### **Massachusetts Department of Public Health**



## Analysis of Family Survey Data Addressing Part C SPP/APR Indicator #4

## **State Report**

2022-2023

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## **SECTION 1**

### **Executive Summary**

In accordance with federal reporting requirements mandated by the U.S. Department of Education, Office of Special Education Programs (OSEP) under the Individuals with Disabilities Education Act (IDEA 2004), Part C Lead Agencies must report annually on performance indicators related to early intervention services for children ages birth to three. This report presents findings of a survey conducted by the Massachusetts Department of Public Health (MDPH) to address Indicator #4, the "percent of families participating in Part C who report that Early Intervention services have helped the family a) <u>know their rights</u>, b) <u>effectively communicate their children's needs</u>, and c) <u>help their children develop and learn</u>".

The survey administered by the MDPH included one rating scale developed and validated by the National Center for Special Education Accountability Monitoring (NCSEAM). The 23-item Impact on Family Scale (IFS) measures the extent to which Early Intervention helped families achieve positive outcomes, including the three outcomes specified in Indicator #4.

#### **Response Rate**

A total of 13,872 surveys were distributed to families in 59 Early Intervention Programs (EIPs). Overall, 3,898 completed surveys were returned, for a **return rate of 28.1%** (3,898/13,872). All returned surveys provided usable data. The number of returned surveys exceeds the minimum number required for an adequate confidence level based on established survey sample guidelines (e.g., https://www.surveysystem.com/sscalc.htm).

Data from the scale was analyzed through the Rasch measurement framework. For the IFS scale, the analysis produces a measure for each survey respondent. Individual measures can range from 0 to 1,000. For the IFS, each family's measure reflects the extent to which the family perceives that Early Intervention has helped them achieve positive family outcomes. The IFS measures of all respondents were averaged to yield a mean measure reflecting the overall performance of the state in regard to the impact of Early Intervention on family outcomes.

As noted, OSEP requires that the state's performance be reported as the percent of families who report that Early Intervention services helped them achieve specific outcomes. Deriving a percent from a continuous distribution requires application of a standard, or cut-score. The MDPH elected to apply the Part C standards recommended by a nationally representative stakeholder group convened by NCSEAM. The recommended standards, established based on item content expressed in the scale, were as follows: for Indicator 4a, <u>know their rights</u>, a measure of 539; for Indicator 4b, <u>effectively communicate their children's needs</u>, a measure of 556; and for Indicator 4c, <u>help their children develop and learn</u>, a measure of 516.

The following points represent the major findings related to Indicator #4:

#### Massachusetts' Mean Measure on the IFS

The mean measure on the IFS is 705 with a standard deviation of 185. The standard error of the mean is 3.0, and the 95% confidence interval for the mean is 699.6–711.2. This means that there is a 95% likelihood that the true value of the mean lies between these two values.

#### Massachusetts' Percent on Indicators

**Indicator 4a:** The percent of families who reported that Early Intervention services helped them *know their rights* is **83.0%**. The 95% confidence interval for the true population percentage is 81.8%–84.1%. This means that there is a 95% likelihood that the true value of the state percentage for Indicator 4a is between these two values.

**Indicator 4b:** The percent of families who reported that Early Intervention services helped them *effectively communicate their children's needs* is **79.2%**. The 95% confidence interval for the true population percentage is 77.9%–80.4%.

**Indicator 4c:** The percent of families who reported that Early Intervention services helped them *help their children develop and learn* is **90.7%**. The 95% confidence interval for the true population percentage is 89.7%–91.6%.

See Appendix A for Massachusetts' historical response rates and Indicator #4 percentages; Appendix F contains the FFY 2022 SPP/APR data template.



## **SECTION 2**

### Background

#### **Federal Requirements**

State Lead Agencies under Part C of the IDEA are required to report data annually addressing key performance indicators. Each state is required to submit an Annual Performance Report (APR) to OSEP addressing established targets set in the State Performance Plan (SPP). Indicator #4, the "percent of families participating in Part C who report that Early Intervention services have helped the family a) <u>know their rights</u>, b) <u>effectively communicate their children's needs</u>, and c) <u>help their children develop and learn</u>", is one of the indicators in the federal accountability system. Performance on the indicator is reported annually.

#### **Survey Instrument**

The IFS was developed by NCSEAM to provide states with valid and reliable instruments to measure (a) positive outcomes that families experience as a result of their participation in Early Intervention and (b) families' perceptions of the quality of Early Intervention services. Items were developed with substantial input from families and other key stakeholders across the country.

As part of its National Item Validation Study, NCSEAM collected data from a nationally representative sample of over 1,700 families participating in early intervention. Results of NCSEAM's data analyses supported the high reliability and validity of both scales. It was determined that scale reliabilities of .90 or above could be achieved with 22 items for the IFS. NCSEAM provided states with an appropriate sample item set for each scale, as well as instructions for customizing the scale by drawing on the larger bank of piloted items that NCSEAM made available on its website. The MDPH elected to use 23 items for the IFS.

#### **Survey Administration**

During the initial stages of the COVID-19 pandemic, programs ceased in-person meetings, instead offering Telehealth services and meetings to children and families via online applications. In the absence of face-to-face meetings, the typical method of survey distribution (i.e., paper surveys provided to families) was replaced with an online survey. However, over the last two years, many programs were able to resume in-person meetings. Some programs continued providing a hybrid model (including both in-person and online meetings) to accommodate families that were still unable to attend in-person meetings. The primary survey delivery method for the past year was the online version, which was made available in seven languages (i.e., English, Spanish, Portuguese, Haitian Creole, Vietnamese, Chinese, and Arabic). Programs distributed unique survey logins to families in-person, via online meetings, and by other electronic means. If requested, families still had the option of completing the paper survey, which was available in five primary languages (i.e., all of the previously listed languages except for Chinese and Arabic). The majority of respondents completed online versions of the survey. Only a small number of paper surveys were distributed to families. Online logins and paper surveys were distributed to families in October 2022 and April 2023; the survey return deadline was May 31, 2023.

A total of 13,872 surveys, in seven languages as noted above, were distributed to families across 59 EIPs; 3,898 were returned (including 3,692 Web submissions), for a response rate of 28.1%. See Appendix B for a sample 2022–23 family survey.

#### Standards

The MDPH elected to apply the standards recommended by NCSEAM as a way of deriving the percents to be reported for Indicators 4a, 4b, and 4c.

To establish a recommended standard, NCSEAM convened a group of nationally representative stakeholders, including parents of children with disabilities, state directors of special education, state early intervention coordinators, district and program personnel, advocates, attorneys, and community representatives. Participants were invited to examine a set of items from the IFS, laid out in their calibration order (see Table 11). The items toward the bottom of the scale, having lower calibrations, are items that families tend to agree with most.



The items toward the top of the scale, having higher calibrations, are items that families tend to agree with least. Because of the robust structure of the scale, a respondent who agrees with a given statement will have a very high likelihood of agreeing, or agreeing even more strongly, with all the items below it on the scale.

For Indicator 4a, the stakeholder group agreed that families needed to endorse all items up to and including the item, "Over the past year, Early Intervention services have helped me and/or my family, know about my child's and family's rights concerning Early Intervention services". For Indicator 4b, the stakeholder group agreed that families needed to endorse all items up to and including the item, "Over the past year, Early Intervention services have helped me and/or my family, communicate more effectively with the people who work with my child and family". For Indicator 4c, the stakeholder group agreed that families needed to endorse all items up to and including the item, "Over the past year, Early Intervention services have helped me and/or my family, communicate more effectively with the people who work with my child and family". For Indicator 4c, the stakeholder group agreed that families needed to endorse all items up to and including the item, "Over the past year, Early Intervention services have helped me and/or my family, understand my child's special needs". These standards were operationalized by designating as the numerical standard the measure that, in each case, corresponds to the threshold item's calibration. For Indicators 4a, 4b, and 4c, the measures representing the standards are 539, 556, and 516, respectively. This ensures that in each case, families with a measure at or above the standard have a .95 likelihood of agreeing with the threshold item.

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## **SECTION 3**

### **Characteristics of the Sample Data**

### 3.1. Distribution of Race/Ethnicity in the Sample

Table 1 displays the distribution of race/ethnicity in the survey sample.

Table 1. Race/Ethnicity Distribution				
Race/Ethnicity	N	Percentage <sup>*</sup>		
Hispanic/Latino	789	20%		
American Indian or Alaskan Native	9	<1%		
Asian	222	6%		
Black or African American	244	6%		
Native Hawaiian or Other Pacific Islander	5	<1%		
White	2,052	53%		
Two or more races	537	14%		
Missing	40	1%		

### 3.2. Distribution of Survey Language in the Sample

Table 2 displays the distribution of the sample by survey language.

Table 2. Survey Language Distribution				
Version	N	Percentage <sup>*</sup>		
Arabic	0	0%		
Chinese	21	<1%		
English	3,593	92%		
Haitian Creole	5	<1%		
Portuguese	46	1%		
Spanish	233	6%		
Vietnamese	0	0%		

<sup>\*</sup> Percentages have been rounded and may not sum to exactly 100%.

