

PHL-PREK, BENCHMARKING THE PROGRAM'S DESIGN

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December 2018

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Grateful acknowledgment is made to the William Penn Foundation for their financial support for this work under grant No. 16-17. The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the William Penn Foundation. We are also thankful to the Mayor's Office from City of Philadelphia and PHMC for providing various background materials used in this report.

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Suggested citation: Nores, M. & Barnett, W.S. (2018). PHL Pre-K, Benchmarking the Program's Design. New Brunswick, NJ: National Institute for Early Education Research.

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Introduction

Over the past 15 years, investments in public preschool have grown significantly, including those of cities. All but seven states fund a prekindergarten program. In nine states and the District of Columbia, more than half of four-year-olds attend free, state-funded pre-k. Several large cities also have implemented their own preschool initiatives in the last decade to expand access and raise quality. Some aim to provide pre-K to all children. Others focus on the most disadvantaged to close the "school readiness gap" between at-risk/low-income children and their more advantaged peers.

Public pre-K quality standards vary greatly by city and state. They have different requirements for teacher qualifications, group size, staff-child ratio, and teacher professional development.² They also vary in the extent to which they set high standards for learning and teaching, continuously assess whether these are attained, support strong implementation, and align expectations, curriculum, assessment, professional development, and evaluation. Large scale public programs that have demonstrated lasting impacts on learning and development—for example, the Chicago Parent-Child Centers, North Carolina Pre-K, and New Jersey Abbott pre-K—have all had strong requirements for these program features (requiring teachers to have four year degrees and small class sizes, while providing strong supports for implementation quality). Programs with weaker results have not.³

How important is it that public pre-K programs adhere to high standards? More than 50 years of research has found that high-quality preschool education programs can produce lasting effects in school readiness, school success and children's long-term achievement.⁴ These gains are large enough to close half or more of the achievement gaps a kindergarten entry, especially for minority children.⁵ Unfortunately, these gains to do fully materialize when quality is not

¹ Friedman-Krauss, A. H., Barnett, W. S., Weisenfeld, G. G., Kasmin, R., DiCrecchio, N., & Horowitz, M. (2018). The State of Preschool 2017: State Preschool Yearbook. New Brunswick, NJ: National Institute for Early Education Research.

² Friedman-Krauss, et a. (2018), ibid.

³ Minervino, J. (2014). Lessons from Research and the Classroom: Implementing High-Quality Pre-K that Makes a Difference for Young Children. Downloaded May 2018 from

 $https://docs.gates foundation.org/documents/Lessons \% 20 from \% 20 Research \% 20 and \% 20 the \% 20 Classroom_September \% 20 20 14.pdf \# page = 23.$

Reynolds, A. J., Temple, J. A., White, B. A., Ou, S. R., & Robertson, D. L. (2011). Age 26 cost–benefit analysis of the child-parent center early education program. *Child development*, 82(1), 379-404.

Lipsey, M. W., Farran, D. C., & Hofer, K. G. (2015). A Randomized Control Trial of a Statewide Voluntary Prekindergarten Program on Children's Skills and Behaviors through Third Grade. Research Report. *Peabody Research Institute*.

⁴ Barnett, W. S. (2008). Preschool education and its lasting effects: Research and policy implications (EPRU Policy Brief). Boulder and Tempe: Education and the Public Interest Center & Education and Policy Research Unit. Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record*, *112*, 579-620.

Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M., Espinosa, L. M., Gormley, Jr., W. T., Ludwig, J., & et al. (2013). *Investing in our future: The evidence base on preschool education*. Ann Arbor, MI: Society for Research in Child Development.

⁵ Camilli, et al. (2010), ibid.

Friedman-Krauss, A., Barnett, W. S., & Nores, M. (2016). How much can high-quality universal pre-K reduce achievement gaps? Washington, DC: Center for American Progress and New Brunswick, NJ: National Institute on Early Education Research.

high. A recent study of 8 state pre-k programs⁶ found that programs varied in their impacts on learning and development and concluded that if long-term benefits were to be produced some states needed to produce greater gains in the most foundational knowledge and skills. Large foundational gains—especially in language development—were the most difficult to produce, and the researchers recommended greater supports for learning and teaching, including curriculum and professional development to "deepen and enrich preschool education."

In this context, on May 19, 2015, Philadelphians overwhelmingly voted (80 percent) to create the Philadelphia Commission on Universal Pre-Kindergarten. The Commission's charge was to propose a universal pre-K program that provides quality, affordable, and accessible services to 3- and 4-year-olds. This gave birth to the Philadelphia preschool program (PHLpreK). The Commission's recommendation included an evaluation by an external entity to monitor quality and report on child outcomes. This report is one part of that evaluation. It benchmarks key features of PHLpreK against what research indicates is required for a high quality, effective program.

This report proceeds in four steps. First, it sets out the framework for evaluation as a set of essential elements for success based on an analysis of proven pre-K programs. Second, it assesses how well PHLpreK conforms with each element. Third, it places this comparison in context by reviewing how well other cities' programs fare when benchmarked against the elements. Finally, the report recommends program improvements based on the evaluation.

Framework for Evaluation

The framework used to evaluate the PHLpreK program builds upon two research-based sets of criteria for high-quality pre-K programs. The first comes from NIEER's State of Preschool Yearbook, and consists of 10 preschool policy standards benchmarks based on the features of programs that research had found to be highly effective. They "provide a coherent set of minimum policies to support meaningful, persistent gains in learning and development that can enhance later educational and adult life achievement." These benchmarks were not designed to standalone and recognize that these are necessary but not sufficient for successful programs. For example, they are not independent of adequate funding and strong implementation.

The second set of criteria are Jim Minervino's essential elements⁸ for successfully providing highly effective public pre-K at scale. Minervino identified these program features based on the common characteristics of large scale programs found to have sustained impacts on learning and development. To do this Minervino reviewed the research literature and conducted in-depth case studies of four state/city programs that had demonstrated long-term impacts or in his words "outcomes that stick" for young children. One recent study used these elements to evaluate state and city programs across the country.⁹

⁶ Barnett, W. S., Jung, K., Friedman-Krauss, A., Frede, E. C., Nores, M., Hustedt, J. T., Howes, C. & Daniel-Echols, M. (2018). State Prekindergarten Effects on Early Learning at Kindergarten Entry: An Analysis of Eight State Programs. AERA Open, 4(2).

⁷ Friedman-Krauss, et. al (2018), ibid.

⁸ Minervino (2014), ibid.

⁹ Barnett, W.S., Weisenfeld, G.G., Brown, K., Squires, J. & M. Horowitz (2016) Implementing 15 essential elements for high quality: a state and local policy scan. New Brunswick, NJ: National Institute for Early Education Research. Downloaded May 2018 from

The two sets of criteria overlap substantially, and for convenience we use the one term "essential elements" to refer to our complete set. We include only those that are program features (excluding features of the broader environment such as political will). We divide them into two main categories: program design and program practices. The elements in each category are listed and then individually explained.

Program Design:

- 1. Teacher degree and teacher specialized training.
- 2. Assistant teacher qualification.
- 3. Teacher compensation (K-12 pay parity).
- 4. Maximum class size (20) and staff-child ratio (1:10).
- 5. Duration (length of school day).

Program Practices:

- 6. Early Learning and Development Standards (ELDS).
- 7. Staff professional development.
- 8. Continuous Quality Improvement System (COIS).
- 9. Data-driven decision-making and independent evaluation.
- 10. Curriculum supports.
- 11. Supports for education of special needs children in inclusive settings.
- 12. Supports for dual language learners.
- 13. Screenings and referrals.

Understanding the Essential Elements and their Evidence Base

This section explains the evidence and reasoning behind each program design and practice listed as an essential element for preschool effectiveness.

<u>Teacher degree and teacher specialized training</u>. The lead teacher in every classroom should be required to have at least a bachelor's degree. This follows recommendations from the National Academies of Sciences based on analyses of what preschool teachers must know and be able to do to produce the desired results including knowledge of learning, development, and pedagogy specific to preschool-age children. Teachers with bachelor's degrees and early childhood content training: have larger vocabularies and linguistic competencies that fuel stronger teacherchild interactions and instruction; are more receptive and responsive to professional development and coaching; are better able to manage implementation of a rigorous curriculum and complex

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 $http://nieer.org/wp-content/uploads/2016/08/1520 Essential 20 Elements 20 S can_0.pdf$

¹⁰ Institute of Medicine and National Research Council. (2015). *Transforming the Workforce for Children Birth Through Age 8: A Unifying Foundation*. Washington, DC: The National Academies Press. Downloaded May 2018 from https://www.nap.edu/catalog/19401/transforming-the-workforce-for-children-birth-through-age-8-a. National Research Council (2001) Eager to Learn: Educating Our Preschoolers. Committee on Early Childhood Pedagogy. Barbara T. Bowman, M.Suzanne Donovan, and M.Susan Burns, editors. Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

Fukkink, R. G., & Lont, A. (2007). Does training matter? A meta-analysis and review of caregiver training studies. *Early childhood research quarterly*, 22(3), 294-311.

assessment system; and, have higher expectations of children's learning and development.¹¹ As early childhood teacher preparation programs vary greatly in their content, states and cities may want to partner with state and local institutions of higher education to obtain alignment with their ELDS.¹²

Assistant teacher qualification. The Child Development Associate (CDA) was developed in the field of early childhood as the entry-level qualification degree for the field. ¹³ Equivalent competencies can be acquired through other certifications or college coursework. ¹⁴ Research specific to assistant teachers has been scarce, but evidence indicates an association between assistant teacher qualifications and teaching quality. ¹⁵ As a minimum standard we suggest that policy require assistant teachers hold a CDA or equivalent preparation.

