

# A Registry of Pre-K to 3<sup>rd</sup> Grade Programs

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# Overview of Pk-3 Registry

Although many registries and clearinghouses of effective programs exist, none focus on prekindergarten to third grade (Pk-3) programs and practices. Given the increased public and research interest in better integrating early childhood and school-age programs, the Registry of Pk-3 Programs was developed to describe promising and proven approaches for enhancing children's school performance and well-being.

## Organization

1. Background
2. Registries of Social Programs
3. Criteria for Pk-3 programs
4. Research Evidence
5. Implications and Recommendations
6. Example: Midwest Child-Parent Center Expansion
7. Examples of Promising State and Local Initiatives
8. Resources of Evidence

# 1. Background

# Early Schooling Trends

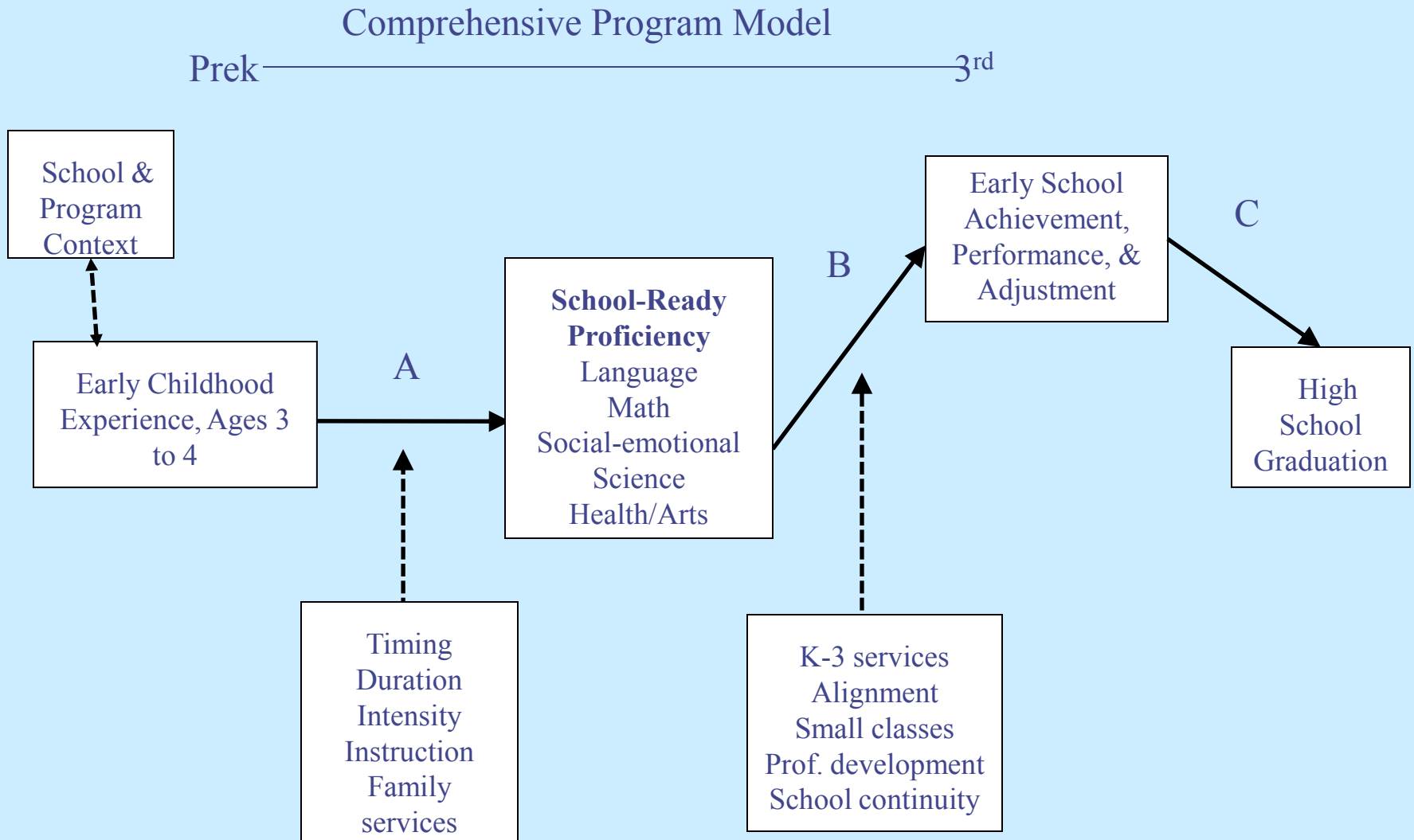
1. Less than half of children enter Kindergarten fully ready succeed.
2. Preschool impacts are frequently found to drop off over time.
3. Third and fourth grade underachievement is the norm in U.S. schools.
4. Most previous efforts to strengthen continuity from preschool to 3<sup>rd</sup> grade have not had sustained effects.

# Reading Proficiency Gap

Goal: 75% Proficient (4<sup>th</sup> gr., 2011 NAEP)

U. S. Children:	32%
Current gap to goal	43 pts.
Impact of effective Pre-K:	15 pts.
Reduction in gap:	35%
Remaining gap:	28 pts.

