Early Childhood Integrated Data System

FoLDS Symposium, October 2023

Early Childhood Integrated Data System

- What's ECIDS?

- ECIDS dashboard

- General demographics

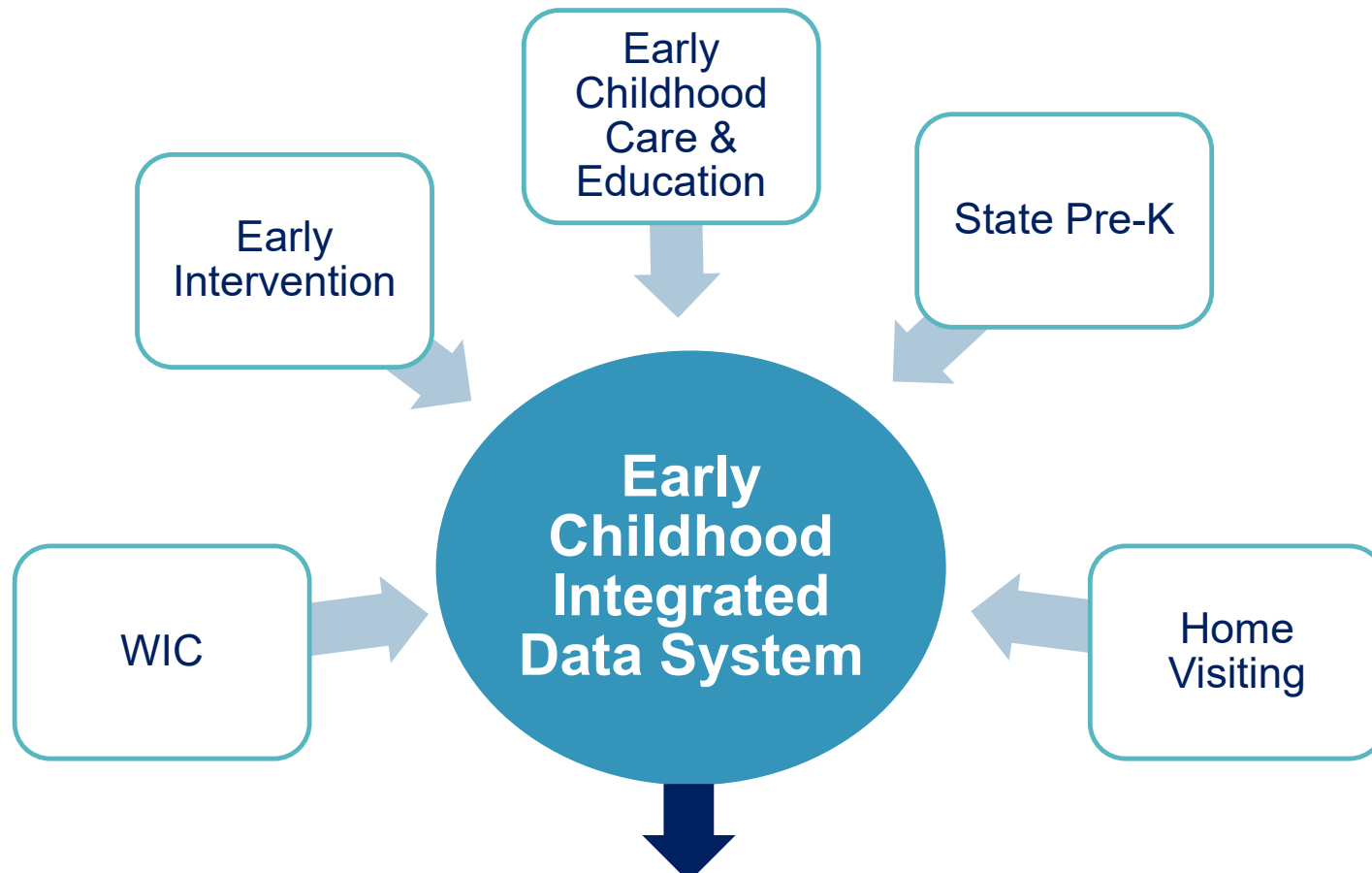- Use case of integrated data

- What's next?

WHAT'S ECIDS?

What's ECIDS?

July 2020 **- Participating agencies signed** Pre-school Development Grant, Birth-Five (PDG B-5) Data Use License Agreement (DULA)

March 2021 – Board votes to approve dashboard **- dashboard launched**

First-ever initiative in MA to **link** enrollment and participation **across state programs** serving children **birth-five**

Dashboard shows the **first-ever view** of **deidentified, unduplicated** information about children birth to five who were participating **in one or more state programs as of July 2015**

4

Early Childhood Care & Education

Early Intervention

State Pre-K

WIC

Early Childhood Integrated Data System

Home Visiting

"Provide valuable **insights to inform and improve the administration** and **impact** of programs serving young children and their families, through **[integrated] data** about **program participation and academic outcomes**"

5

Participating Parties to DULA

- Children's Trust (CT)

- Department of Early Education and Care (EEC)

- Department of Elementary and Secondary Education (DESE)

- Department of Public Health (DPH)

- Executive Office of Education (EOE)

- Executive Office of Health & Human Services (HHS)

- Executive Office of Technology Services and Security (EOTSS)

Programs

- Women, Infants, & Children (WIC) Nutrition Program

- Early Intervention

- Home Visiting

- Childcare Financial Assistance (CCFA)

- Preschool Expansion Initiative (CPPI)

- Public Preschool with & without Individualized Education Plan (IEP)

DULA Questions

Of the children who participated in at least one program…

General demographics

- How many are **participating in one or more programs** for [period of time] including all participation and termination dates by demographics?

