

**Reducing Chronic Absenteeism in  
Preschools in Chile:  
Evidence from a Comparative Study  
Using 2011-2017 Ministry of Education  
Data**



January 11, 2023

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# About Fundación Educativa Oportunidad and the Chilean educational context



# Chilean education system

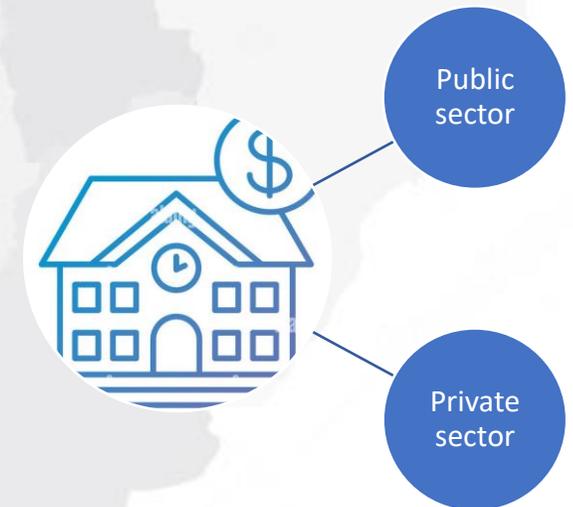
- Population 17.5 million
- Language of instruction: Spanish
- Compulsory Education: 12 years
- Universal access to early childhood education
- Ongoing efforts focused on quality of early childhood education



## • Diagram of Chilean education system



## • Mixed financing system



# Our Purpose

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Fundacion Educacional  
Oportunidad has existed for sixteen years to promote the **development and learning of children from early childhood** using innovating ideas and working collaboratively with others.



# Foundation for Educational Opportunity

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- **Improving language development of preschool children from rural communities in Chile**

*Building professional capabilities to enhance the school system*

# UBC: A story of perseverance

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## • 2006 - 2010

### Design and experimental phase

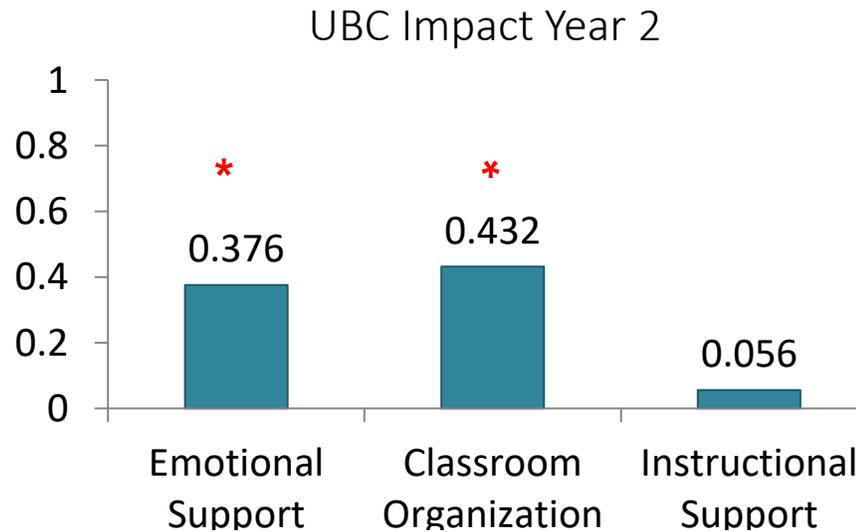
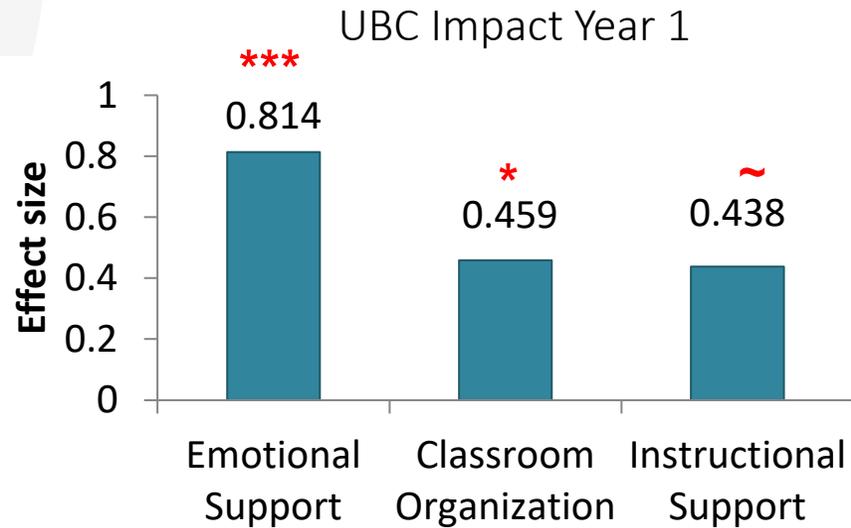
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- Based on best evidence
- Private public collaboration
- Experimental evaluation

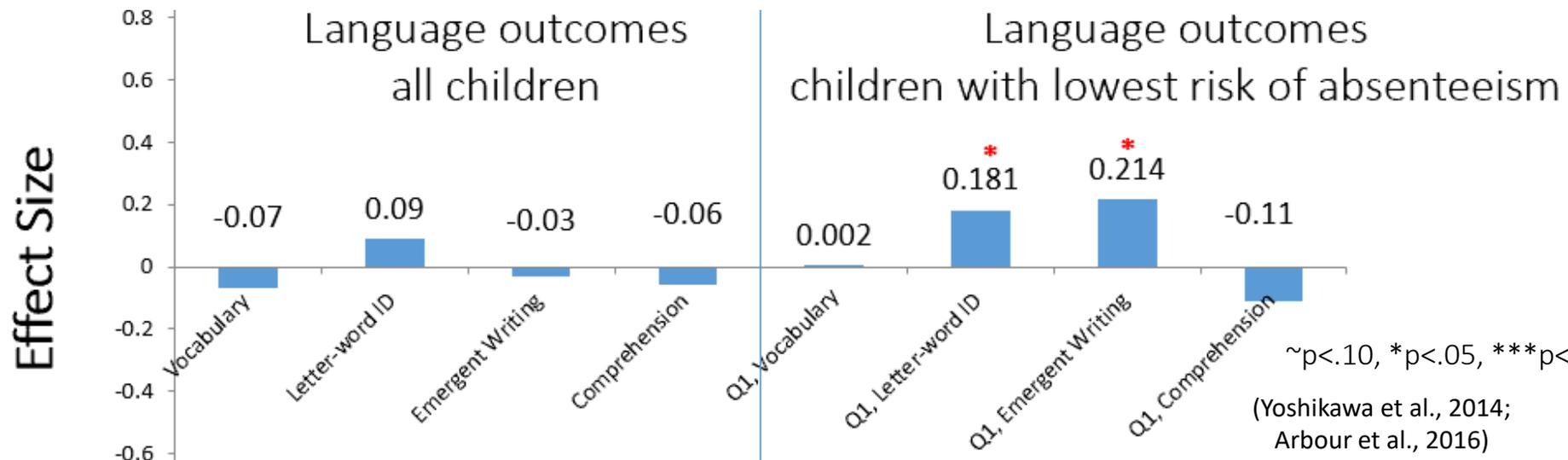
- 6 Municipalities in the Metropolitan Region (Santiago)
- 32 Schools
- 3.200 Children