# Paths of Change for PK-3 Programs



## 2. Registries of Social Programs



# Scope

We identified 14 relevant registries and clearinghouses that identify effective programs for children and families. The 4 federally-sponsored and funded ones are:

National Registry of Effective Programs and Practices  
(NREPP)

What Works Clearinghouse (WWC)

Office of Juvenile Justice and Delinquency Prevention  
Registry (OJJJP)

Interagency Working Group on Youth Programs  
(Findyouthinfo.gov)

# Evidence to Consider

## **Program Models**

Specific programs

Designed to determine impacts

Populations at risk

## **Systems Approaches**

Capacity building

General elements informed by research

Broader implementation

# National Registry of Effective Programs & Practices (NREPP)

## ◆ Quality of Research

- Reliability of Measures
- Validity of Measures
- Intervention Fidelity
- Missing Data and Attrition
- Potential Confounding Variables
- Appropriateness of Analysis

## ◆ Readiness for Dissemination

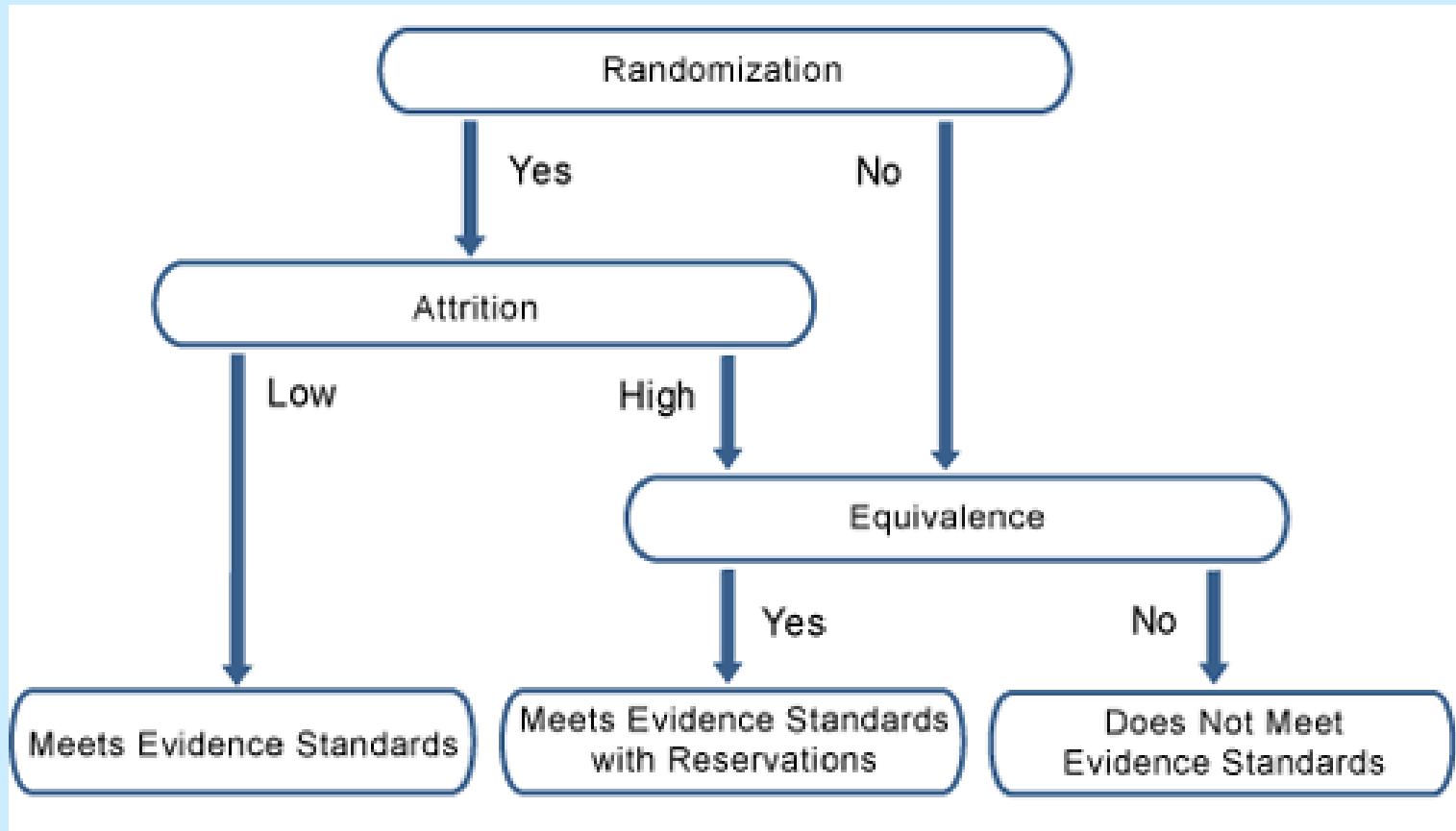
- Availability of implementation materials
- Availability of training and support resources
- Availability of quality assurance procedures

# What Works Clearinghouse

Focus on rigor of analysis:

- ◆ Randomized Trials
- ◆ Low Attrition
- ◆ Group Equivalence
- ◆ Evidence of Effect

# Evaluation Summaries – What Works Clearinghouse



# Classification of Effectiveness

Blueprints for Violence Prevention	Model and Promising
What Works Clearinghouse	Meet, Meet with Reservations, Does not meet
Office Juvenile Justice and Delinquency Prevention	Exemplary, Effective, Promising
Promising Practices	Proven, Promising
LINKS	N/A
CASEL	Safe and Sound Guide
Findyouthinfo.org	Level 1, Level 2, Level 3
Campbell Collaboration	N/A
NREPP	Ranking of variables on 4.0 scale
Best Evidence Encyclopedia	Top Rated, Limited Evidence, Other
Comprehensive School Reform Quality Center	Non-Evaluative
Social Programs that Work	Effective, Ineffective, No/Adverse Effects, Top Tier, Near Top Tier
Blueprints for Violence Prevention	Model and Promising
What Works Clearinghouse	Meet, Meet with Reservations, Does not meet

## 3. Criteria for Pk-3 Programs

# Four Domains of Criteria

We defined 15 criteria of effectiveness in 4 domains: (a) Design, (b) Execution, (c) Impacts, and (d) Scalability.



