Building a Foundation for Success:

Options for Investing in Early Education & Care in Massachusetts

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ROADMAP TO
Expanding Opportunity
Evidence on What Works in Education

The promise of a high-quality education leading to opportunity and shared prosperity for all children is a deeply held value in Massachusetts. Despite a record of prominent successes, our Commonwealth has struggled to provide every child in every community the supports necessary for long-term life success. To confront this challenge, the Massachusetts Budget and Policy Center and the Rennie Center for Education Research & Policy have partnered to research the issues and offer a clear path on what works in education. Ultimately, the Roadmap to Expanding Opportunity project will provide a roadmap for bringing education reform into the 21st century.

This series of reports builds on progress initiated with the Education Reform Act of 1993, addressing critical areas in which progress has stalled. Ultimately, this project will provide a roadmap for bringing education reform into the 21st century. Reports will examine promising evidence-based strategies for supporting all children in achieving college, career, and life success. In particular, analyses will be grounded in a recognition that learning must extend beyond traditional school structures and offerings.

Reports will offer strategies for adapting a broad evidence base to local contexts, including cost analyses to assess the level of resources required to support district and statewide innovation. Ultimately, these briefs are designed to provide education leaders and practitioners with building blocks for driving future educational reforms across the Commonwealth.

Overview

Early education and care has wide ranging benefits for children, parents and the economy.

For children: Participation in early education and care helps lay a foundation for success in school and in life. Many children who participate in early education and care have better academic outcomes later in their K-12 careers.[i] They also have improved social outcomes, participating in the workforce at higher rates, earning more, and accessing other public benefits at lower rates.[ii]

For parents: Early education and care makes it easier for parents to work, giving them the support they need to seek and keep jobs, to improve their economic circumstances, and to provide for their families. This kind of support has become even more important since welfare reforms of the mid-1990s, which encouraged welfare recipients to join the workforce.

For the economy: Economic gains are both immediate and longer-term: 1) early education and care provides an immediate benefit as parents are better able to participate in the workforce and contribute to the state economy; and 2) it provides a longer-term benefit as children are set on a path to become more productive adults, able to make effective contributions to society in the years ahead. These benefits are greatest for low-income children with the weakest existing formal supports.[iii]

In this report we explore the current landscape of early education and care in Massachusetts, looking at where kids are served and identifying groups of children receiving no formal care at all. Based on our estimates of which children are being served in what settings, we then cost out a range of options for expanding and improving early education and care for these three and four year olds in Massachusetts. They are:

- **Providing affordable early education and care to all lower-income kids through private providers, at current rates or with quality improvements.** Targeting resources to low-income kids not currently served by EEC would help make access for low-income families more universal, but would likely leave programs under resourced. Expansion through the EEC system with higher rates tied to QRIS benchmarks has the potential to expand access and quality simultaneously.

- **Providing universal early education and care through public schools,** with funding through the Chapter 70 formula. Integration into Chapter 70 would allow two years of pre-kindergarten to be universal and would better connect the academic support received by these kids with the K-12 curriculum.
- **Providing expanded early education and care through a public/private hybrid system.**

These options provide a rough roadmap for achieving two important goals:

Providing greater access to early education and care for low and moderate-income families currently receiving no public support. Positive returns on investment in early education and care are especially strong when focused on providing formal early education and care for children of the most need. These positive effects include increased high school graduation rates, increased college attendance rates, improved health outcomes, and decreased idleness (neither being in school nor working).[4] Positive effects also often include improved academic test scores, although in different contexts and for different populations, these initial increases sometimes fade over time.

Improving the quality of programs available to all children. High quality programs provide both educational benefits and other long-term social benefits. Good programs jumpstart academic skill development, providing basic literacy skills essential for success throughout one's future schooling.[5] They also provide a venue for children to develop important social skills and to have their health needs monitored during this critical developmental period.

Massachusetts currently has no unified strategy to guarantee access to high quality early education and care. Having a mixed provider system means that changes in one place are likely to have ripple effects across the system, sometimes in unanticipated ways. Therefore, as this paper explores the potential options, we are careful to flag important issues that merit further investigation.

Analysis of Public Support for 3 & 4 Years Old In Massachusetts

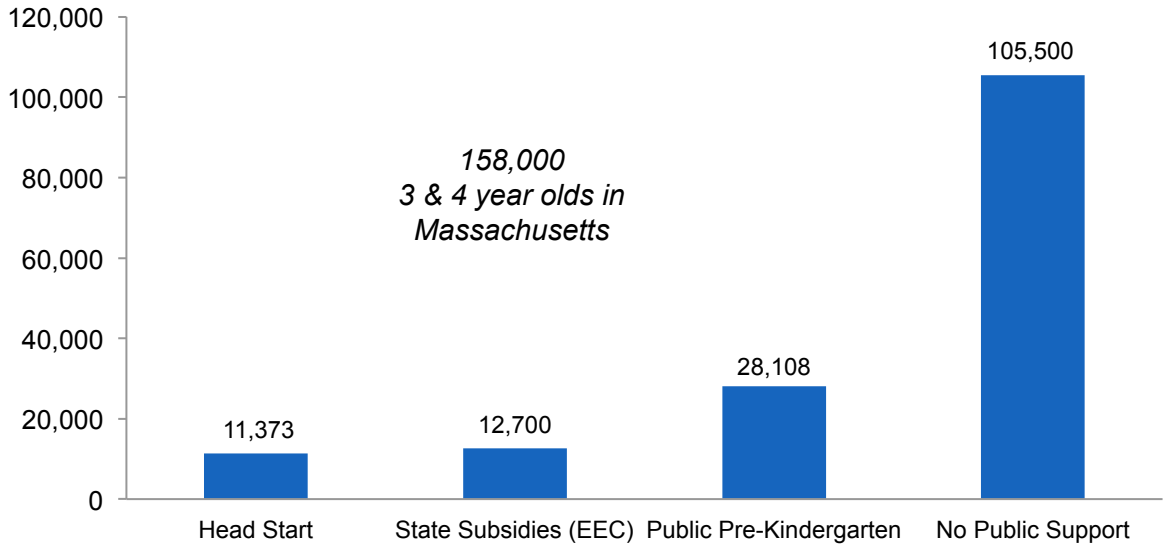
In order to develop a menu of policy options for both expanding access to early education and care and improving the quality of that care, we first define the universe of three and four year olds in Massachusetts and identify the settings in which they are currently being served. Based on the most extensive data available from the U.S. Census Bureau's American Community Survey, we estimate there are a total of roughly 158,000 three and four year olds living in Massachusetts in 2012.

Next we break out the number of three and four year olds currently in early education and care settings based on data gathered directly from public agencies supporting early education and care. These are: the federally funded Head Start program; the Department of Elementary and Secondary Education (DESE), which supports public pre-kindergarten offerings; and the Department of Early Education and Care (EEC), which administers public subsidies for low-income families to access private settings, either private centers or licensed family providers. Unfortunately, there is no reliable source of data on the number of children in Massachusetts in other private settings receiving no public support—e.g. licensed private day care settings or other more informal family and friend arrangements.