### 3.3. Distribution of Region in the Sample

Table 3 displays the distribution of the survey sample by region.

Table 3. Region Distribution		
Version	N	Percentage <sup>*</sup>
Boston	237	6%
Central	799	20%
Metro	399	10%
Northeast	954	24%
Southeast	729	19%
West	578	15%
Unknown	202	5%

<sup>\*</sup> Percentages have been rounded and may not sum to exactly 100%.



## **SECTION 4**

### **Results Pertaining to Indicator #4**

### 4.1. Distribution of the IFS Measures

The properties of the distribution of IFS measures for the 3,898 families who responded to the IFS items are shown in Table 4. The sample mean is 705. The standard deviation of measures is 185, indicating that the average distance of measures from the mean measure is 185 units. The standard error of the sample mean, that is, the expected error of the sample mean in estimating the true population mean for Massachusetts, is 3.0. The 95% confidence interval for the true population mean for Massachusetts extends from 699.6 to 711.2, indicating that we are 95% confident that the true population mean for families of children served by the MDPH's Early Intervention Program lies somewhere in this range.

Table 4. Properties of IFS Measures					
Sample Mean	Standard Deviation	Standard Error of the Sample Mean	95% Confidence Interval for the Population Mean		
705	185	3.0	699.6–711.2		

Figure 1 displays the distribution of the 3,898 IFS measures. Each bar indicates the number of families with measures at the value indicated on the x-axis. The vertical black lines correspond to the three standards applied to Indicator 4a (539), 4b (556), and 4c (516).



Figure 1. Distribution of IFS Measures



The distribution of measures approximates a normal distribution with one exception. An extremely high number of respondents with measures at the positive end of the scale are represented by the high bar at the extreme right of the graph. These individuals responded in the "very strongly agree" category to each and every item. When individuals fail to make any distinction among items that are known to have different levels of agreeability, they are said to display a "response set," that is, a uniform way of responding that makes it hard to judge whether the responses are authentic or are, in effect, a way of complying with the task that does not really provide useful information. This phenomenon should be taken into consideration when interpreting the findings.



### 4.2. Interpretation of the Mean IFS Measure

The state's performance on the IFS conveys information that goes beyond the three outcomes that are addressed in OSEP's Indicator #4. A mean measure of 705 on the IFS indicates that the MDPH is helping families to achieve many positive outcomes. These positive outcomes are evident from the response percentages displayed in Table 5. The table also displays each item's calibration value, to be discussed in Section 6.

Table 5. Percent of Families Expressing Agreement with IFS Items				
Item #	Item Calibration	<b>Item</b> <u>Over the past year, Early Intervention services</u> <u>have helped me and/or my family:</u>	% Agree in any category	% Strongly/ Very strongly agree
20	498	<ul> <li>do things with and for my child that are good for my child's development.</li> </ul>	97%	77%
22	498	<ul> <li>feel that my efforts are helping my child.</li> </ul>	96%	76%
23	508	<ul> <li>be more hopeful about my child's future.</li> </ul>	96%	75%
3	559	<ul> <li>figure out solutions to problems as they come up.</li> </ul>	96%	73%
15	559	<ul> <li>feel that my child will be accepted and welcomed in the community.</li> </ul>	96%	72%
21	516	<ul> <li>– understand my child's special needs.</li> <li>[Indicator 4c]</li> </ul>	96%	72%
13	553	<ul> <li>understand how the Early Intervention system works.</li> </ul>	96%	71%
16	562	<ul> <li>feel that my family will be accepted and welcomed in the community.</li> </ul>	96%	71%
19	539	<ul> <li>know about my child's and family's rights concerning Early Intervention services.</li> <li>[Indicator 4a]</li> </ul>	96%	69%
6	539	<ul> <li>get the services that my child and family need.</li> </ul>	95%	74%
7	559	- feel more confident in my skills as a parent.	95%	73%
14	534	<ul> <li>be able to evaluate how much progress my child is making.</li> </ul>	95%	73%

Table 5. Percent of Families Expressing Agreement with IFS Items (continued)				
ltem #	Item Calibration	<b>Item</b> <u>Over the past year, Early Intervention services</u> <u>have helped me and/or my family:</u>	% Agree in any category	% Strongly/ Very strongly agree
12	565	<ul> <li>feel that I can get the services and supports that my child and family need.</li> </ul>	95%	71%
4	609	<ul> <li>know where to go for support to meet my child's needs.</li> </ul>	95%	70%
17	556	<ul> <li>communicate more effectively with people who work with my child and family. [Indicator 4b]</li> </ul>	95%	70%
11	540	<ul> <li>do activities that are good for my child even in times of stress.</li> </ul>	95%	69%
18	546	<ul> <li>understand the roles of the people who work with my child and family.</li> </ul>	95%	68%
10	584	<ul> <li>be more effective in managing my child's behavior.</li> </ul>	94%	67%
5	640	<ul> <li>know where to go for support to meet my family's needs.</li> </ul>	93%	65%
9	577	<ul> <li>make changes in family routines that will benefit my child with special needs.</li> </ul>	93%	64%
2	656	<ul> <li>know about services in the community.</li> </ul>	91%	58%
8	608	<ul> <li>help other children in my family (if there are other children) adjust to their brother's or sister's needs.</li> </ul>	91%	58%
1	678	<ul> <li>participate in typical activities for children and families in my community.</li> </ul>	90%	56%

As seen in the table, 96%–97% of families agreed, with 75%–77% expressing strong or very strong agreement, that Early Intervention services helped them do things with and for their child that are good for their child's development, feel that their efforts are helping their child, and be more hopeful about their child's future.



Approximately 95% of families agreed, with 73%–74% expressing strong or very strong agreement, that Early Intervention services helped them get the services that their child and family need, feel more confident in their skills as a parent, and be able to evaluate how much progress their child is making.

Less agreement was found in other areas. Approximately 90%–91% of families agreed, with 56%–58% expressing strong or very strong agreement, that Early Intervention services helped them know about services in the community, help other children in their family (if there are other children) adjust to their brother's or sister's needs, and participate in typical activities for children and families in their community.

For reference, the frequency distribution of responses to all the items in the IFS is provided in Appendix C.

# 4.3. Performance of the MDPH: Percent of Families Meeting Each of the Standards for Indicator #4

Table 6 presents the percentage of families having an IFS measure that met or exceeded each of the three standards for Indicator #4, as well as a 95% confidence interval for the true population percentage. Note that the confidence interval is asymmetric about the sample percentage, in that there is a greater distance in the confidence interval below the sample percentage than above the sample percentage. The asymmetric confidence interval represents a more accurate confidence interval for percentages than normal-distribution based symmetric confidence intervals (due to the fact that percentages are bounded between 0 and 100). The asymmetric confidence interval represent interval reported here is the score interval proposed by Wilson (1927), and described in greater detail in Agresti (1996) and Penfield (2003).

# Table 6. Percent of Respondents Meeting or Exceeding Each of the Standards for Indicator #4

	Indicator 4a	Indicator 4b	Indicator 4c
	Percent of families who report that Early Intervention services helped them know their rights (Item 19)	Percent of families who report that Early Intervention services helped them effectively communicate their children's needs (Item 17)	Percent of families who report that Early Intervention services helped them help their children develop and learn (Item 21)
State Target	90.0%	85.0%	93.5%
Percentage	83.0% (3,234 of 3,898	79.2% (3,088 of 3,898	90.7% (3,534 of 3,898
	met standard)	met standard)	met standard)
95% Confidence Interval	81.8%–84.1%	77.9%–80.4%	89.7%–91.6%



### 4.4. Percent of Families Meeting Each of the Standards by Race/Ethnicity

Table 7 presents the percentage of families with measures that met or exceeded each of the three standards, by racial/ethnic category.

Table 7. Percent of Respondents Meeting or Exceeding Each of the           Standards for Indicator #4 by Race/Ethnicity				
	Indicator 4a	Indicator 4b	Indicator 4c	
Race/Ethnicity	Percent of families who report that Early Intervention services helped them know their rights (Item 19)	Percent of families who report that Early Intervention services helped them effectively communicate their children's needs (Item 17)	Percent of families who report that Early Intervention services helped them help their children develop and learn (Item 21)	
Hispanic or Latino	86.4%	83.9%	92.9%	
	(682 met standard)	(662 met standard)	(733 met standard)	
( <i>N</i> = 789)	95% CI:	95% CI:	95% CI:	
	83.9%–88.7%	81.1%–86.3%	90.9%–94.5%	
American Indian or	88.9%	77.8%	100%	
	(8 met standard)	(7 met standard)	(9 met standard)	
(N = 9)	95% CI:	95% CI:	95% CI:	
	56.5%–98.0%	45.3%–93.7%		
Asian	80.6%         75.7%           (179 met standard)         (168 met standard)		91.0% (202 met standard)	
(N = 222)	95% CI:	95% CI:	95% CI:	
	74.9%–85.3%	69.6%–80.9%	86.5%–94.1%	
Black or African	84.4%	79.5%	92.2%	
	(206 met standard)	(194 met standard)	(225 met standard)	
(N = 244)	95% CI:	95% CI:	95% CI:	
	79.4%–88.4%	74.0%–84.1%	88.2%–95.0%	
Native Hawaiian or				
	( met standard)	( met standard)	( met standard)	
$(N = 5)^*$	95% CI:	95% CI:	95% CI:	

<sup>\*</sup> Data in the three sub-indicator columns have been suppressed as the number of respondents is less than six.