<u>Teacher compensation parity</u>. Hiring and retaining highly qualified teachers requires adequate compensation. Yet, the low pay and benefits of preschool teachers in early childhood are well-documented. Preschool teachers with a BA degree receive substantially less compensation than their counterparts in kindergarten and first grade. Often, preschool teachers receive minimal

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¹¹Manning, M., Garvis, S., Fleming, C., & Wong, G. T. (2017). The Relationship between Teacher Qualification and the Quality of the Early Childhood Care and Learning Environment: A Systematic Review. *Campbell collaboration*. Downloaded May 2018 from https://www.campbellcollaboration.org/library/teacher-qualification-and-quality-of-early-childhood-care-and-learning.html Minervino (2014), ibid.

¹² Early, D. M., & Winton, P. J. (2001). Preparing the workforce: Early childhood teacher preparation at 2-and 4-year institutions of higher education. *Early Childhood Research Quarterly*, *16*(3), 285-306.

Whitebook, M., & Ryan, S. (2011). Degrees in Context: Asking the Right Questions about Preparing Skilled and Effective Teachers of Young Children. Preschool Policy Brief. Issue 22. New Brunswick, NJ: National Institute for Early Education Research.

¹³ National Research Council (2001), ibid.

Institute of Medicine and National Research Council (2015), ibid.

Han, J., & Neuharth-Pritchett, S. (2010). Beliefs about classroom practices and teachers' education level: An examination of developmentally appropriate and inappropriate beliefs in early childhood classrooms. *Journal of Early Childhood Teacher Education*, 31(4), 307-321.

Heisner, M. J., & Lederberg, A. R. (2011). The impact of Child Development Associate training on the beliefs and practices of preschool teachers. *Early Childhood Research Quarterly*, 26(2), 227-236.

Kagan, S. L., & Cohen, N. E. (1997). *Not by chance: Creating an early care and education system for America's children [Abridged report]*. New Haven, CT: Bush Center in Child Development and Social Policy, Yale University.

¹⁴ For example, West Virginia has the ACDS, Apprenticeship for Child Development Specialist (ACDS); see http://www.wvacds.org/. Also, all assistant teachers without a CDA are registered in ECCAT (Early Childhood Classroom Assistant Teacher), where they have temporary authorizations for their positions and commit towards fulfilling the requirements for full authorization. See https://wvde.state.wv.us/oel/elearning.php.

¹⁵ Heisner, M. J., & Lederberg, A. R. (2011). The impact of Child Development Associate training on the beliefs and practices of preschool teachers. *Early Childhood Research Quarterly*, 26(2), 227-236.

Burchinal, M. R., Cryer, D., Clifford, R. M., & Howes, C. (2002). Caregiver training and classroom quality in child care centers. *Applied Developmental Science*, 6(1), 2-11.

¹⁶ Whitebook, M., Phillips, D., & Howes, C. (2014). *Worthy work, STILL unlivable wages: The early childhood workforce 25 years after the National Child Care Staffing Study*. Berkeley, CA: Center for the Study of Child Care Employment, University of California, Berkeley.

National Survey of Early Care and Education Project Team. (2013). *Number and characteristics of early care and education (ECE) teachers and caregivers: Initial findings from the National Survey of Early Care and Education (NSECE)*. OPRE Report #2-13-38. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

benefits, and some are so poorly compensated they must depend on social welfare.¹⁷ Consequently, recruitment of strong teachers is difficult, and teacher turnover is high. Without parity with K-12 public schools, preschool can become the training ground that pays for teacher induction and the intensive learning that takes place on the job in the first few years of teaching before many who demonstrate strong performance leave for better paying jobs in K-12 public schools. High turnover hinders the efforts to increase quality through staff development and experience.¹⁵

Maximum class size (20) and staff-child ratio (1:10). Small class size and corresponding teacher-child ratios characterize the most effective programs, even though many studies find weak or no association between these features and effectiveness. ¹⁸ Smaller classes and fewer children per teacher enable more frequent teacher-child interactions, more work in smaller groups, and more opportunities for individualized attention. Virtually all states' child care licensing rules require that classrooms for 4-year-olds have at least two adults, and this is considered an essential quality element for a preschool program. Benchmarking against success suggests no more than 20 or 22 children, with the latter figure with very highly qualified teachers. NAEYC accreditation standards ¹⁹ require 4-year-olds to be in classes of 20 of fewer. The Caring for our Children guidelines ²⁰ call for classes of 16 or fewer. The Boston Public Schools preschool allows classes of up to 22 children and a ratio of 1:11. ²¹ Some research suggests larger gains when class

¹⁷ Phillips, D., Austin, L. J., & Whitebook, M. (2016). The Early Care and Education Workforce. *The Future of Children*, 26(2), 139-158.

Whitebook, M. Phillips, D. & C. Howes, (2014) Worthy Work, STILL Unlivable Wages: The Early Childhood Workforce 25 Years after the National Child Care Staffing Study. Berkeley: Center for the Study of Child Care Employment, University of California.

Whitebook, M., & McLean, C. (2017). Educator Expectations, Qualifications, and Earnings: Shared Challenges and Divergent. Berkeley, Center for the Study of Child Care Employment Institute for Research on Labor and Employment University of California.

¹⁸ National Research Council (2001).

Frede, E. C. (1998). Preschool program quality in programs for children in poverty. In W. S. Barnett & S. S. Boocock (Eds.), SUNY series, youth social services, schooling, and public policy / SUNY series, early childhood education: Inquiries and insights. Early care and education for children in poverty: Promises, programs, and long-term results (pp. 77-98). Albany, NY, US: State University of New York Press.

NICHD Early Child Care Research Network (1999). Child outcomes when child care center classes meet recommended standards for quality. *American Journal of Public Health*, 89, 1072-1077.

National Association for the Education of Young Children (2005). *NAEYC early childhood program standards and accreditation criteria*. Washington, DC: Author.

Perlman, M., Falenchuk, O., Fletcher, B., McMullen, E., Beyene, J., & Shah, P. S. (2016). A systematic review and meta-analysis of a measure of staff/child interaction quality (the classroom assessment scoring system) in early childhood education and care settings and child outcomes. *PloS One*, *11*(12), e0167660.

Reynolds, A. J., Hayakawa, M., Ou, S. R., Mondi, C. F., Englund, M. M., Candee, A. J., & Smerillo, N. E. (2017). Scaling and sustaining effective early childhood programs through school–family–university collaboration. *Child Development*, 88(5), 1453-1465.

¹⁹ See https://idahostars.org/portals/61/Docs/Providers/STQ/TeacherChildRatioChart.pdf.

²⁰ National Resource Center For Health and Safety In Child Care and Early Education. Caring for Our Children, 3rd Edition (CFOC3). Chapter 1: Staffing. Colorado: University of Colorado College of Nursing. Downloaded May 2018 from http://nrckids.org/CFOC/Database/1.1.1.2

²¹ Weiland, C., & Yoshikawa, H. (2013). Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development*, 84(6), 2112-2130.

size drops below 15.²² The best study of class size reduction for young children to date found substantive and lasting impacts on achievement and educational success for smaller class sizes in kindergarten.²³

<u>Duration</u>. Providing at least a full school day better ensures adequate dosage. Full-day preschool programs consistently have been found to have larger impacts on children's school readiness than part-day programs.²⁴

Early Learning and Development Standards (ELDS). The ELDS define a program's goals and set clear, appropriate expectations for children's learning and development across multiple domains. This makes good ELDS essential for quality.²⁵ The expectation is that ELDS be specifically designed for preschool-aged children and that they are vertically aligned with standards for younger and older children. They also should be comprehensive, covering all areas identified by the National Education Goals Panel;²⁶ children's physical well-being and motor development, social/emotional development, approaches toward learning, language development, and cognition and general knowledge.²⁷

<u>Staff professional development</u>. Research points to the importance regular professional learning, including coaching in the classroom, supports teaching practices related to high-quality experiences for children.²⁸ Individualized professional development focused on supporting

²² Bowne, J. B., Magnuson, K. A., Schindler, H. S., Duncan, G. J., & Yoshikawa, H. (2017). A meta-analysis of class sizes and ratios in early childhood education programs: Are thresholds of quality associated with greater impacts on cognitive, achievement, and socioemotional outcomes? *Educational Evaluation and Policy Analysis*, *39*, 407-428.