Education

- How many were **chronically absent** in [first grade, second grade, third grade]?

- How many scored meeting expectations or above on the **third grade ELA MCAS** by demographics?

- How many **received** an Individualized Education Plan **(IEP)** or Individualized Family Support Plan **(IFSP)** in [pre-school, kindergarten, first grade, second grade, third grade, ever?] by demographics, and how many **accepted/did not accept** the IEP or IFSP by demographics?

ASQ screenings

- How many participated in programs that have met or exceeded **quality benchmarks** recognized by the state and **how many of those children had ASQ screenings** that resulted in [potential concern, strong concern, or no development concerns]?

- How many of those children were **screened using Ages and Stages Questionnaire** (ASQ) by demographics, how many of those screenings **resulted** in [potential concern, strong concern, or no development concerns], and did those children score proficient or above on the **third grade ELA MCAS** by demographics?

Program referrals

- And were referred to another program, **how many [did not accept the referral, enrolled in the program]** by demographics?
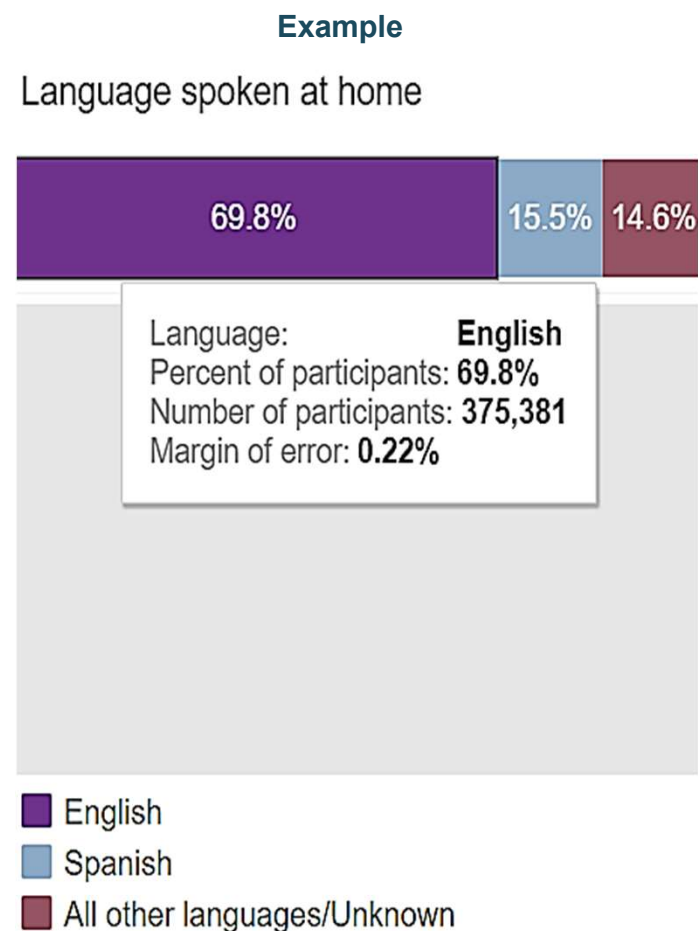
Limitations of ECIDS

ECIDS allows us to...

✓ View and compare **overall trends** in participation

✓ Learn about opportunities for coordination between and among programs to **improve access and transitions**

ECIDS does **not** allow us to…

✗ Draw **inferences** about outcomes, effectiveness

✗ Determine **causation**

Differential Privacy (DP)

- State agencies must ensure that **child-level data is protected**

- Differential privacy is an approach to maintain **confidentiality** and **prevent re-identification**

- **"Noise" added** to aggregated data, dashboard shows figures within **margin of error**

- **Accuracy limitations** for smaller cell sizes

Example

Language spoken at home

69.8%	15.5%	14.6%

Language: **English**
Percent of participants: 69.8%
Number of participants: 375,381
Margin of error: **0.22%**