- UBC had positive impact on classroom quality

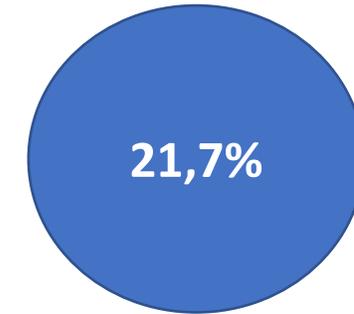


- Effects on child language and literacy skills moderated by absenteeism



- **Learning**: Absenteeism rates among 4- and 5-year-old children attending public preschool

*67% of children have chronic absenteeism*



**Average absenteeism**



# UBC: A story of perseverance

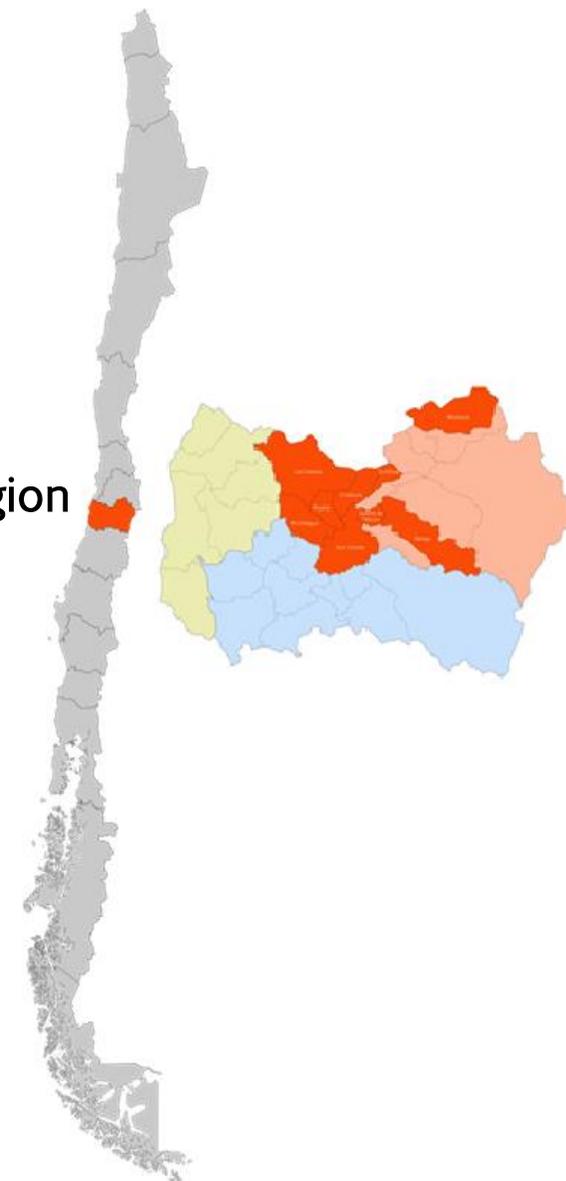
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## • 2011 - 2015

### Model consolidation phase

- Continuous Improvement Model (IHI)
- Voice & participation of teachers and school leaders
- Focus on attendance promotion & absenteeism prevention

- 13 Municipalities in the VI region
- 60 Schools
- 1.636 Children



# Cross-Institutional School Attendance Board



# 2012 – onward Adaptive Intervention

Implementation content = Driver Diagram  
(Theory of Change)

PRIMARY DRIVERS

Instructional time

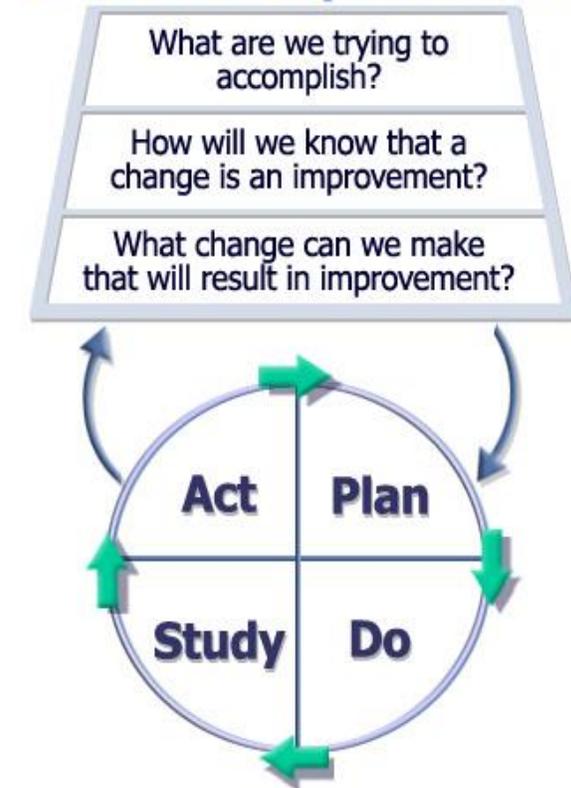
Effective classroom interactions

Students' attendance

AIM: 80% of pre-K and 90% of K children reach advanced language proficiency

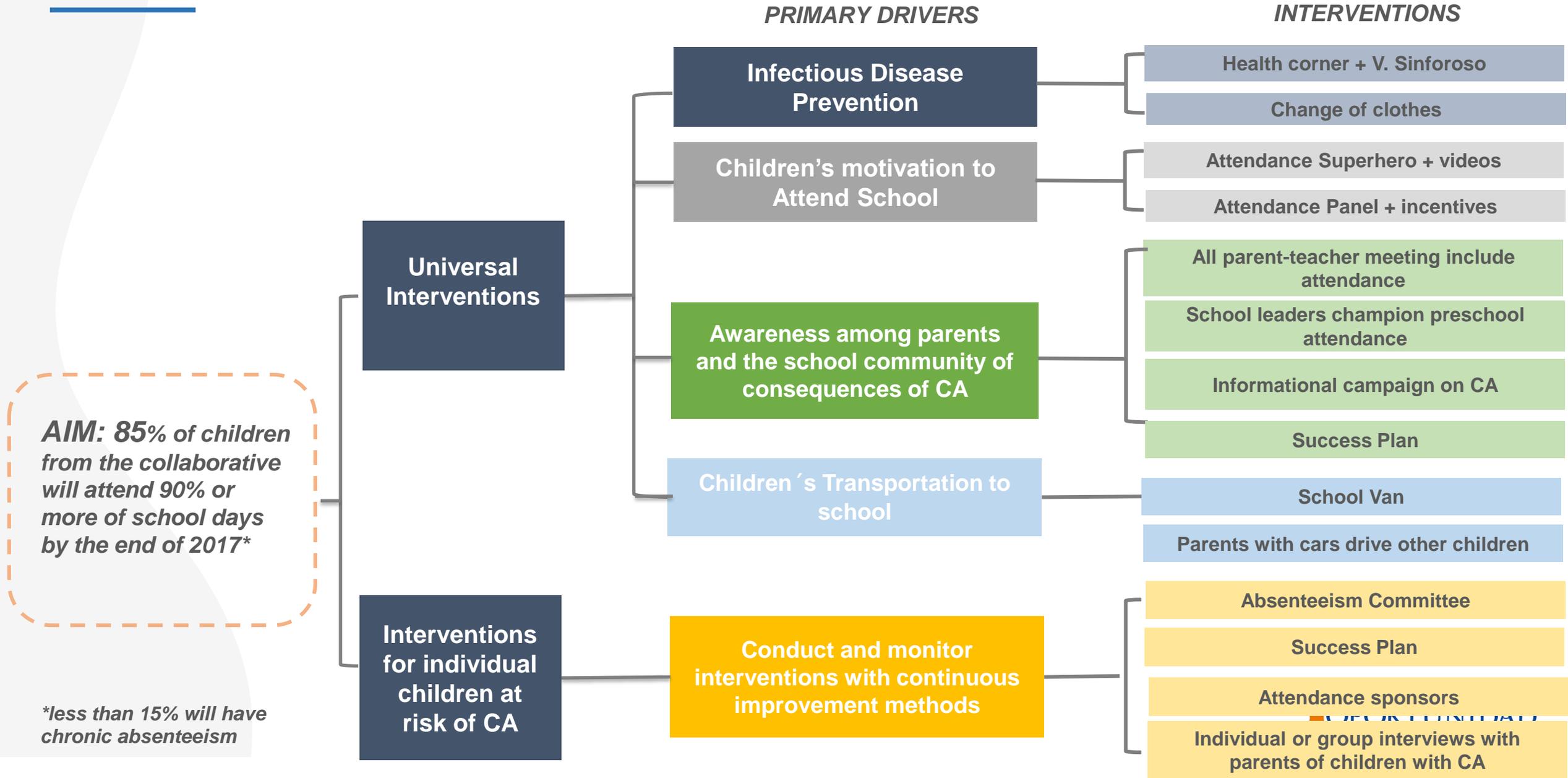
Strategy = Continuous Quality Improvement