²³ Krueger, A. B., & Whitmore, D. M. (2001). The effect of attending a small class in the early grades on collegetest taking and middle school test results: Evidence from Project STAR. *The Economic Journal*, *111*(468), 1-28.
²⁴ Reynolds, A. J., Richardson, B. A., Hayakawa, M., et al. (2014). Association of a full-day vs part-day preschool intervention with school readiness, attendance, and parent involvement. JAMA, 312(20), 2126-2134.
Robin, K.B., Frede, E.C., Barnett, W.S. (2006). Is More Better? The Effects of Full-Day vs. Half-Day Preschool on Early School Achievement. NIEER Working Paper.

²⁵ Bornfreund, L. A., McCann, C., Williams, C., & Guernsey, L. (2014). *Beyond subprime learning: Accelerating progress in early education*. Washington, DC: New America Foundation. Bowman, B. T., Donovan, M. S., & Burns, M. S. (Eds.). (2001). *Eager to learn: Educating our preschoolers*. Washington, DC: National Academy Press.

National Education Goals Panel (1991). The Goal 1 Technical Planning Subgroup report on school readiness.
 Washington, DC: Author. National Association for the Education of Young Children (2009).
 Friedman-Krauss, et. al, ibid.

²⁸ Biancarosa, G., Bryk, A. S., & Dexter, E. R. (2010). Assessing the value-added effects of literacy collaborative professional development on student learning. *The Elementary School Journal*, 111(1), 7-34.

Clements, D. H., & Sarama, J. (2008). Experimental evaluation of the effects of a research-based preschool mathematics curriculum. *American Educational Research Journal*, *45*, 443-494.

Hawley, W. & Valli, L. (1999). The essentials of effective professional development: A new consensus in L. Darling-Hammond & G. Sykes (Eds.). *Teaching as the Learning Profession. Handbook of Policy and Practice*, Jossey-Bass Publishers, San Francisco.

Institute of Medicine and National Research Council (2015), ibid. Minervino (2014), ibid.

Phillips, D. A., Lipsey, M. W., Dodge, K. A., Haskins, R., Bassok, D., Burchinal, M. R & Weiland, C. (2017). *Puzzling it out: The current state of scientific knowledge on pre-kindergarten effects, a consensus statement.* Washington, DC: Brookings Institution. Downloaded May 2018 from https://www.brookings.edu/wp-content/uploads/2017/04/consensus-statement_final.pdf

teachers to improve in their own classrooms is more effective than workshops and general professional development activities.²⁹ Effective teachers actively engage in regular professional development, with some evidence for a 15-hour threshold.³⁰

Continuous Quality Improvement System (CQIS). An effective CQIS regularly collects information on outcomes and processes that is used to guide program improvement. At a minimum, it requires that (1) data on classroom quality is systematically collected at least annually, and (2) information from the CQIS is used by both sites and central administration to help improve policy and practice. The use of a cycle of planning, observation, and feedback has characterized highly effective programs.³¹

<u>Data-driven decision-making and independent evaluation</u>. Periodic formative assessments are now common and often required in preschool programs. Highly effective programs closely track and analyze children's progress and use the findings to drive decisions on program improvement

Pianta, R. C., Barnett, W. S., Burchinal, M., & Thornburg, K. R. (2009). The effects of preschool education what we know, how public policy is or is not aligned with the evidence base, and what we need to know. *Psychological Science in the Public Interest*, 10(2), 49-88.

Weber, R. & Trauten, M. (2008). A review of the research literature: Effective investments in child care and early education profession. Oregon State University, Family Policy Program, Oregon Childcare Research Partnership. Whitebook, M., & Bellm, D. (2013). Supporting teachers as learners: A guide for mentors and coaches in early care and education. Washington, DC: American Federation of Teachers.

Weiland, C. (2016). Launching Preschool 2.0: A road map to high quality public programs at scale. *Behavioral Science & Policy*, 2(1), pp. 37–46.

Yoshikawa et al. (2013), ibid.

²⁹ Pianta, R., Downer, J., & Hamre, B. (2016). Quality in early education classrooms: Definitions, gaps, and systems. *Future of Children*, *26*, 119-137.

Weiland (2016), ibid. Yoshikawa et al. (2013), ibid.

³⁰ National Research Council (2001), ibid. Frede (1998), ibid.

Egert, F., Fukkink, R. G., & Eckhardt, A. G. (2018). Impact of In-Service Professional Development Programs for Early Childhood Teachers on Quality Ratings and Child Outcomes: A Meta-Analysis. *Review of Educational Research*, 88(3).

Whitebook, Howes, & Phillips (1989) found that teachers receiving more than 15 hours of training were more appropriate, positive, and engaged with children in their teaching practices. Whitebook, M., Howes, C., & Phillips, D. (1989). Who cares? Child care teachers and the quality of care in America: National child care staffing study. Child Care Employee Project, Oakland, CA.

Kraft, M. A., Blazar, D., & Hogan, D. (2016). The effect of teacher coaching on instruction and achievement: A meta-analysis of the causal evidence. *Review of Educational Research*.

Landry, S. H., Anthony, J. L., Swank, P. R., & Monseque-Bailey, P. (2009). Effectiveness of comprehensive professional development for teachers of at-risk preschoolers. *Journal of Educational Psychology*, *101*(2), 448. Rudd, L. C., Lambert, M. C., Satterwhite, M., & Smith, C. H. (2009). Professional development + coaching = enhanced teaching: Increasing usage of math mediated language in preschool classrooms. *Early Childhood Education Journal*, *37*(1), 63-69.

³¹ Bowman et al. (2001). Barnett, W. S., Frede, E. C. (2017). Long-term effects of a system of high-quality universal preschool education in the United States. In Blossfeld, H.-P., Kulic, N., Skopek, J., Triventi, M. (Eds.), Childcare, early education and social inequality: An international perspective (pp. 152–172). Cheltenham, UK: Edward Elgar. Derrick-Mills, T., Sandstrom, H., Pettijohn, S., Fyffe, S., & Koulish, J. (2014). *Data use for continuous quality improvement: What the Head Start field can learn from other disciplines, a literature review and conceptual framework (OPRE Report 2014-77)*. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families.

Institute of Medicine and National Research Council (2015), ibid. Egert et al. (2018), ibid. Minervino (2014), ibid. Weiland (2016), ibid.

including curriculum and to design professional development. Such data-driven decision-making is more likely to produce sustainable gains in children's development.³² For programs, this translates into providing teachers with appropriate time and support to review child-level data, plan instruction, and reflect upon their instruction efficacy.³³ At a systems level, this translates into periodic and rigorous evaluation of the implementation quality and of program impact.³⁴

<u>Curriculum supports</u>. Early learning standards support developmentally appropriate preschool instruction, but typically do not prescribe curriculum. Programs that have implemented a strong curriculum paired with intensive professional development for teachers specific to that curriculum have shown especially strong gains for children's development (e.g. Boston). A strong curriculum that is well-implemented increases support for learning and development broadly, and includes specificity regarding key domains of language, literacy, mathematics, and social-emotional development.³⁵

Strong supports for education of special needs children in inclusive settings. The majority of preschool children with special needs are best served in inclusive classrooms. Successful inclusion requires clear policy and strong supports for teachers to ensure that children's needs are being effectively met in regular classrooms.³⁶

<u>Support for dual language learners</u>: Recent research has found benefits associated with learning more than one language at an early age, including greater cognitive flexibility and problemsolving skills. It has also been found that children who speak a language other than English at home, have stronger long-term achievement when their home language as well as English is

³² Minervo, op. cit.

³³ Pacchiano, D., Klein, R., & Hawley, M. S. (2016). Job-Embedded Professional Learning: Essential to Improving Teaching and Learning in Early Education. Chicago, IL: The Ounce of Prevention Fund. Downloaded May 2018 from http://www.theounce.org/resources/publications

³⁴ Durlak, J. A. (2010). The importance of doing well in whatever you do: A commentary on the special section, "Implementation research in early childhood education". *Early Childhood Research Quarterly*, 25(3), 348-357.

³⁵ Kagan, S. L., Kauerz, K., Tremblay, R. E., Barr, R. G., & Peters, R. V. (2006). Preschool programs: Effective curricula.

National Association for the Education of Young Children and The National Association of Early Childhood Specialists in State Departments of Education. Early childhood curriculum, assessment, and program evaluation: Building an effective, accountable system in programs for children birth through age 8. Washington, DC: National Association for the Education of Young Children; 2003. Downloaded May 2018 from https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/CAPEexpand.pdf.