For the purposes of this paper, we look at two years' worth of early education and care leading up to public kindergarten eligibility. For enrollment counts of kids in public pre-kindergarten we capture roughly two years' worth of children. For Head Start and EEC, however, eligibility actually spans more than two years, and for this reason, we adjust these totals downwards.[6]

Based on data gathered from these public sources, we estimate that one-third of three and four year olds statewide, roughly 52,000 children, receive public support to help fund their early education and care. The remaining two-thirds, approximately 105,500, are either not in a formal setting or are paying full price to access one. The majority of middle and upper income families in this group are paying full price in some "preschool setting.[7]

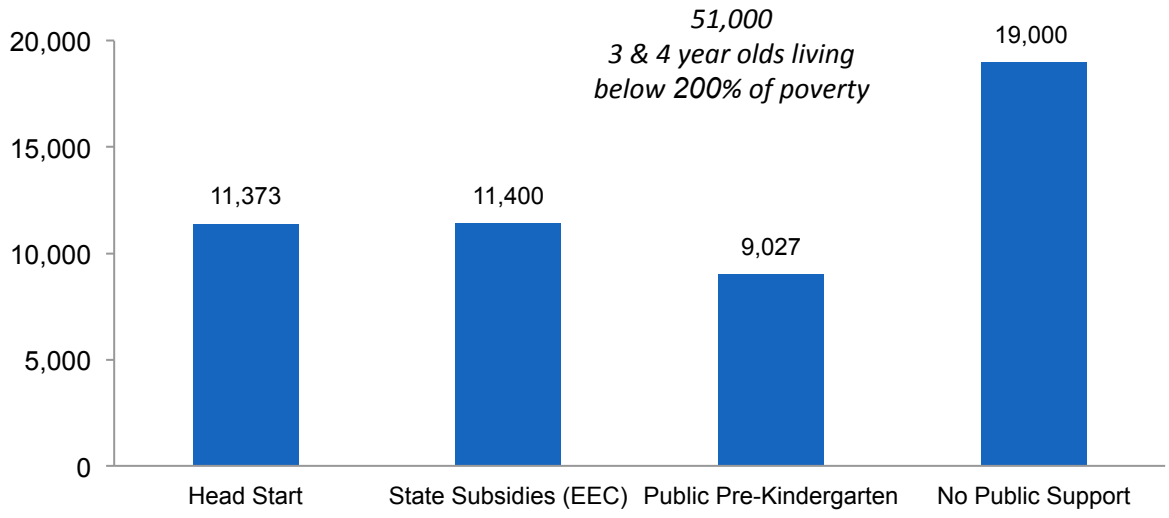
A small portion of families receive public support for their pre-school children.



*FY 2013 Head Start data, MA Head Start Association and EEC
**FY 2014 state subsidy data, the Department of Early Education and Care
*** FY 2013 pre-kindergarten enrollment, Department of Elementary and Secondary Education
****2012 American Community Survey 1-year estimate used to determine number of children receiving "no public support"

For kids below 200 percent of poverty, roughly one-third receive no public support to help fund their early education and care. These families likely stand to benefit most from an expansion of early education and care. Some of these children may be in a private setting, but since they're receiving no public support, these families would be paying full private rates, rates that are a real strain on families with such limited financial resources.

One-third of families below 200% of poverty receive no public support for their pre-school children



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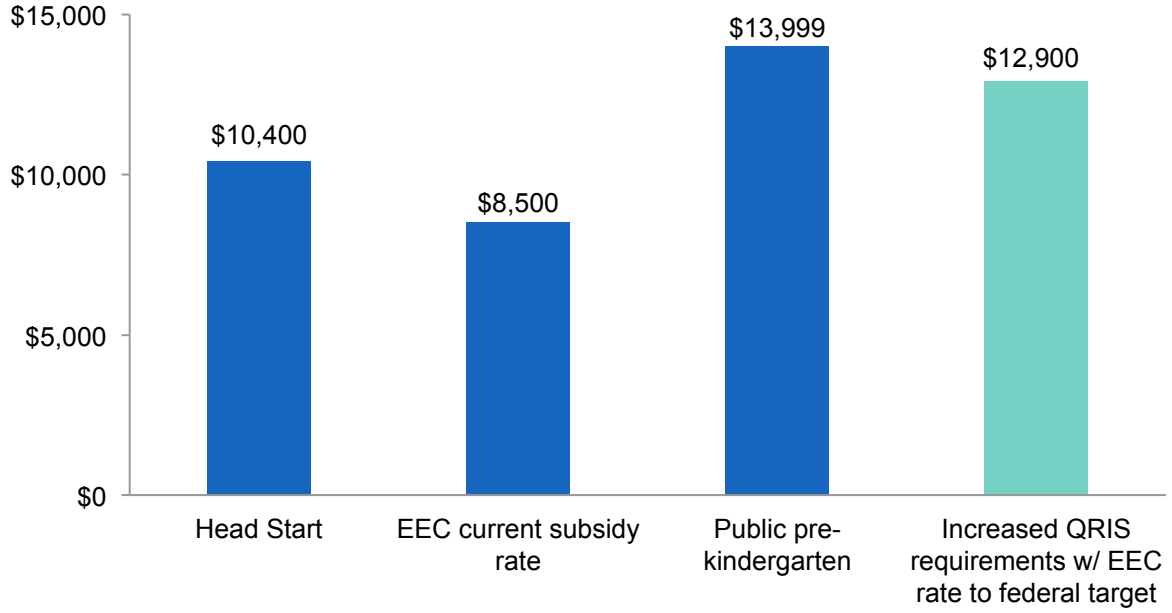
Cost Estimates for Different Investment Options

So far we have identified the number of three and four year olds in Massachusetts by type of early education and care setting, and we've identified critical gaps in kids receiving no public support. Next, we describe what it costs to educate kids in each of these settings.

The chart below outlines estimates of per child costs for providing early education and care in a few different settings. The vast majority of Head Start funding and a large portion of EEC subsidy funding come initially from federal revenue sources. Specifically, about 80 percent of current EEC funding comes from two federal block grants—Temporary Assistance for Needy Families and the Child Care Development Fund. Unlike Head Start, though, this funding flows through the state budget and is distributed to providers by EEC. Federal funding from these two grants decreased by 13 percent from FY 2001 to FY2013, adjusted for inflation, limiting the available funds for these subsidy programs. For more information on the role of federal funding and on recent spending cuts please see MassBudget's Declines in Spending on Early Education & Care in Massachusetts.

Per student spending estimates by provider

Most recent available per pupil amounts by provider type



Head Start spending per child is roughly $10,400.[8] This funding level likely fluctuates a bit year-to-year and is derived by dividing the annual number of federally subsidized seats with annual federal funding, and then adding a required 20 percent local match.

The current EEC reimbursement rate is roughly $8,500 annually per child. It is important to stress that unlike the Head Start and public school per pupil spending amounts presented in this paper, the EEC reimbursement rate of $8,500 per child is only a very rough proxy for actual costs. It is significantly lower than actual costs per child for most programs who therefore use other revenue sources to cross-subsidize students receiving EEC support. For instance, many programs admit private paying students at higher rates and do supplemental private fundraising. With no uniform spending reporting, however, EEC rates are the best baseline estimate we have for costs at this level. Further, actual EEC rates may be roughly equivalent to the marginal cost of adding additional students for some programs that have excess capacity. Nonetheless, this $8,500 amount should be viewed as a low proxy for the cost of providing early education and care in an EEC-subsidized setting.

