attributed to a variety of factors. Family-related factors, such as a lack of awareness about the need for EI and its benefits, socioeconomic stressors, and difficulties navigating a complex system can create barriers to EI access. Service-related factors, including insufficient funding, staffing shortages, unclear referral practices, inadequate service coordination, and communication issues between families and providers also contribute to the issue.¹⁵

Early On Michigan

Michigan provides EI services to eligible infants and toddlers aged 0 to 3 with developmental delays and established conditions through *Early On*® Michigan, which is led by the Michigan Department of Lifelong Education, Advancement and Potential (MiLEAP). However, the Michigan EI landscape is unique as it includes an additional layer of support through Michigan Mandatory Special Education (MMSE) services within the Michigan Administrative Rules for Special Education (MARSE). These services are available to young children from birth to age 26.¹⁶ This two-tier structure is designed to ensure coverage of EI services to a broader set of eligible children with some delays, while offering intensive support to those with more significant developmental challenges.¹⁷ For the purposes of this study, we focused on the *Early On* program.

Early On is “designed to help families find the social, health, and educational services that will promote the development of their infants and toddlers with special needs.”¹⁸

Early On services in Michigan are administered through 56 service areas, often named Intermediate School Districts (ISD)ⁱ. These ISDs lead the delivery of services for the program, which can vary by ISD, including evaluation, assessment, individualized family service plans, and access to other community support and resources.

Any concerned adult can make a referral to *Early On* if they suspect a child is demonstrating a delay or has an established condition that would make them eligible for services. This could include a family member, a childcare provider, or even a neighbor. Common methods for referring kids to *Early On* include completing an online referral form at www.1800earlyon.org or calling 1800-Early-On. .

Physician Engagement in *Early On* Intervention

Pediatric primary care providers, including pediatricians, have long been the main point of entry into EI for children with developmental delays or disabilities. They play a crucial role in identifying and addressing the needs of these infants and toddlers and referring them for further diagnoses and services. According to a recent GAO report, physicians and other primary health care providers were the most common primary source of Part C referrals in 34 out of the 45 states surveyed, accounting for 43% of all referrals, followed by parents and other family members as the second most common referral source.¹⁹

Relying heavily on primary care pediatricians for medical information and services, families are more likely to follow their recommendations regarding seeking assessments and interventions.²⁰ Despite physicians' significant role in EI referrals, many pediatric providers lack familiarity with common developmental screeners, such as Ages & Stages Questionnaires (ASQ) or the Parents' Evaluation of Developmental Status (PEDS), and the EI programs in their state, including the eligibility criteria and referral process.²¹ In addition, some pediatricians prefer a "wait and evaluate" approach and may not share their suspicions about a child's potential developmental delay with parents right away, potentially resulting in delayed or missed referrals EI. ²²

Improving the Physician Referral Pipeline for *Early On* in Michigan

In Michigan, direct physician referral is an important avenue for directing families to the *Early On* program. In 2021, 24% of *Early On* Michigan referrals were provided directly by physicians, and an additional 37% were submitted by families, many of whom first learned about *Early On* from their physician (*Early On* Michigan, personal communication, May 26, 2022). Physicians are well-positioned to observe potential risk factors among their young patients and are more likely to be aware of *Early On* than new parents. Moreover, they can provide *Early On* with specific developmental information that can make the referral-to-enrollment pipeline more efficient.

A Youth Policy Lab review of existing research identified both transparent referral procedures and messaging about the value of early intervention as promising best practices for physicians to implement to support access to EI services.²³ However, in Michigan, existing referral processes are inefficient for physicians to implement. To complete an *Early On* referral for a patient, physicians must leave their EMR portal to locate and access the *Early On* referral form through a web browser, which disrupts their workflow, taking valuable time away from patients and families.

One current way that physicians provide recommendations without disrupting their workflow, or because they are unaware of another option, is to recommend that families submit the *Early On* referral themselves. However, relying on families to follow through on this recommendation is less than ideal. Each step in the process, like finding time to make a phone call, or locate and fill out a referral form online, can be enough of a barrier to ensure that a self-referral never gets placed.²⁴ Moreover, families who are economically disadvantaged, are non-English speaking, and/or who have other social barriers, may find it particularly challenging to connect with *Early On*. Preliminary data analysis from one county in Michigan found that self-referral rates were relatively lower in lower-income zip codes compared with higher-income zip codes within the same county; enrollment rates following referral were also lower in these communities (Youth Policy Lab, personal communication, 2021).

Additionally, conversations with pediatricians and interviews with *Early On* administrators by the study team also

ⁱ ISDs may also be known as Regional Education Services Agencies (RESAs), Educational Service Agencies (ESAs), Regional Education Service Districts (RESDs), or Educational Service Districts (ESDs). In the remainder of the report, we will refer to all of these entities using the term ISD.

revealed misconceptions and misunderstandings between the medical community and the education systems about *Early On* generally and the program's intake process specifically. The standard referral and intake process often involves redundant back-and-forth communication over medical records documentation between pediatric clinics and local *Early On* offices. Additionally, there is insufficient two-way information sharing, where physicians rarely hear about *Early On* evaluation results or the outcome of their referrals. Such inefficiency has contributed to frustration among referring providers and *Early On* administrators alike, as well as potential delays in connecting children to much needed services.

This project seeks to address both of these urgent needs -- improved understanding of *Early On* processes among pediatric physicians and a more efficient process for directly submitting referrals and relevant health information to *Early On*.

Project Overview

Funded by the Michigan Health Endowment Fund, the University of Michigan Youth Policy Lab (YPL) and the Michigan Chapter of the American Academy of Pediatrics (MIAAP) partnered with small and large medical institutions across Michigan to integrate an eFax referral template into the existing electronic medical record (EMR) system at their clinics. By streamlining physician referral process, the project aimed to enable physicians to refer patients to *Early On* Michigan more seamlessly, connect families to the needed services in a timelier manner, and potentially reduce the burden on pediatricians, *Early On* service providers, and families.

Throughout the 2-year project implementation phase between July 2023 and June 2025, the project team also worked with *Early On* Michigan and participating clinic representatives to provide training to pediatric care providers on the role of *Early On* in supporting children with developmental delays, and how to most effectively refer to *Early On* using the eFax system.

The study team conducted an evaluation of this pilot project to explore how these interventions impacted physicians and the referral pipeline, including physicians' beliefs and understanding of *Early On*, the frequency and methods of *Early On* referral, and the efficiency of the physician referral process.

Research Methods

To evaluate this pilot project, the research team recruited 11 clinics to be randomized into one of two implementation cohorts. We collected and analyzed surveys, semi-structured interviews, and chart reviews to understand the impact of the intervention.

Recruitment

In the first few months of 2023, MIAAP reached out to a total of nearly 60 clinics in Michigan using three specific criteria for recruitment, including community need, institutional interest, and potential for impact and learning.

Community need

We focused our recruitment on clinics in communities where physician referral rates to EO were either extremely low or extremely high based on ISD enrollment rates. We hypothesized that this eFax technological innovation would be most effective in the communities reflecting a possible lack of awareness or capacity to refer to *Early On*, or opportunities for increased efficiency.

Institutional interest

We approached a wide swath of potential partner clinics through email outreach, and prioritized recruiting those that expressed interest. Systems change literature indicates that uptake of technological innovations will be most successful if they are imposed where there is already interest in changing practice.²⁵

Potential for impact and learning

In recruiting sites, we wanted to both maximize the impact on families of young children who could be eligible for *Early On* as well as our ability to adapt the intervention to multiple different contexts. To do this, we first prioritized recruiting several large-scale hospital systems as they employ many physicians and have the potential to impact a large number of families. Second, we also recruited smaller medical practices as well as non-profit institutions to increase the range of contexts where the intervention could be implemented.

Through intensive recruitment efforts, 11 clinics located in eight counties, covering different geographic regions across Michigan, were successfully recruited and onboarded to the project by July 2023.

Each participating clinic identified a physician champion to oversee project implementation. This physician champion worked closely with MIAAP staff and the YPL research team to ensure that site-specific tasks were handled smoothly and served as a local, site-based advocate for implementation.

Randomization

The 11 clinics were randomized into two cohorts for phased implementation. Six clinics were randomized into Cohort 1 and began implementation in Summer 2023; they constituted the treatment group. The remaining clinics were assigned to Cohort 2, and did not begin implementation until Summer 2024; they served as the control group. Two clinics in the control group withdrew in the summer of 2024 and did not complete the eFax implementation.

Data

We collected data from multiple different sources, including anonymous surveys of physicians and *Early On* providers, a family survey, and chart reviews from participating clinics. We explain each in more detail below.

Physician survey

To explore the impact of the pilot project on physician attitudes and practices regarding *Early On* Michigan, YPL developed two anonymous surveys for physicians across participating clinics to complete at two different times. These surveys include questions about physicians' medical training background, knowledge of early intervention and *Early On*, and personal referral practices with *Early On*. Additionally, physicians in Cohort 1 were invited to complete an extra section on their interactions with the eFax referral template integrated into the EMR at their clinics.