■ English
■ Spanish
■ All other languages/Unknown

PROGRAM	DESCRIPTION	AGES SERVED	ELIGIBILITY CRITERIA
Public Preschool Individualized Education Plan (IEP)	Special education services for children with disabilities	2 years 9 months – Start of kindergarten	Not Means-Tested: Eligibility is based on the child's health needs.
Early Intervention (EI)	Home-based support to children who have developmental delays or are at risk of a developmental delay	Birth – 3rd birthday	Not Means-Tested: Eligibility is based on the child's health needs.
Home Visiting (HV) • Healthy Families America (HFA) • Parents as Teachers (PAT) • Healthy Families Massachusetts (HFM)	Home-based support to families with young children	HFA: Prenatal - 3rd birthday PTA: Prenatal - End of kindergarten HFM: Prenatal – 3rd birthday	Not Means-Tested: Eligibility criteria vary by program. It is not based on financial need, but HFA and PTA are only available in select communities identified through a needs assessment, so it is designed to target communities with higher needs.
Commonwealth Preschool Partnership Initiative (CPPI)	Partnerships between public school districts and private EEC-licensed childcare programs to expand access to high-quality pre-kindergarten or preschool	Ages 3 - 4	Not Means-Tested: CPPI-funded classrooms do not have any eligibility criteria. The grant selection process has prioritized communities serving higher percentages of underserved and low-income families.
Childcare Financial Assistance (CCFA)	Childcare financial assistance for low-income families	Birth - Age 13 (ECIDS contains data up to 6th birthday)	Means-Tested: Eligibility is based on the family's financial needs, with a few exceptions.
Women, Infants, & Children Program (WIC)	Provides healthy foods, nutrition education, breastfeeding support, and referrals to healthcare and other services	Prenatal - Age 4	Means-Tested: Eligibility is based on the family's financial needs.

ECIDS DASHBOARD

Visualizations

Participation by

- Race, Language, Gender
- Fiscal Year
- Age
- Gateway Cities & Boston

Integrated data system

- Program combinations
- Program transitions

What do the screenshots in this presentation represent?

- **DP-treated** data

- Count of **all children Birth - Five**

- Enrolled in **at least one program for at least one day**

- **Born** between **2009 - 2022**

- Participated **July 2015 - Sept 2022** (most recent dashboard refresh)

Early Childhood Integrated Data System (ECIDS): Participation Dashboard through September 30, 2022

This data reflects 537,740 children (deduplicated) who participated in included programs between 7/1/2015 and 09/30/2022, based on 787,270 total program participants.

Please note that this data is treated with differential privacy, a statistical method that adds a small amount of random noise to each count. Hover over counts to view a margin of error representing the range within which the true count will likely fall. You can also read more about differential privacy in the README tab.

Select a cohort
Select as many filter categories (birth year, race, gender, low income, language spoken at home, programs) as desired. To select a single value in a filter category, first deselect "All", and then check the desired value.

Birth year
- ☑ Include all years
- ☑ In or before 2015
- ☑ 2016
- ☑ 2017
- ☑ 2018
- ☑ 2019
- ☑ 2020
- ☑ 2021
- ☑ 2022

Low income
Data on low income children is taken from DESE public school enrollments from Pre-K to Grade 3. You can read more about the DESE's low income eligibility and our methodology in the README tab. By selecting "Low Income" or "Not Low Income", you will filter out all children who do not have any public school enrollments.
- ☑ All
- ☑ Low income
- ☑ Not low income

Race
- ☑ All
- ☑ Asian
- ☑ Black/African American
- ☑ Hispanic/Latinx
- ☑ White
- ☑ More than one race/other/unknown

Gender
- ☑ All
- ☑ Female
- ☑ Male

Language spoken at home
- ☑ All
- ☑ English
- ☑ Spanish
- ☑ All other languages/unknown

Programs
Select 'Include all programs' to see all children who participated in at least one program.

- ☑ Include all programs

Select one or more programs to filter to children in that combination of programs. Choose 'Exclude' to see the children who participated in the program(s) you selected but who did NOT participate in the excluded program(s).

Hover for program selection examples

	Select specific programs	Exclude specific programs
Supplemental Nutrition Program for Women, Infants & Children (WIC)	☐	☐
Home Visiting (HV)	☐	☐
Early Intervention (EI)	☐	☐
Childcare Financial Assistance (CCFA)	☐	☐
Public Preschool without IEP (PreK no IEP)	☐	☐
Public Preschool with IEP (PreK with IEP)	☐	☐
Preschool Expansion Initiatives (PEG/CPPI)	☐	☐

Participation by Race, Gender, Language

Selected cohort:

Birth year: • In or before 2015 • 2016 • 2017 • 2018 • 2019 • 2020 • 2021 •
Gender: • Female • Male •
Race: • Asian • Black/African American • Hispanic/Latinx • White • More than one race/other/unknown •
Language spoken at home: • English • Spanish • All other languages/unknown •
Low income: • Low income • Not low income •

Programs:
Children participated in:
Selected cohort includes all children who participated in at least one program.