Table 7. Percent of Respondents Meeting or Exceeding Each of the         Standards for Indicator #4 by Race/Ethnicity (continued)				
Race/Ethnicity	Indicator 4a Percent of families who report that Early Intervention services helped them know their rights (Item 19)	Indicator 4b Percent of families who report that Early Intervention services helped them effectively communicate their children's needs (Item 17)	Indicator 4c Percent of families who report that Early Intervention services helped them help their children develop and learn (Item 21)	
White ( <i>N</i> = 2,052)	83.1% (1,706 met standard) 95% CI: 81.5% 84.7%	79.1% (1,623 met standard) 95% CI: 77.3% 80.8%	90.9% (1,865 met standard) 95% CI:	
Two or more races ( <i>N</i> = 537)	79.0% (424 met standard) 95% CI: 75.3%–82.2%	76.0% (408 met standard) 95% CI: 72.2%–79.4%	87.5% (470 met standard) 95% CI: 84.5%–90.1%	
Missing ( <i>N</i> = 40)	62.5% (25 met standard) 95% CI: 47.0%–75.8%	55.0% (22 met standard) 95% CI: 39.8%–69.3%	65.0% (26 met standard) 95% CI: 49.5%–77.9%	



### 4.5. Percent of Families Meeting Each of the Standards by Survey Language

Table 8 presents the percentage of families with measures that met or exceeded each of the three standards, by survey language.

Table 8. Percent of Respondents Meeting or Exceeding Each of the         Standards for Indicator #4 by Survey Language				
	Indicator 4a	Indicator 4b	Indicator 4c	
Survey Language	Percent of families who report that Early Intervention services helped them know their rights (Item 19)	Percent of families who report that Early Intervention services helped them effectively communicate their children's needs (Item 17)	Percent of families who report that Early Intervention services helped them help their children develop and learn (Item 21)	
Chinese	71.4%	71.4%	95.2%	
	(15 met standard)	(15 met standard)	(20 met standard)	
( <i>N</i> = 21)	95% CI:	95% CI:	95% CI:	
	50.0%–86.2%	50.0%–86.2%	77.3%–99.2%	
English	82.7%	78.7%	90.5%	
	(2,971 met standard)	(2,828 met standard)	(3,252 met standard)	
(N = 3,593)	95% CI:	95% CI:	95% CI:	
	81.4%–83.9%	77.3%–80.0%	89.5%–91.4%	
Haitian Creole				
	( met standard)	( met standard)	( met standard)	
( <i>N</i> = 5) *	95% CI:	95% CI:	95% CI:	
Portuguese	76.1%	73.9%	95.7%	
	(35 met standard)	(34 met standard)	(44 met standard)	
( <i>N</i> = 46)	95% CI:	95% CI:	95% CI:	
	62.1%–86.1%	59.7%–84.4%	85.5%–98.8%	
Spanish	89.3%	88.4%	91.4%	
	(208 met standard)	(206 met standard)	(213 met standard)	
(N = 233)	95% CI:	95% CI:	95% CI:	
	84.6%–92.6%	83.7%–91.9%	87.1%–94.4%	

<sup>\*</sup> Data in the three sub-indicator columns have been suppressed as the number of respondents is less than six.

### 4.6. Percent of Families Meeting Each of the Standards by Region

Table 9 presents the percentage of families with measures that met or exceeded each of the three standards, by region.

Table 9. Percent of Respondents Meeting or Exceeding Each of theStandards for Indicator #4 by Region					
Region	N	Indicator 4a	Indicator 4b	Indicator 4c	
Boston	237	81.4%	78.1%	89.9%	
Central	799	81.2%	77.3%	90.6%	
Metro	399	81.0%	76.4%	89.2%	
Northeast	954	86.0%	82.7%	91.5%	
Southeast	729	83.5%	80.8%	91.1%	
West	578	84.6%	79.4%	92.0%	
Unknown	202	74.8%	70.8%	85.1%	



### 4.7. Percent of Families Meeting Each of the Standards by Program

Table 10 presents the percentage of families with measures that met or exceeded each of the three standards, by program.

Table 10. Percent of Respondents Meeting or Exceeding Each of theStandards for Indicator #4 by Program						
Program	N	Indicator 4a	Indicator 4b	Indicator 4c		
Arc of the South Shore/First Early Intervention Program	74	81%	78%	89%		
Aspire Early Intervention Program	254	86%	82%	92%		
Associates for Human Services Taunton Early Intervention Program	154	82%	81%	92%		
BAMSI Early Intervention	68	71%	62%	88%		
Bay Cove Early Intervention	77	84%	82%	95%		
BEAM Early Intervention	19	74%	74%	89%		
Behavioral Health Network Early Intervention	59	93%	90%	95%		
Boston Children's Hospital Early Intervention Program	8	63%	63%	63%		
Cambridge/Somerville Early Intervention at Riverside	116	84%	79%	88%		
Center for Human Development Early Intervention Program	44	84%	80%	93%		
Community Healthlink Lipton Early Intervention Program	100	78%	73%	86%		
Criterion Boston Early Intervention Program	23	74%	70%	78%		
Criterion Heritage Early Intervention Program	159	84%	78%	92%		
Criterion Medford Early Intervention Program		77%	74%	83%		
Criterion Middlesex Early Intervention Program	84	82%	76%	92%		
Criterion Riverway Early Intervention Program	15	60%	53%	73%		
Criterion Stoneham Early Intervention Program	47	87%	81%	89%		
Criterion Valley Early Intervention Program	162	81%	77%	93%		
Criterion Wachusett Early Intervention Program	82	83%	82%	95%		
Criterion Worcester Early Intervention Program	49	82%	78%	94%		
Dimock Early Intervention Program	30	77%	70%	93%		
Eliot Malden Early Intervention Program	25	84%	76%	84%		
Enable Early Intervention	25	84%	80%	92%		
Harbor Area Early Intervention/North Suffolk Mental Health	78	82%	79%	87%		
Kennedy Donovan Center - Attleboro Early Intervention Program		89%	86%	92%		
Kennedy Donovan Center - Cape Cod & Islands Early Intervention Program	72	92%	92%	94%		
Kennedy Donovan Center - Greater Plymouth Early Intervention Program	81	79%	75%	86%		
Kennedy Donovan Center - New Bedford Early Intervention Program	64	83%	80%	88%		

Table 10. Percent of Respondents Meeting or Exceeding Each of the         Standards for Indicator #4, by Program (continued)							
Program	N	Indicator 4a	Indicator 4b	Indicator 4c			
Kennedy Donovan Center - South Central Early Intervention Program	137	80%	77%	88%			
May Center for Early Intervention	23	83%	74%	96%			
Meeting Street Early Intervention	56	93%	93%	96%			
Mentor South Bay Community Services - Early Childhood, Brockton	24	75%	71%	92%			
Mentor South Bay Community Services - Early Childhood, Fall River/Swansea	22	95%	95%	95%			
Mentor South Bay Community Services - Early Childhood, Framingham	15	73%	67%	80%			
Mentor South Bay Community Services - Early Childhood, Lawrence	40	95%	95%	98%			
Mentor South Bay Community Services - Early Childhood, Lowell	11	82%	82%	82%			
Mentor South Bay Community Services - Early Childhood, Worcester		71%	71%	86%			
Minute Man Arc Early Intervention Program	74	86%	82%	91%			
Northeast Arc Early Intervention - Cape Ann	62	84%	77%	92%			
Northeast Arc Early Intervention - Northshore	13	77%	69%	77%			
Northern Berkshire Early Intervention Program	44	77%	73%	86%			
Pediatric Development Center Early Intervention Program	36	86%	83%	92%			
Pediatric Development Center South Early Intervention Program	13	69%	62%	77%			
People Incorporated Early Intervention	68	78%	74%	94%			
Pernet Early Intervention Program	20	95%	95%	100%			
Riverside Early Intervention - Needham	102	81%	75%	85%			
Step One Early Intervention Program	80	76%	75%	85%			
The Professional Center for Child Development	170	84%	83%	91%			
The Reach Program of ServiceNet	50	90%	88%	100%			
Thom Anne Sullivan Center	89	78%	71%	85%			
Thom Boston Metro Early Intervention Program	37	84%	81%	92%			
Thom Charles River Early Intervention Program	63	83%	83%	97%			
Thom Marlboro Area Early Intervention Program	37	65%	59%	78%			
Thom Mystic Valley Early Intervention Program	134	91%	89%	96%			
Thom Neponset Valley Early Intervention Program	34	65%	56%	85%			
Thom Pentucket Area Early Intervention Program	111	91%	86%	95%			
Thom Springfield Infant Toddler Services	105	80%	74%	89%			
Thom Westfield Infant Toddler Services	59	88%	85%	92%			
Thom Worcester Area Early Intervention Program	68	87%	82%	93%			



## **SECTION 5**

#### **Measurement Framework**

The measurement approach used by NCSEAM, known as the Rasch framework, applies a series of parametric models to estimate the properties of each survey item and each respondent in a way that places individuals and items on a common metric (Bond & Fox, 2001; Fischer & Molenaar, 1995; Rasch, 1960; Wright & Masters, 1982). The Rasch approach offers many advantages over typical approaches to survey development. First, it is possible to test whether the items administered belong together, that is, whether they are all related to the construct that the scale is supposed to measure. Ongoing confirmation of the fit of the items helps to maintain the quality of the measurement system. It is also possible to test whether the response categories are operating in the expected fashion. Often, the way in which respondents actually use the response categories does not correspond to the equidistant way in which they are laid out on paper. Extreme categories (e.g., "very strongly disagree") are sometimes used so infrequently that it makes sense to combine them with an adjacent, less extreme, category ("very strongly disagree").