The initial survey was distributed to participating physicians in all 11 clinics in summer 2023 before the implementation of Cohort 1 and served as a baseline. The follow-up survey was distributed to participating physicians in 10 clinics in summer 2024 (one clinic from Cohort 2 had withdrawn). The survey responses are the primary outcome data source for much of the analyses in this report.

Family survey

YPL also developed a brief survey to learn more about families' recent experiences with the *Early On* referral and intake process. Questions addressed aspects such as emotional reactions to reaching out for support and the ease or difficulty of navigating the system before receiving services. The survey was administered to patients who were referred to *Early On* by physicians in participating clinics between October and December 2024.

Early On provider survey & interview

To better understand the *Early On* intake process across ISDs in Michigan, YPL developed a standalone survey that asked questions about *Early On* providers' experiences with contacting families and working with them through the intake process. The survey was administered to *Early On* providers in the eight ISDs where the participating clinics are located, between October and December 2024.

To gain a deeper understanding of the nuances and complexities of the *Early On* intake process in different ISDs, the study team also conducted semi-structured online interviews with *Early On* administrators in ISDs where most participating clinics were located. The interview lasted an hour and covered topics such as the respondent's background, experiences in connecting with families, and the ideal relationship with an *Early On* family's physician.

Chart Reviews

To measure the possible change in referral rates by physicians in participating clinics during the phased-in cohort implementation, YPL used administrative data from these clinics. Clinics were asked to review their chart records for two specific time periods: one before (March – August 2023) and the other after the implementation of the Cohort 1 eFax template integration (March – August 2024). After sampling a set of pediatric well visits for children aged 0 to 3 years, they coded these visits on the mention of *Early On* during pediatrician visits, whether the clinician recommended families to submit an *Early On* referral, and whether the clinician themselves submitted an *Early On* referral during or after this visit.

Analysis

Impact analyses were conducted comparing 2024 outcomes between our Cohort 1 clinics (treatment) and Cohort 2 clinics (control), using a multiple regression model. For the physician survey analysis, we controlled for physician gender, race/ethnicity, years of practicing medicine since obtaining a medical degree, and the type of practice associated with their clinic. For the *Early On* provider survey, we controlled for *Early On* provider's years of experience with *Early On*. Please note that we only conducted descriptive analysis for the family survey.

Sample

Participating Clinics and Physicians

As shown in Figure 1, the eleven participating clinics, randomly assigned to either Cohort 1 (6 clinics) or Cohort 2

(5 clinics), are located in ten countiesⁱ and represent different types of practices, including six clinics affiliated with hospital systems and five private practices.

Figure 1: Counties Represented by Participating Clinics by Cohort



As shown in Table 1, the follow-up physician survey was sent to 113 medical providers and 82 responded, for an overall response rate of 73%. Among the respondents, 77% were physicians, 13% are nurse practitioners, and the rest were residents. About three fourths of these respondents were female and the remainder were men or chose not to disclose their gender. Approximately 76% identified as white, 10% identified as Asian, 6% preferred not to answer, and the remaining respondents identified as Black/African American, Hispanic/Latinx, Middle Eastern/North African, Native Hawaiian/Pacific Islander, or two more races. On average, physician survey respondents have about 15

years of experience practicing medicine since obtaining their medical degree, and the number fell slightly when considering only the years practiced in Michigan.

Overall, most demographic characteristics for the treatment and control groups are well-balanced. The type of practice, however, is somewhat imbalanced as there are more respondents practicing medicine in a hospital system in the treatment group (83%) than in the control group (27%). Conversely, there are more respondents in a private practice in the control group (73%) than in the treatment group (17%). We account for this difference in our analyses.

ⁱ The ten counties are located in eight ISDs. Northwest Education Services includes Leelanau County, Kalkaska County, and Grand Traverse County.

Table 1: Background Characteristics of Physician Survey Respondents

Race/Ethnicity	Control		Treatment		Total	
	n	% (mean)	n	% (mean)	n	% (mean)
Gender						
Woman	23	77%	39	75%	62	76%
Man	5	17%	10	19%	15	18%
Prefer not to answer	2	7%	3	6%	5	6%
Race/Ethnicity						
White	21	70%	41	79%	62	76%
Asian	4	13%	4	8%	8	10%
Other ^a	2	7%	5	10%	7	9%
Prefer not to answer	3	10%	2	4%	5	6%
Role						
Physician	24	80%	39	75%	63	77%
Resident	0	0%	8	15%	8	10%
Nurse Practitioner	6	20%	5	10%	11	13%
Practice type						
Private	22	73%	9	17%	31	38%
Hospital System	8	27%	43	83%	51	62%
Experience^b						
Years practicing medicine in total	24	16.1	33	14.4	57	70%
Years practicing medicine in Michigan	24	14.3	36	11.5	60	73%
TOTAL	30	37%	52	63%	82	100%

Notes:

a. For confidentiality purposes, we do not report individual race/ethnicity categories representing less than 5% of the total population. The "Other" category includes Black/African American, Hispanic/Latinx, Middle Eastern/North African, Native Hawaiian/Pacific Islander, and two more races.

b. We are missing some values for the experience-related questions as we only asked these questions in the baseline survey. When merging the responses of baseline with the follow-up survey, we could not obtain the answers to these questions from those who only completed the follow-up survey. The total number of individuals missing the data for Years practicing Medicine is 25 and that for Years practicing medicine in Michigan is 22, across both groups.

Families & *Early On* providers

We obtained responses from 58 family respondents who indicated that their referral to *Early On* was initiated by physicians in recent years. These families represent 18

counties across Michigan. As shown in Table 2, over 60% of the referred children were between 0 to 18 months old at the time of referral, about 35% were between 18 and 30 months, and the remainder were between 30 and 36 months old.

Table 2: Child's Age at the Time of *Early On* Referral

Age Range	N	%
Less than 12 months old	18	31%
12-18 months old	18	31%
18-24 months old	11	19%
24-30 months old	9	16%
30-36 months old	1	2%
TOTAL^a	58	

Note:

a. This includes one instance (2%) of missing data.

Finally, we also received survey responses from 51 *Early On* providers/administrators from six ISDs across Michigan whose roles involved contacting families for consent, collecting medical records, or obtaining required information for evaluation. Among these responses (Table 3), 31% are

early interventionists, followed by physical therapists at 10%, administrative assistants and teachers both at 8%, intake/referral specialists and social workers each at 6%, *Early On* coordinators at 4%, and the remaining respondents as a role other than specified above.

Table 3: Roles Among *Early On* Provider Survey Respondents

Role on the team	N	%
Early interventionist	16	31%
Physical therapist	5	10%
Administrative assistant	4	8%
Teacher	4	8%
Intake and/or referral specialist	3	6%
Social worker	3	6%
<i>Early On</i> coordinator	2	4%
Other ^a	14	27%
TOTAL	51	

Note:

a. This includes occupational therapists, speech therapists, etc.

Intervention

The study contained several intervention components, including:

1. An eFax referral template built into electronic medical record (EMR) systems to streamline direct physician referrals to *Early On*;
2. Trainings and support provided to physicians at participating clinics regarding *Early On* Michigan and the use of eFax template; and
3. Quarterly learning collaborative meetings to enhance communication and address any issues facing clinics during implementation.

Please refer to Figure 2 for a complete overview of the project timeline.

EFax referral template integration

The major intervention component was the integration of an eFax referral template into the EMRs at participating clinics. The template (see Appendix A) was developed by the study team in coordination with Clinton County RESA, the operational lead for *Early On* Michigan, managing and overseeing the implementation of *Early On* across the state.

Since most EMRs contain faxing capabilities, implementing a HIPAA-compliant eFax referral template using each clinic's existing technological infrastructure enabled physicians to send referrals directly to Michigan's *Early On* program while staying in their patient portal workflow. The integration with existing EMR systems also allowed the referral template to automatically populate key health information for the child and family that is needed for the intake and evaluation process at *Early On*.

The study team provided the eFax referral template to all physician champions at participating clinics in a phased-in approach. Cohort 1 clinics began working with their IT departments in the summer of 2023 to integrate the eFax template into their system, while Cohort 2 maintained business-as-usual until the summer of 2024. Depending on the feedback from *Early On* after sending test eFaxes, clinics adjusted their clinic-specific template to ensure the eFax referral functioned properly with *Early On* before implementing it across the clinic. By early 2024, all Cohort 1 clinics had begun referring families to *Early On* via the eFax template system. Cohort 2 clinics began working with

their IT departments in the summer of 2024; by the spring of 2025, all clinics remaining in the study were referring families to *Early On* using the eFax system.

Although Epic was the most common EMR among participating clinics, other EMR systems such as Athena, eClinicalWorks, and Veradigm were also used in the study. On average, clinics spent 3-6 months completing the eFax template integration, though the exact time varied significantly as clinics encountered technical issues and administrative barriers at different levels.

Trainings

As part of the intervention, physicians in participating clinics were also trained in two key areas: *Early On* Michigan and the eFax referral technology.

Early On training

Presented by *Early On* administrators, the one-hour synchronous online training provided information on the purpose of *Early On* early intervention, the services available, and how the program operates to support families. Additional topics covered included the eligibility criteria, specifically the variety of congenital diagnoses and pre-existing conditions that make children and their families automatically eligible for *Early On*.