Summary
This section shows distributions by race, gender, and language spoken at home for the selected cohort. Demographic distributions for the MA population birth to age 5 and MA population under the federal poverty level birth to age 5 provide comparison points.
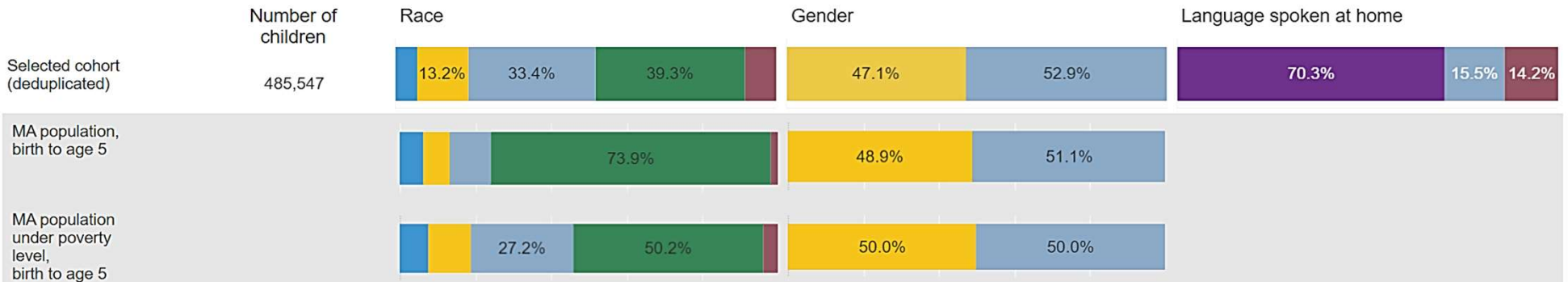
	Number of children	Race	Gender	Language spoken at home
Selected cohort (deduplicated)	485,547	13.2% / 33.4% / 39.3%	47.1% / 52.9%	70.3% / 15.5% / 14.2%
MA population, birth to age 5		73.9%	48.9% / 51.1%	
MA population under poverty level, birth to age 5		27.2% / 50.2%	50.0% / 50.0%	

This section does not respond to cohort selection.

Legend:
- Asian
- Black/African American
- Hispanic/Latinx
- White
- More than one race/Other/Unknown
- Female
- Male
- English
- Spanish
- All other languages/Unknown

Program Combinations & Transitions

1 program	2 programs		

Click on the bar chart above to filter program combinations below. To remove the filter, click again in the selected section.

Top 20 program combinations

WIC	HV	EI	CCFA	PreK no IEP	PreK with IEP	PEG/CPPI		Number of children
●							WIC	180,808
		●					EI	59,957
				●			PreK no IEP	58,746
●			●				WIC, CCFA	47,676
			●				CCFA	33,762
●		●					WIC, EI	31,488
●				●			WIC, PreK no IEP	20,815
●		●	●				WIC, EI, CCFA	17,235
		●			●		EI, PreK with IEP	14,395
					●		PreK with IEP	12,447
●		●			●		WIC, EI, PreK with IEP	9,361
●			●	●			WIC, CCFA, PreK no IEP	6,570
		●		●			EI, PreK no IEP	6,535
●					●		WIC, PreK with IEP	4,161
●		●		●			WIC, EI, PreK no IEP	3,910
●		●	●		●		WIC, EI, CCFA, PreK with IEP	3,311
		●	●				EI, CCFA	3,050
			●	●			CCFA, PreK no IEP	2,512
	●						HV	1,923
●	●						WIC, HV	1,821

Percentage of children in Home Visiting who later started EI

Started EI during HV	26.7%
Started EI after HV	8.8%
Total	**35.5%**

Services after Home Visiting or Early Intervention

On or AFTER their 3rd birthday, percentage of children who were enrolled in Home Visiting or Early Intervention then enrolled in other programs:

From	To	Age	
HV	CCFA	Age 3	7.1%
		Age 4-5	2.5%
	PreK no IEP	Age 3	2.7%
		Age 4-5	5.3%
	PreK with IEP	Age 3	4.7%
		Age 4-5	2.0%
EI	CCFA	Age 3	3.8%
		Age 4-5	1.3%
	PreK no IEP	Age 3	6.7%
		Age 4-5	5.0%
	PreK with IEP	Age 3	25.2%
		Age 4-5	8.2%

This section does not respond to cohort selection.

GENERAL DEMOGRAPHICS

Programs are Reaching Children of Color at Varying Levels

Racial Demographics of Children who Participate in Programs that Report Data to ECIDS (July 2015 - September 2022)
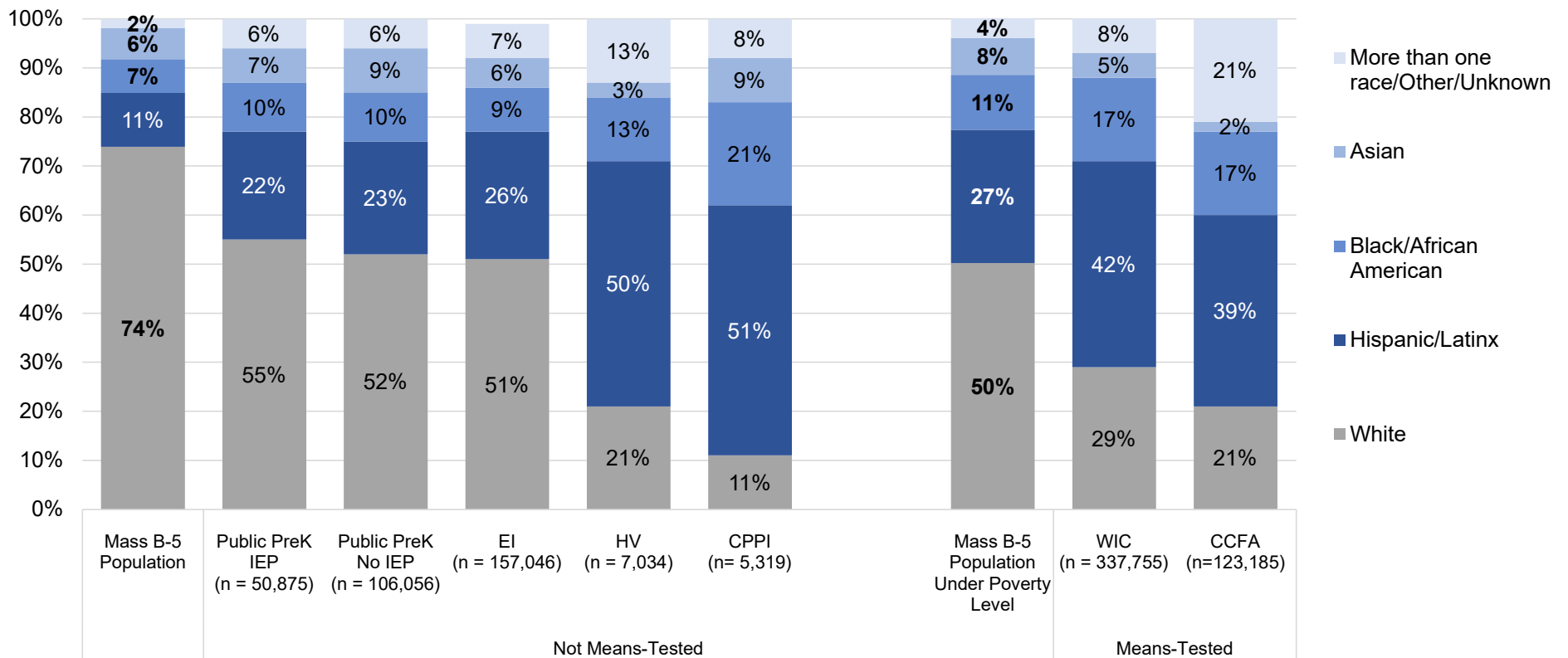
Programs are Reaching Non-English Speakers