Current public school spending is $13,999 per student. Because districts do not report separately their spending by grade level, it is impossible to know if districts currently providing pre-kindergarten are spending more or less than this statewide, grade-wide amount. Therefore, it is important to note that this $13,999 amount is a pre-kindergarten through 12th grade average spending amount.

On the far right-hand side of the graph we show what it would cost to increase EEC reimbursement rates up to the federally recommended level. Current EEC reimbursement rates are so low that they reflect rates charged by only about the 10 cheapest percent of private providers in the state (actual percentages vary by region). The federal government, by contrast, recommends that states set their reimbursement rates to levels that match what 75 percent of providers are charging their unsubsidized children. Increasing rates to this $12,900 level would provide more resources to providers and would likely result in more available seats for subsidized children. This level is also on par with the $12,800 New Jersey is currently spending in their publically funded high-quality early education and care program. One option, discussed later in the paper, proposes tying a rate increase to this level with new quality expectations utilizing the state's new Quality Rating and Improvement System (QRIS).

Since Head Start is a federal program with funds going directly to providers and bypassing the state budget, we do not include a separate model costing out a Head Start expansion. However, the model can contribute unique ideas to the other models being considered in the report because of the breadth of services included for both children and their families. Most preschools concentrate solely, or at least predominantly, on the child. Resources largely support the costs

of in-class programming—teacher salaries, curriculum and support materials, and building and administration costs. The Head Start model, by contrast, reaches beyond the classroom, actively engaging families while providing health, nutrition, and other services to families who need them.

Next, we explore three different options for expanding and improving our public early education and care supports:

1. Providing affordable early education and care to all lower income kids through private providers, at current rates or with quality improvements.
2. Providing universal early education and care through public schools.
3. Providing expanded early education and care through a public/private hybrid system.

For each model we assume full participation among eligible kids not currently receiving public support. Some families, though, will choose not to enroll. In practice, up to a quarter of children may not enroll, depending on the specifics of the program. In Florida, for instance, about 20% of 4 year-olds do not attend Florida's voluntary prekindergarten program.[9] In Oklahoma's voluntary preschool program, about 26% of children did not enroll in 2012.[10]

By assuming full participation, our cost estimates are most likely a bit high. However, there are other ways in which our estimates may be a bit low. For example, some kids attending public pre-kindergarten also receive EEC subsidies for care outside of half-day prekindergarten (we have fully excluded kids in kindergarten and older that receive EEC wraparound subsidies). Since there is no way to identify the number of kids in both public pre-kindergarten and receiving an EEC subsidy, there is likely some double counting of kids in these two categories. The effect of this potential overlap is to drive down our estimated state costs, because our remainder of kids receiving no public support is likely somewhat understated.

OPTION 1: Providing Affordable Early Education and Care To All Lower-Income Children Through Private Providers, At Current Rates Or With Quality Improvements

We will explore two different models for expansion through the EEC system.

- The first model is the most limited one we explore in this paper. It uses current reimbursement rates paid both to private centers and family providers. This expansion option is useful in that it outlines a minimum baseline of funding that would be needed for a significant expansion. It is the least costly option, but also the most limited in offering further quality improvements for kids.
- For our second option, we describe an expansion that would pair increased program quality expectations with higher reimbursement rates. Higher rates can supply the level of support necessary for providers to meet new quality improvement expectations.

For both models, we utilize a sliding family fee scale, based off of EEC's current sliding scale, in order to target public support to those with the greatest need. The scale outlines fees families must contribute when using a subsidy. The fee goes up as family income increases.

EEC reimburses providers at rates based on the age of the child and the type of program being accessed. Families, however, are required to contribute a co-payment based upon family income.[11] We employ this EEC sliding scale fee model, adjusting EEC fee levels, which are based off of state median income, to instead run off of federal poverty estimates. The table below lays out our adjusted sliding fee scale, which we use for our cost estimates. The right hand column shows the annual state cost per child according to a family's income level.

Pre-school sliding fee scale

Federal Poverty Level	Family Fee (%)	Family Fee ($)	State Cost
0-50%	0%	$0	$8,500
50-100%	11%	$950	$7,550
100-150%	29%	$2,450	$6,050
150-200%	54%	$4,600	$3,900
200-250%	72%	$6,100	$2,400
250-300%	86%	$7,300	$1,200
300-350%	89%	$7,550	$950
350-400%	98%	$8,300	$200
400% +	100%	$8,500	$0

*The federal poverty level for a family of three is $19,530. For a family to receive a free subsidy, their annual income would have to be below 50 percent of federal poverty, below $9,765.

**A family of three with income over 400 percent of poverty ($78,120) would not receive a subsidy.

EEC Model 1: Expanding through the EEC subsidy system at current reimbursement rates

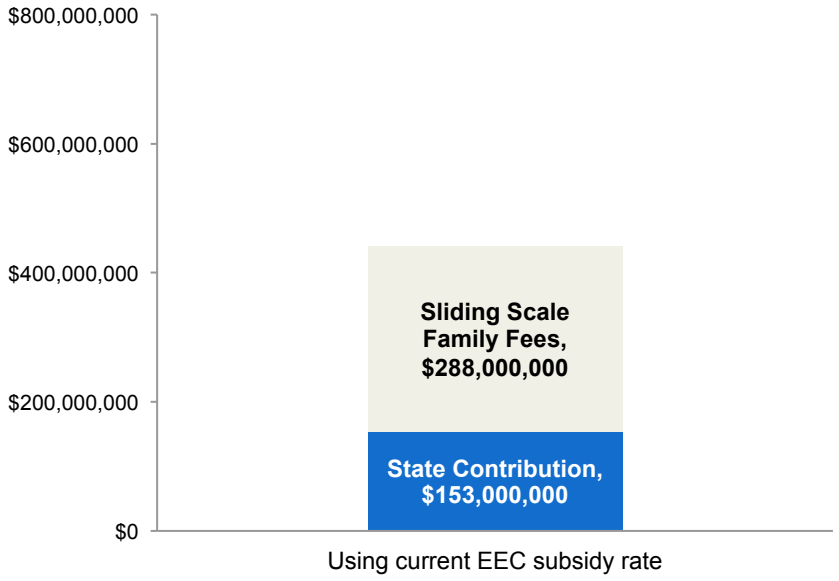
This first model of expansion through the current EEC system is the most limited option we explore in this paper. Before costing out this option, here are a few important notes of caution:

1. Reimbursement rates paid by EEC to providers are very low. At current reimbursement levels, many private providers choose not to accept EEC subsidies, thereby limiting the available choices for families with subsidies.
2. The current reimbursement rate of $8,500 is a low proxy for actual program costs—most, if not all, providers that accept subsidies charge higher tuition to private paying students in the same classrooms. Higher tuition from these students is used to cross-subsidize EEC-supported kids. Many programs also supplement these revenue streams with private fundraising. Providers who cannot raise a significant amount through fundraising often maintain the lowest costs, which has a direct effect on program quality. These providers have a harder time paying their teachers a competitive salary and thus struggle to attract highly trained teachers.[12] These providers also have a more limited capacity to provide comprehensive professional development.
3. Since there is no uniform source of data on current capacity at private providers that accept EEC subsidies, it is difficult to estimate their available capacity, both currently and projecting into the future. In the short term, there is some limit and it is likely current capacity could only handle a small to moderate increase.