The training also aimed to debunk common misconceptions physicians might have about *Early On*, ensuring physicians participating in the training would gain a better understanding of how a referral to *Early On* differs from a medical referral that they routinely make and how they could best support evaluations during the *Early On* intake process.

Cohort 1 clinics received online training from *Early On* administrators in the state in August 2023, while physicians in Cohort 2 attended the training session in August 2024.

Clinic specific training

After clinics successfully integrated the eFax template into their EMR system, physician champions were responsible for helping physicians in their clinic acclimate to the eFax template, providing a step-by-step guide on how to make *Early On* referrals, and addressing their questions and concerns. Template trainings were conducted in a variety of

formats, such as email instructions with screenshots, a how-to video, staff meetings, or one-on-one training, depending on each clinic's specific needs and work schedules.

A short video for broader outreach

To enhance communication and encourage broader adoption of the eFax template among physicians in participating clinics, the study team produced a [3-minute video](#), explaining the background behind this initiative, our goals, and how physicians can get involved. The video was shared with Cohort 1 clinics in the spring of 2024 and with Cohort 2 clinics in early 2025.

Quarterly learning collaborative meetings

Between the summer of 2023 and the spring of 2025, we held several quarterly learning collaborative meetings among physician champions across different cohorts to facilitate communication and troubleshoot issues that arose throughout the implementation phase, specifically during eFax template integration. Due to the phased-in implementation, Cohort 2 physician champions did not begin participating in these learning collaboratives until the summer of 2024.

Starting in January 2023, a staff member from the *Early On* team in Michigan began attending these meetings regularly to enhance communication between our pilot project and their program. This was typically a representative from Clinton County RESA whose role includes coordinating statewide public awareness, technical assistance, professional development, and data reporting efforts to ensure that infants and toddlers with developmental delays or disabilities—and their families—receive the early intervention services and support they need.

Depending on the phase of the implementation at each participating clinic, meeting topics included the project overview and timeline, physician champion responsibilities, eFax template integration check-in, training updates, data collection activities such as surveys and chart reviews, the health status report, and two-way information sharing between physicians and *Early On* local offices.

These learning collaborative sessions also provided physician champions with the opportunity to stay actively engaged in the intervention while establishing a network of support among participating physicians and clinics.

FIGURE 2: *Early On* eFax Referral Project Timeline



Implementation Findings

As previously noted in the report, a key feature of the study intervention is integrating an eFax referral template into the existing electronic medical record systems at their clinics. We analyzed implementation data from several sources: *Early On* tracking of incoming eFax referrals, physician surveys, and interviews with *Early On* administrators.

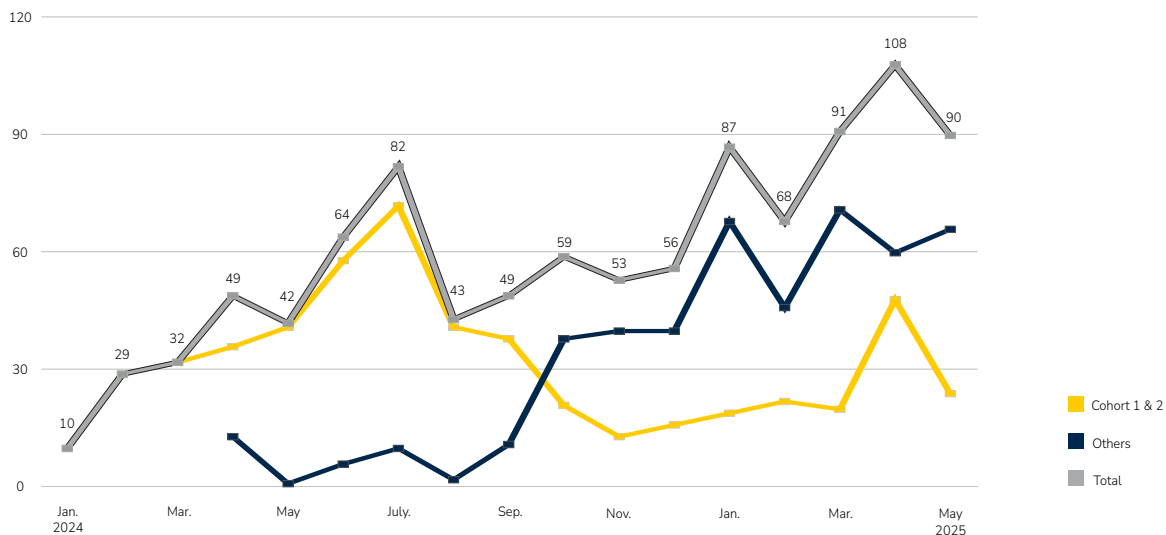
Growth in eFax referrals over time

As shown in Figure 3, the monthly rate of eFax referrals has increased over time. In January 2024 when most clinics in Cohort 1 started to send eFax referrals, the *Early On* intake office only received 10 of them. However, the number climbed throughout the spring of 2024, peaking at 72 in July before there was a downward trend in eFax usage toward the end

of the year. This was in part due to seasonal variations in pediatric well child visits. Cohort 2 clinic eFax referrals began being recorded in February 2025, as the overall trend started to rebound from its previous decline.

While Cohort 1 clinics experienced a decline in eFax referral numbers in the second half of 2024, the *Early On* intake office began receiving an increasing number of eFax referrals from a number of clinics not involved in the study. These clinics are affiliated with the same hospital systems as the Cohort 1 clinics. The spillover effect began in the fall of 2024 and persisted throughout the spring of 2025, further demonstrating that **the eFax template is well received beyond the intended study group.**

Figure 3: eFax Referrals Submitted by Month



Note: The exact number of referrals may vary slightly due to tracking limitations.

Positive experiences with eFax template

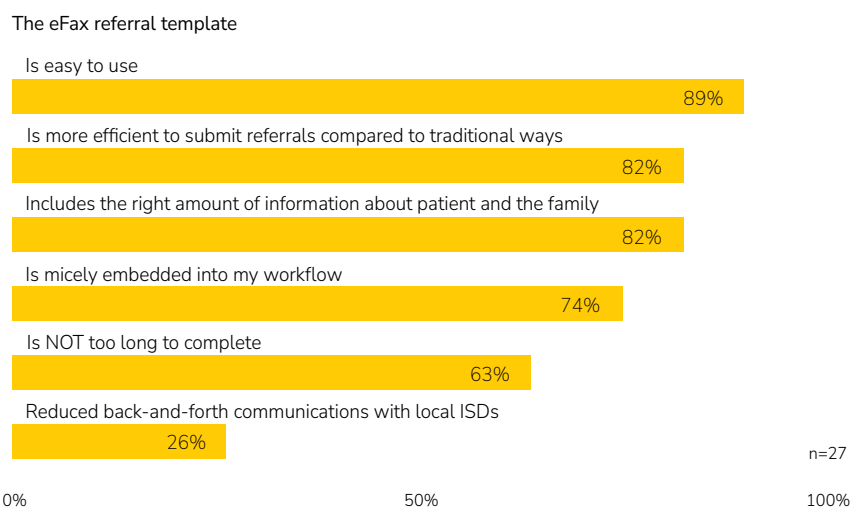
Overall, participating physicians in Cohort 1 clinics reported a positive experience using the eFax referral template embedded into the EMR system at their clinics (see Figure 4).

- The vast majority of these respondents reported the eFax referral template is easy to use (89%), is more efficient to submit referrals compared to traditional ways, such as the online referral form or calling 1-800-EarlyOn

(82%), and includes the right amount of information (82%).

- Over 70% of them agreed the eFax referral template is well-integrated into their workflow (74%) and almost two thirds reported the template is not too long to complete (63%).
- Over a quarter of respondents agreed the eFax referral template has helped reduced back and forth communications with ISDs (26%).

Figure 4: Physician Experience with eFax Referral Template



Note: This subgroup analysis focused on responses from 27 Cohort 1 physicians who indicated that they have used, tried, or at least knew how to use the eFax template in a prior survey question, accounting for a third of the treatment group sample size.

Testimonials from physicians and *Early On* administrators

Several physicians provided detailed positive feedback on their recent experience with the eFax template, and two example responses are included below:

"(Submitting referrals directly to Early On) is so much better with the eFax than it was online. (It is) much faster and pulls in a lot of the necessary information...I always complete them in the room with the family so they know it is submitted and I can add any information they would like (to) share with Early On. Overall, really appreciate the eFax."

"The referral that we are piloting with Epic where patient information has been pulled forward from the chart makes it much faster and easier."

During the *Early On* provider interviews, we received similar feedback on the eFax template. Three of the four *Early On* administrators interviewed from ISDs where the treatment group clinics are located confirmed the receipt of the eFax referral in their area and recognized that the template contained helpful information that would help *Early On* providers determine eligibility for children to receive services. One *Early On* coordinator particularly appreciated the inclusion of the "Established Condition" section, which she thought is crucial as part of the medical records.

Barriers in eFax template integration

Our follow-up survey also asked physician champions across all six clinics in Cohort 1 about their experiences integrating the eFax referral template into their EMR

systems, inviting them to identify technical issues and other barriers associated with this technological intervention.