Language Demographics of Children who Participate in Programs that Report Data to ECIDS (July 2015 - September 2022)

19% of WIC participants speak Spanish versus 9% of the overall Massachusetts population (ACS survey)

Legend:
- ■ All Other Languages/Unknown
- ■ Spanish
- ■ English

Program	English	Spanish	All Other Languages/Unknown
Public PreK IEP (n = 50,875)	80%	9%	11%
EI (n = 157,046)	79%	11%	10%
Public PreK No IEP (n = 106,056)	74%	11%	15%
HV (n = 7,034)	69%	24%	7%
CPPI (n= 5,319)	66%	23%	11%
CCFA (n=123,185)	78%	13%	9%
WIC (n = 337,755)	63%	19%	17%

Not Means-Tested | Means-Tested
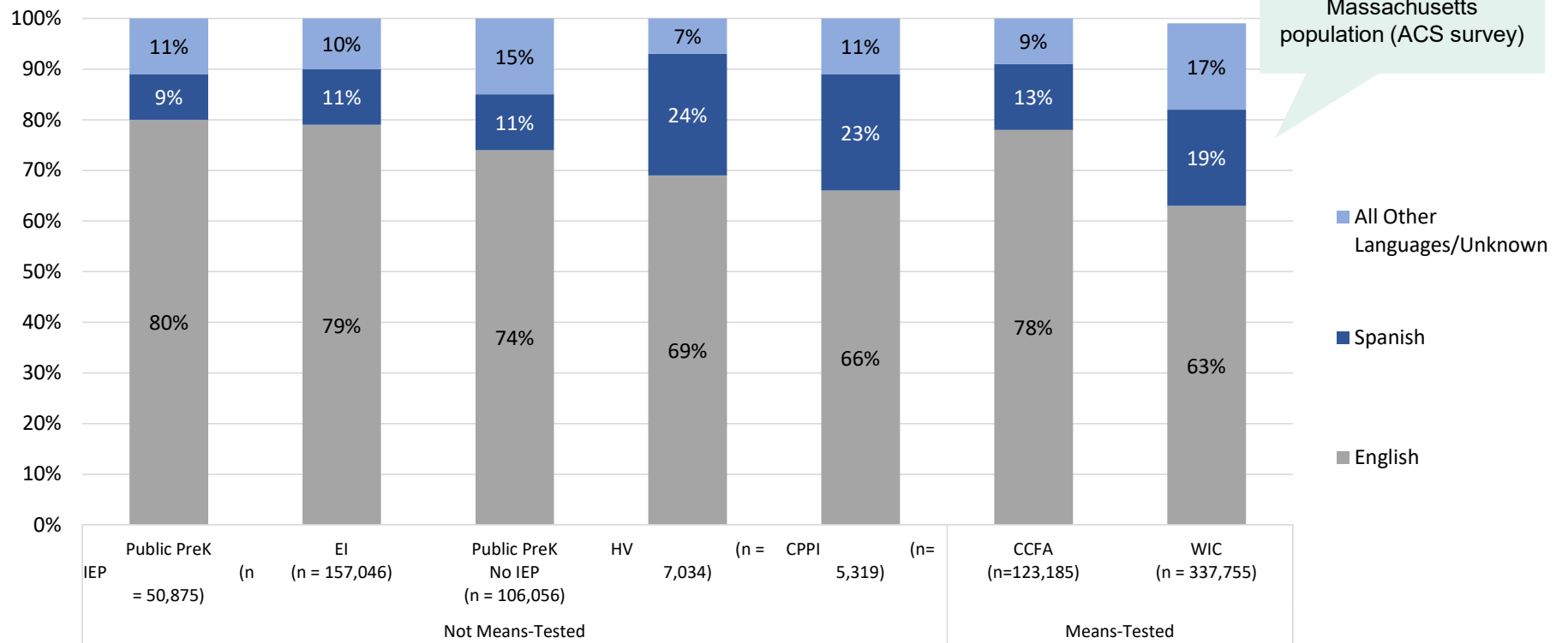
There are More Boys in Early Intervention & Public PreK Special Education