For this first expansion model, we estimate what it would cost to provide state subsidies for all families at or below 400 percent of federal poverty not currently receiving public support for their early education and care—52,000 children based on our analysis of American Community Survey data. The specific value of the state subsidy for individual families increases for lower-income families according to the table shown above. Currently, EEC eligibility rules require that parents be working or in some other qualifying activity (such as school) for 30 hours a week. Our model does not include a similar requirement, making expanded access available solely based upon income.

Calculating per student spending under current EEC rates and then adjusting based on fees paid by families, we estimate the total cost to expand the current EEC subsidy system to all eligible 3 and 4 year olds is $440 million. The state portion is approximately $153 million, with families picking up the other $288 million. More than half of the kids in the state not already receiving public support, almost 54,000 children, have family incomes over 400 percent of poverty and would thus not be eligible for any subsidy under this model.

EEC Model 1: Expansion using current subsidy system



*Calculations include FY 2014 rate increase

The current cost of this expansion ($153 million) represents on-going costs associated with expansion through this model. This would more than double the amount the state is currently spending on subsidies for preschool children, a little over $68 million through the first half of FY 2014 ($136 million annualized).[13] There could also be meaningful start-up costs associated with each option if current capacity is not enough to handle the increased enrollment. Start-up costs, though, may not add to the total state costs. If new settings must be opened to handle the influx of children, initial funds would be needed to make sure these settings meet current EEC licensing requirements. Whether these funds come from public or private sources is uncertain.

There are significant viability questions for an expansion using current EEC rates as it would result in more kids using subsidies without providing more resources to providers to cross subsidize these kids. The more viable alternative may be requiring providers to improve quality through attainment of a higher QRIS level, and tying rate increases to this improvement. Raising rates accomplishes two things; it increases the resources for providers who currently accept kids with a subsidy and it likely increases the pool of providers who accept subsidies giving families more choice. Raising EEC reimbursement rates would close the gap between reimbursement rates and the market rate charged by most providers.

EEC Model 2: Investing in QRIS quality improvements supported by increased EEC rates

In recent years EEC has developed a Quality Rating Information System (QRIS) to help define more uniformly what quality means. QRIS systems have already been implemented in over thirty states and are based on research highlighting key practices linked to high quality education.

A second option for expanding the current EEC subsidy system would support QRIS quality improvements that are tied to increased EEC reimbursement rates. Before we discuss the increase in rates needed for providers to meet new quality improvement expectations, we will first describe the Massachusetts QRIS system and outline ways to tie QRIS improvements with increased resources for providers.

The Massachusetts QRIS captures research-based criteria linked to early education and care program quality. The QRIS has four levels (from one to four stars) that reflect a program's progressive improvement toward providing excellent early childhood education. As a program's quality increases, however, often so does its costs, particularly those associated with attracting and retaining well-prepared and experienced teachers. In recognition of a program's increasing costs as educational quality increases, some states, like Pennsylvania, have differentiated payments to programs depending on the quality of education they provide. Known as "tiered reimbursement system," these states offer higher reimbursement rates as incentives for programs that are able to achieve higher QRIS levels.

Pennsylvania's "Keystone STARS" system has a base reimbursement rate, approximately $8,100 per child using a subsidy. Additional funds are given to providers at higher STAR levels. For a full time child, the additional funds amount to:

- $91 for a STAR 1 program
- $248 for a STAR 2 program
- $731 for a STAR 3 program
- $1,305 for a STAR 4 program

Pennsylvania also offers "Merit Awards" on top of the tiered reimbursement rates to providers for attaining a higher STAR level, and offers education and retention awards for staff who attain certain degrees in early childhood education levels (for more detail on specific rates and awards, see HERE).

The Massachusetts QRIS system standardizes program characteristics that have a meaningful impact on program quality, making it easier and more efficient to evaluate programs and assess their overall quality. Five key indicators are used to evaluate programs and determine each program's quality rating and corresponding QRIS level (for more detail on specific quality measures within each indicator please see HERE). These are:

- Curriculum and learning
- Safe, healthy indoor and outdoor environments
- Workforce development and professional qualifications
- Family and community engagement

Leadership, administration and management

EEC's final four-level ranking is determined by the sum of ratings within each of the five indicators above. There are currently four levels of quality and programs must meet all criteria of one level before qualifying for a higher rating.

There are multiple ways to provide resources to providers to improve the experience and training of their teachers. QRIS can be utilized to help Massachusetts do this. In fact, many states with QRIS systems already utilize incentives to improve classroom and teacher quality. Some of the incentives include:

- Quality Improvement Grants: grants to providers that can be conditioned on QRIS advancement.
- Quality Achievement Awards: awards for providers in recognition for achieving a higher QRIS level. Awards can be one-time or on-going. On-going awards support the cost of operating at a higher QRIS level.
- Wage and Retention Awards: designed to reward individual teachers for attaining credentials in early childhood education and to help providers retain teachers as their salaries increase.
- Scholarships: scholarships that help teachers access professional development, training and higher education opportunities that will improve their experience and overall program quality.
- Tiered Subsidy Reimbursement: tiers relate to QRIS quality levels with reimbursement increasing as higher levels are attained.

Used as a reward, EEC could simply increase reimbursement rates for providers after they have met the requirements and reached a higher QRIS level. Under this design, utilization of some of the different grants outlined above could help providers with cost increases before they actually reach a higher QRIS level.

Achieving a certain rating in each category could be prescribed for any provider receiving a rate increase. For instance, EEC could tie rate increases to a required increase in teacher experience, training and pay. The experience and training of teachers, the amount of their formalized early childhood education, is one of the QRIS key indicators.

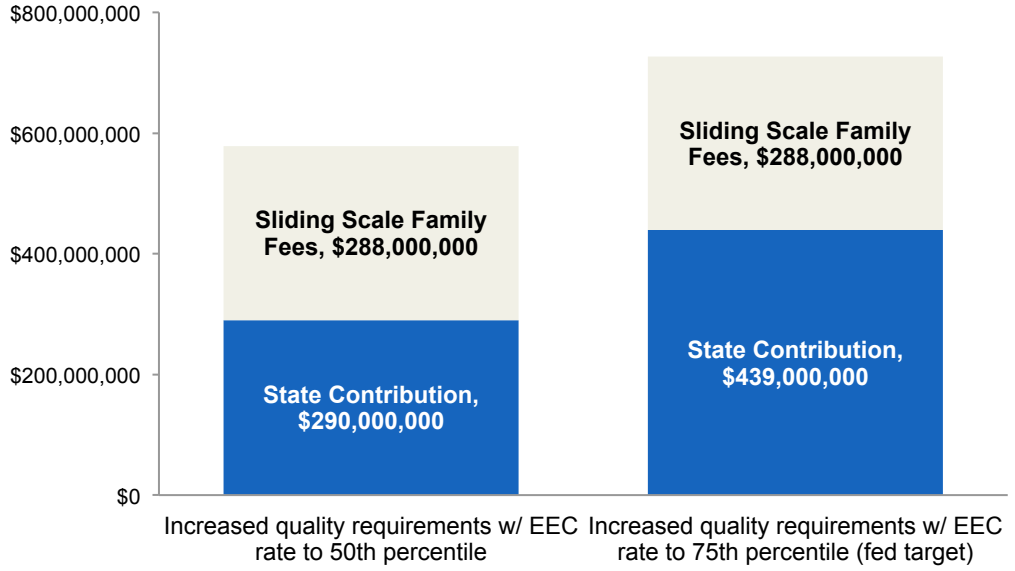
As outlined above, there are multiple ways QRIS can be used to incentivize improvements in quality.[14] Rate increases could supply the level of support necessary for providers to meet new quality improvement expectations. Ideally, a well-designed QRIS incentive system would tie specific rate increases with objective measures of what it actually costs to provide services at different QRIS levels. Unfortunately, research that attempts to identify these tiered cost levels is still being developed and has not been comprehensively evaluated in a Massachusetts context. Better identifying the cost of different quality levels in Massachusetts is an essential step for implementing an expansion of this sort. A few indicators, though, can help us estimate the cost for providing high quality early education and care in Massachusetts.