Model for Improvement



# Attendance Driver Diagram: Theory and Interventions

## Multi-tier Approach



# Intervention Strategy: Continuous Improvement Methods to Build Capacity at 3 levels

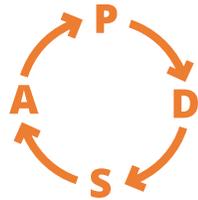
	March	April	May	June	July	August	September	October	November	December
<b>Classroom</b>			*	*		*		*	*	
<b>School</b>			*	*		*		*	*	
<b>Network</b>		*			*					*

## CLASSROOM level strategies



### Teachers:

- Propose ideas
- Test
- Measure
- Evaluate



### Teachers and school leaders:

- **Analyze** data to **make decisions**
- **Adapt** innovations to context

## SCHOOL level strategies



### Teachers and school leaders:

- Conduct school-to-school visits
- Model and observe testing changes in pedagogical practices
- Analyze shared experience based on data analysis

## NETWORK level strategies



### Full teams and sponsors attend learning sessions

- Embrace a shared aim
- Analyze progress using common metrics
- Share innovations
- Set new challenges

# School attendance program



## Building capacity at 3 levels

	March	April	May	June	July	August	September	October	November	December
<b>Classroom</b>			*	*		*		*	*	
<b>School</b>			*	*		*		*	*	
<b>Network</b>		*			*					*

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### Plan de Escuela

Incorporar el saludo en la rutina diaria de los alumnos.  
Mejorar la comprensión auditiva a través de historias y canciones.

### Descripción de Pruebas de cambio trabajadas

**Equipo directivo:** La prueba de comprensión lectora incorporará el inglés como elemento fundamental de la rutina de los alumnos.  
**Docente:** La prueba consiste en que a partir de historias los alumnos practicarán y mejorarán sus habilidades de comprensión auditiva.

### Equipo de Escuela

Directora: Lany Villalobos  
Jefe de UTP: Verónica Gallardo  
Docente: Claudia González

### CICLO PHEA

**Equipo Directivo**

- Planear:** Se incorporará el saludo en inglés. Lo realizará el profesor encargado.
- Hacer:** Se realiza lo planificado.
- Ajustar:** Se mantendrá el saludo y se incluirá a todos los docentes de la comunidad. Se incorporará la despedida.
- Estudiar:** Nos fue bien, ya que 100% de los alumnos responde el saludo inicial en inglés en las oraciones que nos son de inglés o el taller de inglés.

**Equipo Sala**

- Planear:** Todos los docentes incorporarán a su rutina diaria el saludo y despedida en inglés.
- Hacer:** Se realiza lo planificado con un break de ambiente un día.
- Ajustar:** Se va a mantener el saludo y despedida en inglés. El equipo de profesores seguirá realizando la rutina.
- Estudiar:** Nos fue bien, ya que paulatinamente los interponen de la comunidad han empezado el saludo y despedida en inglés. 60% de los alumnos responde al saludo y despedida.

**Equipo Sala**

- Planear:** Se incorporaron lecturas en donde los alumnos debían contestar 3 preguntas de comprensión. Esta fue realizada por docente de inglés.
- Hacer:** Si se realizó lo planificado.
- Ajustar:** Se desea decir mantener el ciclo, pero se marcó la selección de alumnos a siete más de diez, a cada 15 segundos una hoja de respuestas.
- Estudiar:** Los alumnos responden a las preguntas de manera incorrecta desde de las primeras semanas. A partir de la semana 3 los alumnos comienzan a contestar 2 de 3 preguntas.

**Equipo Sala**

- Planear:** Se diseñaron 3 preguntas de comprensión auditiva, seleccionando algún orden de lista. Para determinar el nivel de respuesta de inglés se usó una planilla de nivel con puntaje, para el nivel de base.
- Hacer:** Se realiza lo planificado de manera silenciosa.
- Ajustar:**

# Study

2014-2015: All schools in VI Region offered the choice of receiving UBC professional development

- 27 schools did not participate in UBC (27 Comparison Schools),
- 14 schools participated in UBC in 2014-2015, but did not choose attendance as their priority intervention area
- 5 Schools participated in UBC in 2014-2015 and chose attendance as their priority intervention area

2018: Ministry of Education made available databases with daily, individual student-level attendance 2011-2017

# Data: Publicly Available, Individual-level daily attendance

## Chilean education system

- Laws and legislations that consider attendance



1998 law-ranking decree N2

- *Subsidy to schools*



Norm of evaluation and promotion

- *Promotion from one grade to another*



Law on educational quality assurance

- *Assess the quality of the school*

# Chilean school attendance data

- Attendance process

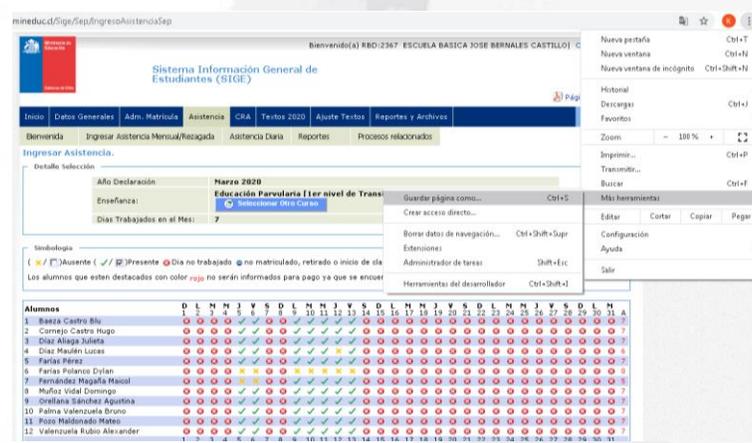


## 1.- Class roll

DOCENTE	Mes		Parámetros de calificación			Injustificado	Atraso	Días ausencias	TOTAL																													
	Enero		(J) Justificado	(I) Injustificado	(A) Atraso																																	
CURSO	PARALELO	Año Lectivo: 2018																																				
Nº	NOMBRE	L	M	M	J	V	S	D	L	M	M	J	V	S	D	L	M	M	J	V	S	D	L	M	M	J	V	S	D	L	M	M	J	V	S	D		
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- Teacher are responsible for recording attendance (present, absent, or **late**) in a class roll every day. Circular Nº 30 of the Superintendence of school Education.