Frede E, Ackerman DJ. Curriculum decision-making: Dimensions to consider. New Brunswick, NJ: National Institute for Early Education Research; 2006. Downloaded May 2018 from http://nieer.org/resources/research/CurriculumDecisionMaking.pdf. Accessed June 07, 2006.

³⁶ Akalın, S., Demir, Ş., Sucuoğlu, B., Bakkaloğlu, H., & İşcen, F. (2014). The needs of inclusive preschool teachers about inclusive practices. Eurasian Journal of Educational Research, 54, 39-60.

Barton, E. E., & Smith, B. J. (2015). Advancing high-quality preschool inclusion: A discussion and recommendations for the field. Topics in Early Childhood Special Education, 35, 69-78.

Mitchell, L., & Hegde, A. V. (2007). Beliefs and practices of inservice preschool teachers in inclusive settings: Implications for personnel preparation. Journal of Early Childhood Teacher Education, 27, 353-366.

S. Lawrence, S.Smith & R. Banerjee (2016) Preschool Inclusion. Key Findings from Research and Implications for Policy. Child Care and Early Education. Research Connections.

supported during the early childhood years. Effective preschool programs put in place intentional high-quality approaches to support language development in both English and a child's home language.³⁷

<u>Screenings and referrals</u>. Policies should require that preschool programs ensure children receive vision, hearing, and health screenings and referrals. For some children, preschool provides the first chance to detect and address vision, hearing, and health problems that may impair a child's learning and development.³⁸ A child's overall well-being and educational success depends on physical and mental health.³⁹

Evaluation of the PHLPreK Program

The Philadelphia Commission on Universal Pre-Kindergarten developed the Philadelphia Preschool Program (PHLpreK) with multiple goals, first among them to provide accessible, high quality, and affordable services in a way *that does not reduce K–12 funding*. PHLpreK began during the 2016-2017 school year, after the passage of the Philadelphia Beverage Tax in June 2016 dedicated to funding the program. PHLpreK provides parents with tuition credits to enable them to enroll their children in high-quality preschool. All 3- and 4-year-old children resident of Philadelphia are eligible. PHLpreK defines itself as "the City of Philadelphia's FREE, quality pre-K program." Below we assess how well the program has accomplished its goals with respect to: access, program design quality, program practices quality, and other features including funding.

Participation: In 2016-17 and 2017-18, there were 1,996 children participating in PHLpreK. Based on 2016 American Community Survey population estimates for Philadelphia that number

³⁷ Magruder, E. S., Hayslip, W. W., Espinosa, L. M., & Matera, C. (2013). Many languages, one teacher: Supporting language and literacy development for preschool dual language learners. *YC Young Children*, 68(1), 8. Castro, D. C., Páez, M. M., Dickinson, D. K., & Frede, E. (2011). Promoting language and literacy in young dual language learners: Research, practice, and policy. *Child Development Perspectives*, 5(1), 15-21. Ballantyne, K. G., Sanderman, A. R., & McLaughlin, N. (2008). Dual Language Learners in the Early Years: Getting Ready to Succeed in School. *National Clearinghouse for English Language Acquisition & Language Instruction Educational Programs*.

Castro, D. C., Garcia, E. E., & Markos, A. M. (2013). Dual language learners: Research informing policy. *Chapel Hill, NC: The University of North Carolina, Frank Porter Graham Child Development Institute*. Barnett, W. S., Yarosz, D. J., Thomas, J., Jung, K., & Blanco, D. (2007). Two-way and monolingual English immersion in preschool education: An experimental comparison. *Early Childhood Research Quarterly*, 22(3), 277-293.

Zepeda, M., Castro, D. C., & Cronin, S. (2011). Preparing early childhood teachers to work with young dual language learners. *Child Development Perspectives*, *5*(1), 10-14.

³⁸ Meisels, S. J., & Atkins-Burnett, S. (2000). The elements of early childhood assessment. In J. P. Shonkoff & S. J. Meisels (Eds.). *Handbook of early childhood intervention* (pp. 231-257). New York: Cambridge University Press. Tout et al. (2013).

³⁹ Blair (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist*, *57*, 111-127. Janus, M., & Duku, E. (2010). The school entry gap: Socioeconomic, family, and health factors associated with children's school readiness to learn. *Early Education and Development*, *18*, 375-403.

⁴⁰ http://www.phlprek.org/about/#1497480361890-d15ce035-0586

is 4.7% of the city's 42,000 three- and four-year-olds in the city and 11.5% of those not enrolled in another public program (Head Start or Pre-K Counts). Of families enrolled, 81% are under 200% of the Federal Poverty Level. 41 Growth in PHLpreK has been frozen due to litigation over the tax that funds the program. 42 As a result, participation is lower than in other prominent publicly-funded state and city preschool programs. For example, approximately 73% of 4-yearolds in Oklahoma and 65% in West Virginia participate in state pre-K, and over 88% of 4-yearolds in the District of Columbia are enrolled in public pre-K. 43 In each of these programs, there is no cost to families. San Francisco's Preschool for All enrolls 39% of 4-year-olds and Boston's program enrolls 49%.

Program Design

The PHLpreK program's design is compared against the five benchmarks associated with success that were discussed earlier in Table 1. The program meets three benchmarks, but falls short on two that relate to teacher qualifications and pay. PHpreK requires lead teachers to have an associate's degree with specialization in ECE or a related field. For Assistant Teachers, a CDA is required. In terms of teacher compensation, there are only living wage requirements (with waivers allowed) and no parity with the public K-12 system. The program maintains prescribes class sizes should not exceed twenty children with staff to child ratios of no more than ten to one. The dosage of 5.5 hours a day for 180 days per year makes the program one of 990 hours.

Table 1. PHLpreK program design elements comparison

Component	Benchmark	PHLpreK Requirement
Lead Teacher	BA plus ECE training	No BA required. Teacher must have an associate's
Qualification		degree in ECE or related field ^a
Assistant Teacher	CDA or equivalent	Yes. CDA or 6 credits of ECE content as defined by
Qualification		the PA Career Pathway
Teacher compensation	Parity with K-3	Not required. Must comply with the City's Twenty-
	teachers	First Century Living Wage and Benefits Ordinance
		(Chapter 17-1300) ^b
Class size and Ratio	Max. = 20, 1:10	Yes. Maximum of 20 and 1:10
Dosage	Full school day, school	Yes. Minimum of 5.5 instructional hours per day for
	year	180 days

Notes:

^aFor existing PHLpreK Family Child Care Partners with a CDA credential, a plan must be created to achieve an associate's degree within 4 years. Keystone Stars establishes an AA degree as a minimum requirement for Directors and only 75% of lead teaching staff. PHLpreK was built on this already low requirements. 44

^bProviders unable to meet the 21st Century Minimum Wage and Benefit Standard may request a temporary waiver.

⁴¹ https://beta.phila.gov/2017-12-11-moe-releases-updated-phlprek-by-the-numbers-report/

⁴² Williams et al. v. City of Philadelphia et al.

⁴³ Friedman-Krauss, et al., 2018.

⁴⁴ PAKeys. June 2017. Keystone STARS program performance standards. OCDEL: PA.

Program Practices

PHLpreK program practice standards are compared against the eight benchmarks for these in Table 2. As can be seen, PHLpreK fully meets two benchmarks (early learning standards, and screening and referrals), but falls short of full implementation on the others. The program partially meets four more, and does not address two at all.

PHLpreK early learning standards practice builds upon the work already done by the PA Department of Education and the Office of Child Development and Learning (OCDEL).⁴⁵ In 2010 early learning standards were integrated into an online portal to support educators with integrated tools to support teaching effectiveness. Pennsylvania's Infant, Toddler and Pre-Kindergarten Learning Standards for Early Childhood were revised in 2014, and the Kindergarten, Grades 1 and 2 Learning Standards for Early Childhood were revised in 2016.⁴⁶

PHLpreK has provided professional development through training on child development principles, dual language learners, curriculum, parent engagement, classroom quality, classroom materials and space, and child assessment. All providers could access these as they wished. In 2018 a pilot coaching program specific to PHLpreK was initiated.⁴⁷ These two professional development activities are being evaluated in 2018 to different degrees.⁴⁸

In terms of continuous quality improvement, PHLpreK is being externally evaluated by the National Institute for Early Education Research (NIEER) which is assessing classroom quality using two classroom observation measures. ⁴⁹ In addition, the program builds on Keystone STARS which uses a third and different measure that can inform program improvement. However, these evaluation efforts are not integrated with curriculum and formative assessments in systematic way for program-level decisions. Programs are required to conduct child observations using a measured approved by the Office of Child Development and Early Learning and training is provided for two measures, including GOLD, which aligns with Creative Curriculum. Whether these observations drive program improvement, curriculum design and PD choices could not be determined.