# Criteria for Evidence Registry

## A. Design

1. Conceptual framework
2. Study design rigor
3. External validity
4. Measurement validity

## B. Execution

5. Implementation fidelity
6. Service dosage and quality
7. Missing data and attrition
8. Control group monitoring

# Criteria for Evidence Registry

## C. Impacts

9. Effect sizes
10. Sustained effects
11. Generative mechanisms
12. Economic benefits

## D. Scalability

13. Feasibility
14. Readiness for dissemination
15. Capacity for sustainability

# Select Definitions

1. Conceptual framework: Theory of change is described and is adequate to address goals and outcomes
2. Study design rigor: Design type, group comparability, contrasts, analysis of confounds
3. External validity: Sample attributes, program attributes, scale, and cost
4. Measurement validity: Reliability, validity, and appropriateness to goals
5. Implementation fidelity: Adherence of program plan
6. Service dosage and quality: Quantity and quality

# Select Definitions

7. Feasibility: Acceptability to stakeholders, alignment to current initiatives and priorities, and costs
8. Readiness for dissemination: Availability of implementation guides, technical and implementation support, and quality assurance procedures
9. Capacity for sustainability: Organizational capacity, leadership support, cost, and mechanism for financing

# Scale of Evidence for Criteria

0 = No evidence or insufficient

2 = Moderate evidence with limitations

4 = Strong or extensive evidence

Scale points of 1 and 3 are possible but fractions are not.

# Domain Summary

Category	Range	Minimum evidence
Design	0 to 16	8
Execution	0 to 16	8
Impact	0 to 16	8
Scalability	0 to 12	6
Total	0 to 60	30

# Classification of Evidence

Not interpretable:	Design and execution do not meet minimum levels.
Not effective:	No positive evidence interpretable as an effect.
Promising:	Some positive evidence.
Effective:	Sizable positive evidence with a consistent pattern.
Very Effective:	Consistently positive evidence that endures for two or more years

# Control Group Contrasts:

## Prek-3 vs:

1. Prek only (Value added)
2. School-age only (Value added)
3. Less extensive (Dosage threshold)
4. NonPrek-3 (Dosage threshold)
5. Years of service (Gradient)
6. No participation (Synergy)
7. Usual local services (Synergy)



## 4. Research Evidence

# Defining Strategies

## **Programs**

Planned interventions and services beginning during any of the first 5 years of life and continue up to third grade

## **Practices**

Elements of PK-3 programs such as preschool, full-day kindergarten, class sizes, curriculum alignment, parent involvement.

# PK-3 Program Goals

- ❖ Promote continuity in learning
- ❖ Improve school transition
- ❖ Enable synergy of preschool, kindergarten, and early school experiences
- ❖ Help prevent fade in effect of preschool

# History of PK-3 programs and studies

Follow Through, 1968

Chicago Child-Parent Centers, 1968

Project Developmental Continuity, 1974

Carolina Abecedarian Project, 1977

Head Start-Public School Transition  
Demonstration Project, 1991

# Classification of PK-3 Approaches

<b>Classification</b>	<b>Example</b>
Case Management	Head Start Transition; Abecedarian Project
School Organizational	Small classes; PK-3 schools
Comprehensive Services	Child-Parent Centers; Proj. Devel. Continuity
Instructional Reforms	Follow Through
Single Practices	Full- Day K; Parent Involvement , PD

# Classification Continued

<b>Classification</b>	<b>Example</b>
Systems coordination, alignment	Montgomery County, MD; Bremerton District, WA

# Meta-Analysis Findings for Behaviors & Experiences Relevant for Pk-3

	Effect size	Duration
Prekindergarten	.26	Variable
Full-day K	.17	Short
Small classes, K-3	.19	Short
Parent involvement	.20-.40	Variable
Frequent school moves	-.30	> 2 yrs

# Inclusion Criteria for Studies

To be included in the registry analysis, program studies were required to meet all of the following criteria:

1. Program was designed as a Pk-3 intervention.
2. A comparison group was defined a priori
3. Evidence was reported through the end of the program (Grade 3 or beyond)
4. Contrast of Pk-3 participation versus comparison condition was well defined.



# Number of Studies Identified

Carolina Abecedarian Project	3
Head Start/Follow Through	4
Chicago Child-Parent Centers	8
National Head Start Transition Project	4

# Reviewed Studies

The ratings included in the registry are based on the program study with the most complete evidence.

Effect sizes are reported in standard deviations.

Effect sizes of 0.20 or higher in absolute value are considered practically significant although lower values can still be meaningful.