## 2.- General student information system (SIGE)



- The attendance officer or the school's general inspector is responsible for reporting attendance to MINEDUC by the online digital system SIGE.

# Study

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Research Question 1: What were the rates of absences and chronic absenteeism in preschools in the VI region of Chile between 2011 and 2017?

Research Question 2: . Is there a difference in the evolution of absences and chronic absenteeism between three groups of schools?

# Analytic Approach

2014-2015: All schools in VI Region offered the choice of receiving UBC professional development

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2.1 Statistical Process Control charts: central line (mean), regression-based control limits (=3 SD)

identify changes in the data that have a less than 5% probability of occurring by chance alone

examine associations between changes in data with timing of UBC attendance strategies

2.2 Interrupted Time Series Analysis: compare pre- and post-intervention intercepts (Level) & slopes (trends)

We estimated an ordinary least squares regression model:

$$Y (\text{percent absent}) = \text{beta} + B_1\text{time} + B_2\text{interventionperiod} + B_3\text{time}^*\text{period}$$

ITSA can estimate effects of multiple treatment periods. We compared

Pre-UBC (2011-2012) to Year 1 UBC intervention data (March-Nov 2014) and post-Year2 (2015-2017)

## Results: Analytic Sample

2011–2017	UBC schools that prioritized attendance	UBC schools that did not prioritize attendance	Comparison schools	Total	<i>p</i> -Value <sup>d</sup>
N schools	5	14	27	46	
N rural schools	5	14	20	39	
N municipal schools	5	13	27	37	
N voucher schools	0	1	0	10	
N classrooms	6	19	42	67	
Average N preschool children <sup>a</sup> , total (range)	104 (83–126)	300 (274–317)	814 (742–865)	1,218 (1,099–1,308)	
Average N children per preschool classroom (range)	18 (5–39)	16 (4–45)	19 (1–44)	18 (1–45)	0.01
Average N matriculated children per school (range)	156 (77–254)	159 (72–363)	195 (16–825)	180 (16–825)	0.64
Average N students living in poverty <sup>b</sup> (range)	112 (44–166)	123 (59–252)	147 (11–565)	120 (11–565)	0.62
Average % students living in poverty <sup>b</sup> (range)	71.4 (57.1–80.6)	78.4 (64.0–92.2)	75.1 (58.1–86.1)	75.7 (57.1–92.2)	0.22
Average N students living in extreme poverty <sup>c</sup> (range)	65 (25–79)	80 (36–127)	94 (4–369)	87 (4–369)	0.57
Average % students living in extreme poverty <sup>c</sup> (range)	42.4 (29.9–52.3)	52.3 (34.8–72.9)	46.9 (24.1–65.0)	48.1 (24.1–72.9)	0.19

# Results: Implementation of Attendance Strategies

**Table 1.** UBC Schools that prioritized attendance and the strategies they tested each month.

UBC Schools that prioritized attendance	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014	Sept 2014	Oct 2014	Nov 2014	Dec 2014	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sept 2015	Oct 2015	Nov 2015	Dec 2015	
Escuela Básica José Bernales Castillo 5A																					
Escuela Osvaldo Correa Fuenzalida 5A																					
Escuela Básica Pataguas Cerro 5A																					
Escuela Reino de Dinamarca 5 <sup>a</sup>																					
Centro Educativo Siglo XXI 5A																					

Key to Table 1.

Color	Strategy
Dark Blue	Attendance panel
Light Blue	Inclusion of the attendance issue in all parent-teacher meetings
Yellow	Absenteeism Committee
Grey	Incentives for children
Orange	Incentives for families
Red	Success Plan
Purple	Health Corner

# Attendance program results: Research Question 1

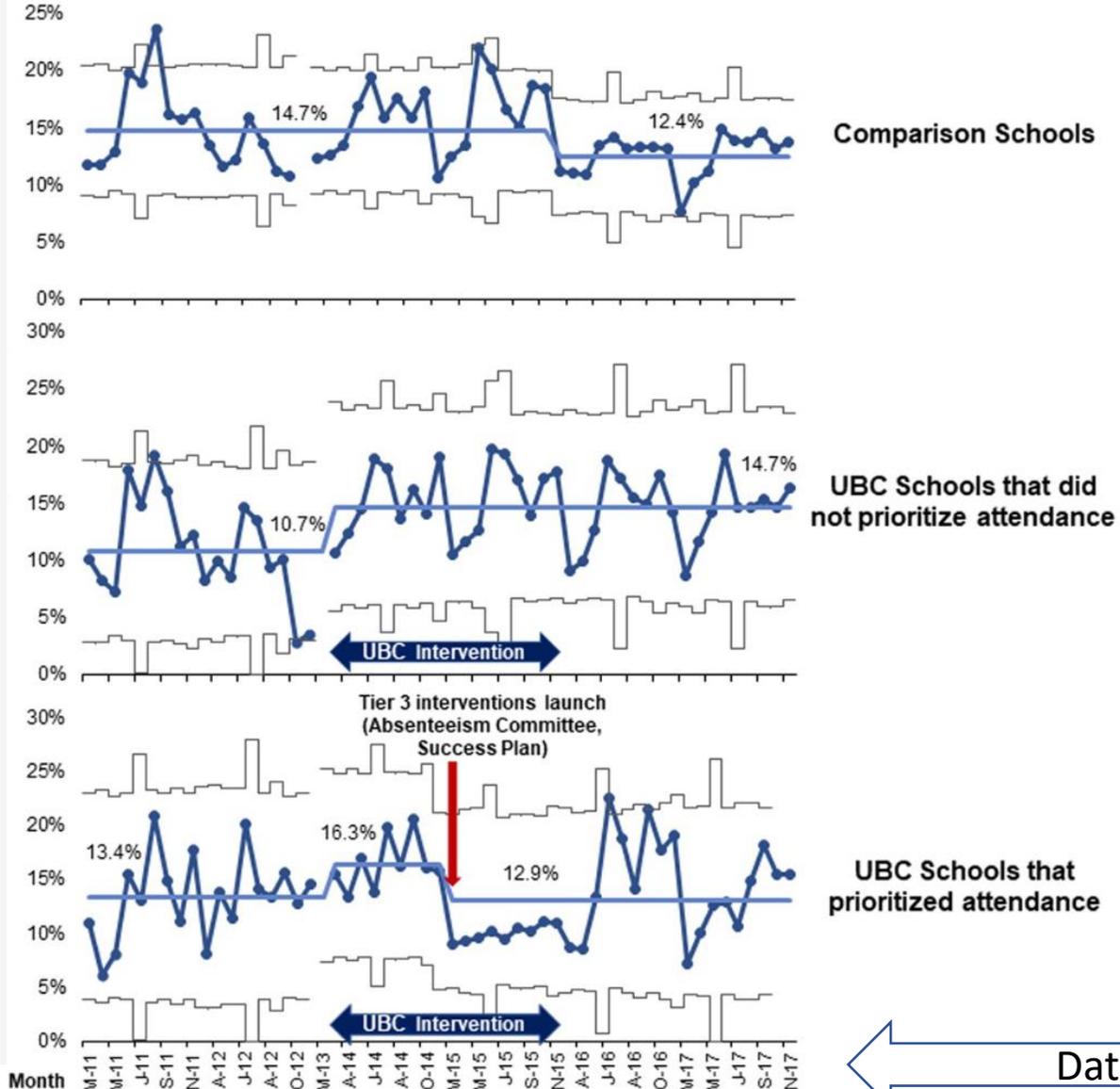
- What were the rates of absences and chronic absenteeism in preschools in the VI region between 2011 and 2017?