Curriculum is a program-level decision, and programs can choose from those approved by OCDEL. Consequently, curriculum supports are not curriculum aligned but more general. In practice, 65 percent of the classrooms use Creative Curriculum[©], either alone or in combination with something else. There are no provisions in the contracts with providers, nor at the program level that specifically address special education nor dual language learners.

Lastly, in terms of screening and referrals, the program requires one developmental screening early on and verification that dental, vision and health checks have been completed for the child annually. Referrals are to be made to a nonprofit agency that has a substantial presence in Philadelphia.

⁴⁵ In terms of articulation, OCDEL also governs over PAKeys, which is the administration entity of Keystone Stars, the statewide quality and rating information system for early childhood programs.

⁴⁶ http://www.pakeys.org/pa-early-learning-initiatives/early-learning-standards/

⁴⁷ PHMC. 2017. Proposal to the William Penn Foundation. Philadelphia, PA: Author.

⁴⁸ The NIEER evaluation is collection information on the PD and TA and the extent to which it has supported programs from teachers and program administrators. In addition, the coaching experience has an evaluation component aligned to the NIEER evaluation.

⁴⁹ Nores, M., Francis, J., & W.S. Barnett (2017) Evaluation of the Philadelphia Prek Program Classroom Quality Report. National Institute for Early Education Research: New Brunswick, NJ.

Table 2. PHLpreK program and elements of program practices

Component	Benchmark	Information
Learning Standards	Comprehensive early learning standards	Yes. Pennsylvania Learning Standards (birth to age 8)
High-quality professional development	System of formal and informal PD opportunities, including job-embedded coaching	No required coaching. PHLpreK staff or administrator must attend at least 75% of additional training as required by PHMC or the City.
Continuous Quality Improvement System (CQIS)	Structured classroom observation; program improvement plan and integration between curriculum, formative assessment, evaluation and PD.	Falls short of a complete system. External evaluation provides information on classroom observations. ³⁴ This information goes to providers for use in program improvement through individual provider reports. The program leverages quality supports that exist Keystone STARS and Success by 6 programs, as well as builds on those of the former.
Data-driven decision- making and independent evaluation	Track and analyze children's progress and use their findings to drive day-to-day program improvement and larger decisions about curriculum design and PD.	Not fully met. Must conduct continuous child observation to assess child outcomes using an OCDEL approved tool twice per year. Observation records must be included in the child's file. Training provided on the two most commonly used assessment tools: Teaching Strategies GOLD and Pearson Work Sampling System. ⁵⁰
Curriculum Supports	Approval process & supports	Lacking supports for strong implementation. Use an OCDEL approved early learning curriculum aligned to the PA Early Learning Standards. 51 Information collected on what curriculum is used.
Special Ed Supports	Strong supports for children with special needs; emphasis on inclusion	No provisions.
DLL Supports	Well-developed strategy and support for implementation	No provisions.
Screening & Referrals	Vision, hearing & health screenings; & referral	Yes. Requires at least one developmental screening within 45 days of the child's first day using a reliable and valid screen. Verify at least one vision, dental and health screening obtained within 60 days of enrollment. ^a Requires referral of any child with an identified concern to ELWYN for assessment. ^b

Notes:

^aProviders work with families to help them obtain screenings if they have not occurred within recommended timeframes and assist families to ensure children are insured and have a primary care physician.

bhttps://www.elwyn.org/

⁵⁰ While this is what is noted in documentation, a review of content of training shows that Ages and Stages has been included.

⁵¹ PADOE. PA Early Learning Standards. Harrisburg, PA: Downloaded May 2018 from http://www.education.pa.gov/Early%20Learning/Early%20Learning%20Standards/Pages/default.aspx#.VZ_Uz_k3z 1E.

Other program characteristics

Funding Adequacy: To fully implement the benchmarks for design and practice set out above requires a level of funding that is adequate for the design and supports for practice. PHLpreK provides \$8,500 per child per year (\$850/child per child per month) to providers. This level of funding is similar to average funding per child for Pre-K counts, which is \$7,876, while the average for Head Start in Pennsylvania is \$9,543, about \$1000 per child higher. Pennsylvanians spend \$18,043 per child in K-12, but this includes the cost of special education, netting that out suggests a figure of about \$15,000.⁵² For further comparison, New Jersey's exemplary Abbott pre-K is funded at \$13,439 per child. In the summer of 2017, every PHLpreK classroom also received \$1,800 in classroom materials based on an initial classroom environment checklist observation conducted by the evaluation team. Clearly, funding per child limits the program's capacity to increase teacher qualifications and compensation to levels comparable to those in the public schools.

Participation of Diverse Providers: The program allows parents to choose from a wide range of early learning providers, including programs operated by the Philadelphia Public Schools, child care centers, private preschools, and family child care homes. PHLpreK requires current STAR 3 or 4 providers to maintain that standing in Keystone STARS, while requiring that STAR 1 or 2 providers apply for Success by 6 or other resources to increase their STAR ratings. If the latter is the case, providers are required to increase their designation to at least a STAR 3 by June of the corresponding academic year. In the spring of 2017, 14% of classrooms were in programs with 1 STAR rating and 18% a 2 STAR, while 42% in a 3-star, 21% in a 4-star, and 5% in an unrated program. By the spring of 2018, <1% of classrooms were in a 1 STAR rating program, 22% in a 2 STAR, 46% in a 3-star, 31% in a 4-star, and <1% in an unrated program (this program remains unrated for reasons unrelated to quality).

Blending and braiding of funds: PHLpreK program supports the blending and braiding of multiple funding streams. It has been structured to include classrooms that also receive funding from Head Start, Pennsylvania's Pre-K counts, and child care assistance. The expectation of blending and braiding can be double-edged sword to the extent that programs that do not have other funding streams have difficultly sustaining high quality if they are not fully funded. Full cost analyses not yet completed, but these analyses will provide further insights in the future.

Examples of Other City Level Programs

Other local preschool initiatives are briefly described below with specific attention to how they compare against benchmarks set out above, as well as their eligibility requirements, scale, program requirements, and funding. The goal is to help set the PHLpreK program in context of other cities' efforts to expand access to quality. Table 3 summarizes findings regarding the

⁵² Friedman-Krauss, (2018) et al., ibid.

⁵³ PHLpreK. Provider Unitary Agreement. FY 2018. City of Philadelphia, PA.

⁵⁴ Friedman-Krauss, (2018) et al., ibid.

benchmarks for elements (program features) that support program quality. The inclusion of these elements is a first step towards quality. Some programs go well beyond these elements in terms of provisions of intensive training (even to assistant teachers, as is the case of Boston) and supports for program quality.

Table 3. PHLpreK compared to other city programs on benchmarks for program design and

practices to support quality

City	PHL	Boston	Cleveland	New York	San Antonio	San Francisco	Seattle
Program Name	PHLpreK	Boston Preschool Program (BPP)	PRE4CLE	Pre-K For All	Pre-K 4 San Antonio (Pre-K 4 SA)	Preschool for All in San Francisco (PFA)	Seattle Preschool Program (SPP)
Teacher Degree (BA)	No	Yes	Yes	Yes	Yes	No	Yes
Teacher Specialized Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Assistant Teacher CDA	Yes	No	Yes	No	Yes	No	Yes
Salary Parity	No	Yes	No	Partial	Partial	No	Yes
Class Size	Yes	Yes*	Yes	Yes	Yes	No	Yes
Ratio	Yes	Yes*	Yes	Yes	Yes	No	Yes
Duration	Yes	Yes	Partial	Yes	Yes	No	Yes
ELDS	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff professional development	No	Yes	Yes	Yes	Yes	No	Yes
CQIS	Yes	Yes	No	Yes	Yes	Yes	Yes
Data-driven decision-making	Partial	Yes	Partial	Yes	Partial	Partial	Yes
Curriculum support	Partial	Yes	Yes	Yes	Yes	Yes	Yes
Special education supports	No	Partial	No	Partial	Partial	Yes	Yes
DLL supports	No	Yes	No	Yes	Yes	Partial	Yes
Screenings/Referral	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: *Boston has a class-size of 22 children with a child-teacher ratio of 11:1 in its public school classrooms and ratio of 10:1 in its partnership classrooms. The additional personnel and supports in the program would indicate that this element is still fulfilled in this program.

Boston

The Boston Public Schools' (BPS) early childhood program is known as a high-quality large-scale public preschool program. BPS started the current K1 program for four-year-olds in 2005 and created a Department of Early Childhood. The program expanded rapidly and engaged in a rigorous continuous quality improvement process. From 2006 through 2009, the department implemented quality improvement initiatives that brought the program to very high quality. BPS required all teachers to use Opening Worlds of Learning (OWL) and Building Blocks while providing very intensive coaching and other professional development focused on effective implementation of those curricula. ⁵⁵

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⁵⁵ Sachs, J., & Weiland, C. (2010). Boston's rapid expansion of public school-based preschool: Promoting quality, lessons learned. *YC Young Children*, 65(5), 74.