# Follow Through: Instructional Reform

	Age 8-9	Age 12-13
Direct Instruction (n = 2,004)	.50	.22
High/Scope (n = 807)	.29	--
Bank Street (n = 61)	.26	.07

# Abecedarian Project: Case Management (N = 49)

Outcome	Effect size
Age 8 reading/math	.25
Age 15 math	.10
Special education	.24
High school completion	.03

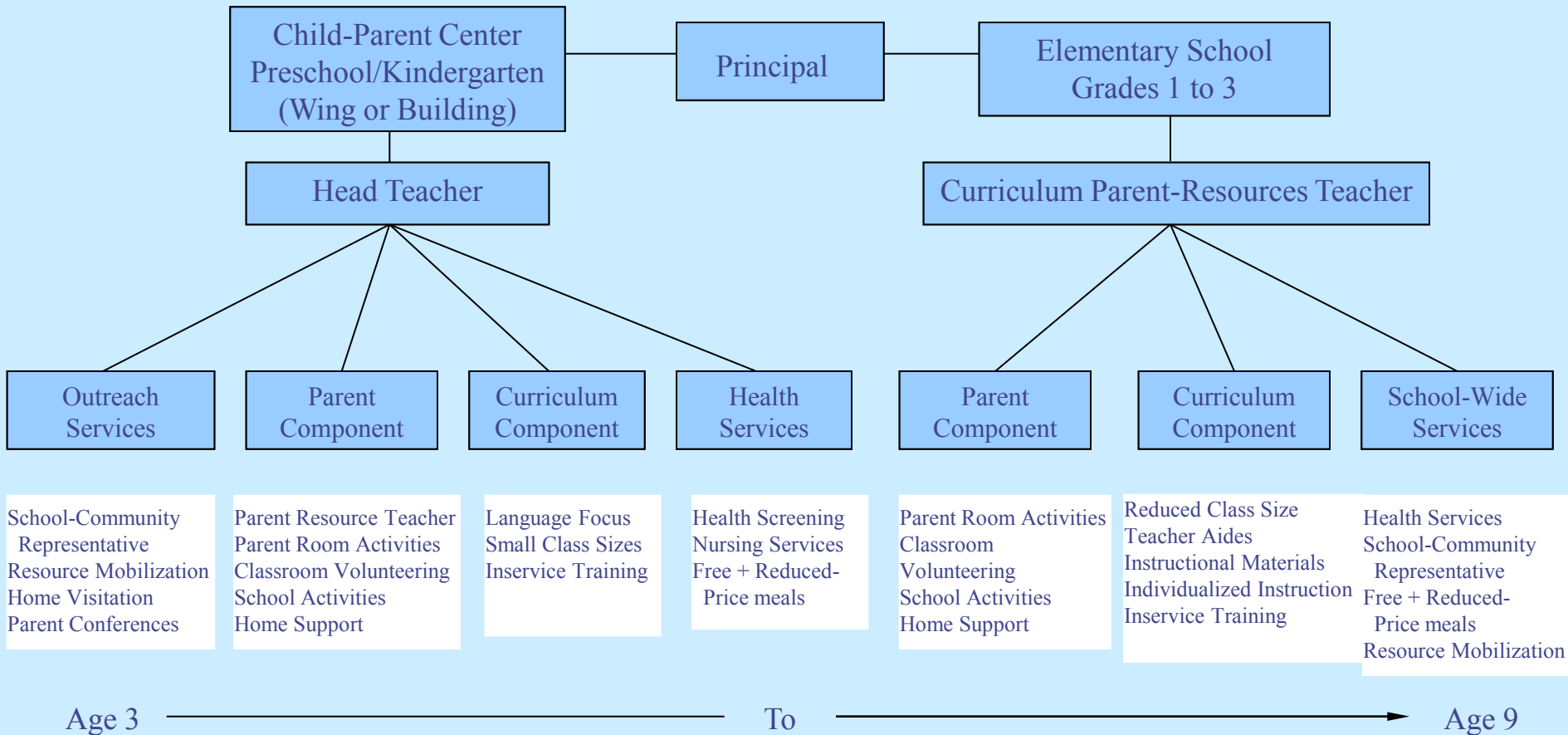
# Chicago Child-Parent Centers (CPC)

CPC-1      Original model, 1967; Fuerst & Fuerst, 1993; Conrad & Eash, 1983

CPC-2      Updated Model, began in mid 1970s; Chicago Longitudinal Study

Developed and implemented by Chicago Public Schools through Title I funding

# Child-Parent Centers



# CPC, Original: Comprehensive

Examined 684 children of the original 6 CPCs with 4 or more years vs. 2 different control schools

Outcome	ES
Grade 8 reading/math achievement	.33
High school graduation (62% vs 49%)	.33