Two out of the six physician champions reported neither technical issues nor other barriers. Among the remaining four physician champions, the common technical issues included the significant effort required for custom development and IT support, and back and forth communication with the IT department. In addition, some physician champions found the template somewhat lengthy.

The logistical or administrative challenges were mostly related to the acceptance of the new template by colleagues, or multiple rounds of revision required for the template implementation.

Statewide policy change among physician referrals

Through our quarterly learning collaborative meetings, we also identified and worked to resolve a long-standing frustration from physicians related to referrals. As part of the *Early On* intake process and for documentation of special education regulatory compliance, *Early On* has been asking physicians to complete a standalone “Health Status Report” form with specific questions about prior vision and hearing screenings, as well as the “strength, vitality, and alertness” of children referred to the program. Physicians often received specific requests for this information even when their referral materials included the relevant medical records. To address this, the study team worked with the project’s physician champions and the state *Early On* team at MiLEAP to improve

the Health Status Report and streamline the physician referral process. Changes included refining the language around “strength, vitality, and alertness” to align with physician’s evaluations, and the updated form was incorporated directly into the eFax template. Additionally, the state *Early On* team updated their own online referral form in March 2025 to include a “Health Status Report” section that better captures the necessary information. This additional section helps prevent local *Early On* offices from sending repetitive health status requests to physicians.

By May 31st, *Early On* central intake office reported about 44% of the physician referrals submitted online have answered the first question of the Health Status Report section, improving the efficiency of physician referral process across the state, even for those not using our eFax template.

Impact Findings

Outcomes for our impact analysis were collected between February 2024 and December 2024, the time during which all Cohort 1 clinics had all received training and implemented their eFax referral templates, whereas no Cohort 2 clinics had yet participated in the intervention. Thus, for this section, we will refer to Cohort 1 as the treatment group and Cohort 2 as the control group for our impact findings.

Primary impacts of intervention

Analyzing over 80 survey responses from physicians in participating clinics and chart review records for pediatric well-child visits in participating clinics, we found the intervention has had an overall positive impact on physicians' self-reported belief in the social validity of *Early On* services and their active role in referral practice at their clinics. In this report, social validity may refer to the general acceptance of the *Early On* program, the appropriateness of the intervention in meeting the needs of program participants, and the effectiveness of the intervention in improving outcomes for families and their children.²⁶

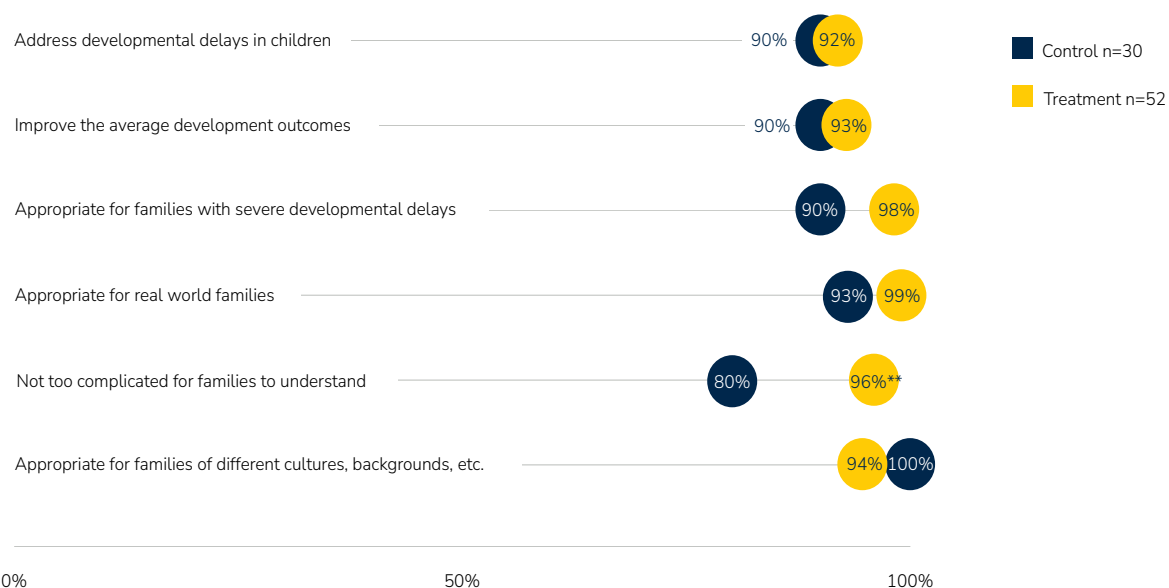
Positive impact on physician beliefs in the social validity of early intervention services

All surveyed physicians in both groups believed in the effectiveness and social validity of early intervention programs in general, including addressing developmental delays and improving outcomes in children ages 0-3.

Similarly, as shown in Figure 5, a majority of physicians in both groups believed in the social validity of *Early On*. In particular, compared to the control group, physicians in the treatment group were:

- Similarly likely to agree that *Early On* is appropriate even for families with severe delays (98% vs 90%, not a significant difference).
- Similarly likely to agree that *Early On* is appropriate for both researchers and families in their community (99% vs 93%, not a significant difference).
- More likely to agree that ***Early On* is NOT too complicated for most families to understand (96% vs 80%), a statistically significant difference.**
- Similarly likely to agree that *Early On* is appropriate for families from different cultures and backgrounds (94% vs 100%, not a significant difference).

Figure 5: Physician Belief in Social Validity of *Early On*



Notes: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B.

Statistical significance levels are indicated as follows: *p<0.10, **p<0.05

Positive impact on physician referral practices to *Early On*

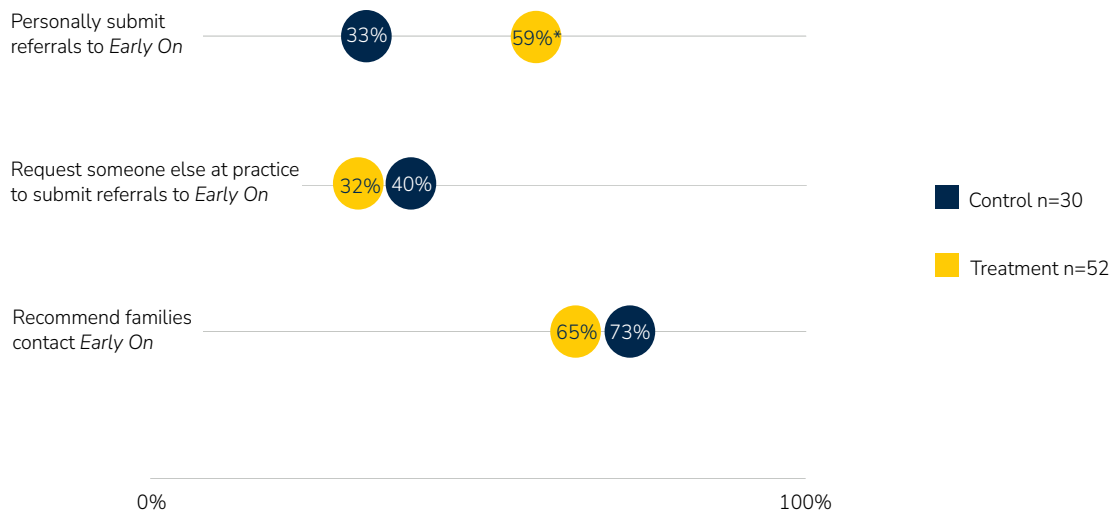
By combining the physician survey responses with administrative records from participating clinics, we found the **eFax intervention changed physician referral practices to *Early On*, enabling physicians to be more proactive in discussing *Early On* with families during well-child visits and in directly submitting referrals.**

Positive impact on frequency and methods of physician referral to *Early On*

As shown in Figure 6, for patients with a developmental concern or established condition, compared to the control group, physicians in the treatment group were:

- **Almost twice as likely to personally submit an *Early On* referral** more than half the time, a statistically significant difference (59% vs 33%).
- Similarly likely to request someone else in their clinics place a referral (32% vs 40%, not a significant difference) or recommend that family contact *Early On* themselves (65% vs 73%, not a significant difference).

Figure 6: Frequency and Methods of Physician Referral to *Early On*



Notes: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B. Each item is an independent question in the survey, thus percentages shown in the figure for each item do not add up to 100%.