**Gender Demographics of Children who Participate in Programs that Report Data to ECIDS
(July 2015 - September 2022)**

Category	Female	Male
Mass B-5 Population	51%	49%
Public PreK IEP (n = 50,875)	30%	70%
EI (n = 157,046)	38%	62%
CPPI (n= 5,319)	47%	53%
Public PreK No IEP (n = 106,056)	51%	49%
HV (n = 7,034)	54%	46%
Mass B-5 Population Under Poverty	50%	50%
WIC (n = 337,755)	49%	51%
CCFA (n=123,185)	49%	51%

Not Means-Tested (Public PreK IEP, EI, CPPI, Public PreK No IEP, HV)

Means-tested (WIC, CCFA)

USE CASE OF INTEGRATED DATA

WIC Serves the Largest Number of Children, with 45% Participating in WIC and at Least One Other Program in ECIDS

Number and Percentage of Children who Participate in Programs that Report Data to ECIDS (July 2015 - September 2022)

Legend:
- Participate only in this program and no other program reporting data to ECIDS
- Participate in this program & at least one other program reporting data to ECIDS

Data values by program:

Program	Participate in this program & at least one other program	Participate only in this program
EI (n = 157,046)	62%	38%
Public PreK No IEP (n = 106,056)	45%	55%
Public PreK IEP (n = 50,875)	76%	24%
HV (n = 7,034)	73%	27%
CPPI (n= 5,319)	72%	28%
WIC (n = 337,755)	46%	54%
CCFA (n=123,185)	73%	27%

Not Means-Tested: EI, Public PreK No IEP, Public PreK IEP, HV, CPPI
Means-Tested: WIC, CCFA

What Accounts for this Observed Trend?

- **WIC serves far more children**

    - Only a portion of WIC participants may have needs that require additional services from the programs that report data to ECIDS

    - WIC's total population is 337,755 compared to 7,034 children for Home Visiting

- **Children may participate in programs that do not report data to WIC**

    - Families who receive WIC services may participate in other programs that do not report data to ECIDS (SNAP, Fuel Assistance, MassHealth)

- **There may be language and/or cultural barriers to accessing services**

    - Non-English speakers and children for whom the language is flagged as "unknown" make up 44% of all kids who participate *only in WIC and no other program*

    - 28% of non-English speakers and children for whom the language is flagged as "unknown" kids participate in *WIC and at least one other program*
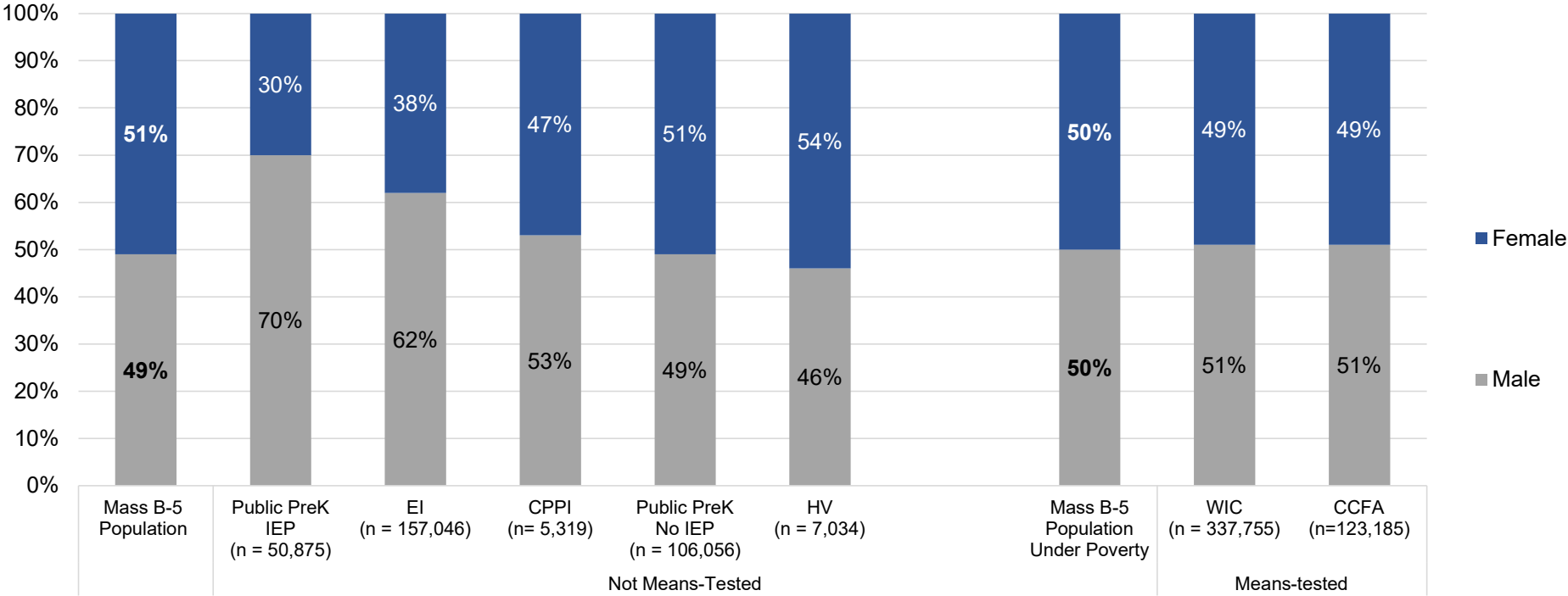
English-Speaking WIC Participants Access More Programs in ECIDS