The National Institute for Early Education Research (NIEER), for instance, has constructed a model preschool program of high quality and has estimated the cost of providing each of its component parts—e.g. wages, benefits, program materials.[15] After making a regional cost adjustment,[16] they estimate that Massachusetts would have to spend approximately $13,900 per child (FY 2011 dollars) to provide high quality early education and care within private settings.

New Jersey, an early education and care model we discuss in more depth later in the paper, provides high quality early education and care to low income "Abbott" communities.[17] These programs have helped decrease retention rates for kids in school, decrease the number of kids in special education classes, and increase math and literacy test scores.[18] In 2012, New Jersey spent approximately $12,800 per pupil on early education and care in these communities.[19]

Here we use two rough benchmarks for estimating an EEC subsidy system with additional funding for higher quality. We cost out providing expanded access to all income-eligible families with increased reimbursement rates up to $10,600, a level equivalent to what 50 percent of private providers charge their unsubsidized children. An increase to the 50th percentile, as opposed to the current 10th percentile level, is roughly equal to an increase of $2,100 per child. Second, we highlight a higher benchmark using federal recommendations asserting that states should set their reimbursement rates to levels that match what 75th percentile–$12,900—providing an extra $4,400 per subsidized child. The 75th percentile amount ($12,900), although not quite to the level that NIEER proposes, does match what is being spent in New Jersey's high quality early education and care program.

EEC Model 2: Increased QRIS quality requirements tied to increased EEC reimbursement rates



*State contribution combines spending due to increase on current kids and spending on new kids

** Calculations include FY 2014 rate increase

The rate increases affect the total cost in two ways; they increase the amount needed for new subsidies and increase costs for current children. Raising rates to the 50th percentile would cost just over $27 million to cover current children and about $263 million for new subsidies—roughly $138 million more than just expanding at current rates. Raising rates to the 75th percentile would cost almost $56 million and $383 million, respectively—around $286 million more than an expansion at current rates. In any of the models, families would pay the same fee, amounting to $288 million in total. It is

important to note at any of the levels that increase rates, children would potentially still not be able to access all providers, especially those that charge the highest rates.

OPTION 2: Providing Universal Early Education & Care Through Public Schools

Expanding access to early education and care through the existing public school system offers an alternative to expanding access through EEC subsidies for early education and care in private settings. This route would more closely integrate the education and care of three and four year olds with the educational system designed to support them during their K–12 years. Further, an expansion through the public school system would likely require significantly greater compensation for teachers serving these young children. With a higher salary structure, public school districts can require more advanced credentials for incoming teachers and they can also be more selective in recruiting top talent.

One real downside to expansion through the public school model is that "full-day" schooling is still predominantly 6 hours per day, rather than a full 8-hour workday. Further, a traditional school year does not include school vacation weeks and summer months. Most private providers offer support that is closer to a true full day/full year. This eases the burden on working parents and largely eliminates the need for families to pay for supplemental before school and afterschool care. School districts could obviously also expand the length of the school day, although this would come with additional cost increases.

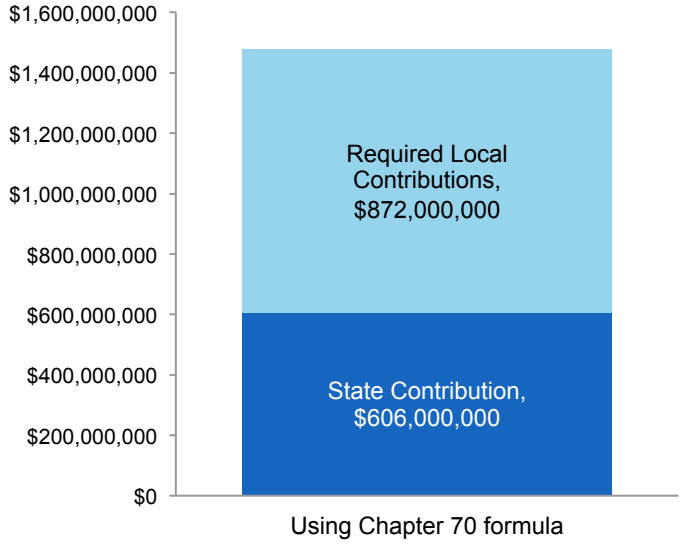
Roughly 28,000 three and four year olds are currently being educated in public pre-kindergarten classrooms in Massachusetts. Since another 24,000 kids are currently being served through Head Start and EEC subsidies, here we describe one option for financing an expansion of public pre-kindergarten for the remaining 105,500 three and four year olds in Massachusetts currently receiving no public support. Specifically, this model integrates full-day pre-kindergarten into district foundation budgets, with the state and local communities splitting the associated cost increases (41% state, 59% localities).

Assuming a per pupil foundation budget of $13,999 (current PK–12 actual per pupil spending), expanding full-day pre-kindergarten to these 105,500 kids would cost roughly $1.48 billion annually. It is important to note that while the total cost of $1.48 billion may appear large, much of this total represents money already being spent privately by parents in the private child care system. In some ways, one could think of these options as shifting resources currently in the private early education and care system into a more comprehensive public system.

Further, the state could instead expand for this same population of kids but assume a much lower per pupil amount of $8,151, which is the state's foundation budget for full-day pre-kindergarten (factoring in proportional low-income and English Language Learner amounts), rather than using $13,999 per student. The state's foundation budget calculation is the state's estimate of what it costs to provide an adequate baseline education, but this calculation is based on assumptions that are now more than 20 years old and are proving to be increasingly out of date. Using this much lower $8,151 per student foundation budget amount would cost a total of roughly $860 million. For more information on how the Chapter 70 formula works please see Demystifying the Chapter 70 Formula.

Expansion through Chapter 70 formula with a higher foundation budget for pre-kindergarten

FY 2013 estimated costs, foundation budget raised to meet current per pupil spending in PK-12 districts.