Average, 2011–2017	Total	Comparison schools	UBC schools that did not prioritize attendance	UBC schools that prioritized attendance
Percent of days absent per child	14.2 (10.4–17.3)	14.4 (12.1–16.3)	14.0 (10.8–15.3)	14.2 (10.4–17.3)
Percent of children with chronic absenteeism	52.1 (33.5–68.9)	50.9 (33.5–68.9)	51.2 (40.3–57.1)	54.2 (35.3–62.0)

# Attendance program results

- RQ2 Is there a difference in evolution of absenteeism?

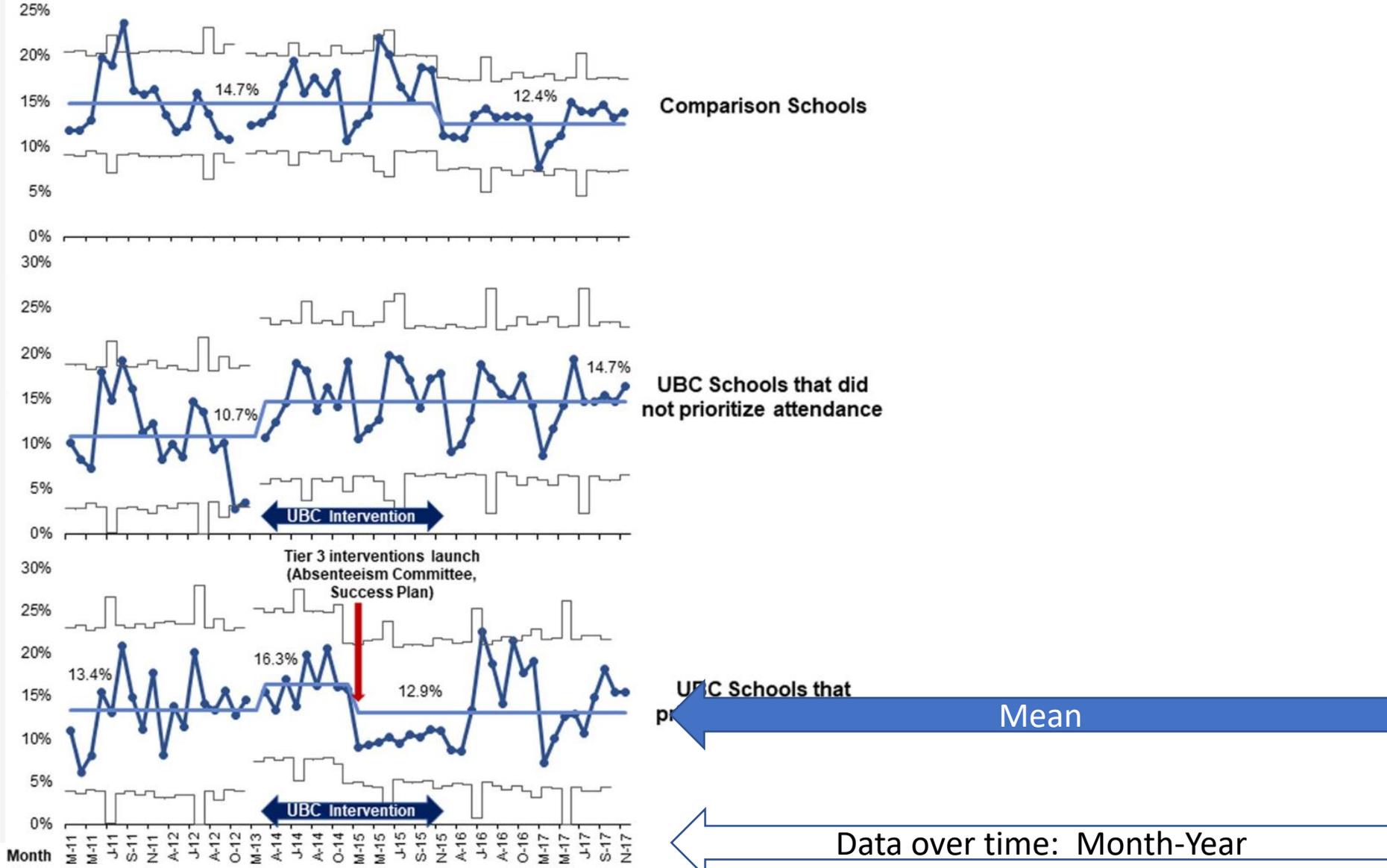
## Average percent days absent per child per month



# Attendance program results

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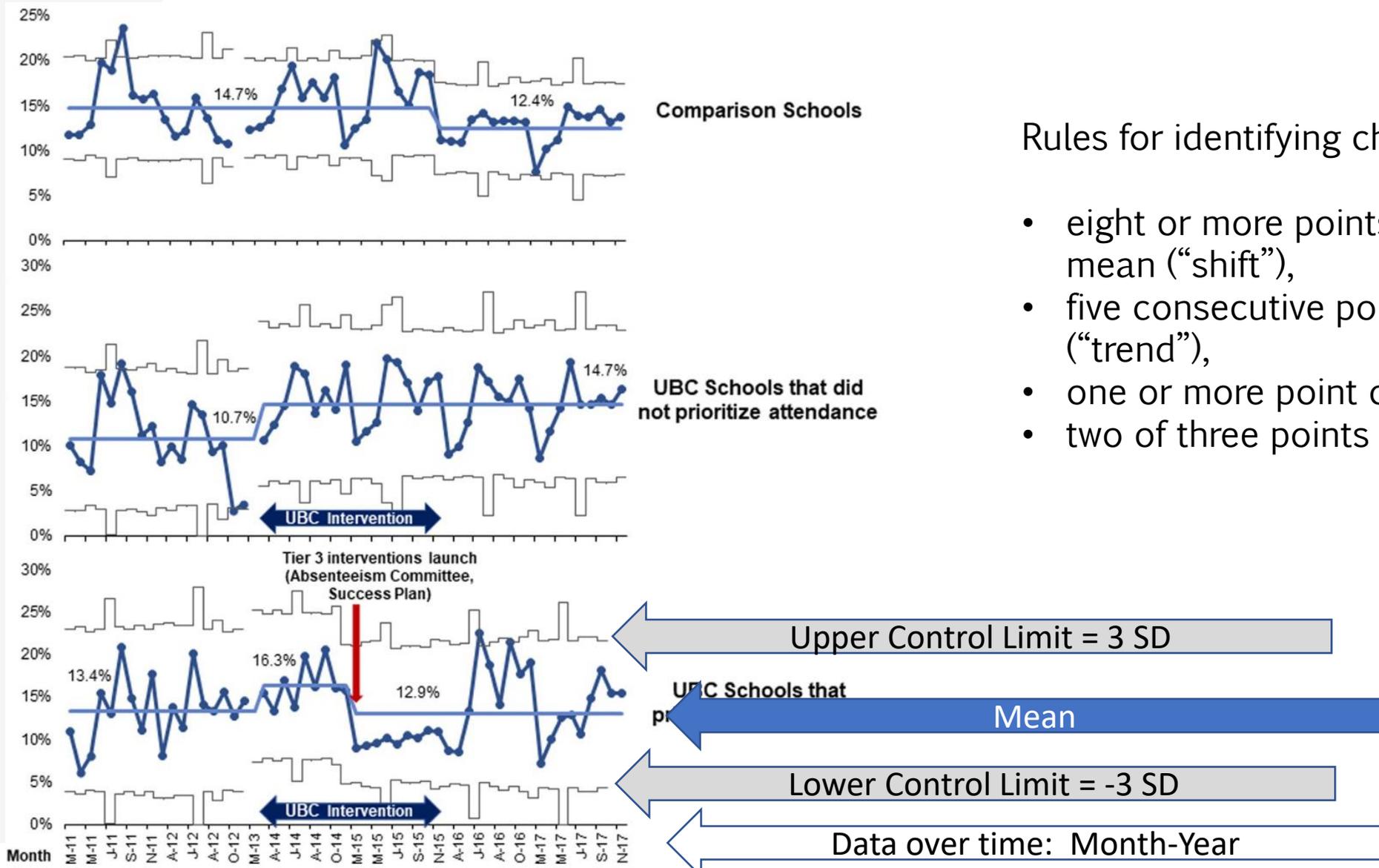
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# Attendance program results