Second, it is possible to determine where each item is located on the measurement ruler. The item's location is referred to as the item's "calibration." Typically, items in a test or survey are not all equal with respect to the amount of the attribute or quality that the items are measuring. It has been empirically demonstrated, in fact, that items in the IFS are not all of equal agreeability. Items range from those that are most likely to draw "agree" responses to those that are least likely to draw "agree" responses. Highly agreeable items have low calibrations; less agreeable items have higher calibrations. Table 11 displays the IFS items in calibration order.

Table 11. IFS Items in Calibration Order						
ltem #	Item Calibration	Item Over the past year, Early Intervention services have helped me and/or my family:				
1	678	<ul> <li>participate in typical activities for children and families in my community.</li> </ul>				
2	656	<ul> <li>know about services in the community.</li> </ul>				
5	640	<ul> <li>know where to go for support to meet my family's needs.</li> </ul>				
4	609	<ul> <li>know where to go for support to meet my child's needs.</li> </ul>				
8	608	<ul> <li>help other children in my family (if there are other children) adjust to their brother's or sister's needs.</li> </ul>				
10	584	<ul> <li>be more effective in managing my child's behavior.</li> </ul>				
9	577	<ul> <li>make changes in family routines that will benefit my child with special needs.</li> </ul>				
12	565	<ul> <li>feel that I can get the services and supports that my child and family need.</li> </ul>				
16	562	<ul> <li>feel that my family will be accepted and welcomed in the community.</li> </ul>				
7	559	<ul> <li>feel more confident in my skills as a parent.</li> </ul>				
3	559	<ul> <li>figure out solutions to problems as they come up.</li> </ul>				
15	559	<ul> <li>feel that my child will be accepted and welcomed in the community.</li> </ul>				
17	556	<ul> <li>communicate more effectively with people who work with my child and family.</li> </ul>				
13	553	<ul> <li>understand how the Early Intervention system works.</li> </ul>				
18	546	<ul> <li>understand the roles of the people who work with my child and family.</li> </ul>				
11	540	<ul> <li>do activities that are good for my child even in times of stress.</li> </ul>				
6	539	<ul> <li>get the services that my child and family need.</li> </ul>				
19	539	<ul> <li>know about my child's and family's rights concerning Early Intervention services.</li> </ul>				
14	534	<ul> <li>be able to evaluate how much progress my child is making.</li> </ul>				
21	516	<ul> <li>understand my child's special needs.</li> </ul>				
23	508	<ul> <li>be more hopeful about my child's future.</li> </ul>				
22	498	<ul> <li>feel that my efforts are helping my child.</li> </ul>				
20	498	<ul> <li>do things with and for my child that are good for my child's development.</li> </ul>				



The fact that items have highly stable calibrations (agreeability levels) regardless of the population that is asked to respond to the items is a very important attribute of well-constructed measurement scales. This stability means that items with similar calibrations are, for all intents and purposes, interchangeable. As an example, this is why the SAT is the "same" test each time it is administered, even though it contains different items each time. The score achieved on any particular version of the SAT is comparable to the score achieved on any other version. Thus, a state can change some of the items on the survey from year to year, and still have validly comparable IFS measures across successive years.

Third, a Rasch analysis condenses information from a person's responses to all the items in a scale into a single number. That number is the person's measure on the scale. Since the Rasch framework puts measures on the same metric as item calibrations, a person's measure on a scale can be meaningfully interpreted in terms of the items on the scale. A person with a higher measure is expressing more agreement with items, overall, than a person with a lower measure. When IFS measures from a representative sample of parents are aggregated, the average value represents a reliable and highly interpretable measure of the extent to which Early Intervention services have helped the family know their rights, effectively communicate their children's needs, and help their children develop and learn.

Fourth, a Rasch analysis yields an estimate of the reliability of both the calibration values (related to the items) and the measures (related to people's responses). Scientific approaches to measurement require that the amount of "error," or imprecision, in the system be estimated, so that interpretations based on the measures can take this into consideration.

For a more detailed explanation of these concepts, please refer to Bond and Fox (2001) and Wright and Masters (1982).

### **SECTION 6**

# Results Pertaining to the Psychometric Properties of the Impact On Families Scale (IFS)

#### 6.1. Psychometric Properties of the IFS Measures

In assessing the quality of the person-level measures derived from the IFS, it is germane to consider the issues of reliability and validity. The reliability of the obtained IFS measures pertains to the extent to which a particular individual is expected to attain the same IFS measure if the IFS were to be administered to the individual multiple times. That is, reliability concerns the stability of the IFS measure<sup>1</sup> (Crocker & Algina, 1986; Lord, 1980; Traub, 1994); low reliability coincides with a low level of stability, and high reliability coincides with a high level of stability. Reliability coincides with a high level of stability. Reliability of the IFS measures concerns the extent to which they are actually representative of the intended trait (i.e., level of impact on family).<sup>2</sup> The validity of the IFS measures can be assessed using numerous approaches, several of which are described below.

Statistics used to express measurement reliability range from 0 (indicating lack of any stability) to 1 (indicating perfect stability). The reliability of the IFS measures for the Massachusetts sample was measured in the Rasch framework to be .91. An alternative approach to estimating the reliability of the IFS measures is to employ Cronbach's alpha, which makes no assumptions about the fit of the responses to any particular model (Cronbach's alpha is based on the simpler true score model, and is commonly used in the behavioral sciences as a model-free index of reliability). The value of Cronbach's alpha was .99, which is consistent with the value of .91 obtained from the Rasch analysis. These results suggest that the measures obtained from the IFS serve as stable measures of the underlying trait.

<sup>&</sup>lt;sup>1</sup> A definition of reliability that is more theoretically accurate describes reliability as the extent to which a given respondent's measure is determined by random error versus his or her true level of the trait being measured; low reliability coincides with a high level of measurement error, and high reliability coincides with a high low level of measurement error (Crocker & Algina, 1986; Lord, 1980; Traub, 1994).

<sup>&</sup>lt;sup>2</sup> This definition of validity is a simplification of the definition now endorsed by the technical measurement community. The contemporary definition of validity describes it as the extent to which evidence and theory support the interpretations of the scale measures entailed by the proposed use of the scale (AERA/APA/NCME, 1999; Osterlind, 2006). That is, the validity of the IFS measures is based on how much evidence we have that the measures support the intended purposes of the use of the measures (i.e., are the measures behaving as they are supposed to behave, and leading to the correct decisions about individuals).



Support for the validity of the measures obtained by the IFS comes from several lines of evidence. First, items for the IFS were developed in consultation with multiple groups of individuals, including parents of children with disabilities, state directors of special education, state early intervention coordinators, district and program personnel, advocates, attorneys, and community representatives, with direct and extensive experience related to early intervention programs' facilitation of positive family outcomes. Subsequent review of the items by expert panels, researchers, and NCSEAM's Parent/Family Involvement Workgroup confirmed that the item content maps onto the intended content domain of the IFS. Second, dimensionality analysis (i.e., principal components analysis and factor analysis) indicates that the items of the IFS are all measuring one primary construct, which is likely the intended one (i.e., positive family outcomes achieved as a result of Early Intervention services). A third line of evidence is related to a characteristic of items known as discrimination, discussed in Section 6.2. The high discrimination indices of the IFS items (see Table 12) indicate that the items are providing useful information concerning the construct that is intended to be measured. All of these types of evidence support the claim that the measures obtained using the IFS are valid.

### 6.2. Psychometric Properties of the IFS Items

Table 12 gives the calibration of each item along with indices of the item's fit to the Rasch model. The column labeled "Item Calibration" provides the value of the location parameter of the item. The higher the value of the item calibration, the greater the overall positive impact of Early Intervention services on family outcomes. The "Infit" and "Outfit" columns provide two measures of how well the Rasch model fits the responses provided to each item. In general, values of 1.0 indicate very good fit. Values approaching 2, or less than 0.5, suggest poorer fit (Bond & Fox, 2001).

The rightmost column of the table presents an index of discrimination for each item, calculated as the corrected item-total correlation coefficient. The values in this column are all quite high ( $\geq$  0.79), indicating that each item is discriminating well between respondents who had more positive versus more negative perceptions of early intervention programs' facilitation of positive family outcomes.