A 2010 external evaluation, five years into implementation, found high observed quality on the CLASS Instructional Support dimension (average of 4.30).⁵⁶ Strong program effects were found for children's vocabulary, early reading, numeracy, working memory, and impulse control. A follow up study through third grade, found that 43% of students who participated in K1 scored in the proficient or advanced range on the MCAS state assessment in English Language Arts compared to only 34% of matched non-participants.⁵⁷

In 2010, BPS began to extend its program to community-based preschools. It developed a partnership with 10 community-based centers serving 200 children aged 3 and 4. Teachers were given training and coaching, required to implement the same curriculum as K1 (but with more intensive differentiation and a greater focus on math), and the ratio was reduced to 10:1.⁵⁸ Training also included center directors.

Cleveland

The PRE4CLE initiative is a public-private partnership developed as part of Cleveland's *Plan for Transforming Schools*. ⁵⁹ This plan dates to late 2011, when Cleveland Mayor Frank Jackson charged the Cleveland Metropolitan School District (CMSD), the philanthropic sector, the business community and representatives of the charter sector to develop a plan to reinvent Cleveland's public education. One of the Plan's goals was expanding high-quality preschool education, and this culminated in PRE4CLE which officially began in 2014.

PRE4CLE has as its goal to provide (first for 4-year-olds, and then for 3-year-olds) high-quality pre-K education through rapid and efficient expansion of high-quality, high-capacity early learning settings. ⁶⁰ The Cleveland Plan and a supporting dedicated tax levy provided CMSD the resources for expansion. Yearly targets were set at 40%, 45% and 50% of preschool children for 2018, 2019 and 2020, respectively. ⁶¹ PRE4CLE defines high-quality preschool as having a rating of 3 to 5 stars in Ohio's Step Up To Quality QRIS. ⁶² PRE4CLE stated as a goal to increase by 30% the number of programs in Cleveland achieving this rating in 2018. A Step Up To Quality (SUTQ) 3-star rating is one minimum requirement for participating in

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Weiland, C., McCormick, M., Mattera, S., Maier, M., & Morris, P. (2018). Preschool Curricula and Professional Development Features for Getting to High-Quality Implementation at Scale: A Comparative Review Across Five Trials. *AERA Open*, *4*(1).

⁵⁶ Weiland, C., & Yoshikawa, H. (2013). Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development*, 84(6), 2112-2130.

⁵⁷ Boston Public Schools. Measuring the Effectiveness of BPS K1 Programs. Using 3rd Grade MCAS Performance Scores. BPS K1 Cohorts: 2007, 2008, 2009. Boston, MA: Author. Office of Data & Accountability. Downloaded May 2018 from

 $[\]label{lem:http://bpsearlychildhood.weebly.com/uploads/1/0/1/3/10131776/measuring_the_effectiveness_of_bps_k1_programs_using_grade_3_mcas_cohorts_07_to_09.pdf.$

⁵⁸ Boston K1DS. (2016) BPS K1DS: Piloting the Boston Public Schools' Prekindergarten Model in Community-Based Organizations. Final Report. Boston, MA: Boston Public Schools. Downloaded May 2018 from http://bpsearlychildhood.weebly.com/uploads/1/0/1/3/10131776/bpsk1ds_final_report_feb2016_11.pdf.

⁵⁹ PRE4CLE. About. Cleveland, OH: Author. Downloaded May 2018 from https://pre4cle.org/about/

⁶⁰ Cleveland Pre-K Task Force. (2014) PRE4CLE. The Cleveland Pre-K Implementation Plan. Cleveland, OH: Author. Downloaded May 2018 from https://pre4cle.org/media/pre4cle-the-cleveland-pre-k-implementation-plan/.

⁶¹ PRE4CLE. The PRE4CLE Plan. Revised 2016. Cleveland, OH: Author. Downloaded May 2018 from https://pre4cle.org/wp-content/uploads/2017/06/2016-PRE4CLE-Plan.pdf

⁶² PRE4CLE. 2016 Annual Report. Cleveland, OH: Author.

PRE4CLE,⁶³ and in addition (above the 3-star level) each provider must have 50% of teachers with a BA and the remaining 50% an associate's degree while working toward a BA, Assistant teachers, teacher aides and substitute teachers must have a minimum of a high school diploma/GED and obtain a CDA within eighteen months of becoming a PRE4CLE Provider.⁶⁴

New York

New York City's Pre-K for All program is currently the largest city preschool initiative in the country. It served approximately 70,400 four-year-olds in 2016-17.⁶⁵ The program was initiated in 2014 and built on New York State's Universal Pre-K half-day program. Pre-K for All established strong quality standards at the beginning. It requires that teachers have a BA and teaching certificate in early childhood.⁶⁶ The program requires that pre-K teachers in public schools be paid at parity with teachers in older grades, and minimum salaries have been established for teachers in non-public schools, yet their salaries vary.⁶⁷ This last academic year, 2017-18, the City started an incentive program to retain teachers, supplementing returning teacher salaries with \$3,500.⁶⁸ Pre-K for All funds programs at \$10,200 per child.

A 162-page handbook provides guidance for program policy and practice. The program does not require a specific curriculum, but some supports for specific curriculum have been developed together with professional development. The city requires programs to participate in one of four professional learning 'Instructional Tracks' to support effective teaching. NYC Pre-K for All classrooms average high quality on the CLASS Emotional Climate and Classroom Organization dimension, and are in the middle range (above the threshold for effective practice, which is 3) on the Instructional Support dimension. Organization dimension.

The City developed partnerships with institutions of higher education to pathways for teachers to access the coursework for the credentials required. The New York Early Childhood Professional Development Institute created a system that incorporated academic planning and advisement for students, accessible coursework in early education, an online tool to locate degree programs, an online job-board for positions across early childhood programs, opportunities for student teaching and scholarships to cover the costs of coursework.⁷¹

⁶³ PRE4CLE works with unrated, 1- and 2-Star preschools to support their process to quality, though they are not designated as PRE4CLE Providers until they achieve at least a 3-Star rating.

⁶⁴ PRE4CLE. 2016 PRE4CLE Plan. Cleveland, OH: Author. Downloaded May 2018 from https://pre4cle.org/wp-content/uploads/2017/06/2016-PRE4CLE-Plan.pdf

⁶⁵ Boston Consulting Group and The Dallas Foundation op. cit.

⁶⁶ Teachers in private programs must have a BA and have a written plan to receive certification within five years.

⁶⁷ http://schools.nyc.gov/Careers/Teachers/PreK

⁶⁸ http://schools.nyc.gov/Academics/EarlyChildhood/educators/LeadTeacherIncentive

⁶⁹ Professional Learning. 2018-19: Pre-K for All Professional Learning. Downloaded May 2018 from http://schools.nyc.gov/Academics/EarlyChildhood/educators/pd.htm?wbc_purpose=basic&WBCMODE=%2F%3F mo%3D3%3Fmo%3D5%3Fmo%3D3%3Fmo%3D3%3Fmo%3D5

⁷⁰ NYC Department of Education. (2015) Pre-K Program Assessments Classroom Assessment Scoring System (CLASS) and Early Childhood Environmental Rating Scale – Revised (ECERS-R) Release. New York: Author. Downloaded May 2018 from http://schools.nyc.gov/NR/rdonlyres/A8A27BFE-7C58-4F03-8EB7-B90E01BA3D0D/0/CLASSandECERSRReleaseDeckFinal.pdf.

⁷¹ Westat, Metis Associates and Branch Associates (2016). Pre-K for All: Snapshot of Student Learning. Report to the New York City Center for Economic Opportunity and the New York City Department of Education. Downloaded May 2018 from https://www.researchgate.net/publication/308712510_Pre-K_for_All_Snapshot_of_Student_Learning.

San Antonio

San Antonio started by creating four new model preschool centers to serve 2,000 low income children in different neighborhoods across the city. In the 2016-17 school year, Pre-K 4 SA expanded to serve an additional 1,700 children through competitive grants to school districts, charter schools, non-profit education partners and private schools. These grants were for adding enrollment or enhancing existing preschool classrooms by adopting the high-quality standards in place in the model programs.