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## Average percent days absent per child per month



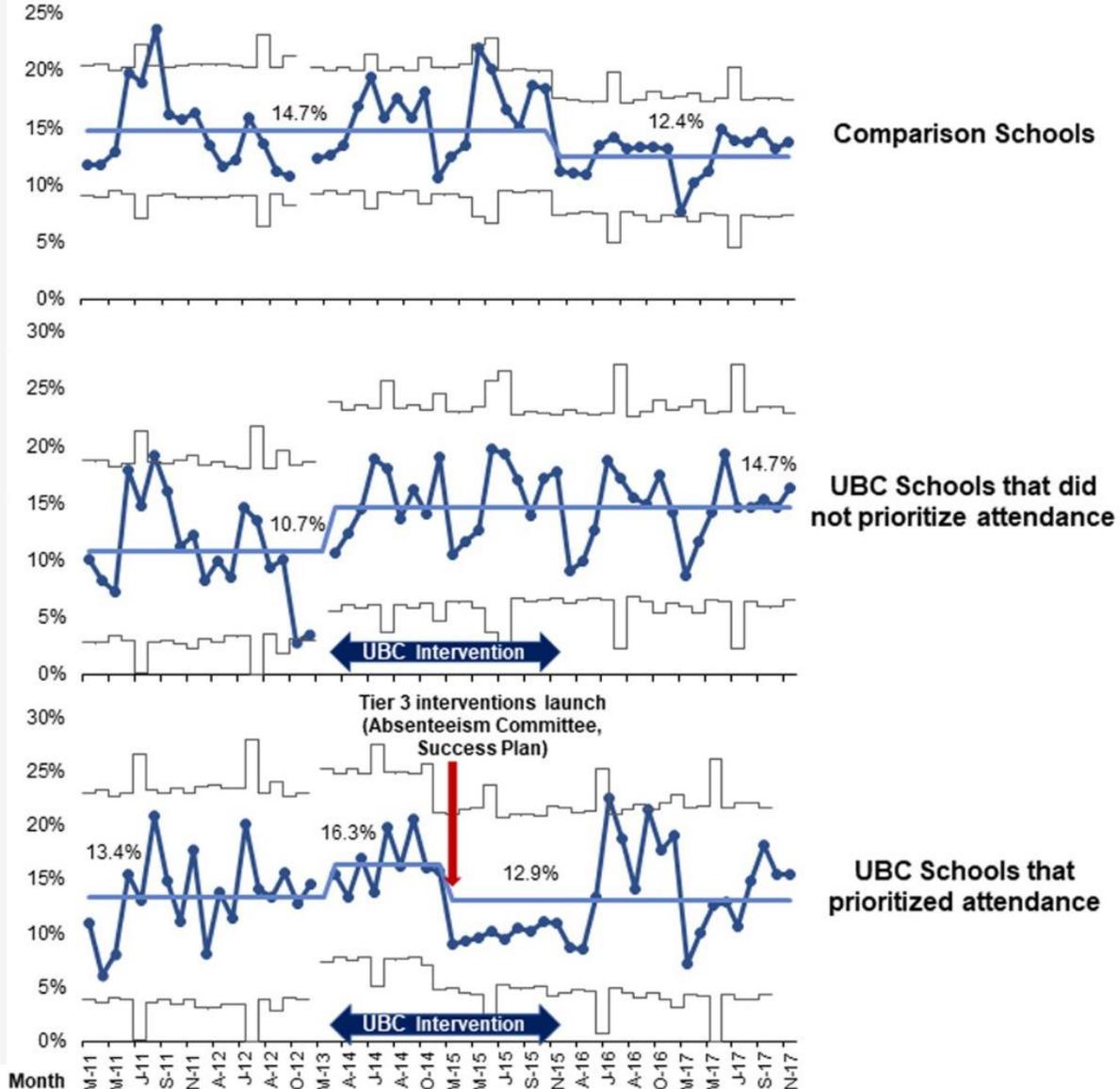
Rules for identifying changes on SPC charts:

- eight or more points in a row above or below the mean (“shift”),
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- one or more point outside the CL, and
- two of three points outside 2SDs