Table 12. Calibra	ation, Fit, and Disc	crimination of the	IFS Items	
ltem #	Item Calibration	Infit	Outfit	Discrimination
Q1	678	1.94	2.22	0.79
Q2	656	1.56	1.72	0.81
Q3	559	0.85	0.88	0.84
Q4	609	0.99	0.94	0.85
Q5	640	1.15	1.11	0.86
Q6	539	0.84	0.89	0.83
Q7	559	0.81	0.87	0.84
Q8	608	1.21	1.42	0.84
Q9	577	0.95	1.03	0.86
Q10	584	0.77	0.81	0.87
Q11	540	0.89	0.99	0.86
Q12	565	0.63	0.60	0.86
Q13	553	0.74	0.81	0.85
Q14	534	0.76	0.88	0.85
Q15	559	0.69	0.67	0.85
Q16	562	0.67	0.67	0.86
Q17	556	0.62	0.61	0.87
Q18	546	0.74	0.80	0.87
Q19	539	0.86	0.99	0.85
Q20	498	0.79	0.86	0.84
Q21	516	0.96	1.17	0.85
Q22	498	0.90	0.94	0.84
Q23	508	0.86	0.92	0.84

While items Q1 and Q2 ("Over the past year, Early Intervention services have helped me and/or my family participate in typical activities for children and families in my community." and "Over the past year, Early Intervention services have helped me and/or my family know about services in the community.") display less than ideal levels of fit, they nevertheless have relatively strong discrimination indices, which provide evidence that they are useful items. Therefore, these items appear to be measuring the intended construct relatively well, but are not a very good fit for the Rasch framework, which employs specific assumptions concerning the properties of the items. The poor fit of items #1 and #2 make them possible candidates for revision and/or replacement in future administrations of the SEPPS.



## **SECTION 7**

### **Calibration Methodology for the IFS**

The Rasch calibrations of the IFS were conducted using the Winsteps software program. All items were fit using the Rating Scale Model (Wright & Masters, 1982). The metric of the calibration was set by equating the items in relation to the calibrated values obtained by Dr. William Fisher, consultant to NCSEAM, for a large dataset of five states. The mean and logit scale of the current calibration were also set equal to those generated in the larger analysis on five states conducted by Dr. Fisher. These equating procedures were conducted so that the scale measures obtained in the current calibration have equivalent meanings to those of other states' data.

Based on the analysis of the current data and on the results of Dr. Fisher's combined multi-state analysis, it was decided to combine the response categories "very strongly disagree" and "strongly disagree" into a single category. The rationale for combining the two categories was based on two factors: (a) low response rates (i.e., < 5%) in these two categories making their corresponding threshold parameter estimates relatively unstable, and (b) the two category threshold estimates were not far enough apart to indicate that the two categories served to meaningfully distinguish between individuals having substantially different levels of the trait being measured. As a result, the final analysis was based on a five-category response structure for each item. The control file used in the current analysis is given in Appendix D. Selected output related to the Rasch analysis of the IFS is given in Appendix E.

### REFERENCES

Agresti, A. (1996). An introduction to categorical data analysis. New York: Wiley.

- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: APA.
- Bond, T. G., Fox, C. M. (2001). Applying the Rasch model: Fundamental measurement in the human sciences. Mahwah, NJ: Erlbaum.
- Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. Fort Worth: Harcourt Brace Jovanovich.
- Fischer, G. H., & Molenaar, I. W. (Eds.). (1995). *Rasch models: Foundations, recent developments, and applications*. New York: Springer-Verlag.
- Lord, F. M. (1980). *Applications of item response theory to practical testing problems*. Hillsdale, NJ: Lawrence Erlbaum.
- Osterlind, S. J. (2006). *Modern Measurement: Theory, principles, and applications of mental appraisal*. Upper Saddle River, NJ: Pearson.
- Penfield, R. D. (2003). A method of constructing asymmetric confidence intervals for the mean of a rating scale item. *Psychological Methods*, *8*, 149-163.
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Copenhagen, Denmark: Danmarks Paedogogiske Institut.
- Traub, R. (1994). Reliability for the social sciences. Thousand Oaks: Sage.
- Wilson, E. B. (1927). Probable inference, the law of succession, and statistical inference. *Journal of the American Statistical Association*, 22, 209-212.

Wright, B. D., & Masters, G. N. (1982). Rating scale analysis. Chicago: MESA Press.



## **APPENDIX A: LONGITUDINAL FIGURES**

### Response Rates 2006–2023

Fiscal Year	Surveys Distributed	Surveys Completed	Response Rate
2006–07	13,675	665	4.86%
2007–08	15,350	2,239	14.59%
2008–09	15,350	2,270	14.79%
2009–10	11,057	3,819	34.54%
2010–11	8,943	2,776	31.04%
2011–12	9,114	3,450	37.85%
2012–13	9,664	3,829	39.62%
2013–14	10,514	3,990	37.95%
2014–15	11,133	3,930	35.30%
2015–16	12,328	4,750	38.53%
2016–17	12,180	4,548	37.34%
2017–18	12,161	4,461	36.68%
2018–19	13,542	4,719	34.85%
2019–20	3,337	1,215	36.41%
2020–21	8,283	2,458	29.68%
2021–22	6,074	2,804	46.16%
2022–23	13,872	3,898	28.10%



Fiscal Year	Indicator 4a	Indicator 4b	Indicator 4c
2006–07	74.9%	71.6%	85.9%
2007–08	77.6%	74.6%	85.6%
2008–09	78.6%	75.1%	86.3%
2009–10	81.5%	78.3%	88.0%
2010–11	81.3%	78.9%	89.3%
2011–12	86.0%	82.9%	91.9%
2012–13	84.9%	82.0%	91.1%
2013–14	85.4%	82.7%	92.3%
2014–15	86.2%	83.4%	92.4%
2015–16	86.0%	83.1%	92.3%
2016–17	86.7%	84.2%	93.6%
2017–18	86.8%	84.1%	93.1%
2018–19	87.4%	84.9%	93.9%
2019–20	87.1%	84.5%	93.9%
2020–21	82.8%	78.5%	90.8%
2021–22	83.5%	80.0%	91.4%
2022–23	83.0%	79.2%	90.7%

### Indicator 4 Percentages 2006–2023





## **APPENDIX B: SAMPLE SURVEY**



Impact o	r <mark>f Early Int</mark>	ervention	Services	on Your	Family (o	ٽ <u>cont.)</u> d me	stronghy Disa	, Disa	Very Strongly b	,
and/or m	<u>y family:</u>					<u></u>	SIE	istee ister	Stee Stee	oree
21 under	rstand my ch	ild's special	needs.					00	000	0
22 feel th	hat my effort	s are helping	my child.					00	000	0
23 be me	ore hopeful a	about my chi	d's future.					00	000	0
of Su O Birt O 1 - O 2 - O Ove	rvey Com h to 1 year 2 years 3 years er 3 years	pletion		to 000	Early Inte Birth to 1 y - 2 years 2 - 3 years	ervent ear	ion			
26. What	city or to	wn do you	live in?						]	
27. Child O His O Am O Asi O Bla O Nat O Wh O Two	's Race / I panic/Latino erican India an ck or Africa ive Hawaiia ite o or more ra	E <b>thnicity</b> on or Alaska n American in or Other aces	n Native Pacific Isla	nder						
28. Do yo Interv	ou think yo vention se	our race, s rvices you	kin color I and you	, ethnicit r child re	y or lang ceives?	<b>uage</b> O Yes	you spe O No	e <b>ak affe</b> If yes, i	<b>ct the Ear</b> n what way	<b>ly</b> ys:
1										



## APPENDIX C: RESPONSE FREQUENCIES BY ITEM

Q1 - Over the past year, Early Intervention services have helped me and/or my family participate in typical activities for children and families in my community.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	102	2.6	2.7	2.7
	Strongly Disagree	52	1.3	1.4	4.0
	Disagree	232	6.0	6.1	10.1
	Agree	1289	33.1	33.8	44.0
	Strongly Agree	787	20.2	20.7	64.6
	Very Strongly Agree	1347	34.6	35.4	100.0
	Total	3809	97.7	100.0	
Missing	System	89	2.3		
Total		3898	100.0		

## Q2 - Over the past year, Early Intervention services have helped me and/or my family know about services in the community.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	95	2.4	2.5	2.5
	Strongly Disagree	45	1.2	1.2	3.6
	Disagree	189	4.8	4.9	8.5
	Agree	1274	32.7	33.1	41.7
	Strongly Agree	886	22.7	23.0	64.7
	Very Strongly Agree	1359	34.9	35.3	100.0
	Total	3848	98.7	100.0	
Missing	System	50	1.3		
Total		3898	100.0		

## Q3 - Over the past year, Early Intervention services have helped me and/or my family figure out solutions to problems as they come up.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	87	2.2	2.2	2.2
	Strongly Disagree	22	.6	.6	2.8
	Disagree	54	1.4	1.4	4.2
	Agree	868	22.3	22.4	26.6
	Strongly Agree	1031	26.4	26.6	53.3
	Very Strongly Agree	1808	46.4	46.7	100.0
	Total	3870	99.3	100.0	
Missing	System	28	.7		
Total		3898	100.0		

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Strongly Disagree	86	2.2	2.2	2.2
	Strongly Disagree	29	.7	.8	3.0
	Disagree	86	2.2	2.2	5.2
	Agree	945	24.2	24.5	29.7
	Strongly Agree	972	24.9	25.2	54.8
	Very Strongly Agree	1745	44.8	45.2	100.0
	Total	3863	99.1	100.0	
Missing	System	35	.9		
Total		3898	100.0		

## Q4 - Over the past year, Early Intervention services have helped me and/or my family know where to go for support to meet my child's needs.