Statistical significance levels are indicated as follows: *p<0.10, **p<0.05

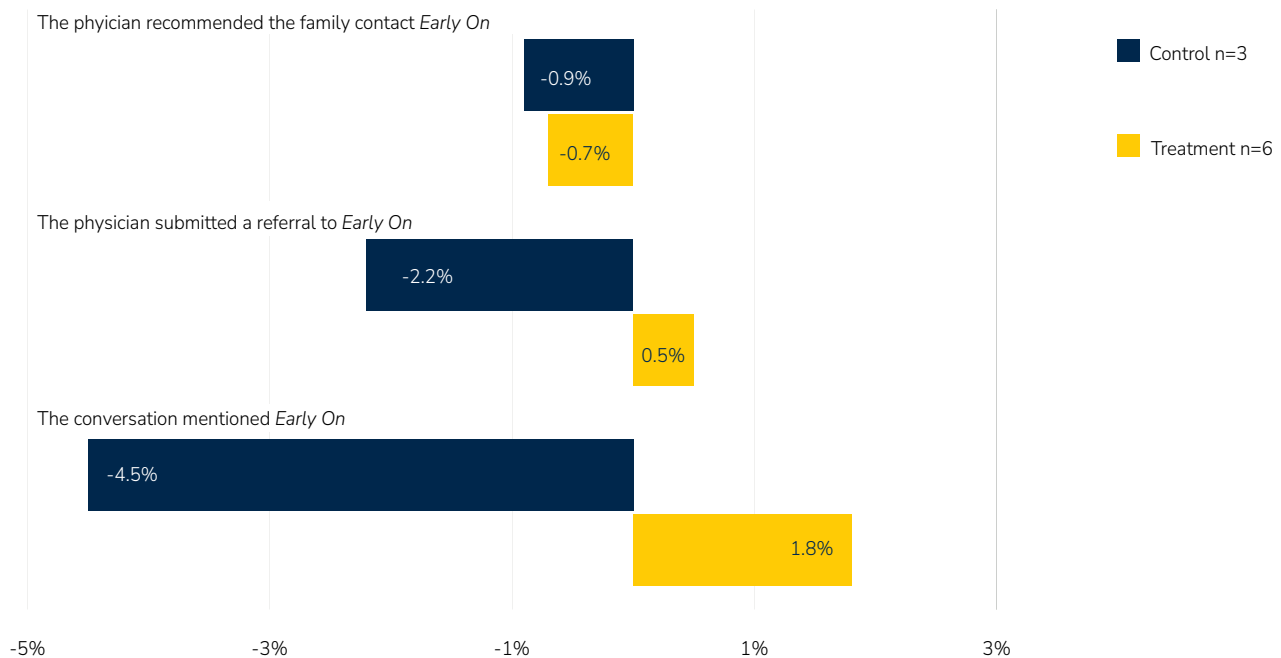
Administrative records corroborate physicians' self-reported outcomes

By comparing the chart review records from all participating clinics from the pre- and post-eFax implementation periods in 2023 and 2024 (Figure 7), we found physicians in treatment group clinics increased their likelihood of mentioning *Early On* during well-child visits and increased their likelihood of submitting referrals to *Early On* themselves between 2023 and 2024. On the contrary, the opposite trend was observed in clinics from the control group: we saw a decreased likelihood of mentioning *Early On* during well-child visits and of submitting referrals to *Early On* themselves across control group clinics during the same period. Accounting for those

changes, **the treatment group was 6.3 percentage points more likely than the control group to mention *Early On* during well-child visits.**

Although physicians in both groups experienced a decreased likelihood of recommending families contact *Early On* from 2023 to 2024, **physicians in the treatment group clinics became somewhat more proactive in handling referrals themselves rather than passing on the responsibilities of contacting *Early On* to families.** This finding complements physicians' self-reported experiences of personally submitting referrals to *Early On*, as indicated in the survey.

Figure 7: Clinic-Level Change in Physician Referrals to *Early On* Between 2023 and 2024

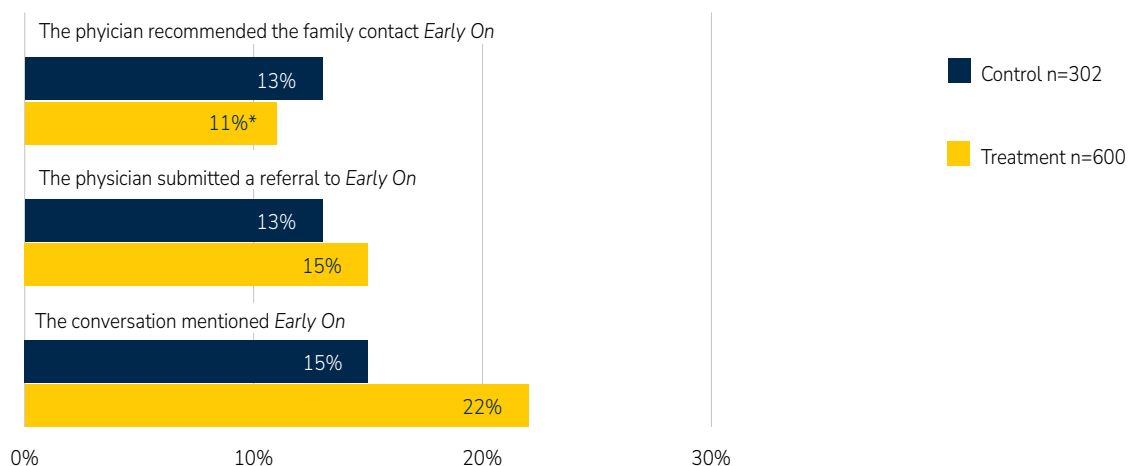


Note: The percentage point change shows the average difference in the clinic-level outcomes between pre- and post-intervention periods. The sample size, which indicates the number of clinics in each group, is three for the control group and six for the treatment group.

Similarly, after controlling for clinic-level average percentage of visits in 2023 where *Early On* was mentioned, the administrative referral records in 2024 (Figure 8) revealed that not all of these differences were statistically significant. Compared to the control group, physicians in the treatment group were:

- Slightly more likely to mention *Early On* to families during pediatric well-child visits (22% vs 15%).
- Equally likely to submit a referral to *Early On* themselves (15% vs 13%).
- **Significantly less likely to recommend that the family contact *Early On* (11% vs 13%).**

Figure 8: Regression-Adjusted Differences in 2024 Referral Practices



Notes: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B.

Statistical significance levels are indicated as follows: *p<0.10, **p<0.05

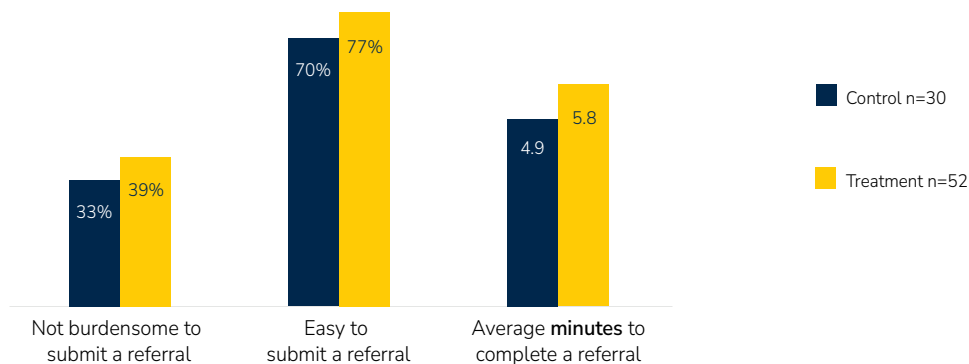
No evidence of increased burden or difficulty on physicians

As shown in Figure 9, despite asking physicians to include more medical and developmental information for the family, **the eFax referral system did not complicate the referral process or significantly increase the time needed to complete a referral to *Early On*.**

- Physicians in the treatment group were similarly likely to find it easy (77% vs 70%) and not burdensome (39% vs 33%) to submit referrals directly, compared to their counterparts in the control group.

- Physicians in both groups reported spending about 5 minutes submitting a referral to *Early On*. There was no significant difference in their self-reported time to complete an *Early On* referral (5.8 min vs 4.9 min).

Figure 9: Physicians' Self-Reported Efficiency of the *Early On* Referral Process



Notes: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B. Ns for specific questions may vary slightly based on missing values.

Other impacts on physicians

Besides major impacts of the intervention on physicians' perception of *Early On* and their referral practices, we have identified several secondary impacts on physicians, including factors influencing physicians' decisions to refer or not to refer families to *Early On* and their knowledge of the program.

Positive impact on physician knowledge of *Early On*

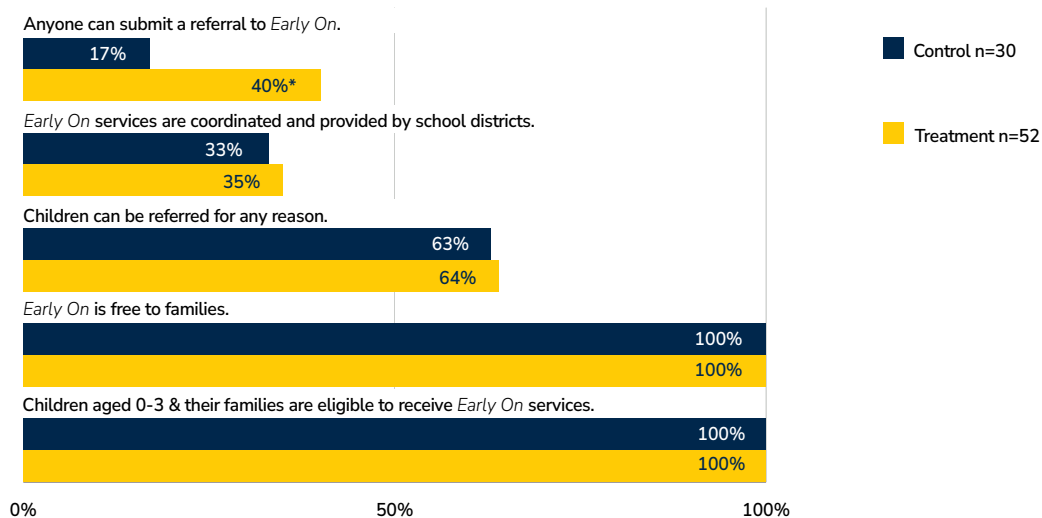
Consistent with our findings on physician comprehension of *Early On* in supporting children and families, we find that the intervention had a positive impact on their understanding of the program's costs, services, and referral eligibility.