# Attendance program results

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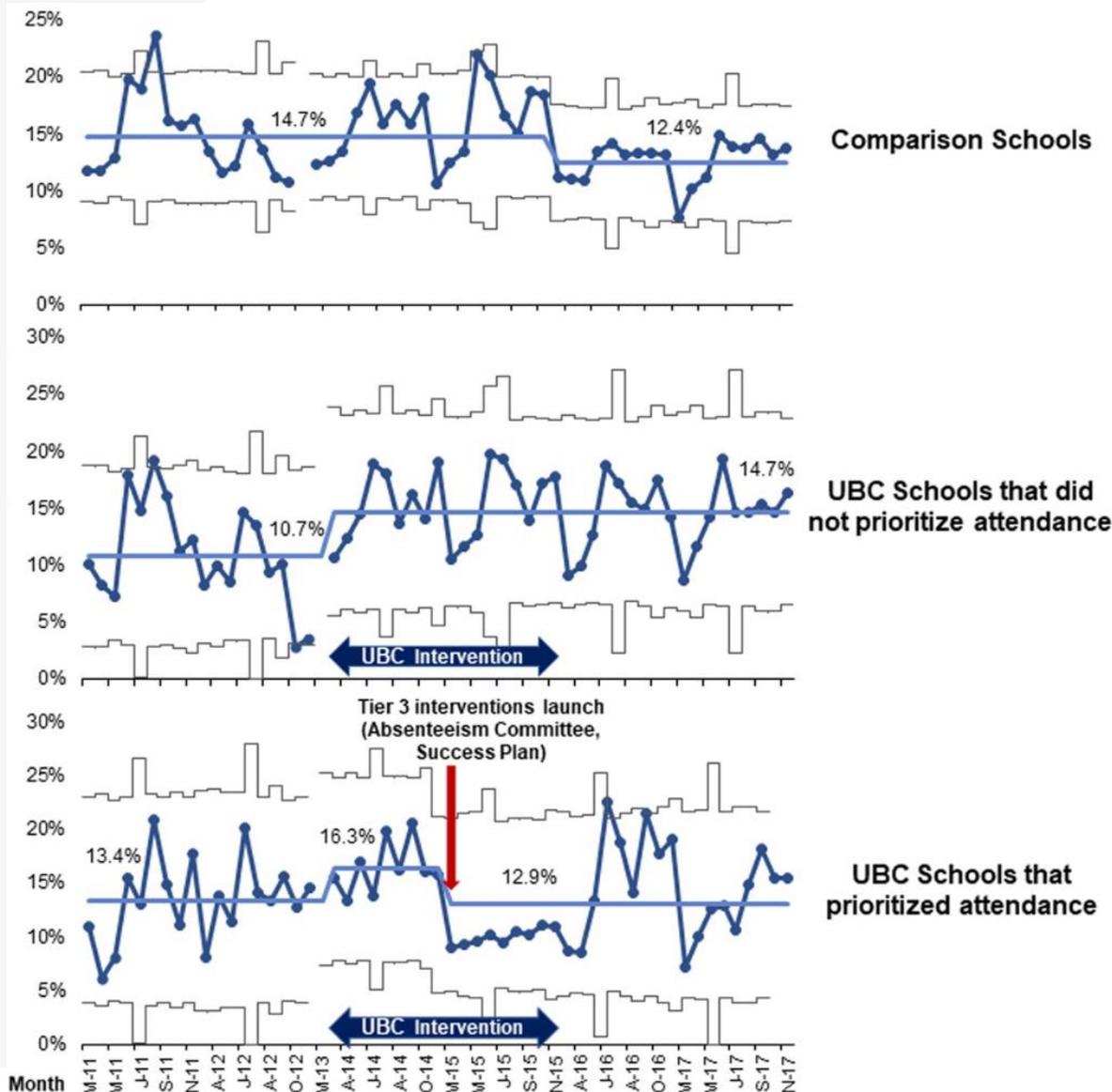
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# Attendance program results

• RQ2 Is there a difference in evolution of absenteeism?

## Average percent days absent per child per month



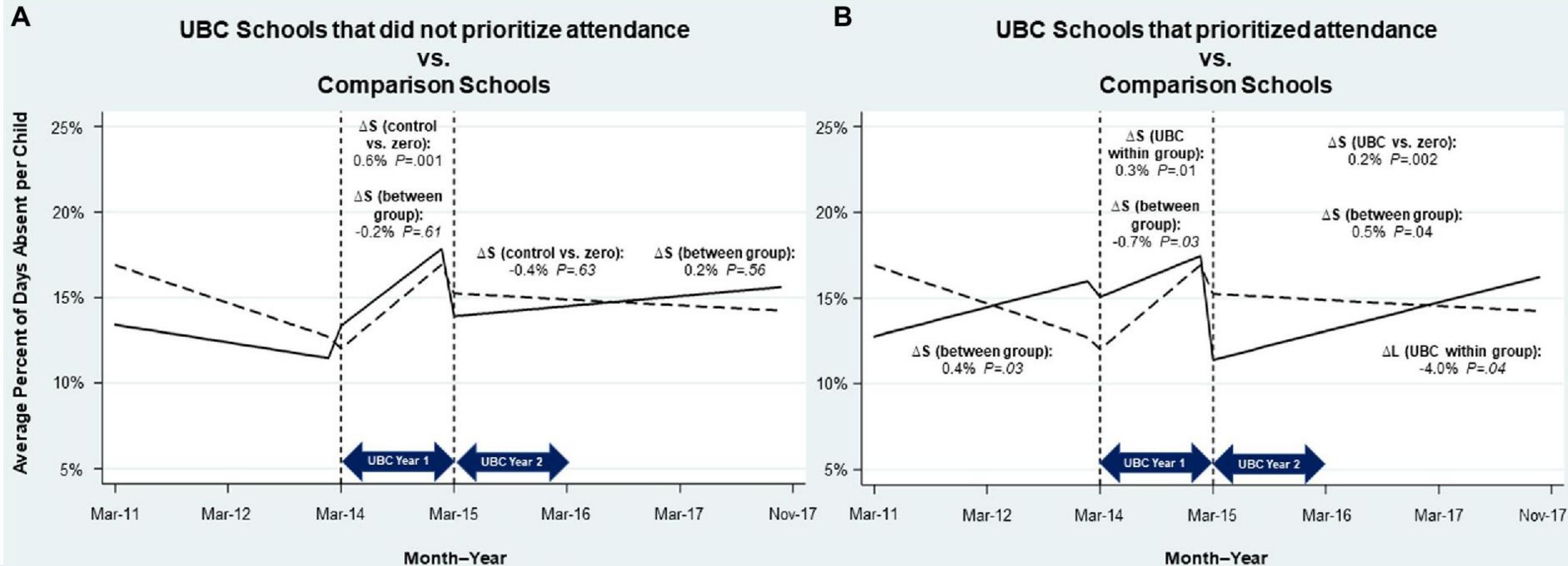
- 2<sup>nd</sup> year reduction in absences coincide with:
- an increase in the number of times strategies were applied
  - Diversification of types of strategies applied and types of attendance strategies that were applied

2014: mostly general strategies for raising awareness

2015: Attendance Committee, a school-level, multidisciplinary team, aimed to accompany children at risk of chronic absenteeism in a personalized way.