Funding for the program comes from a voter approved 0.125% sales tax. The program is overseen by the San Antonio Early Childhood Education Municipal Development Corporation. Per child funding for the directly operated centers was \$14,631 in 2015-16.⁷² Grants to other providers for expansion or enhancement of preschool programming funded by other sources are smaller, averaging approximately \$2,000 per child as an add-on to existing funding levels.⁷³

Requirements of the program include bilingual teachers with a bachelor's degree and a teaching certificate in early childhood and a full-day schedule. Teachers in the four directly operated centers have pay parity with public school teachers. The program offers extended hours to support working families. No specific curriculum is required, but a more general requirement of creating activities that support children's learning is based on children's interest and on the Texas Pre-Kindergarten Guidelines. Most teachers report using Teaching Strategies and Project-Based Learning approaches. Professional learning is supported by 14 coaches with backgrounds in child development, bilingual studies and special education which work one-on-one with teachers. Pre-K 4 SA offers Spanish/English 90/% to 10% model for ESL needs, with Pre-K 4 SA Bilingual teachers holding a Texas certification to teach children learning English as a second language. The model centers have been independently evaluated and have been found have continuous quality improvements with high CLASS scores for Emotional Climate and Classroom Organization and moderate scores for Instructional Support.

San Francisco

The San Francisco's Preschool for All (SFPFA) provides parents with tuition credits to spend at a preschool provider of their choice. Created in 2004 through a ballot initiative, it was

⁷² City of San Antonio (2014). PreK 4 SA Annual Adopted Budget. Downloaded May 2018 from http://www.sanantonio.gov/Portals/0/Files/PreK4SA/FY2015%20Annual%20Adopted%20Budget.pdf.

⁷³ City of San Antonio (2017). PreK 4 SA Grant Overview. Downloaded May 2018 from http://www.sanantonio.gov/Portals/0/Files/PreK4SA/ProgramDetails/PreK4SA-Grants-Fact-Sheet-2018.pdf?ver=2018-03-30-130050-797

⁷⁴ Westat (2017). Pre-K 4 SA Evaluation Report Year 4. Report Submitted to Early Childhood Education Municipal Development Corporation.

⁷⁵ http://www.sanantonio.gov/Pre-K-4-San-Antonio/Teachers

⁷⁶ PreK4SA (2017) Parent & Student Handbook 2017-2018. San Antonio: TX: City of San Antonio. Downloaded May 2018 from http://www.sanantonio.gov/Portals/0/Files/PreK4SA/Parents/Student-Handbook.pdf?ver=2017-09-01-154956-180.

⁷⁷ Westat, op. cit.

overwhelming reapproved by ballot initiative in 2014. SFPFA is now administered by the Mayor's Office of Early Care and Education.

SFPFA provides a reimbursement level of \$6,678 per child for a part-day and \$12,143 for a full day (school year of 175 days), to programs not receiving any other source of public funding. The half-day funding amount is intended to cover the cost of a high-quality preschool program 175 days at 3.5 hours per day or 245 days at 2.5 hours of instruction for a total of 612.5 hours. PFA enhancement funding provides up to \$3,757 in additional funding per child to programs with Head Start or state preschool program funding. Such enhancements are meant to support improvements in materials and supplies, staff training, and professional development. Physical PFA enhancements are meant to support improvements in materials and supplies, staff training, and professional development.

All OECE-funded providers must commit to achieving a Tier 3 rating or higher on the California Quality Rating and Improvement System (QRIS) Matrix to receive funding and must maintain that rating throughout the funding period. SFPFA only requires teacher qualifications to be at par with those required by child care licensing, yet in practice about 80% of teachers have a Bachelor's degree. Salary parity is not a requirement. Approximately 25% of publicly-funded preschool "slots" are in San Francisco Unified School District, with the rest of the children served in Head Start and private providers (55%) or in family child care homes (20%). A 2012 study of SFPFA classrooms found that they had moderate Instructional Support (as measured by the CLASS) and a more recent report describes improvement in quality, in alignment with the work done through a strong coaching system.

Seattle

In 2015 the Seattle Preschool Program (SPP) launched at a very small scale with a plan to grow gradually into a universal program. SPP is funded through a \$58 million property tax levy. ⁸⁴ The program served 268 children in 15 classrooms in 2015-16, 631 children in 33 classrooms in 2016-17 and about 1,100 children in 54 classrooms and homes in 2017-18. Children are served in public schools and in partnerships with community-based organizations. ⁸⁵ SPP is open to all children and incorporates public programs such as Head Start, ECEAP, as well as private providers. Higher income children receive tuition subsidies on a sliding scale; children below 300% FPL attend at no cost.

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⁷⁸ There are some variations on the definition of program hours depending on the type of program. SFOECE. (2017). Early Learning Scholarship and Preschool For All Program Operating Guidelines (Fiscal Year 2017-2018). San Francisco, CA: Author. Downloaded May 2018 from http://sfoece.org/wp-content/uploads/2017/04/ELS-PFA-Center-Program-Operating-Guidelines-427217.pdf

⁷⁹ First Five San Francisco (2016). Preschool for All: A Look Back at the First 10 Years of Universal Preschool in San Francisco. Downloaded May 2018 from http://www.first5sf.org/wp-content/uploads/2016/pfa_look_back.pdf_80 SFOECE, (2017), ibid.

⁸¹ Barnett, et al. (2016), ibid.

⁸² Boston Consulting Group and The Dallas Foundation (2016). *Driving Impact: A National Convening on Early Learning. City Backgrounders for Building a Common Fact Base*. The Dallas Foundation: Dallas, TX ⁸³ First 5 San Francisco. (2016), ibid.

⁸⁴ City of Seattle (2014). Seattle Preschool Program Action Plan: A blueprint for narrowing the opportunity and achievement gap. Seattle, WA. Downloaded May 2018 from http://murray.seattle.gov/wp-content/uploads/2014/05/Seattle-Preschool-Program.pdf

⁸⁵ Boston Consulting Group and The Dallas Foundation, (2016), ibid.

SPP requires lead teachers have a bachelor's degree in early childhood and gives current program staff four years to meet this benchmark (half meet the requirement currently). ⁸⁶ Tuition support is available for teachers to achieve credentials and degrees. Coaching and professional development are provided to strengthen instructional practices. SPP manages a group of instructional coaches who work directly with teachers. Participating programs must be licensed and have obtained a Level 3 rating in Early Achievers (Washington state's QRIS). SPP includes a pay parity requirement with K-12 for SPP teachers fully meeting qualifications requirements. Providers must use either the HighScope Preschool Curriculum or Creative Curriculum. SPP Plus is particularly targeted for special needs children, with a .5 special education teacher in the classroom, and class sizes of 18 (ratios of 7:1). ⁸⁷ Average funding is \$10,700 per child.

The four-year demonstration phase of SPP seeks to: demonstrate that the approach is viable and capable of producing positive outcomes for children; create, refine, and support infrastructure for quality; and, create a process and norms that support continuous quality improvement through evaluation. 88 Quality compares favorability to that of other well-known city programs, and instructional quality now exceeds an accepted threshold for effectiveness. There is some evidence of improvements in children's learning. 89

Summary and Recommendations

Higher-quality preschool programs have larger, more persistent benefits for children's learning and development. 90 Strong process quality—children's immediate experience of positive and stimulating interactions—is central as these are the immediate contributors to children's gains. However, "[s]tructural features of quality (those features of quality that can be changed by structuring the setting differently or putting different requirements for staff in place, like group size, ratio, and teacher qualifications) help to create the conditions for positive process quality" even though they do not by themselves guarantee success. 91 Quality also depends on the use of information in continuous improvement systems that provide feedback to teachers and administrators (at all levels of the system) that produce changes in program design and practices to raise and maintain quality over time.

The PHLpreK has some of the essential program design and practice features needed to support growth in quality over time. These include: the state's early learning standards, required specialized early childhood training to qualify as a teacher or assistant as well as policies setting adequate class size and ratio, and requirements for screening and referrals.

Other program features present challenges. Effectively supporting strong curriculum implementation with professional development as the system expands will be difficult when programs are free to choose a wide range of curricula. In addition, there is no clear alignment of

⁸⁶ Burgess, T., Joseph, G.E., Porter, A., Nores, M., Barnett, W.S. (2018). Raising Seattle: A Proposal to Expand Preschool Services. Seattle, WA: Cultivate Learning, University of Washington.

⁸⁷ https://www.seattleschools.org/cms/One.aspx?portalId=627&pageId=30135168

⁸⁸ Nores, M., Barnett, W.S., Joseph, G., Stull, S. Figueras-Daniel, A. & Soderberg, J.S. (2016). Year 1 report: Seattle Pre-k program evaluation. New Brunswick, NJ: National Institute for Early Education Research & WA: Childcare Quality & Early Learning Center for Research & Professional Development.

⁸⁹ Nores, M., Barnett, W.S., Joseph, G., Stull, S., Jung, K. & Soderberg, J.S. (2017). Year 2 report: Seattle Pre-k program evaluation. New Brunswick, NJ: National Institute for Early Education Research & Seattle, WA: Cultivate Learning.