Although respondents in both groups were equally likely to know that physicians and parents can submit a referral to *Early On*, **a significantly higher percentage of respondents in the treatment group (40.3%) were aware that anyone can submit a referral**, compared to the control group (16.7%).

This indicates that the referral sources can include a wide range of individuals and organizations, such as family members other than parents, childcare protective services, teachers, friends or neighbors, and religious or community leaders.

As shown in Figure 10, all respondents in both the treatment and control groups knew children aged 0-3 years and their families are eligible to receive *Early On* services at no cost. Rates of knowledge of other features of *Early On* were also similar between the treatment and control groups. In both groups, two-thirds of the respondents were aware that children can be referred for any reason, and approximately one-third of respondents knew that *Early On* services are coordinated and provided by school districts.

Figure 10: Physician Knowledge of *Early On*



Notes: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B. Ns for specific questions may vary slightly based on missing values. Statistical significance levels are indicated as follows: *p<0.10, **p<0.05

Both groups had similar reasons for referring families to *Early On*

Based on the survey responses, we found no evidence showing any impact from the intervention on the reasoning behind physician referral decisions to *Early On*. As shown in Table 4, all physicians in both the treatment and control groups reported submitting a referral to *Early On* when they had a concern about a developmental delay. The second most common reason physicians in both groups referred a

family to *Early On* was when a child had a diagnosed eligible condition. Most respondents would also make a referral at the family's request. Only about one-third of the surveyed physicians would do so due to concerns about social determinants of health. Only a small percentage of respondents indicated that they might refrain from referring a family to *Early On*; the most common reasons were because they believed another program is a better fit or the family refused the referral.

Table 4: Reasons for Physicians to Refer a Family to *Early On*

	Control	Treatment
	n=30	n=52
I have a concern about a developmental delay	100%	100%
The child is diagnosed with an eligible condition	90%	83%
Family requests it	80%	79%
I have a concern about social determinants of health	37%	35%

Note: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B.

Other impacts on *Early On* providers and families

We had hypothesized that in addition to positive impacts on physicians, ISD-based *Early On* providers and families who are eligible for *Early On* services might also benefit from the streamlined eFax referral system. We conducted some exploratory data collection to better understand the experience of both *Early On* providers and those of

participating families. However, after analyzing survey responses from the *Early On* providers across several ISDs, as well as a number of families whose children were referred by physicians to *Early On* in recent years, we have found little evidence of a noticeable intervention impact on how families communicated with *Early On* or navigated the post-referral process, nor any significant system changes in the *Early On* intake process within the ISDs where the treatment group clinics are located.

Little impact on *Early On* providers

On average (see Table 5), for all physician-submitted referrals, both those submitted via our eFax template and those coming from clinics outside of our sample, *Early On* providers in both groups found it equally easy to help families navigate the intake process and not burdensome to communicate with families during the process. However, *Early On* providers from counties with control group clinics

did find it slightly easier to successfully contact families after the referral compared to providers from ISDs with treatment group clinics. Because there are a large number of pediatric clinics in most ISDs, most of whom were not participating in our project, it is not surprising that the intervention did not change providers' overall perceptions of referrals coming from physicians.

Table 5: *Early On* Provider Experiences with Families Referred by Physicians

	Control (mean)	Treatment (mean)
	n=10	n=41
Easy to help the family navigate the <i>Early On</i> intake process	3.5	3.5
Not burdensome to communicate with the family back and forth during the intake process	3.1	3.1
Easy to contact the family successfully	3.2	3.0*

Notes: The reported values for the control group come from an unconditional regression model. The reported values for the treatment group are calculated as the unconditional control group mean plus the treatment effect estimate from the regression model specified in Appendix B. Ns for specific questions may vary slightly based on missing values. The values from both groups represent the coded easiness scores for different scenarios, with 4 being the easiest and 1 the hardest. Statistical significance levels are indicated as follows: *p<0.10, **p<0.05

No evidence of direct benefits for families

Similar to the findings from the *Early On* provider survey, there is no evidence demonstrating the intervention had an impact on families (see Table 6). It appears families attending in the treatment clinics, who were referred by physicians, were somewhat more likely to have more frustrating experiences with *Early On* when searching for information,

sharing concerns, and providing documentation before receiving services. This might be partially due to the fact that the survey did not ask families to indicate the time when their child(ren) was referred and it is possible that they were recalling experiences from over a year ago, before the intervention took place. Further investigation is warranted to better understand the family perspective.

Table 6: Initial Experiences of Physician-Referred families During *Early On* Intake Process

	Control	Treatment
	n=20	n=38
The process of finding information about <i>Early On</i> was difficult.	0%	5%
It was difficult to share concerns/ provide the requested info with <i>Early On</i> .	0%	3%
I felt frustrated before receiving any services.	37%	45%

Note: Ns for specific questions may vary slightly based on missing values

Limitations

While some of these results are encouraging, it is worth noting that the study also has several limitations.

First, although clinics were randomized, they did not look identical at baseline. As noted above, there were more hospital systems in the treatment group than in the control group; these systems are often better-resourced, and also have a much larger team of physicians per clinic. While we did control for the type of practice in our regression analyses, along with individual physician characteristics such as gender, race/ethnicity, and years in practice, it is possible that other unobservable differences in participating clinics might bias our results.

Second, there was a notable amount of attrition from the study; two clinics in Cohort 2 ultimately did not participate in the training and eFax implementation. Additionally, we are missing outcome data for them. Neither attriting clinic participated in the chart reviews, and one of the attriting clinics did not participate in the follow-up physician survey that provided the majority of our confirmatory outcomes. Thus, depending on the data source, we have both overall and differential attrition rates of between 9% and 18%. According to What Works Clearinghouse,²⁷ this relatively higher attrition rate in the control group could lead to bias in our impact results.

Conclusions

This pilot project highlights the successful implementation of an eFax referral template to support physician referrals to Michigan's *Early On* program. Between 2023 and 2025, nine clinics received training about *Early On* and successfully integrated the eFax template into their EMR systems. As part of this project, approximately 540 eFax referrals in total were submitted from our participating clinics, and an additional 470 eFax referrals were submitted from additional clinics associated with the same hospital systems as our participating clinics. Overall, physician champions reported a positive experience with the project. The quarterly learning collaborative meetings provided a useful space to troubleshoot challenges, and provided the opportunity to work with members from the state's *Early On* program to support system-wide changes.

We have strong evidence that the intervention (eFax template integration into EMRs, trainings on EMRs, and quarterly learning collaborative meetings) had a positive impact on the frequency and methods of referral to *Early On*. After the trainings and eFax referral integration, participating Cohort 1 physicians were much more likely to submit *Early On* referrals by themselves and more likely to discuss *Early On* with families during pediatric well visits compared to physicians in Cohort 2 who had yet to implement the eFax referral template. A higher percentage of Cohort 1 physicians also reported that *Early On* is understandable for most families compared to their counterparts in Cohort 2.

Moreover, despite asking physicians to include more medical and developmental information for the family, there is no evidence that the eFax referral system significantly increased the time needed to complete a referral to *Early On*.

Additional positive findings include improving physicians' knowledge of key *Early On* referral features, such as the likelihood of physicians being aware that anyone, including a family friend or a neighbor, can submit a referral to *Early On*.

These findings suggest that physicians in pediatric clinics in Michigan would benefit from enhancing their *Early On* referral practice by integrating the eFax template into their EMRs. We are pleased to see that a number of clinics affiliated with the hospital systems of our participating clinics have already adopted the eFax template since it became available in their EMR. The rapid growth in the use of this new template beyond the study group corroborates the potential of broader eFax implementation in more pediatric clinics across Michigan.

Although we have not yet observed any impact on improving families' experiences navigating the intake process or reducing the burden on *Early On* providers during this process, it would be worthwhile for future researchers to explore the long-term influence on both groups as the eFax template referral system becomes more integrated into their workflow in many pediatric clinics in Michigan.

Recommendations

Given the study findings, we have identified the following recommendations to support access to *Early On* more broadly:

Recommendation 1

Consider providing more support for broader eFax implementation across Michigan

To date, physicians from nearly 30 pediatric clinics across 10 counties in Michigan have begun using the eFax template to submit referrals to *Early On* within their EMRs. While great progress has been made in streamlining the physician referral process, larger-scale reform is needed to enable more physicians to directly submit a referral within their workflow. Due to significant differences between different EMRs used by various clinics and nuanced variations within the same EMR, it is essential for physicians in individual clinics to initiate the integration process.