Language Demographics of Children who Participate in Programs that Report Data to ECIDS (July 2015 - September 2022)

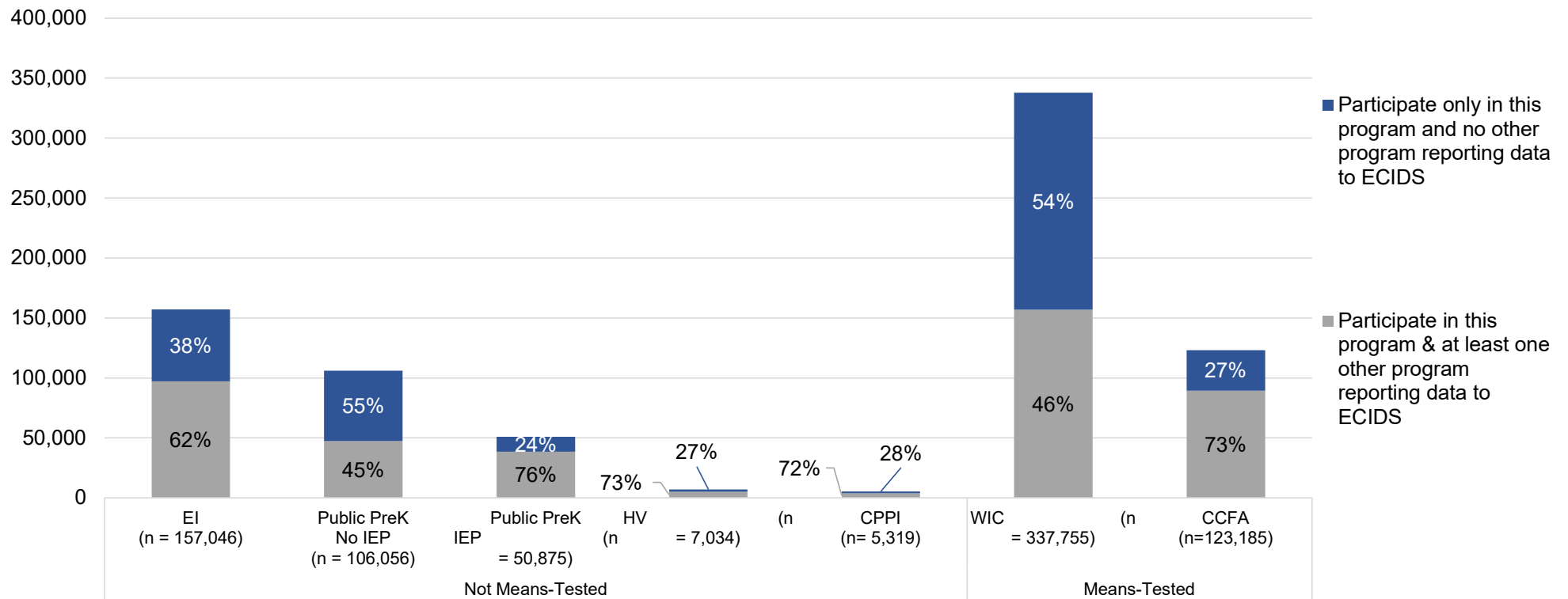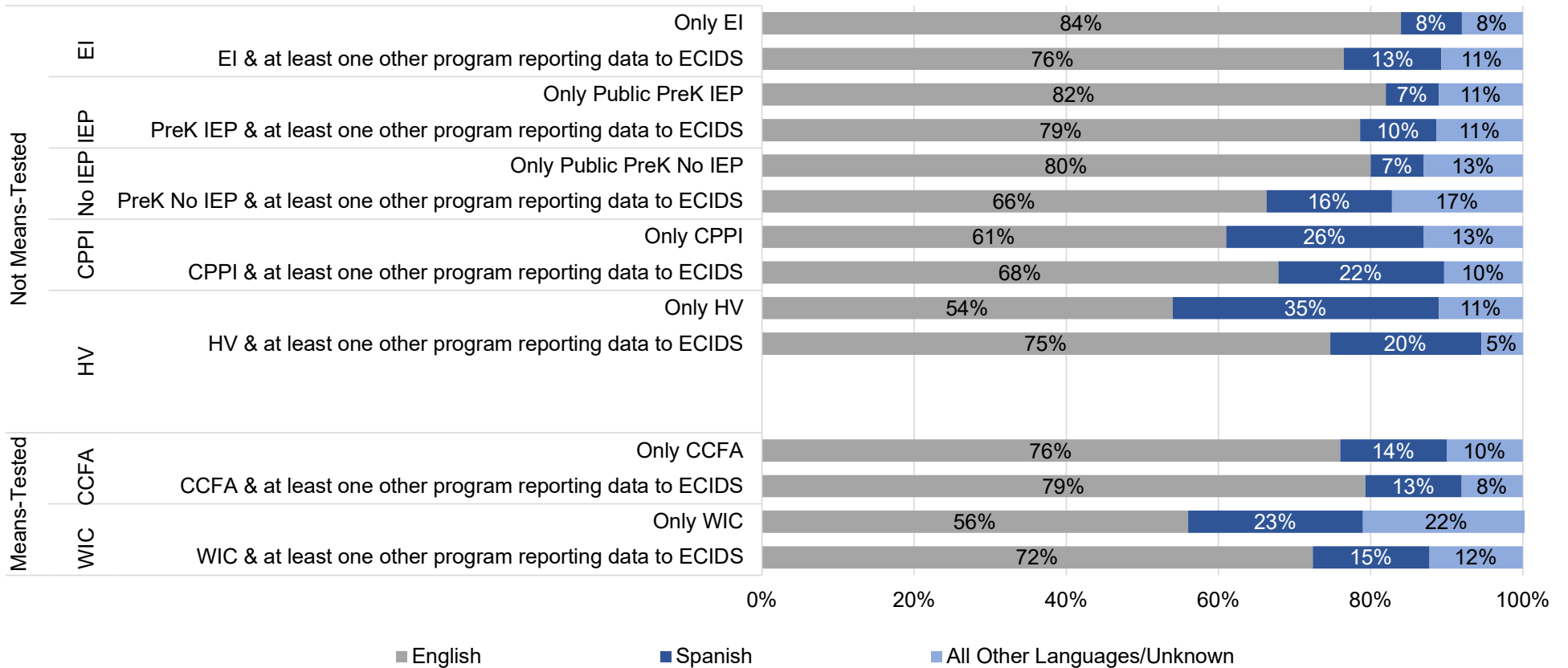|		English	Spanish	All Other Languages/Unknown
Not Means-Tested	EI: Only EI	84%	8%	8%
	EI: EI & at least one other program reporting data to ECIDS	76%	13%	11%
	No IEP IEP: Only Public PreK IEP	82%	7%	11%
	No IEP IEP: PreK IEP & at least one other program reporting data to ECIDS	79%	10%	11%
	No IEP: Only Public PreK No IEP	80%	7%	13%
	No IEP: PreK No IEP & at least one other program reporting data to ECIDS	66%	16%	17%
	CPPI: Only CPPI	61%	26%	13%
	CPPI: CPPI & at least one other program reporting data to ECIDS	68%	22%	10%
	HV: Only HV	54%	35%	11%
	HV: HV & at least one other program reporting data to ECIDS	75%	20%	5%
Means-Tested	CCFA: Only CCFA	76%	14%	10%
	CCFA: CCFA & at least one other program reporting data to ECIDS	79%	13%	8%
	WIC: Only WIC	56%	23%	22%
	WIC: WIC & at least one other program reporting data to ECIDS	72%	15%	12%