Depending on the specific nature of pre-kindergarten services delivered—e.g., class sizes, number of teacher's aides per student, the extent of professional development—the actual per pupil cost of pre-kindergarten could potentially be higher than current per pupil costs for grades kindergarten and above. But it could also be lower. Currently, the state's foundation budget assumes an identical baseline minimum spending level for half-day kindergarten as it does for half-day pre-kindergarten.[20] Elementary classes are assumed to cost a small amount more per pupil, whereas middle school costs are assumed to be a bit lower. According to the foundation budget, high school costs are assumed to be the highest of any grade level, reflecting smaller class size assumptions for specialized course offerings, greater guidance counseling needs, and higher materials and equipment costs.

But those cost assumptions simply reflect the state's judgment in the early 1990's when legislators designed the foundation budget as part of the Ed Reform Act of 1993. The current Boston Public Schools' weighted student formula, by contrast, assumes that it does cost more to provide public pre-kindergarten: roughly $770 per pupil more than kindergarten and roughly $1,500 more than grades 1-2. This cost difference is driven largely by the decision to provide full-time teacher's aides in every classroom.

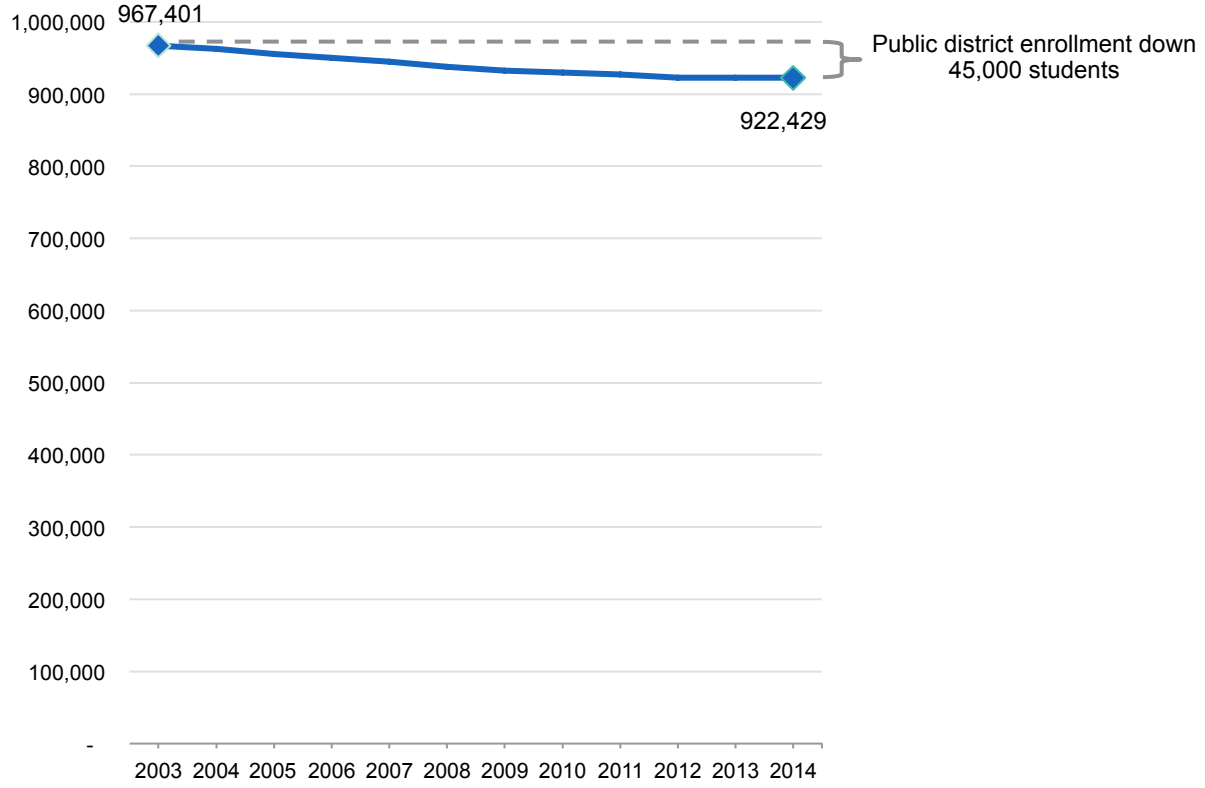
Since they are already served in another public setting, this costing out model does not include funding to transition kids currently in Head Start or those receiving EEC subsidies into public pre-kindergarten classrooms. It is important to note that because public pre-kindergarten costs more per pupil, it would require additional money to shift these three and four year olds from their current settings into public pre-kindergarten. Specifically, it would require an additional $41 million to bring support for all three and four year old Head Start students up to public school spending levels. It would require an additional $70 million to bring support for all three and four year olds receiving EEC subsidies up to public school spending levels.

There are many start-up challenges inherent to an expansion aiming to serve 105,000 new students. This influx of kids would necessitate either the renovation of classrooms in existing school buildings or the provision of new space outside of existing school buildings. The classroom requirements for kids this young are slightly different from the rest of the K–12 population, with classrooms requiring separate bathrooms designed for small children. The main complexity though, from the state's point of view, is that start-up costs in different school districts could be very different. Some districts may have the room in existing buildings, while other districts may not. The Boston Public Schools, for example, estimate their one-time start-up costs to be about $20,900 for each new pre-kindergarten classroom.[21] This estimate covers costs such as facilities preparation and the purchase of new furniture and technology. It does not account for any potential new school building construction.

Boston assumes a pre-kindergarten class size of 22 kids per classroom. Therefore, if providing expanded pre-kindergarten for roughly 105,500 new students required 4,800 new classrooms, the state could provide one-time start-up grants at a cost of about $100 million.

Interestingly, statewide public school enrollment has declined by about 45,000 over the past decade, suggesting that some districts likely have existing classroom capacity to meet some of this need. This one snapshot does not ensure that 45,000 seats currently sit vacant, since some buildings may have been sold off or outlived their useful lives, but it does suggest that there may be some existing capacity to help meet a portion of the need.

Due to declining enrollment, public districts have some capacity to expand pre-kindergarten within existing facilities.



Uncapping the number of pre-kindergarteners that count towards foundation budgets

The existing Chapter 70 formula already allows some pre-kindergarten students to count towards foundation budgets, which means that the state pays for a portion of these costs. Specifically, districts can count towards their foundation budgets up to two times as many regular education pre-kindergarten students as they have special education pre-kindergarten students. Further, these regular education students must be learning alongside special education students in an inclusive setting. In both his FY 2014 and FY 2015 budget proposals, Governor Patrick has proposed lifting this cap, allowing districts to count all pre-kindergarten students towards foundation regardless of how many special education students are enrolled. So far, the Legislature has not adopted this proposal.

Because the state funds a significant portion of district efforts to meet foundation budget spending requirements, this policy change would increase state Chapter 70 aid for many districts offering pre-kindergarten education. Under the Governor's proposal, the state would still only help support half-day pre-kindergarten and it would only apply to those districts not charging tuition.

Since this proposal came after enrollment counts were already set, districts would not be able to respond to this new incentive in the first year of a change. Therefore, this policy change would only have modest funding implications in its first year, only affecting those districts that already provide pre-kindergarten to regular education students above the cap and opt to pay the full cost without any state support. In this first year, as shown in the table below, the statewide foundation budget would only increase by about $14.7 million, with the state only contributing $2.3 million through Chapter 70 aid.