## Q5 - Over the past year, Early Intervention services have helped me and/or my family know where to go for support to meet my family's needs.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	92	2.4	2.4	2.4
	Strongly Disagree	36	.9	.9	3.4
	Disagree	133	3.4	3.5	6.8
	Agree	1091	28.0	28.6	35.4
	Strongly Agree	887	22.8	23.2	58.6
	Very Strongly Agree	1581	40.6	41.4	100.0
	Total	3820	98.0	100.0	
Missing	System	78	2.0		
Total		3898	100.0		

## Q6 - Over the past year, Early Intervention services have helped me and/or my family get the services that my child and family need.

		Frequency	Porcont	Valid Parcent	Cumulative
		Frequency	Fercent	valiu Percent	Feiceni
Valid	Very Strongly Disagree	80	2.1	2.1	2.1
	Strongly Disagree	27	.7	.7	2.8
	Disagree	76	1.9	2.0	4.7
	Agree	813	20.9	21.0	25.7
	Strongly Agree	947	24.3	24.5	50.2
	Very Strongly Agree	1928	49.5	49.8	100.0
	Total	3871	99.3	100.0	
Missing	System	27	.7		
Total		3898	100.0		

## Q7 - Over the past year, Early Intervention services have helped me and/or my family feel more confident in my skills as a parent.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	76	1.9	2.0	2.0
	Strongly Disagree	26	.7	.7	2.6
	Disagree	87	2.2	2.2	4.9
	Agree	875	22.4	22.6	27.5
	Strongly Agree	997	25.6	25.7	53.2
	Very Strongly Agree	1811	46.5	46.8	100.0
	Total	3872	99.3	100.0	
Missing	System	26	.7		
Total		3898	100.0		



#### Q8 - Over the past year, Early Intervention services have helped me and/or my family help other children in my family (if there are other children) adjust to their brother's or sister's needs.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	78	2.0	2.3	2.3
	Strongly Disagree	34	.9	1.0	3.3
	Disagree	188	4.8	5.6	8.9
	Agree	1111	28.5	32.8	41.7
	Strongly Agree	703	18.0	20.8	62.5
	Very Strongly Agree	1269	32.6	37.5	100.0
	Total	3383	86.8	100.0	
Missing	System	515	13.2		
Total		3898	100.0		

## Q9 - Over the past year, Early Intervention services have helped me and/or my family make changes in family routines that will benefit my child with special needs.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	75	1.9	2.0	2.0
	Strongly Disagree	27	.7	.7	2.8
	Disagree	141	3.6	3.8	6.6
	Agree	1083	27.8	29.3	35.9
	Strongly Agree	900	23.1	24.4	60.3
	Very Strongly Agree	1467	37.6	39.7	100.0
	Total	3693	94.7	100.0	
Missing	System	205	5.3		
Total		3898	100.0		

## Q10 - Over the past year, Early Intervention services have helped me and/or my family be more effective in managing my child's behavior.

		Frequency	Dereent	Valid Dargant	Cumulative
		Frequency	Percent	valid Percent	Percent
Valid	Very Strongly Disagree	76	1.9	2.0	2.0
	Strongly Disagree	26	.7	.7	2.7
	Disagree	123	3.2	3.3	6.0
	Agree	1039	26.7	27.5	33.5
	Strongly Agree	978	25.1	25.9	59.3
	Very Strongly Agree	1536	39.4	40.7	100.0
	Total	3778	96.9	100.0	
Missing	System	120	3.1		
Total		3898	100.0		

## Q11 - Over the past year, Early Intervention services have helped me and/or my family do activities that are good for my child even in times of stress.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	78	2.0	2.0	2.0
	Strongly Disagree	22	.6	.6	2.6
	Disagree	101	2.6	2.6	5.3
	Agree	987	25.3	25.8	31.1
	Strongly Agree	969	24.9	25.3	56.4
	Very Strongly Agree	1669	42.8	43.6	100.0
	Total	3826	98.2	100.0	
Missing	System	72	1.8		
Total		3898	100.0		

## Q12 - Over the past year, Early Intervention services have helped me and/or my family feel that I can get the services and supports that my child and family need.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Strongly Disagree	90	2.3	2.3	2.3
	Strongly Disagree	19	.5	.5	2.8
	Disagree	91	2.3	2.4	5.2
	Agree	927	23.8	24.0	29.2
	Strongly Agree	934	24.0	24.2	53.3
	Very Strongly Agree	1804	46.3	46.7	100.0
	Total	3865	99.2	100.0	
Missing	System	33	.8		
Total		3898	100.0		

## Q13 - Over the past year, Early Intervention services have helped me and/or my family understand how the Early Intervention system works.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	77	2.0	2.0	2.0
	Strongly Disagree	20	.5	.5	2.5
	Disagree	67	1.7	1.7	4.2
	Agree	947	24.3	24.4	28.6
	Strongly Agree	953	24.4	24.5	53.2
	Very Strongly Agree	1818	46.6	46.8	100.0
	Total	3882	99.6	100.0	
Missing	System	16	.4		
Total		3898	100.0		

## Q14 - Over the past year, Early Intervention services have helped me and/or my family be able to evaluate how much progress my child is making.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	77	2.0	2.0	2.0
	Strongly Disagree	24	.6	.6	2.6
	Disagree	90	2.3	2.3	4.9
	Agree	858	22.0	22.1	27.0
	Strongly Agree	1002	25.7	25.8	52.9
	Very Strongly Agree	1828	46.9	47.1	100.0
	Total	3879	99.5	100.0	
Missing	System	19	.5		
Total		3898	100.0		

## Q15 - Over the past year, Early Intervention services have helped me and/or my family feel that my child will be accepted and welcomed in the community.

			_		Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	75	1.9	2.0	2.0
	Strongly Disagree	22	.6	.6	2.6
	Disagree	71	1.8	1.9	4.4
	Agree	890	22.8	23.5	27.9
	Strongly Agree	887	22.8	23.4	51.3
	Very Strongly Agree	1848	47.4	48.7	100.0
	Total	3793	97.3	100.0	
Missing	System	105	2.7		
Total		3898	100.0		



## Q16 - Over the past year, Early Intervention services have helped me and/or my family feel that my family will be accepted and welcomed in the community.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	77	2.0	2.0	2.0
	Strongly Disagree	18	.5	.5	2.5
	Disagree	72	1.8	1.9	4.4
	Agree	938	24.1	24.8	29.3
	Strongly Agree	868	22.3	23.0	52.3
	Very Strongly Agree	1802	46.2	47.7	100.0
	Total	3775	96.8	100.0	
Missing	System	123	3.2		
Total		3898	100.0		

## Q17 - Over the past year, Early Intervention services have helped me and/or my family communicate more effectively with people who work with my child and family.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	76	1.9	2.0	2.0
	Strongly Disagree	21	.5	.6	2.5
	Disagree	78	2.0	2.0	4.6
	Agree	962	24.7	25.2	29.8
	Strongly Agree	946	24.3	24.8	54.6
	Very Strongly Agree	1729	44.4	45.4	100.0
	Total	3812	97.8	100.0	
Missing	System	86	2.2		
Total		3898	100.0		

## Q18 - Over the past year, Early Intervention services have helped me and/or my family understand the roles of the people who work with my child and family.

		Freesware	Deveent	Valid Dereent	Cumulative
		Frequency	Percent	valid Percent	Percent
Valid	Very Strongly Disagree	73	1.9	1.9	1.9
	Strongly Disagree	22	.6	.6	2.5
	Disagree	90	2.3	2.3	4.8
	Agree	1025	26.3	26.7	31.6
	Strongly Agree	937	24.0	24.4	56.0
	Very Strongly Agree	1686	43.3	44.0	100.0
	Total	3833	98.3	100.0	
Missing	System	65	1.7		
Total		3898	100.0		

## Q19 - Over the past year, Early Intervention services have helped me and/or my family know about my child's and family's rights concerning Early Intervention services.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	77	2.0	2.0	2.0
	Strongly Disagree	19	.5	.5	2.5
	Disagree	71	1.8	1.8	4.3
	Agree	1009	25.9	26.2	30.5
	Strongly Agree	917	23.5	23.8	54.3
	Very Strongly Agree	1758	45.1	45.7	100.0
	Total	3851	98.8	100.0	
Missing	System	47	1.2		
Total		3898	100.0		

Q20 - Over the past year, Early Intervention services have helped me and/or my family do things wi	ith
and for my child that are good for my child's development.	