Broadening the eFax implementation may be relatively easier in larger systems as once the template is developed in the EMR, all affiliated clinics could have access to the new system. Small practices, often with insufficient resources, may need more technical and financial support to integrate the eFax template. A variety of reasons including staffing shortages, limited applicability beyond individual clinics, and a lack of incentives could impede clinics, in particular small practices, from participating in this enhancement. Thus, public and private organizations should consider providing additional technical and financial support to facilitate broader eFax implementation, especially among small practices.

For further reference, the study team has asked physician champions in all participating clinics to complete an implementation form that documents the integration of the eFax referral template, including screenshots of their post-intervention referral process. The compiled implementation handbook is now available on the [MIAAP](#) website.

Recommendation 2

Strengthen mutual understanding between *Early On* and the medical community

In surveys and through learning collaborative conversations, many physicians expressed a fundamental misunderstanding of *Early On*, including eligibility requirements, the types of services offered, and the difference between *Early On* services and the allied health services that might be offered in a traditional medical setting. Similarly, *Early On* administrators and providers expressed a lack of understanding around physician workflow and frustration about misinformation that gets spread about the program. During interviews, physicians and *Early On* administrators shared their willingness to build stronger relationships with one another to improve mutual learning to support families navigating the two distinct systems. More efforts both from *Early On* and the medical community are needed to enhance mutual understanding, with the ultimate goal of supporting families and children in their healthy development. Local ISDs should consider outreach efforts to engage physicians in their communities in more formal partnership. Such efforts will help to support families in the *Early On* system through more holistic and coordinated care and will serve to better educate healthcare providers on details of the *Early On* program. The state *Early On* team could also consider using the MIAAP annual conference as a platform to deepen physicians' understanding of the *Early On* program and its key features.

Recommendation 3

Facilitate cross-sector information sharing between *Early On* and the medical community

In surveys, many physicians expressed frustration about a lack of follow up from *Early On* regarding the child's evaluation and eligibility status for services after submitting a referral. *Early On* records, however, are considered educational data and thus protected by the federal Family Educational Rights and Privacy Act (FERPA) student privacy law. This requires ISDs to obtain parental consent, including a parent's signature, before sharing their information back with physicians. During interviews, *Early On* administrators shared their willingness to engage more consistently and intentionally with local physicians to better support referred families as they navigate the education and healthcare systems. Currently, the *Early On* central intake office is working internally to explore automating a secure email response to referring physicians indicating a child's eligibility status, including updating mearlychildhood.org to allow staff to track parental consent. More statewide efforts and resources are needed to improve the bi-directional information sharing between healthcare professionals and the education system.

Recommendation 4

Explore the long-term impact of streamlined physician referral process on families and *Early On* providers

Due to time constraints and study limitations, we were unable to detect the intervention's impacts on families and *Early On* providers. Should the eFax implementation be expanded on a broader scale in Michigan, it would be worthwhile to evaluate the long-term impact of the streamlined physician referral process on relieving the stress families experience when seeking services and navigating the system, and on alleviating the workload of *Early On* staff in contacting families. The findings will help inform *Early On* and the medical community to more effectively connect families and children with developmental needs to essential services during the referral and intake processes.

Recommendation 5

Consider other opportunities for system-to-system communication that have the potential to reduce the burdens placed on families

Michigan has many state-based and community resources to support families of young children (e.g., Help Me Grow, Early Head Start, and Great Start Readiness Program), of which *Early On* is one key system. Similar challenges and barriers to access are likely to exist for many of these other resources. For instance, one of the biggest barriers for families when accessing services is knowing what is available and appropriate for their situation. More work needs to be done to help families navigate our complex systems, and address challenges with receiving services. It seems that a good place to start would be in facilitating more cross-sector communication and coordination across these systems. For example, the existing Help Me Grow network works to consolidate information about programs serving children and families at both the state and county levels, enabling families to sort through and promptly connect to the resources they need. Additionally, MiLEAP, MDHHS, and other state agencies should continue to support local adoption of centralized data systems that allow for data sharing and tracking across programs and communities.

Appendix A: *Early On* EFax Referral Template

[AUTO-POPULATE MM HEADER
AND PHYSICIAN'S CONTACT INFO]

Michigan Medicine Early On Referral Form
Fax #: (517) 668-0446

Consent:

Patient has given verbal consent to share the following information with Early On Michigan for purposes of making a referral and is aware that this referral is being made.

- ☐ Yes
☐ No

Child Information:

Name: @FULLNAME@

Date of Birth: @DOB@

Demographic and Contact Information:

.demographics

Caregiver Email: _____

Is the above address where the child primarily resides?

- ☐ Yes
☐ No; if not, please provide the address where child spends majority of his/her time? _____

Relationship:

- ☐ Birth parent
☐ Foster parent
☐ Grandparent
☐ Adoptive parent
☐ Aunt/Uncle
☐ Legal Guardian
☐ Other: _____

REASON FOR REFERRAL:

Briefly describe symptoms and/or diagnosis, recommendations, or description of concerns: ***

ELIGIBILITY BASED ON AN ESTABLISHED CONDITION: This is a list of established conditions that, if diagnosed and documented, may make a child automatically eligible for Early On supports and services. Please select any/all that apply and describe or specify condition:

- ☐ Congenital Anomalies: _____
☐ Chromosomal Anomalies: _____

- ☐ Congenital or acquired infection (e.g. TORCH infection, history of meningitis or encephalitis, etc): _____
- ☐ Endocrine/Metabolic Disorder: _____
- ☐ Neurologic Disorder/Disease (e.g. CP, intracranial hemorrhage, trauma, neurocutaneous disorders, degenerative disorders, etc): _____
- ☐ Vision Impairment
- ☐ Hearing Deficiency: _____
- ☐ Exposures Affecting Fetus/Child
 - ☐ Prenatal (e.g. alcohol, drugs, or maternal PKU): _____
 - ☐ Postnatal (e.g. venous lead level ≥ 3.5 , etc): _____
- ☐ Chronic medical illness (e.g. FTT, VLBW, SGA, moderate-to-severe asthma, etc): _____
- ☐ Developmental delay: _____
 - ☐ Autism spectrum disorder
 - ☐ Rett Syndrome
 - ☐ Sensory processing disorder
- ☐ Mental Health Condition(s): _____

CURRENT SERVICES: *Indicated by*

- ☐ None
- ☐ Speech Therapy
- ☐ Occupational Therapy
- ☐ Physical Therapy
- ☐ Patient has an existing IFSP
- ☐ OTHER

PREVIOUS EVALUATIONS: *Indicated by*

- ☐ No prior evaluations

Yes		If yes, please describe
	Genetics	
	Neurology	
	Psychiatry	
	Community Mental Health	
	Audiology (hearing)	
	Physical Medicine and Rehabilitation	
	Special education/Early Intervention	
	Other	

PERTINENT DEVELOPMENTAL SCREENING: *Mark all that apply and indicate score if abnormal.*

- ☐ ASQ
 - ☐ Normal
 - ☐ Abnormal. Domain(s)/Score(s): ***
- ☐ SWYC

- ☐ Normal
- ☐ Abnormal. Domain(s)/Score(s): ***
- ☐ MCHAT
 - ☐ Normal
 - ☐ Abnormal. Score: ***
- ☐ Other: ***

PAST MEDICAL HISTORY:

@PMH@

CURRENT MEDICAL PROBLEMS FROM MICHART ACTIVE PROBLEM LIST:

@PROB@

BIRTH HISTORY:

Complications during pregnancy: ***

Alcohol use during pregnancy:

- ☐ Yes
- ☐ No

Drug, opiate or painkiller use during pregnancy:

- ☐ Yes
- ☐ No

Born at:

- ☐ Term
- ☐ Preterm: *** weeks

Patient is a twin or a triplet:

- ☐ Yes
- ☐ No

Complications during delivery: ***

Complications during neonatal period: ***

PAST SURGICAL HISTORY:

@PSH@

ALLERGIES: @ALLERGY@

CURRENT MEDICATIONS:

[. @MED2@](#)

FAMILY HISTORY: *Mark all that apply and indicate family member affected if applicable*

- ☐ ADHD
- ☐ Autism
- ☐ Mental illness
- ☐ Alcohol or drug abuse
- ☐ Learning disability
- ☐ Genetic or neurologic condition

☐ Other: ***

SOCIAL HISTORY: @NAME@ lives at home with ***.

HEALTH STATUS REPORT:

When compared to a typically developing, same-aged peer, do any of the child's above diagnoses (including all physical, mental, and behavioral health disorders) have the potential to impact their:

- A. Capacity for physical exertion and/or the ability to resist force? (e.g. does the child need more assistance with mobility and/or physical transitions than would be expected?) YES/NO
- B. Ability to fully participate in daily routines due to decreased endurance, reduced energy, or inability to sustain effort? YES/NO
- C. Ability to orient and respond, direct their attention, or meaningfully engage in an activity? YES/NO

Has the child had a Hearing Screening/Test? YES/NO
If so, date & results:

Has the child had a Vision Screening/Test? YES/NO
If so, please list date & results:

Do you have any other information about the child's condition/diagnosis(es) that you feel might be important for the Early On team to know or consider?