Costs of counting all pre-kindergarteners towards foundation budgets

	FY 2015 (Pre-K cap)	FY 2015 (Pre-K uncapped	*Increase*
Foundation budget	9,851,273,620	9,866,011,313	*14,737,693*
Chapter 70 aid	4,398,049,606	4,400,355,962	*2,286,356*
Required minimum contribution	5,814,527,632	5,817,618,238	*3,090,606*

This $14.7 million increase is the result of including 2,012 additional pre-kindergarten students towards foundation budgets. It is important to stress that these 2,012 students are already being educated in pre-kindergarten classrooms. Districts are just running these classrooms outside of the Chapter 70 formula and funding them on their own.

If all pre-kindergarten students could count towards district foundation budgets over multiple years, however, the actual number of kids served through public pre-kindergarten could increase steadily. Districts would have the option of increasing pre-kindergarten offerings knowing that the state would contribute a portion of the resulting increased costs.

It is important to note that the decision to expand pre-kindergarten would be made on a case-by-case basis, with many factors affecting local decisions. These factors include: what proportion of a district's increased foundation budget would come in the form of Chapter 70 aid; parent demand for pre-kindergarten and how its quality compares to private alternatives in the same community; and district capacity either to add classrooms within existing schools or expand into new buildings.

This approach would gradually lead to greater pre-kindergarten access and would require the state and localities to share in contributing revenue to meet these new costs.

Requiring Universal, Free-Day Kindergarten

Most Massachusetts districts provide tuition-free full-day kindergarten—86 percent of kindergarteners were in tuition-free full-day kindergarten in FY 2014—but it is not yet universal. Currently, districts are only required to provide half-day kindergarten, which is roughly 3 hours per day. Districts offering tuition-free full-day kindergarten are able to count these students towards their foundation budgets and, therefore, are eligible to receive additional Chapter 70 aid from the state. Those charging tuition can only do so for the second half of the school day.

Requiring universal, free full-day kindergarten in FY 2014 would raise the statewide foundation budget by about $77.5 million, with the state contributing $29.3 million through Chapter 70 aid (see table below).

Costs of universal, free full-day kindergarten in FY 2014

	FY 2014 Actual	FY 2014 Full-Day Kindergarten Statewide	*Increase*
Foundation budget	9,711,217,585	9,788,688,182	*77,470,598*
Chapter 70 aid	4,300,854,366	4,330,193,699	*29,339,333*
Required minimum contributions	5,748,475,145	5,753,646,783	*5,171,638*

This change would benefit 8,760 full-time equivalent kindergarteners. Some of these students are currently only in half-day

classes and others are paying tuition to attend full-day classes. While this change would create a more universal early education system, if done in isolation it would do little to target resources to the greatest need, since most low-income communities already provide free, full-day kindergarten. It is predominantly wealthier communities that choose to limit kindergarten to half-day or to charge tuition for full-day.

OPTION 3: Providing Expanded Early Education and Care Through a Public/Private Hybrid System

With early education and care currently provided through a mix of service providers—public school districts, private settings, federally-funded Head Start programs—a few promising hybrid investment options exist for better integrating these largely separate systems. Two options we explore here are: 1) the New Jersey model for expanding access and quality through public and private providers, and; 2) the Boston model for funding private center quality investments that help better integrate their curriculum with the Boston Public Schools.

New Jersey

The state of New Jersey fully funds early education for all 3 and 4 year-olds living in "Abbott" districts, with kids attending public schools, Head Start programs or private centers. A state-defined group of 31 cities and towns, Abbott districts are predominantly low-income, urban districts, similar in many ways to Gateway Cities in Massachusetts. Creation of universal preschool in low-income Abbott districts occurred by judicial mandate. A 1985 state Supreme Court ruling in *Abbott v. Burke* found that kids in many urban districts were receiving inadequate education because of insufficient funding, and the decision created the Abbott designation.

State funding under this model first flows to Abbott school districts, with districts then having the option to either use this revenue to operate pre-kindergarten themselves, or, alternatively, to contract with qualifying Head Start programs or private providers. Since private providers are expected to meet the same quality expectations as public districts, spending in both settings is set at the same level—roughly $12,800 per pupil in FY 2012.[22]

New Jersey's hybrid funding approach provides flexibility to local communities. Where sufficient classroom space exists, many districts decide to provide pre-kindergarten themselves. In other communities, where there are strong private preschool options and public classroom space is more limited, districts have opted to subcontract out. In FY 2010, 40 percent of children were served within districts and 60 percent were served by Head Start programs or private providers.[23]

While New Jersey's model has evolved over time, it includes the following additional key features:

- The state provides 100 percent of the revenue necessary to run these preschool programs.
- Abbott districts now provide free full-day preschool for all 3 and 4 year olds.
- All Abbott preschool programs, including those subcontracted providers, must meet the following standards:
    - All teachers must have a bachelor's degree
    - All teachers must be licensed to teach early education
    - Classes may not exceed 15 students and must include teacher's assistants
- To connect early education efforts with the K-12 system, all kindergarten classes in Abbott districts are full-day.
- Students in kindergarten through third grade in Abbott districts must receive 4 years of intensive literacy instruction in classes of no more than 21 students.

This description is not intended to suggest that there are not significant challenges inherent to combining a public education system with a private one. Public schools, for example, typically operate for fewer hours per day and fewer days a year than do most private settings and Head Start programs. Teacher qualifications pay and curriculum can vary widely. Funding mechanisms, which are currently separate, would likely have to be molded together in some form. Additionally, these two systems in Massachusetts have separate and very different methods for assessing quality.

Boston

The Boston Public Schools (BPS) Boston K1DS program has taken a different hybrid approach, distributing school district funding out to private providers in order to support their quality improvement efforts. This new BPS funding comes in addition to existing revenue (e.g. EEC subsidies, private tuition, private grants) used by these programs to operate their baseline services. In this case, district-funding support flows to private providers and is targeted at improving program quality, rather than at increasing access for new children. BPS has undertaken this initiative in order to better connect the academic instruction of 3 and 4 year olds with the instruction they will receive in the early grades as BPS students. As a relatively new program, K1DS is currently being evaluated for effectiveness.

Criteria for private providers to participate include:

- The program must be EEC certified.
- Teachers must meet certain education qualifications.
- Teacher salaries must meet requirements.
- The program must be National Association for the Education of Young Children (NAEYC) accredited.

Benefits to participating programs include:

- Each classroom receives up to $45,000 to support salary increases and administrative expenses.
- Classrooms receive administrative support in adopting the Boston K1 literacy and math curricula.
- Coaches are available for classroom visits to help the teachers and directors with implementation of new programming.
- Program directors receive support in delivering professional development for their teachers.[24]

Unfortunately, well-resourced, comprehensive school/private provider collaborations of this sort are not all that common. And even this Boston program is limited to 10 private providers it currently partners with. Moving forward, the state could play a useful role in connecting the public and private systems in a more comprehensive way and providing the necessary funding.

An Interim Approach: Expansion for Four Year-Olds

So far we have focused on cost estimates for expanding early education and care for three and four year olds in Massachusetts and have proposed models—EEC's sliding scale and the Chapter 70 formula—that target greater state resources towards the lowest-income families. One option for targeting resources even more narrowly would be to consider an expansion just for four year olds. Expanded access for four year olds could be an end in of itself or it could be seen as an interim step towards later including three year olds.