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	80	2.1	2.1	2.1
	Strongly Disagree	11	.3	.3	2.3
	Disagree	37	.9	1.0	3.3
	Agree	753	19.3	19.4	22.7
	Strongly Agree	912	23.4	23.5	46.3
	Very Strongly Agree	2083	53.4	53.7	100.0
	Total	3876	99.4	100.0	
Missing	System	22	.6		
Total		3898	100.0		

## Q21 - Over the past year, Early Intervention services have helped me and/or my family understand my child's special needs.

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Very Strongly Disagree	76	1.9	2.0	2.0
	Strongly Disagree	16	.4	.4	2.4
	Disagree	63	1.6	1.7	4.1
	Agree	902	23.1	23.8	27.9
	Strongly Agree	885	22.7	23.4	51.3
	Very Strongly Agree	1841	47.2	48.7	100.0
	Total	3783	97.0	100.0	
Missing	System	115	3.0		
Total		3898	100.0		

## Q22 - Over the past year, Early Intervention services have helped me and/or my family feel that my efforts are helping my child.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Strongly Disagree	82	2.1	2.1	2.1
	Strongly Disagree	11	.3	.3	2.4
	Disagree	44	1.1	1.1	3.5
	Agree	794	20.4	20.5	24.1
	Strongly Agree	953	24.4	24.7	48.7
	Very Strongly Agree	1981	50.8	51.3	100.0
	Total	3865	99.2	100.0	
Missing	System	33	.8		
Total		3898	100.0		

## Q23 - Over the past year, Early Intervention services have helped me and/or my family be more hopeful about my child's future.

		Frequency	Porcont	Valid Parcont	Cumulative
		Frequency	Feiceni	vallu Fercerit	Feiceill
Valid	Very Strongly Disagree	81	2.1	2.1	2.1
	Strongly Disagree	18	.5	.5	2.6
	Disagree	48	1.2	1.3	3.8
	Agree	807	20.7	21.1	25.0
	Strongly Agree	854	21.9	22.3	47.3
	Very Strongly Agree	2014	51.7	52.7	100.0
	Total	3822	98.1	100.0	
Missing	System	76	1.9		
Total	-	3898	100.0		



	U U				
					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Birth to 1 Yr	368	9.4	9.4	9.4
	1-2 Yrs	1294	33.2	33.2	42.6
	2-3 Yrs	2150	55.2	55.2	97.8
	Over 3 Yrs	61	1.6	1.6	99.4
	Unknown	25	.6	.6	100.0
	Total	3898	100.0	100.0	

#### Q24 - Child's Age at Time of Survey Completion

#### Q25 - Child's Age When First Referred to Early Intervention

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Birth to 1 Yr	1831	47.0	47.0	47.0
	1-2 Yrs	1758	45.1	45.1	92.1
	2-3 Yrs	272	7.0	7.0	99.1
	Unknown	37	.9	.9	100.0
	Total	3898	100.0	100.0	

#### Q27 - Child's Race / Ethnicity

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Hispanic/Latino	789	20.2	20.2	20.2
	American Indian or Alaskan	9	.2	.2	20.5
	Native				
	Asian	222	5.7	5.7	26.2
	Black or African American	244	6.3	6.3	32.4
	Native Hawaiian or Other	5	.1	.1	32.6
	Pacific Islander				
	White	2052	52.6	52.6	85.2
	Two or more races	537	13.8	13.8	99.0
	Unknown	40	1.0	1.0	100.0
	Total	3898	100.0	100.0	

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Yes	77	2.0	2.0	2.0
	No	3775	96.8	96.8	98.8
	Unknown	46	1.2	1.2	100.0
	Total	3898	100.0	100.0	

 $\ensuremath{\mathsf{Q28}}\xspace$  - Do you think your race, skin color, ethnicity or language you speak

affect the Early Inter	vention servic	es you and	your child receiv	/es?



### **APPENDIX D: WINSTEPS CONTROL FILE**

&INST ; THIS FILE MUST BE SAVED AS ASCII DOS TEXT BEFORE USE WITH WINSTEPS Title="MA Impact on Families Scale: June 2023, parameters fixed to 2010 values" ITEM1=2 DELIMITER=TAB ; specifies a tab as a delimiter ;FITI=7 ;FITP=7 ITLEN=15 ;max length of item label LCONV=0.0001 RCONV=0.001 RESCOR=2 NEWSCR="112345" DATA=C:\Users\13059\OneDrive\Documents\Consulting\Massechussets\2023C\MA C 2023 Data.txt; Name of data file NI=23 XWIDE = 1 CODES = "123456" IAFILE=\* 1 677.5 2 656.0  $3\ 559.2$  ;fixed to 2010 value 4 608.8 5 639.8 6 539.0 7 559.3 8 608.2 ; fixed to 2010 value 9 576.8 10 583.5 11 540.4 12 564.5 13 552.9 14 534.4 15 559.1 16 562.2 17 555.9 18 545.5 19 538.9 20 497.8 21 516.1 22 498.1 23 507.5 ; fixed to 2010 value SAFILE=\* 2 = -220.933 = -147.884 = 55.955 = 128.99NAME1 = 1; Column containing person name NAMLEN = 15; Length of person name PRCOMP=S UDECIM=2 UMEAN=568.3 USCALE=58.91 CSV=S HLINES=N IFILE=ItemStats.sav ;Name of file containing item-level statistics PFILE=PersonStats.sav ;Name of file containing person-level statistics REALSE=Y TABLES=1110000001001100000000000100011 &END

Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q20 Q21 Q22 Q23 END NAMES



### **APPENDIX E: SELECTED WINSTEPS OUTPUT**

MEASUR	RE PERSON -	MZ	AP	- IT	ΕM				
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INPUT: 3898 PERSON 23 ITEM REPORTED: 3898 PERSON 23 ITEM 5 CATS WINSTEPS 4.4.7 SUMMARY OF 3051 MEASURED (NON-EXTREME) PERSON REAL INFIT OUTFIT | COUNT MEASURE S.E. MNSQ ZSTD MNSQ ZSTD | ------L TOTAL SCORE \_\_\_\_\_ 
 MEAN
 87.3
 22.4
 653.02
 25.66
 .97
 -.43
 .98
 -.40

 SEM
 .3
 .0
 2.15
 .20
 .01
 .04
 .01
 .04

 P.SD
 18.5
 1.9
 118.83
 11.22
 .65
 2.02
 .82
 1.94

 S.SD
 18.5
 1.9
 118.85
 11.22
 .65
 2.02
 .82
 1.94

 MAX.
 114.0
 23.0
 897.30
 165.62
 7.29
 9.86
 9.90
 9.75

 MIN.
 3.0
 1.0
 160.71
 17.70
 .00
 -5.94
 .00
 -5.49
 REAL RMSE 28.00 TRUE SD 115.48 SEPARATION 4.12 PERSON RELIABILITY .94 MODEL RMSE 25.22 TRUE SD 116.12 SEPARATION 4.61 PERSON RELIABILITY .95 | S.E. OF PERSON MEAN = 2.15 -----MAXIMUM EXTREME SCORE: 776 PERSON 19.9% MINIMUM EXTREME SCORE: 71 PERSON 1.8% SUMMARY OF 3898 MEASURED (EXTREME AND NON-EXTREME) PERSON \_\_\_\_\_ TOTAL REAL INFIT OUTFIT | SCORE COUNT MEASURE S.E. MNSQ ZSTD MNSQ ZSTD | 

TABLE 3.1 MA Impact on Families Scale: June 2023 ZOU042WS.TXTf Jun 6 2023 18:10s

1		SCOKE	COL	JINI	PIEAS	UKE	0.11.	14	113Q 2	510	MINDQ	2310	
													-
MEA	N	91.4	22	2.5	705	.39	43.59						I
SE	М	.3		.0	2	.97	.57						
P.S	D	21.8	2	L.7	185	.18	35.45						I
S.S	D	21.8	2	L.7	185	.20	35.45						I
MAX		115.0	23	3.0	969	.87	165.62						
MIN		3.0	-	L.O	73	.62	17.70						
													-
REA	L RMSE	56.18	TRUE	SD	176.45	SEF	ARATION	3.14	PERSON	RELIA	ABILITY	.91	
MODE	L RMSE	55.14	TRUE	SD	176.78	SEF	ARATION	3.21	PERSON	RELI	ABILITY	.91	
S.E	. OF PI	ERSON M	EAN =	2.9	7								I

PERSON RAW SCORE-TO-MEASURE CORRELATION = .93 CRONBACH ALPHA (KR-20) PERSON RAW SCORE "TEST" RELIABILITY = .99 SEM = 1.86