# Attendance program results

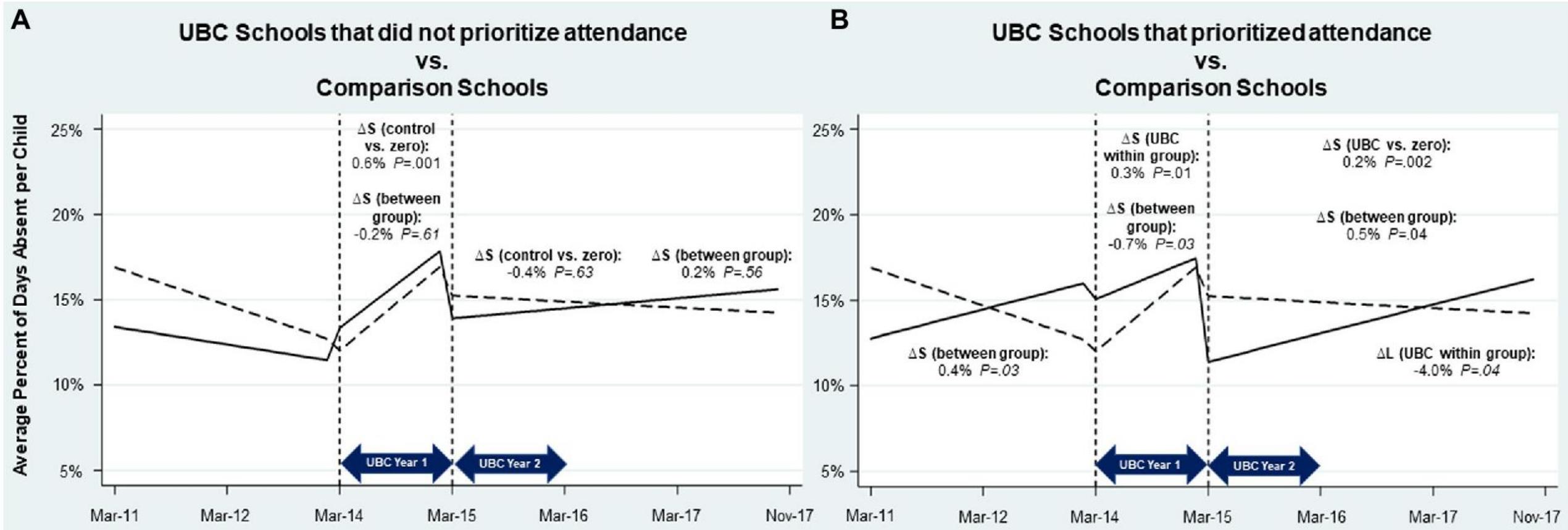
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Arbour, M., Soto, C., Alée, Y., Atwood, S., Muñoz, P., Marzolo, M. Absenteeism prevention in preschools in Chile: Impact from a quasi-experimental evaluation of 2011–2017 Ministry of Education data. *Frontiers in Education*. 2022. 7:975092. doi: 10.3389/feduc.2022.975092

# Attendance program results

• RQ2 Is there a difference in evolution of absenteeism?



Comparison Schools and UBC Schools that did not prioritize attendance had similar and stable absence rates before 2014 and again 2015-2017.

In 2014, absence rates rose for both groups by approximately 0.6 percentage points each month ( $P<.001$  for both).

In UBC Schools that prioritized attendance before 2014, absence rates were similar in level to the other two groups, but they were rising.

In 2014, absence rates rose less quickly in UBC schools that prioritized attendance than the other schools

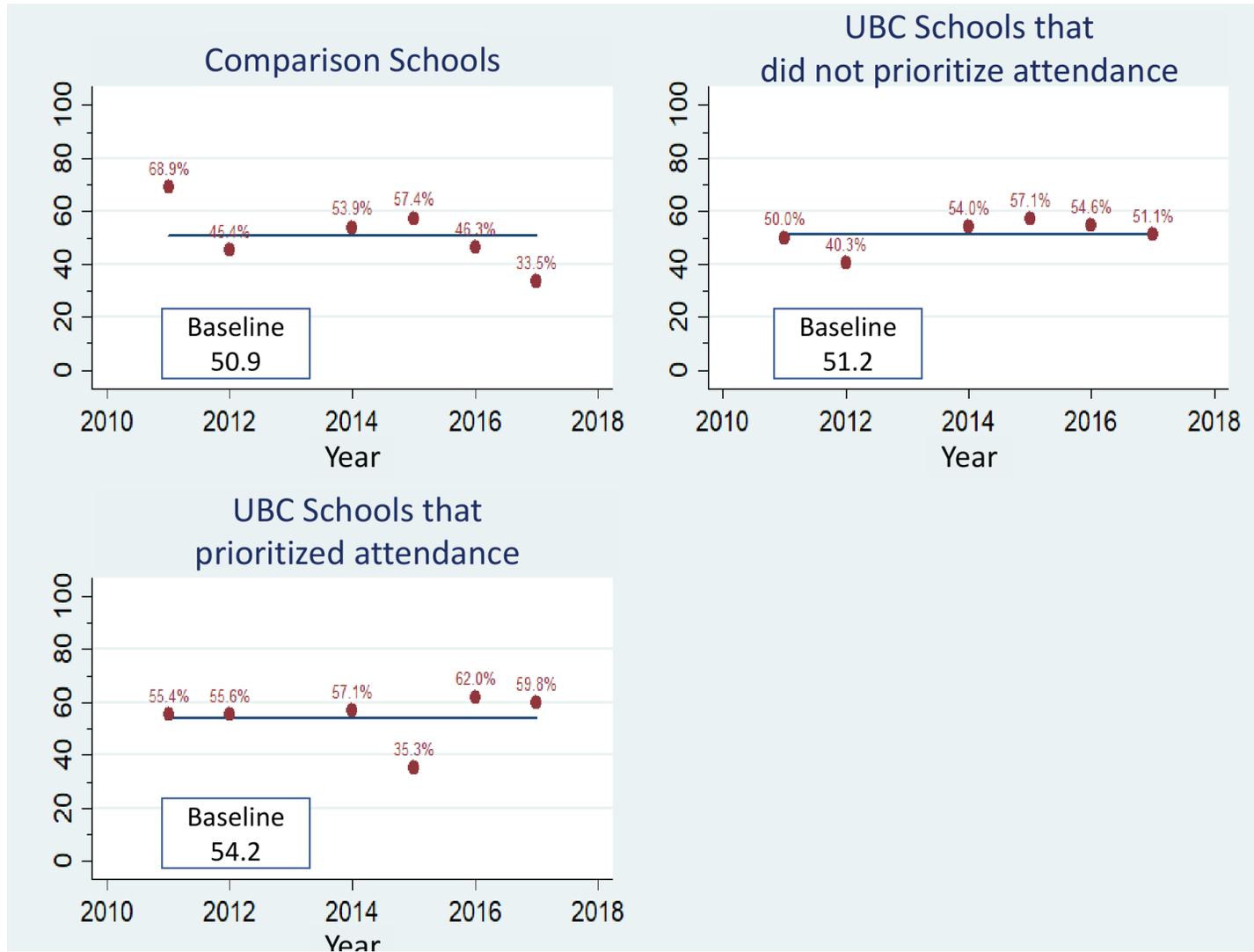
In 2015, absence dropped by 4 percentage points, then rising

# Attendance program results

- RQ2 Is there a difference in evolution of absenteeism?

## Percent of children with chronic absenteeism per year

2011-2017



# Conclusions and Implications

First study to analyze the effects of innovations to promote attendance and reduce chronic absenteeism using national Ministry of Education data of 7,310 children enrolled in public preschool in Region VI over seven years (63,689 child-months of data).

## Replicated Findings:

1. Absenteeism rates among preschool-aged children are high (14%) -- higher than the threshold that
  1. affects skill development in the medium term (Chang and Romero, 2008) and
  2. can reduce or eliminate the impact of high-quality early childhood education (Arbour et al, 2016).
2. more than half of the children enrolled in prekindergarten and kindergarten are absent for more than 10% of school days

## New findings

3. It is possible to reduce absenteeism

These reductions in absenteeism were of large magnitude, as compared to other studies in the literature.

4. Improving attendance and reducing absenteeism requires a tiered approach
  - universal strategies to promote regular attendance by all children and,
  - rigorous and systematic application of strategies that address the specific causes of absences of individual children at risk of chronic absenteeism.
5. Obtaining and sustaining improvements in attendance can be supported using networked peer learning and continuous improvement methodology (i.e., Breakthrough Series Collaborative).

# Questions?



For more...Attend Friday's presentation:

Data + community-based teamwork=

**Effective interventions to promote school attendance and reduce chronic absenteeism in Chile**

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