The state of Oklahoma, for example, provides universal pre-kindergarten for all four year olds statewide. This is in contrast to New Jersey, which provides early education to a targeted group of three and four year olds (those living in predominantly low-income Abbott districts). Starting in 1998 funding for pre-kindergarten for four year olds was added to Oklahoma's K-12 funding formula, tying pre-kindergarten closely to the traditional K-12 system.

In Oklahoma, districts have the option of providing full-day or half-day pre-kindergarten, with those offering full-day receiving greater state support. The number offering full-day has increased significantly over the intervening years. In FY 1999, only 35 percent of kids attending public pre-kindergarten in Oklahoma were in full-day classrooms. In FY 2013, that number has more than doubled to 72 percent.

Additional features of the Oklahoma system include:

- Pre-kindergarten teachers are paid the same salaries as other teachers in their respective K-12 districts.
- Teachers must have a college degree and a certificate in early education.
- In order to address infrastructure challenges, districts can partner with outside entities—tribal programs, private centers, faith-based settings, and Head Start centers—to house these pre-kindergarten classrooms. These

classrooms, however, are still fully part of the public school system with classrooms staffed by public school teachers and funding going through the education funding formula.

- No more than 20 students per teacher with one aide per classroom.
- Pre-kindergarten is voluntary. A large percent—74 percent—participated in 2012.
- Since 4-year old pre-kindergarten is provided for through the state system, private philanthropy and providers have been freed up to focus on providing education for 3 year olds.
- Starting in school year 2013-2014, all districts are required to offer the option of full-day kindergarten.

Summary

Through this paper we analyzed the current landscape of early education and care in Massachusetts, identifying groups of children receiving no public support, and described three broad options for expanding and improving our current system:

- **Providing affordable early education and care to all lower-income kids through private providers, at current rates or with quality improvements.**
- **Providing universal early education and care through public schools.**
- **Providing expanded early education and care through a public/private hybrid system,** either with new funding supporting increased seats in both public and private settings or with new funding supporting improved and integrated programming across public and private providers.

Needless to say, the state will face many pressing design and implementation challenges in pursuing any of these options. But the evidence is clear: by expanding and improving our current system of early education and care, we can help build a foundation for success, both for children directly and for the state economy as a whole.

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[i] For example, the Boston Public School's early education (K0-K1) program has been shown to drive positive academic gains in the early grades: Christina Weiland and Hirokazu, *Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills*, 2013. Url:http://onlinelibrary.wiley.com/doi/10.1111/cdev.12099/abstract

[ii] David Deming, 2009 Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start
Arthur MacEwan, 2013 Economic Gains from Early Education & Care

[iii] James Heckman, The Heckman Equation; Clothier and Poppe, Early Education as Economic Investment; James Heckman, Return on Investment.

[4] David Deming, 2009 Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start

[5] Christina Weiland and Hirokazu, Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills, 2013. Url: http://onlinelibrary.wiley.com/doi/10.1111/cdev.12099/abstract

[6] EEC currently covers approximately 2.75 years of eligibility so we take the full number of EEC preschool subsidized seats and apply a ratio adjusting the totals downwards to two years' worth of enrollees.

For Head Start, we take the full number of federally funded Head Start seats for FY 2013 (11,724). We then look at the five year period between 2008 and 2012 and add the number of three and four year olds together for each year to calculate an annual ratio to total federally funded Head Start seats. We then apply the average ratio over this period to the FY 2013 number of seats. Finally, we add 235 seats to the new total to approximate the number of seats supported annually through state Head Start funds. See this EEC Report for state funded Head Start seats.

[7] Data from the Kids Count data center. Statistics come from one question on the ACS survey asking if kids are in preschool. Results of this question are inconsistent because of misunderstandings concerning what counts as preschool.

[8] Received from MA Head Start Association

[9] Florida Office of Early learning

[10] NIEER report on The State of Preschool 2012

[11] For more information, see the EEC sliding scale.

[12] According to the Bureau of Labor Statistics, the average annual salary for child care workers in Massachusetts is $25,500 - http://www.bls.gov/oes/current/oes399011.htm. Preschool teachers earn around $33,500 annually - http://www.bls.gov/oes/current/oes252011.htm.

[13] MassBudget data request received from EEC on February 20, 2014.

[14] Incentives have also been shown to increase participation in QRIS and state subsidy systems. See Mitchell, A. 2012. Financial Incentives in Quality Rating and Improvement Systems. QRIS National Leaning Network. Url: http://www.qrisnetwork.org/sites/all/files/resources/gscobb/2012-05-24%2015:13/Approaches%20to%20Financial%20Incentives%20in%20QRIS.pdf

[15] NIEER uses a model from, Gault, B., et al. (2008, March). Meaningful Investments in Pre-k: Estimating the Per-Child Costs of Quality Programs. Url: http://www.iwpr.org/publications/pubs/meaningful-investments-in-pre-k-estimating-the-per-child-costs-of-quality-programs.

[16] The regional cost adjustment comes from statistics in, Taylor, L. & Fowler, W. (2006). A comparable wage approach to geographic cost adjustment. Washington DC: IES, US Department of Education.

[17] See an overview of the *Abbott v. Burke* New Jersey Supreme Court case at http://www.edlawcenter.org/cases/abbott-v-burke.html. For evaluations of quality in New Jersey, see Barnett, S. W., et al. (2013, Mar 20). The Apples Blossom: Abbott preschool Program Longitudinal Effects Study: Fifth Grade Follow-Up. Url: http://nieer.org/sites/nieer/files/APPLES%205th%20Grade.pdf; Frede, E., et. al. (2009, June). The Apples Blossom The Abbott preschool program longitudinal effects study. Preliminary Results through 2nd grade. Url: http://www.nj.gov/education/ece/research/apples2.pdf.

[18] Ibid.

[19] http://nieer.org/sites/nieer/files/New%20Jersey_0.pdf; For overall state spending, see State of New Jersey Department of Education (2012, Feb 23). Education Funding Report. Url: http://www.nj.gov/education/stateaid/1213/report.pdf; For past cost assessments, see Belfield, C. & Schwartz, H. The Cost of High-Quality Preschool in New Jersey (2007). Url: http://www.edlawcenter.org/assets/files/pdfs/Newsblasts/elcnews_071210_CostOfPreschool.pdf.

[20] Full-day kindergarten receives twice this assumption--$7,171 per pupil—and districts cannot currently count full-day pre-kindergarten at all.

[21] These start-up costs are for K1 (4 year old pre-kindergarten) classrooms in the public schools. BPS also recently partnered with 10 private providers as part of the K1DS program. This discussion does not include K1DS classrooms which are highlighted in Option 3 of this report.

[22] National Institute for Early Education Research, *The State of Preschool 2012*, New Jersey State Profile:

http://nieer.org/sites/nieer/files/New%20Jersey_0.pdf

[23] The Education Law Center's The Abbott Preschool Program: A 10-Year Progress Report, August 2010:

http://www.edlawcenter.org/assets/files/pdfs/publications/AbbottPreschoolProgressReport.pdf

[24] For a full list of the benefits and criteria, see the K1 Request for Proposals.

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