Legend: ■ English ■ Spanish ■ All Other Languages/Unknown

23

Questions for Further Exploration

Understand demographic trends

- What factors account for the proportionately higher participation of people of color and Spanish-speakers in some programs that report data to ECIDS relative to other programs in ECIDS?

- What role does the program context (e.g.: eligibility criteria, type of service, etc.) play in the demographics of participants?

- What are some possible reasons for the lower percentage of girls in Early Intervention and children with IEPs in public preschool relative to the general population and other programs?

Explore lessons about service coordination and potential barriers

- What lessons can we learn about service coordination when looking at the overlap of WIC with other programs that report data to ECIDS?

- How do barriers to services differ between means-tested versus non-means-tested programs and in-home services versus non-in-home services?

WHAT'S NEXT?

What's next?

Additional data forthcoming

- Chronic absenteeism
- MCAS Math and ELA third grade scores

What are the priority questions we need to answer?

- DULA questions
- Others?

How do we answer these questions?

- Engaging researchers and agency staff
- Conducting deeper analyses
- Creating data stories

Contact Information

Agency/Secretariat	Board member name	Contact
Department of Early Education & Care	Jocelyn Bowne (Board Chair)	jocelyn.bowne@mass.gov
Department of Public Health	Stephanie Doyle	stephanie.e.doyle@mass.gov
Department of Elementary and Secondary Education	Matt Deninger	matthew.j.deninger@mass.gov
Children's Trust	Sarita Rogers	sarita.rogers@mass.gov
Executive Office of Education	Heidi Gold	heidi.s.gold@mass.gov
Executive Office of Health & Human Services	Open	N/A
Executive Office of Technology Services and Security	Jacob Viola	jacob.viola@mass.gov

Project managers:
Ana Vasconcelos / Sam Ribnick
Massachusetts Education-to-Career (E2C) Research and Data Hub
ana.vasconcelos@mass.gov
sam.ribnick@mass.gov