

KENTUCKY REPORT:
A Commitment to
Pre-Kindergarten
IS A Commitment to
National Security

High-Quality Early Childhood Education
Saves Billions While Strengthening Our
Military and Our Nation



MISSION: READINESS
MILITARY LEADERS FOR KIDS



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Who We Are



Show in the photo are (left to right): Major General David M. Edgington, US Air Force (Ret.), Admiral James M. Loy, US Coast Guard (Ret.) and General Richard E. Hawley, US Air Force (Ret.) on the deck of the *Battleship Wisconsin*, in Norfolk, VA. February 2012 at a news conference supporting high-quality early education.

MISSION: READINESS is the nonprofit, nonpartisan national security organization of more than 350 retired generals, admirals and other senior retired military leaders calling for smart investments in America's children. It operates under the umbrella of the nonprofit Council for a Strong America.

For a full listing of our membership, please see our website at www.missionreadiness.org.

Acknowledgments

MISSION: READINESS is supported by tax-deductible contributions from foundations, individuals, and corporations. MISSION: READINESS accepts no funds from federal, state, or local governments.

Major funding for MISSION: READINESS is provided by: Alliance for Early Success • The Boeing Company • The California Education Policy Fund • The California Endowment • The Annie E. Casey Foundation • Early Care and Education Funders Collaborative of The Washington Area Women's Foundation • The Grable Foundation • The Leona M. and Harry B. Helmsley Charitable Trust • Robert Wood Johnson Foundation • W.K. Kellogg Foundation • The Kresge Foundation • The David & Lucile Packard Foundation • William Penn Foundation • The Pew Charitable Trusts. The opinions expressed are those of the author(s) and do not necessarily reflect the views of The Pew Charitable Trusts.

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Photos on summary page courtesy of US Department of Defense.



Summary

Today's military is an exacting environment sustained by complex technology and systems unimagined in generations past. It demands the very best of its service members.

Alarmingly, the Department of Defense estimates that **75 percent of all young Americans are unable to join the military** primarily because they are too poorly educated, have a serious criminal record, or are too overweight. More than 1 in 5 high school graduates who tried to join the Army could not score highly enough on the military's entrance exam to be allowed to serve; in Kentucky, the figure is 24 percent. And 20 percent of young people in Kentucky do not graduate from high school on time.

The retired admirals and generals of Mission: READINESS recognize that there are many factors impacting educational achievement. But there is one factor that has been proven to have a crucial impact on children from all backgrounds, and that is high quality early learning.

New data from across New Jersey confirm that pre-kindergarten can be brought to scale with strong and lasting results. By the time they were beyond third grade, children who participated in **New Jersey's** high quality program for two years were three-quarters of an academic year ahead in math and two-thirds of an academic year ahead in literacy compared to those who did not. Numerous studies of voluntary high quality programs in states such as **Tennessee, Michigan, Arkansas, West Virginia, New Mexico and Pennsylvania** have also shown impressive gains in literacy and reductions in the number of children needing special education services or being held back in school.

These new and emerging research results are bolstered by long-term studies of participants from high quality programs in **Michigan** and **Illinois**, which found they were far more likely to graduate from high school and far less likely to be involved in criminal activity in later years.

While debate about education policy is often contentious, the value of high quality early learning is recognized by policymakers across the political spectrum. Numerous states have invested in high quality pre-K and, in 2013, **Republican and Democratic governors in Colorado, Michigan, Mississippi, New Mexico, New York, North Dakota, Pennsylvania and Virginia have made bold moves in support of new investments in quality pre-K**. The Kentucky Preschool Program (KPP) was established in 1990 and primarily serves disadvantaged or at-risk four-year-olds. Enrollment has increased seven percent from 2001 to 2012 and, in



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"We spend over \$500 billion a year on integrated weapon systems and highly-trained personnel. We cannot afford to start turning our defense systems over to individuals who are poorly educated, have criminal records, or suffer from obesity."

Admiral Gregory G. "Grog" Johnson (Ret.)
US Navy

2012, the state served 30 percent of its four-year-olds. This support coincides with an extremely challenging economic environment for states. Unlike many other states, state per-child funding for preschool in Kentucky increased slightly in 2011-2012.

The federal Administration recently proposed a state-federal partnership that offers states the resources to create, strengthen and expand quality early learning programs for children from low- and moderate-income families. The partnership would enable states to offer children well-qualified teachers, small student-teacher ratios, and other elements that have a proven impact on learning. It could also lead to **a 15 percent increase in graduation rates for low- and moderate-income children, which would amount to nearly two million more graduates nationwide** from the 10-year investment.