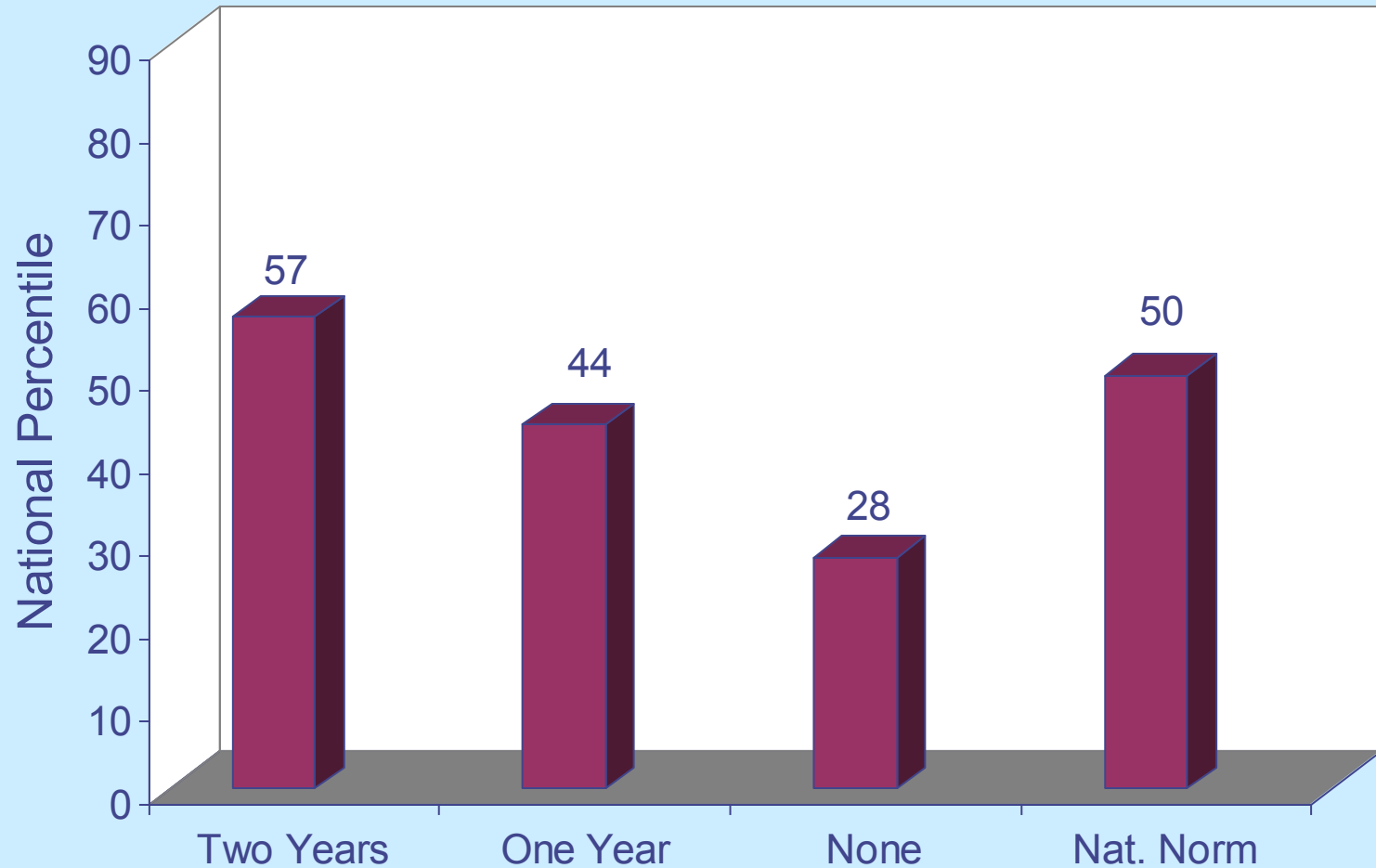
Fuerst & Fuerst, 1993

# Chicago Longitudinal Study, CPC

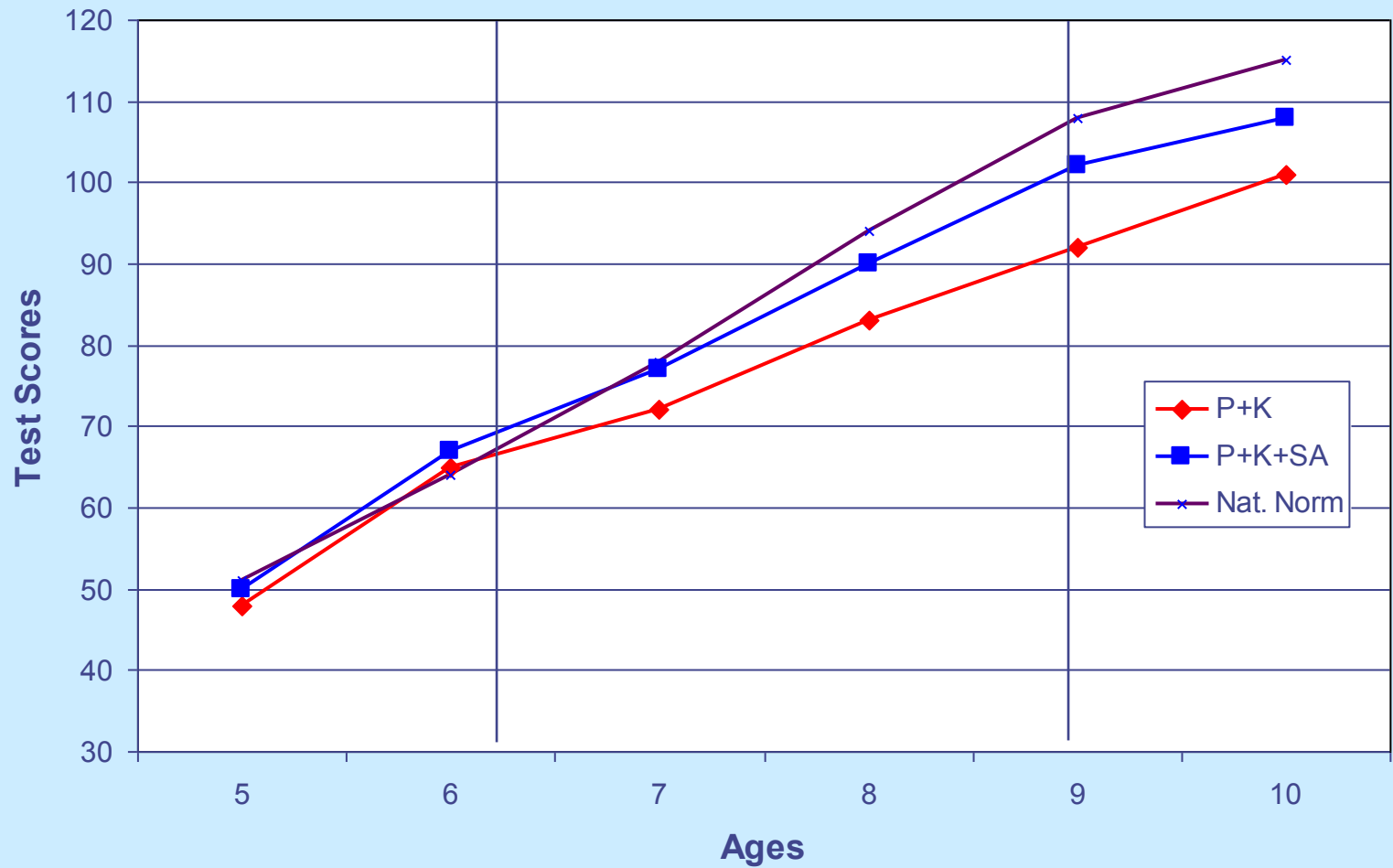
	<b>CPC Intervention</b>	<b>Comparison</b>
Sample	Complete cohort	Random sample of K sites + 6 CPC areas
Recovery, by age 27	893 of 989 (90%)	480 of 550 (87%)
Key attributes	Reside in highest poverty areas Mean no. of risks = 4.5; 73% with 4 or more risks	Reside in high poverty areas Had school-based enrichment Mean no. of risks = 4.5; 71% with 4 or more risks
<b>Intervention levels</b>		
Preschool	100% 1 or 2 years	15% in Head Start
Kindergarten	60% full day	100% full day
School age	69% 1 year 56% 2-3 years	7% 1 year 23% 2-3 years



# CPC Preschool and Readiness



### Reading Achievement over Time by Extended Program Groups



# Effect Sizes, Pk-3 Relative to 3 or Fewer Years of Service

Outcome	ES
Grade 3 achievement	.52
Grade 6-8 achievement	.38
Remediation by Grade 8	-.31
High school graduation	.35
High school completion	.14

# Head Start Transition (Case Management, Comprehensive)

Outcome	ES
Grade 3 Reading	.10
Grade 3 Math	.07
Special education services	.18
Rate of MR	-.13
Rate of emotional disturb.	-.12

# Ratings for 4 Studies

A. Design	FT	ABC	CP1	CP2
1. Conceptual framework	3	2	3	4
2. Study design rigor	3	4	2	4
3. External validity	3	1	3	3
4. Measurement validity	2	2	2	3
B. Execution				
5. Implementation fidelity	3	1	2	3
6. Service dosage and quality	3	2	2	3
7. Missing data and attrition	2	4	2	4
8. Control group monitoring	2	1	2	4

# Ratings Continued

C. Impacts	FT	ABC	CP1	CP2
9. Effect sizes	3	4	3	4
10. Sustained effects	2	4	3	4
11. Generative mechan.	1	2	1	4
12. Economic benefits	1	3	2	4