SUMMARY OF 23 MEASURED (NON-EXTREME) ITEM

		TOTAL SCORE	COUNT	MEASURE	REAL S.E.	II MNSQ	NFIT ZSTD	OUTF MNSQ	IT ZSTD	
	MEAN SEM P.SD S.SD MAX. MIN.	15497.3 160.6 753.5 770.4 16487.0 12978.0	3811.7 21.7 101.7 103.9 3882.0 3383.0	564.41 9.85 46.20 47.24 677.50 497.80	L 1.88 5 .03 0 .14 4 .14 0 2.36 0 1.74	.92 .06 .30 .31 1.94 .62	-4.15 1.35 6.34 6.48 9.90 -9.90	.99 .08 .36 .37 2.22 .60	-1.66 1.24 5.83 5.96 9.90 -9.90	
	REAL MODEL S.E.	RMSE 1.89 RMSE 1.82 OF ITEM MEAN	TRUE SD TRUE SD N = 9.85	46.16 SH 46.17 SH	EPARATION EPARATION	24.48 ITI 25.36 ITI	EM REL EM REL	IABILITY IABILITY	1.00 1.00	

ITEM RAW SCORE-TO-MEASURE CORRELATION = -.70 Global statistics: please see Table 44. UMEAN=568.3000 USCALE=58.9100



TABLE 3.2 MA Impact on Families Scale: June 2023 ZOU042WS.TXTf Jun 6 2023 18:10s INPUT: 3898 PERSON 23 ITEM REPORTED: 3898 PERSON 23 ITEM 5 CATS WINSTEPS 4.4.7

SUMMARY OF CATEGORY STRUCTURE. Model="R"

_										_	
	CATEGORY	r scoi	OBSERV RE COUNI	'ED OBSVD % AVRGE	SAMPLE   EXPECT	INFIT MNSÇ	OUTFIT   MNSQ	ANDRICH THRESHOLD	CATEGORY   MEASURE	 	
I				+	+	+	++		+		
İ	1	1	2433	3 -200.0	-263	1.54	1.63	NONE	-295.89)	İ.	1
I	2	2	2232	3 -100.7	-140	.97	1.01	-220.93A	-185.38	1	3
I	3	3	22187	25  -5.89	1.45	.97	1.19	-147.88A	-45.97	I	4
I	4	4	21105	24  95.34	80.29	.88	.81	55.95A	93.44		5
I	5	5	39712	45 211.62	224.9	.95	.99	128.99A	(203.95)		6
1				+	+	+	++		+	1	
I	MISSING	3	1985	2  59.14	I		11			I	
-										-	

OBSERVED AVERAGE is mean of measures in category. It is not a parameter estimate.

C.	ATEGORY LABEL	STRUCT MEASURE	URE S.E.	SCORE-   AT CAT.	TO-MEAS	SURE	50% CUM.  PROBABLTY	   	COHEH M->C	RENCE C->M	RMSR	ESTIM  DISCR	OBSERVEI  RESIDUAL	)-EXPECTED   DIFFERENCE	
i i	1	NONE		-295.89)	-INF -	-247.18		1	74%	41%	1.3253		-20.9%	-171.0	1
1	2	-220.93A	2.47	-185.38-	247.18-	-127.29	-233.39	1	34%	34%	.8697	.85	-59.5%	-1328.2	3
1	3	-147.88A	1.14	-45.97-	127.29	35.36	-137.31	1	73%	69%	.5832	1.17	3.9%	872.4	4
1	4	55.95A	.67	93.44	35.36	155.24	45.39		57%	64%	.5052	.98	13.9%	2923.7	5
I	5	128.99A	.67	(203.95)	155.24	+INF	141.46	Ι	79%	74%	.5433	1.00	-10.4%	-2297.0	6

M->C = Does Measure imply Category? C->M = Does Category imply Measure?

Category Matrix : Confusion Matrix : Matching Matrix												
	Predicted Scored-Category Frequency											
Obs	Cat Freq	1	2	3	4	5	Total					
	+					+						
İ.	1	1967.41	201.60	199.97	45.06	18.96	2433.00					
1	2	257.86	602.44	1123.41	202.19	46.11	2232.00					
	3	347.01	2303.64	12434.97	5276.19	1825.19	22187.00					
	4	26.67	383.75	6008.00	7917.77	6768.82	21105.00					
1	5	5.02	68.79	1548.26	4740.05	33349.88	39712.00					
	+					+						
	Total	2603.97	3560.22	21314.60	18181.25	42008.96	87669.00					





TABLE 10.1 MA Impact on Families Scale: June 202 ZOU042WS.TXT Jun 6 2023 18:10es INPUT: 3898 PERSON 23 ITEM REPORTED: 3898 PERSON 23 ITEM 5 CATS WINSTEPS 4.4.7

PERSON: REAL SEP.: 3.14 REL.: .91 ... ITEM: REAL SEP.: 24.48 REL.: 1.00

#### ITEM STATISTICS: MISFIT ORDER

ENTRY  NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	REAL   IN S.E.  MNSQ	NFIT   OUN ZSTD MNSQ	TFIT  PTMEA ZSTD CORR.	SUR-AL EXACT EXP.  OBS%	MATCH  EXP%	 DISPLACE	 ITEM
1	14368	3809	677.50A	2.36 1.94	9.90 2.22	9.90 A .79	.87  40.0	57.71	-52.32	Q1
2	14679	3848	656.00A	2.13 1.56	9.90 1.72	9.90 B .81	.87  43.8	57.6	-40.35	Q2
8	12978	3383	608.20A	2.07 1.21	6.94 1.42	9.90 C .84	.86  62.1	60.01	8.66	Q8
21	15669	3783	516.10A	1.91  .96	-1.37 1.17	3.14 D .85	.79  72.0	64.7	35.71	Q21
5	15120	3820	639.80A	1.84 1.15	5.22 1.11	3.54 E .86	.86  55.6	59.1	-53.26	Q5
9	14568	3693	576.80A	1.82  .95	-1.67 1.03	.75 F .86	.84  67.4	61.7	15.17	Q9
4	15735	3863	608.80A	1.74  .99	32  .94	-2.04 G .85	.85  64.4	59.8	-47.80	Q4
11	15484	3826	540.40A	1.84  .89	-4.12  .99	11 H .86	.81  70.5	63.8	29.77	Q11
19	15723	3851	538.90A	1.84  .86	-5.50  .99	16 I .85	.81  71.4	63.7	23.45	Q19
22	16280	3865	498.10A	1.94  .90	-3.69  .94	-1.00 J .84	.77  69.1	66.3	36.36	Q22
23	16102	3822	507.50A	1.92  .86	-5.08  .92	-1.49 K .84	.78  73.2	65.4	27.91	Q23
6	16126	3871	539.00A	1.83  .84	-6.18  .89	-2.54 L .83	.81  71.1	63.7	5.09	Q6
3	15985	3870	559.20A	1.80  .85	-5.83  .88	-3.29 k .84	.82  68.1	62.6	-8.42	Q3
14	16003	3879	534.40A	1.84  .76	-9.66  .88	-2.97 j .85	.81  73.4	64.0	17.92	Q14
7	15944	3872	559.30A	1.79  .81	-7.42  .87	-3.51 i .84	.82  69.3	62.6	-5.55	Q7
20	16487	3876	497.80A	1.93  .79	-8.08  .86	-2.67 h .84	.77  71.6	66.3	27.14	Q20
10	15057	3778	583.50A	1.79  .77	-9.11  .81	-5.79 g .87	.84  69.6	61.5	72	Q10
13	15974	3882	552.90A	1.80  .74	-9.90  .81	-5.17 f .85	.82  73.0	63.0	1.25	Q13
18	15528	3833	545.50A	1.83  .74	-9.90  .80	-5.17 e .87	.81  73.0	63.5	23.69	Q18
15	15697	3793	559.10A	1.82  .69	-9.90  .67	-9.68 d .85	.82  74.3	62.7	-8.97	Q15
16	15535	3775	562.20A	1.82  .67	-9.90  .67	-9.87 c .86	.83  74.5	62.3	-6.35	Q16
12	15828	3865	564.50A	1.79  .63	-9.90  .60	-9.90 b .86	.83  74.2	62.3	-5.68	Q12
17	15568	3812	555.90A	1.82  .62	-9.90  .61	-9.90 a .87	.82  75.5	62.5	6.65	Q17
				+	+	+	+	+	++	
MEAN 1	5497.3	3811.7	564.41	1.88  .92	-4.1  .99	-1.7	67.7	62.5	1.28	
P.SD	753.5	101.7	46.20	.14  .30	6.3 .36	5.8	9.1	2.3	26.79	



## APPENDIX F: FFY 2022 SPP/APR DATA

FFY 2022 SPP/APR Data	Number
The number of families to whom surveys were distributed	13,872
Number of respondent families participating in Part C	3,898
A1. Number of respondent families participating in Part C who report that early intervention services have helped the family know their rights	3,234
A2. Number of responses to the question of whether early intervention services have helped the family know their rights	3,898
B1. Number of respondent families participating in Part C who report that early intervention services have helped the family effectively communicate their children's needs	3,088
B2. Number of responses to the question of whether early intervention services have helped the family effectively communicate their children's needs	3,898
C1. Number of respondent families participating in Part C who report that early intervention services have helped the family help their children develop and learn	3,534
C2. Number of responses to the question of whether early intervention services have helped the family help their children develop and learn	3,898

Data analysis conducted by Randall D. Penfield, Ph.D. Report generated by Piedra Data Services.

For questions regarding this report, please contact Piedra Data Services at 305-254-9986.