⁹⁰ Minervino, (2014), ibid. Barnett, (2008), ibid. Camilli, et al. (2010), ibid. Yoshikawa, et al. (2013), ibid.

⁹¹ Yoshikawa, et al. (2013), ibid.

child assessments, curriculum, professional development and evaluation across the system. Encouraging use of one or a few curricula and strengthening alignment would facilitate more effective support for continuous improvement, as well as increasing efficiencies for provision of coherent and comprehensive PD and coaching, implementing systemic accountability, and choosing, supporting and utilizing consistent child and classroom assessment tools across programs. Additional funding may be required to support these system's building activities.

PHLpreK should consider gradually raising the qualifications of lead teachers to a BA with ECE certification. This could be done by developing a system that supports current teachers and assistants to obtain a BA in early childhood over time through partnerships with institutions of higher education, funding and advisement for teachers to enter, navigate and pay for higher education, and substantial increases in compensation when teachers attain their degrees. Long term it might be possible to create a pipeline beginning in Philadelphia high schools that offers advance college credits (through the current high school CDA program, for example), apprenticeships (building on the existing Philadelphia early childhood Apprenticeship program⁹²), and a path through assistant teacher to fully qualified lead teacher. Such an effort would be transformative for the workforce and the children they serve. Such effort should also be matched by an effort towards salary parity to increase retention, as qualifications and training increase.

PHLpreK can learn from other city efforts as well as from successful statewide programs such as those in New Jersey and North Carolina. The most successful examples have strongly emphasized high expectations for teachers and children, elevating the workforce, specific attention to the content and implementation of curriculum, and intensive coaching and professional development aimed at improving each teacher's individual practice as well as the system overall. As PHLpreK expands in the near future it might look particularly to NYC and Boston for specific systemic tools that might be borrowed or adapted including practices and materials that those cities provide to support continuous improvement of the workforce, classroom practice, and administration.

⁹² Some links may already exist with PHLpreK. These were not evident from the program documents. For information on the program see:

ECAC. Philadelphia early childhood education apprenticeship program. Downloaded May 2018 from http://ecactioncollective.org/index.php/blog/243-philadelphia-early-childhood-education-apprenticeship-program Training and upgrading fund. Early childhood education. Downloaded May 2018 from http://www.1199ctraining.org/ECE

http://www.phillytrib.com/news/stakeholders-discuss-new-workforce-development-strategy/article_65de4f25-58e8-5e8c-ae64-f7725efb759a.html

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Appendix Table. Description of PHLpreK features and source of information.

Program Feature	Information	Source
Workforce Qualifications		
Lead Teacher	Associate's degree in ECE or related field	Contract, p.20 & p.33
Assistant Teacher	CDA or 6 credits of ECE content as defined by the PA Career Pathway	Contract, p.20 & p.33
Fam Home Provider	Associate's degree in ECE or related field ^a	Contract, p.20 & p.33
Teacher compensation	Comply with the City of Philadelphia Twenty-First Century Living Wage and Benefits Ordinance (Chapter 17-1300) ^b	
Class size	Providers will assure that class sizes will not exceed twenty (20) children and that staff to child ratios of no more than ten to one will be maintained at all times. There must be clear delineation of classrooms in large open facility designs. Class sizes and ratios may need to be reduced further to ensure the needs of the children in the program are met.	Contract, p.31
Ratio	No more than ten children. An assistant teacher in the classroom.	Contract, p.20 & p.31
Curricular Requirements	Implement programming based on a PA-approved early learning curriculum that is aligned to the PA Early Learning Standards	Contract, p.20 & p.30-31
Funding	\$8,500 per child (\$850/child per month)	Pre-k-Implementation-Plan-FINAL; Contract p. 22 & p.42; Commission report, p.5
Dosage	Deliver quality, developmentally-appropriate educational services to three- and four- year-olds for a minimum of 5.5 instructional hours per day for 180 days	Contract, p.20 & p.30
Teaching staff /classroom	1 or 2 depending on size	Contract, p.20
Special Ed Supports	Not specified.	-
DLL Supports	Not specified.	-
In-Service training	A PHLpreK staff or administrator must attend at least 75% of additional training as required by PHMC or the City. A training calendar will be provided at the commencement of the PHLpreK school year.	Contract, p.22
	MOE, PHMC or a training partner will provide training to Providers on the two most commonly used assessment tools: Teaching Strategies GOLD and Pearson Work Sampling System	Contract, p.31
Screening	At least one developmental screening for each child annually within 45 days of the child's first day in the classroom using a screening tool that has been tested for reliability and validity. ASQ and ASQ:SE recommended.	Contract, p.21 & p.35

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	Verify that at least one vision, dental and health screening has been obtained annually within 60 days of the child's first day in the classroom.	Contract, p.21 & p.35
Referrals	Refer any child with an identified concern to ELWYN for assessment. ^d	Contract, p.21 & p.35
Meals	Provide nutritious, family style meals and snacks everyday by applying for subsidized food program. ^f	Contract, p.21
QRIS	Current STAR 3 or 4 providers must maintain good standing in Keystone STARS. Eligible growth (STAR 1 or 2) providers must apply to participate in Success by 6 in FY 18 or ensure that they are utilizing other resources to achieve STAR 3 or STAR 4 status (STARS Mentoring, STARS TA, Regional Key Move Up Cohorts). Those already enrolled in Success by 6 must continue in good standing. Submit quality improvement plan to achieve star 3 designation.	Contract, p.19
Access	This Pre-K program is open to all children who live in the City of Philadelphia who will be 3 or 4 years old by September 1 and not eligible for Kindergarten	Contract
Attendance	Maintain 85% average daily attendance each month	Contract, p.20
Wrap Around	Maintain CCIS contract and offer full-day services (before- or aftercare) as needed by the family. Support families to access funding support for these.	Contract, p.21 & p.34
Evaluation	Not specified.	-
Child Formative Assessment	Conduct continuous child observation to inform child outcomes assessment using an OCDEL approved assessment tool twice per year (October and May). Observation records must be included in the child's file and reflect observations completed across the PHLpreK Program year. Formalized Assessment will be documented in Childware twice per year.	Contract, p.20 & p.31
Monitoring	Lesson plans may be reviewed at any time during on site visits by PHLpreK Contract Specialists.	Contract, p.31
Other	Each classroom has access to appropriately credentialed substitutes, floaters, aides to ensure teachers can take breaks.	Contract, p.20
	Classes are staffed by full-time staff and will not have a substitute as the lead teacher for over 90 days.	Contract, p.20
	All programs will meet the Physical activity and Screen time standard. Provide 90 minutes per day of physical activity, including at least 60 minutes of moderate to vigorous physical activity	Contract, p.21 & p.36
	No Providers will be permitted to provide a City-funded PHLpreK seat to a child already enrolled in their Pre-K program and must provide all PHLpreK seats to newly enrolled individuals. This includes seats funded by Head Start, Pre-K Counts, Child Care Subsidy or private pay or to use PHL Pre-K to convert a family from part day	Contract, p.29

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service to full day service. Failure to expand your slots to newly enrolled families by the minimum number of PHLpreK slots specified in your agreement may result in a decision to not renew contracting for the next contracting period, reduced payment or cancellation of your contract.

No religious instruction or activities should occur during the 5.5-hour PHLpreK school Contract, p.29 day.

While not reimbursable by PHLpreK dollars, a nap/rest period shall be provided to Contract, p.30 children who are enrolled in full day care at PHLpreK locations.

Social meal and snack times, appropriately managed activity transitions, and personal Contract, p.30 care routines are included in instructional time.

- ^c Providers will support the family in accessing additional funding to support full-day (6+ hours) and full-year (260 days) child care needs. PHLpreK funds will support part-day (5.5 hours) and part-year (180 days) services. Providers will support families in accessing other funding sources to support full-day and full-year services namely private tuition and childcare subsidies (CCIS). If a family is unable to secure public or private funds for additional hours or days of service, PHLpreK providers are not required to guarantee or provide services beyond the school day, school year services funded through PHLpreK.
- ^d Providers must document and track all collaboration efforts. Providers are expected to follow the goals, modifications and accommodations noted in a child's Individualized Education Plan (IEP) or Individualized Family Services Plan (IFSP).
- ^e Not done by providers. Providers will work with families to obtain screenings if they have not occurred within recommended timeframes and will assist families to ensure children are insured and have a primary care physician

^a For Existing PHLpreK Family Child Care Partners with a CDA credential, an action plan must be created outlining the timeline to achieve an associate's degree within a 4-year period

^b Providers who are unable to meet the 21st Century Minimum Wage and Benefit Standard may request a temporary waiver from this requirement

f Providers will offer at least one, family-style nutritious meal and one snack to program participants during the instructional day. Depending on program times additional meals or snacks should be offered. Meal and snack times must be noted on the Program Daily Schedule. No fees may be charged for any snack or meal.