D. Scalability				
13. Feasibility	1	1	3	4
14. Readiness for dissem.	3	2	2	3
15. Capacity for sustain.	3	2	2	3

# Additional Ratings (Head Start Transition)

A. Design	HST
1. Conceptual framework	3
2. Study design rigor	3
3. External validity	4
4. Measurement validity	2
B. Execution	
5. Implementation fidelity	2
6. Service dosage and quality	2
7. Missing data and attrition	1
8. Control group monitoring	0

# Additional Ratings Continued

C. Impacts	HST
9. Effect sizes	1
10. Sustained effects	1
11. Generative mechan.	0
12. Economic benefits	0
D. Scalability	
13. Feasibility	1
14. Readiness for dissem.	2
15. Capacity for sustain.	2



# Summary of Four Programs

	Total Score	Met Minimum
Follow Through	35	Yes
Abecedarian	35	Yes
CPC-1, Original	33	Yes
CPC-2, Later	54	Yes
Head Start Trans.	24	No

# Classification of Effectiveness

<i>Program</i>	<i>Classification</i>
Follow Through	Effective
Abecedarian Project	Promising
Child-Parent Centers	Very Effective
Head Start Transition	Not interpretable

# Limitations of Evidence

1. Inconsistent control group definitions
2. Insufficient assessment of added value
3. Attrition and group comparability not fully assessed
4. Limited longitudinal follow up to high school
5. Tested programs had low comprehensiveness and dosage
6. Smaller samples

# 5. Implications & Recommendations

# Conclusion

Overall, Pk-3 interventions have demonstrated positive evidence of benefits on child outcomes above and beyond the impact of Prek alone. Only the comprehensive-service Child-Parent Center Program is rated as very effective. Evidence from other programs are more mixed but show effectiveness on some outcomes.