Appendix B: Methodology

Impact analysis methods²⁸

The primary impact analysis focused on the impact of providing the eFax referral system along with trainings about *Early On* and the referral process. We estimated program impacts by comparing average outcomes for Cohort 1 (the treatment group) and Cohort 2 (the control group) after the first year of implementation (summer 2024), using OLS regression.

For physician-level outcomes (from the physician survey), we estimated impacts using the following model:

$$Y_{ij} = \beta_0 + \beta_1 T_{ij} + X_{ij}\Gamma + \varepsilon_{ij}$$

Where Y_{ij} = the outcome of interest for physician i in site j , T_{ij} = 1 if physician ij is in the Cohort 1 and zero otherwise, and X is a vector of individual level covariates. For the analysis of the physician survey, individual covariates include gender, race/ethnicity, years practicing medicine, and the type of practice associated with their clinic. Finally, standard errors were calculated using the wild-cluster bootstrap method²⁹ to account for correlation of errors within sites, and the small number of sites (i.e. clusters) in the sample. For clinic level outcomes, we have fewer data points. The same analysis framework is used, but Y_i represents the outcome of interest at the clinic level. The only covariates are a vector of provider type indicators and a baseline measure of the outcome.

For each covariate with missingness rates greater than 10%, we imputed the sample means and included an indicator for missingness in the model. For example, when a physician's years of practice is missing, we imputed the mean for the variable among respondents who provided the information and added an indicator of missingness.

Data analysis

To streamline our data analysis and outcomes reporting, the YPL data team created binary variables for most survey data outcomes, with a few exceptions. Please see below our coding approaches outlined by figure and table for your reference.

Figure 4: Each item is a 5-point Likert scale question in the physician follow-up survey. A binary variable was created where "agree" includes strongly agree and somewhat agree, while the opposite category includes "neither agree or disagree," "somewhat disagree," and "strongly disagree." Figure 4 displays the percentage of respondents from the treatment and control groups who "agreed" with each of the items using the regression model noted above. Please note the item "Not too long to complete" has been reworded from the original survey question "Too long to complete" for consistency. It includes responses where respondents "strongly disagree" or "somewhat disagree" with the original statement.

Figure 5: Similar to Figure 4, each item is a 5-point Likert scale question in the physician follow-up survey. A binary variable was created where "agree" includes strongly agree and somewhat agree, while the opposite category includes "neither agree or disagree," "somewhat disagree," and "strongly disagree." Please note the item "Not too complicated for most families to understand" has been reworded from the original survey question "Too complicated for most families to understand" for consistency. It includes responses where respondents "strongly disagree" or "somewhat disagree" with the original statement. The figure shows the percentage of respondents from the treatment group who indicated they have used, tried, or at least knew how to use the template and "agreed" with each of the items.

Figure 6: Each item is based on a 5-point Likert scale from the physician follow-up survey. A binary variable was created where "more than half the time" includes "often" and "always", while "less than half the time" includes "sometimes," "rarely," and "never." The figure shows the share of respondents in each randomized group who reported using each of the listed methods to refer families to *Early On* more than half of the time.

Figures 7 & 8: Both figures present the findings of administrative records, which have been aggregated from coded chart review records submitted by physician champions in all participating clinics. Figure 7 illustrates the change in the average percentage of well-child visits in regard to each of the three items between 2023 and 2024 across each randomized group. Figure 8 shows the percentage of well-child visits for each of the three items in 2024 using the regression model noted above. In Figure 8, the control mean is computed by averaging clinic visits across all clinics in the control group, without weighting for the number of records in each clinic.

Figure 9: For the first two items shown in the figure regarding the self-reported difficulty of referring families to *Early On*, we created binary variables. For the question about burdensomeness, “not burdensome” includes the response “not at all burdensome,” while “burdensome” includes “a little burdensome,” “somewhat burdensome,” and “very burdensome.” For the question regarding easiness, “easy” includes “very easy” and “a little easy” while “difficult” includes “a little difficult” and “very difficult.” For the last item where response options were listed as age ranges (e.g., 0-2 minutes, 3-5 minutes), we recoded the responses by using the midpoint of each range, such as 1 minute for those who selected 0-2 minutes. The figure shows the average time physicians in both groups spent in directly submitting a referral to *Early On*.

Figure 10: All items, except the one at the bottom, are select-all-that-apply questions in the physician follow-up survey. For the cost question, we considered a response correct as long as the correct option was selected. We coded a response as correct if only the correct option was selected for the questions about the *Early On* referral reason and service coordination. The first item represents the percentage of respondents in each group who selected all ten options, indicating their awareness that anyone, regardless of their identity, professional background, and connection to the family, can refer a family to *Early On*.

Table 5: Each item uses a 4-point Likert scale, which we converted into numeric values to reflect the average easiness of the outcome of interest for each randomized group. Using the regression model noted above, we assigned higher values to responses that “agreed” with a positive statement and lower values to those that “agreed” with a negative statement.

Table 6: Each item is based on a 5-point Likert scale. For the first two items, we assigned an indicator for difficulty, coding responses as “Yes” if they selected “very difficult” and “somewhat difficult”, and “No” for any remaining options. For the last item with response options ranging from “not at all frustrated” to “extremely frustrated,” a response was coded “No” only if “not at all frustrated” was selected.

Appendix C:

Detailed Regression Analysis Results

Appendix Table C1: Physician Survey Outcomes

Main Outcomes	Coefficient (difference)	Control Group Mean	Adjusted Treatment Group mean	P-Value (bootstrapped)	Control observations	Treatment observations
Physician belief in the effectiveness of <i>Early On</i>						
Using <i>Early On</i> to address developmental delays in children aged 0-3 years is an effective approach.	0.02	90.0%	92.0%	0.80	30	52
<i>Early On</i> , if used appropriately, will improve the average developmental outcomes of most children.	0.03	90.0%	93.0%	0.53	30	52
<i>Early On</i> may be appropriate for research clients but not the "real-world" families in my community.	-0.05	6.7%	1.5%	0.49	30	52
<i>Early On</i> is appropriate even for families whose children demonstrate severe developmental delays.	0.08	90.0%	98.0%	0.17	30	52
<i>Early On</i> is too complicated for most families to understand.	-0.15	16.7%	1.5%	0.06*	30	51
<i>Early On</i> is appropriate for families of a wide variety of ethnicities, cultures, and socio-economic backgrounds.	-0.06	100.0%	94.0%	0.22	30	51
Frequency and methods of referral to <i>Early On</i>						
How frequently do you personally submit referrals to <i>Early On</i> ?	0.26	33.3%	59.2%	0.08*	30	52
How frequently request someone else at practice submit a referral?	-0.08	40.0%	32.0%	0.77	30	52
How frequently do you recommend families contact <i>Early On</i> ?	-0.09	73.3%	64.6%	0.41	30	52
Efficiency of the <i>Early On</i> referral process						
How long does it take in mins to submit referral using directly to <i>Early On</i> ?	0.94	4.89	5.83	0.10	28	50
Very / A little easy to submit a referral directly to <i>Early On</i>	0.07	70.0%	77.2%	0.51	30	52
Very/Somewhat/A little burdensome to submit a referral directly to <i>Early On</i> .	-0.06	66.7%	60.6%	0.64	30	52
Reasons for referring families to <i>Early On</i>						
The child is diagnosed with an eligible condition.	-0.07	90.0%	82.6%	0.30	30	52
I have a concern about a developmental delay.	0	100.0%	100.0%	0.99	30	52
I have a concern about social determinants of health.	-0.01	36.7%	35.2%	0.89	30	52
Family requests it.	-0.01	80.0%	78.8%	0.91	30	52
Knowledge of <i>Early On</i>						
<i>Early On</i> is free to families.	0	100.0%	100.0%	1.00	30	52
Children can be referred for any reason.	0.01	63.3%	64.7%	0.83	30	51
<i>Early On</i> services are coordinated and provided by school districts.	0.02	33.3%	35.3%	0.66	30	52
Children aged 0-3 years and their families are eligible to receive <i>Early On</i> services.	0	100.0%	100.0%	.	30	52
Anyone can submit a referral to <i>Early On</i> for a child/family.	0.24	16.7%	40.3%	0.05*	30	52

Note: Statistical significance levels are indicated as follows: *p<0.10, **p<0.05

Endnotes

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Youth Policy Lab

The University of Michigan Youth Policy Lab was launched in 2016 with a vision for reducing socio-economic disparities through improvements in education and other social policies affecting youth. By developing evidence-based, policy-relevant research in partnership with local and state agencies, practitioners, and policymakers, Dr. Robin Jacob and Dr. Brian Jacob sought to build upon their exemplary careers in social science research by taking research findings out of academic journals and putting them in the hands of decision-makers. With this aim in mind, they have been bringing the resources and expertise of one of the nation's leading public research universities to bear on some of Michigan's most pressing social challenges.

The Youth Policy Lab, a joint research center of the Gerald R. Ford School of Public Policy and the Institute for Social Research, envisions a world where partner-driven and policy-centered research fuels positive social change. Our mission is to inform public policy decisions that impact youth by analyzing data and evaluating programs to help society answer its most pressing questions.