# Implications/Recommendations

1. Increase investments in PK-3 research and services (e.g., family support, and curriculum alignment).
2. Use criteria of effectiveness to better prioritize funding and reforms.
3. Implement CPC PK-3 more widely as evidence-based program.

# Implications/Recommendations

4. Develop funding mechanisms to support timely implementation of proven program and practices.
5. Establish key principles of effectiveness to guide program development and funding priority.
6. Link funding at different levels to registries of effectiveness.

# Implications/Recommendations

7. Develop cross-agency funding plans for programs and approaches that impact broader well-being.
8. Require Pre-K programs to develop plan to sustain or strengthen learning gains.
9. Require 10% of Title I go to evidence-based K-3 services linked to Pre-K.



## 6. Example: Midwest Child-Parent Center Expansion

# Summary

A scale up of the Chicago Child-Parent Center Pk-3 Program in 32 centers and schools in Illinois and Minnesota beginning in fall 2012. The expansion follows a Prek cohort for 5 years until third grade and is funded by the U. S. Department of Education's Investing in Innovation Program.

Web site:

<http://humancapitalrc.org/midwestcpc>

# CPC Core Elements

<u>Collab. Leadership</u>	HT, PRT, SCR with Principal
<u>Effective Learning</u>	Class size, Length, Balance
<u>Curric. Alignment</u>	Plan completed, integration
<u>Parent Involvement</u>	Plan completed, assessment
<u>Prof. Development</u>	Modules, On-line, Facilitation
<u>Continuity &amp; Stability</u>	80%+ continuity plus instructional supports

# Refinements

1. Full-day Pre-K in many sites.
2. Menu-based parent involvement and curriculum plans endorsed by principals.
3. PD system & site support instead of full-time curriculum coordinators.
4. Broader context including community-based sites.
5. On-going assessment and data collection on key elements.

# Research Design

26 program Prek sites in five districts will implement starting in fall 2012. Primarily Title I schools in high-need areas. 2,400 preschool participants will be followed to third grade

23 control sites matched to program schools based on propensity scores of school, family, and child attributes.

Assessments of children will be in preschool, kindergarten, and up to third grade.

# CPC PreK Picture: 2012-2013

	<u>Minnesota</u>		<u>Illinois</u>			<b>Total</b>
<u>CPC Pre-k 2012-2013</u>	St. Paul	Virginia	Chicago	Normal	Evanston / Skokie	
<b># Pre-k Sites</b>	6	1	16	1	2	26
<b># Classrooms</b>	10	3	65	5	12	95
<b># Full-day</b>	2	0	23	0	2	27
<b># Children</b>	296	53	1655	85	227	2316

**Note: No. of children based on fall 2012 data. Most classrooms were part-day. 13 of 26 sites offered full-day Pre-k.**

# Sites by Organization

9 co-located in elementary school

9 in close-by centers adjacent to school

8 in community-based sites 2+ blocks from school (2 are child care centers)

# Chicago Predictors of Attendance






VARIABLES	Attendance Rate	Chronic Absence
Free Lunch	-0.003	0.04
4 year olds	-0.011*	0.012
Full Day	0.045***	-0.14***

The most important predictor is full day status, with students from full day programs significantly higher attendance rates and significantly less likely to be chronically absent.








## 7. Examples of Promising State and Local Initiatives

# PK-3 in Wisconsin

PK-3 Practice	4K, SAGE and WECCP
Teacher Training	SAGE, WMELS 
Curriculum Alignment	WMELS 
Student-Teacher Ratio	20:2 PK & 15:1 SAGE
Wrap Around Services (transportation, out-of-school activities, summertime learning)	WECCP 
Evaluations	Limited
Parent Involvement	WECCP 
Resource Mobilization	WECCP 
Funding	State funding formula; State
Co-Location	Often with 4K, but not always

# PK-3 in Montgomery County Public Schools (Maryland)

PK-3 Practice	MCPS
Teacher Training	
Curriculum Alignment	
Student-Teacher Ratio	15:1 for K-3
Wrap Around Services (transportation, out-of-school activities, summertime learning)	
Evaluations of the Program	Limited
Parent Involvement	Encouraged; not mandatory
Resource Mobilization	
Funding	Through state funding formula
Co-Location	

# 8. Resources of Evidence

## Carolina Abecedarian Project

- Campbell, F. A., & Ramey, C. T. (1995). Cognitive and school outcomes for high-risk African-American students at middle adolescence: Positive effects of early intervention. *American Educational Research Journal, 32*, 743-772.
- Ramey, C. T., Campbell, F. A., Burchinal, M., Skinner, M. L., Gardner, D. M. & Ramey, S. L., (2000). Persistent effects of early childhood education on high-risk children and their mothers. *Applied Developmental Science, 4*, 2-14.
- Campbell, F. A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian project. *Applied Developmental Science, 6(1)*, 42-57.

## Head Start/Follow Through

- Becker, W. C. & Gersten, R. (1982). A follow-up of Follow Through: The later effects of the Direct Instruction model on children in fifth and sixth grades. *American Educational Research Journal*, 19, 75-92.
- Schweinhart, L. J. & Wallgren, C. R. (1993). Effects of a Follow Through program on achievement. *Journal of Research in Childhood Education*, 8, 43-56.
- Abelson, W. B., Zigler, E., & DeBlasi, C. L. (1974). Effects of a four-year Follow Through program on economically disadvantaged children. *Journal of Educational Psychology*, 66, 756-771.
- Seitz, V., Apfel, N. H., Rosenbaum, L. K., & Zigler, E. (1983). Long-term effects of projects Head Start and Follow Through: The New Haven Project. In Consortium for Longitudinal Studies (Ed.). *As the twig is bent: Lasting effects of preschool programs* (pp. 299-332). Hillsdale, NJ: Lawrence Erlbaum Associates.

## Chicago Child-Parent Centers

Conrad, K.J., & Eash, M.J. (1983). Measuring implementation and multiple outcomes in a Child-Parent Center compensatory education program. *American Educational Research Journal, 20*, 221-236.

Fuerst, J.S., & Fuerst, D. (1993). Chicago experience with an early childhood program: The special case of the Child-Parent Center program. *Urban Education, 28*, 69-96.

Reynolds, A.J. (1994). Effects of a preschool plus follow-on intervention for children at risk. *Developmental Psychology, 30*, 787-804.

Reynolds, A. J. (2000). *Success in early intervention: The Chicago Child-Parent Centers*. Lincoln: University of Nebraska Press.

Reynolds, A. J. Temple, J. A., White, B., Ou, S. & Robertson, D. L. (2011). Age-26 cost-benefit analysis of the Child-Parent Center early education program. *Child Development, 82*(1), 379-404.

## Chicago Child-Parent Centers (Continued)

Reynolds, A. J. Temple, J. A., Ou, S., Robertson, D. L., Mersky, J. P., Topitzes, J. W. & Niles, M. D. (2007). Effects of a school-based, early childhood intervention on adult health and well being: A 19-Year follow-up of low-income families. *Archives of Pediatrics & Adolescent Medicine*, *161*(8), 730-739.

Reynolds, A.J., Temple, J.A., Robertson, D. L., & Mann, E. A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools. *Journal of the American Medical Association*, *285*, 2339-2346.

Reynolds, A. J., & Temple, J. A. (1998). Extended early childhood intervention and school achievement: Age 13 findings from the Chicago Longitudinal Study. *Child Development*, *69*, 231-246.



## Head Start/Public School Transition Demonstration Project

Bryant, D. M. et al. (1998). What is 'participation' in North Carolina's Head Start Transition Demonstration? *Summary of Conference Proceedings of Head Start's Fourth National Research Conference*. Washington, DC: ACYF.

Ramey, S. L., Ramey, C. T., & Lanzi, R. G. (2004). The transition to school: Building on preschool foundations and preparing for lifelong learning. In E. Zigler & S. J. Syfco (Eds), *The Head Start debates* (397-413). Baltimore: Paul H. Brookes.

Ramey, S. L., Ramey, C. T., Phillips, M. M., Lanzi, R.G., Brezausek, C., Katholi, C. R., et al., (2000). *Head Start Children's Entry into Public School: A Report on the National Head Start/Public School Early Childhood Transition Demonstration Study*. Washington, DC: Administration for Children and Families, DHHS.

Redden, S. C., Forness, S. R., Ramey, S. L., Ramey, C. T., Brezausek, C. M. & Kavale, K.A. (2001). Children at risk: Effects of a four-year Head Start Transition Program on special education identification. *Journal of Child and Family Studies*, 10(2), 255-270.

## Further Reading

Bogard, K., & Takanishi, R. (1995). An aligned and coordinated approach to education for children 3 to 8 year old. *Social Policy Report*, XIX, No. III. Washington, DC: SRCDC.

House, E. R. et al. (1978). No simple answer. Critique of the Follow Through evaluation. *Harvard Educational Review*, 48, 128-160.

Human Capital Research Collaborative. (2012). *Midwest Child-Parent Center Expansion Project, Prek to 3<sup>rd</sup> Grade. Guidelines and requirements* . Minneapolis, MN: University of Minnesota.

Nation, M., Crusto, C., Wandersman, A., et al. (2003). What works in prevention: Principles of effective prevention programs. *American Psychologist*, 58, 449-456.

O'Connell, M. E., Boat, T., & Warner, K. E. (Eds.). (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Washington, DC: National Academy Press.

## Further Reading (Continued)

Reynolds, A. J. & Temple, J. A. (2008). Cost-effective early childhood development programs from preschool to third grade. *Annual Review of Clinical Psychology, 4*, 109-139.

Reynolds, A. J. (2003). The added value of continuing early intervention into the primary grades. In A. J. Reynolds, M. C. Wang, & H. J. Walberg (Eds.), *Early childhood programs for a new century* (pp. 163-196). Washington, DC: Child Welfare League of America.

Reynolds, A. J., Magnuson, K. & Ou, S. (2010). PK-3 programs and practices: A review of research. *Children and Youth Services Review, 32*, 1121-1131.

Rhine, W. R. (Ed.). (1981). *Making schools more effective: New Directions from Follow Through*. New York: Academic Press.

Takanishi, R., & Kauerz, K. (2008, March). PK inclusion: Getting serious about a P-16 education system. *Phi Delta Kappan, 89*(7), 480-487.