Based on an independent analysis, high-quality pre-kindergarten can **cut crime, welfare and other societal costs and produce average net benefits to society of \$15,000 for every child served. Nationwide, that could produce \$150 billion in net benefits from the \$75 billion proposed investment in the next 10 years. Kentucky could save more than \$2 billion.**

America has bipartisan support for our sophisticated 21st Century military systems. But without qualified personnel, those investments will be severely compromised and our national security will be put at risk. Support from both Republican and Democratic policymakers demonstrates a commitment to high quality school readiness programs from both sides of the aisle. The more than 350 retired generals and admirals of Mission: READINESS know that investing in high-quality early childhood education, from birth to kindergarten entry, is essential for the future strength of our military and our nation.



KENTUCKY REPORT:

A Commitment to Pre-Kindergarten Is a Commitment to National Security

High-Quality Early Childhood Education Saves Billions While Strengthening Our Military and Our Nation

75 Percent of Young Americans Are Not Eligible to Serve in the Military

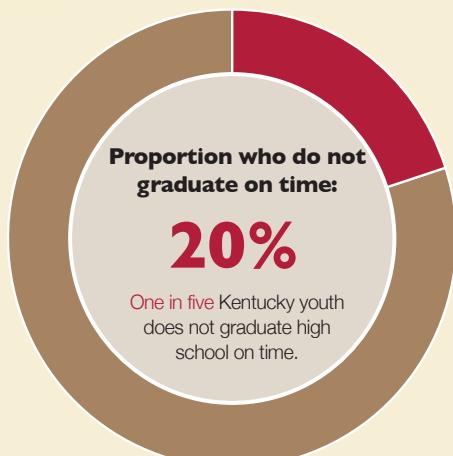
Military service is out of reach for an estimated 75 percent of all young Americans between the ages of 17 and 24. There are three primary reasons: they are too poorly educated, they have serious criminal records, or they are too overweight.¹ Nationwide, 22 percent of young people do not graduate on time from high school; in Kentucky, the figure is 20 percent.² The military rarely takes anyone without a diploma anymore. Even among young adults who do finish high school, 23 percent who seek to enlist in the Army cannot score highly enough on the military's exam for math, literacy and problem-solving to be allowed to serve. In Kentucky, 24 percent do not have an adequate score.³ One in 10 young adults cannot join because they have at least one prior conviction for a felony or serious misdemeanor.⁴ In Kentucky, there were 8,042 arrests of juveniles under age 18 in 2011.⁵ National surveys conducted for the military and by the Centers for Disease Control and Prevention (CDC) show

that approximately one in four young adults is unable to serve because of excess body fat.⁶ According to CDC criteria, which are broader than the military's, 45 percent of young adults in Kentucky are overweight or obese.⁷ The limited pool of young people qualified for military service jeopardizes our military readiness and threatens future national security.

High-Quality Early Childhood Education Programs Work: Better Outcomes for Children

While trends in education reform come and go, research shows that we have a solution that is consistently proven over time. High-quality early childhood education can prepare children to start school ready to learn. It can improve student performance, boost high school graduation rates, deter youth from crime, and, by helping children develop healthy early exercise and good nutrition habits, even help reduce childhood obesity rates.

High School Graduation and Military Entrance Exam Qualifying Rates Among Young Kentuckians



Source: US Department of Education, 2013

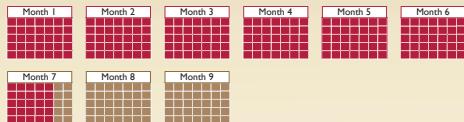


Source: The Education Trust, 2010

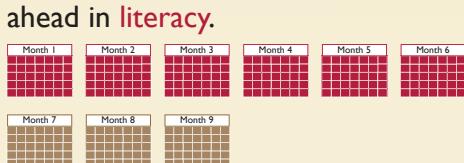
Strong New Results from New Jersey

By the time pre-K children in New Jersey were past third grade, they were:

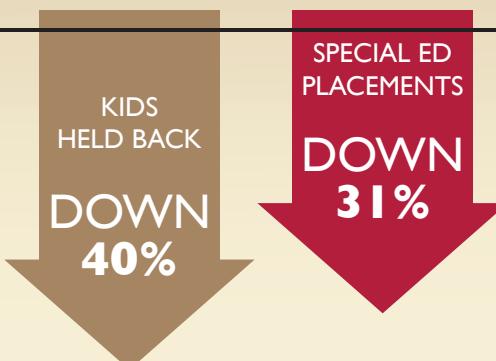
Three-fourths of a Year ahead in math.



Two-thirds of a Year ahead in literacy.



New Jersey pre-K reduces costly grade retention and special education.



Source: National Institute for Early Education Research, 2013

New Findings from New Jersey Prove Early Childhood Education Can Be Brought to Scale with Strong Results

By 4th or 5th grade, children who attended New Jersey's preschool program for two years were three-quarters of an academic year ahead in math and two-thirds of an academic year ahead in literacy compared to their peers who did not attend. Children who attended the preschools were also 40 percent less likely to be held back in school and 31 percent less likely to need special education services. There was no "fade out" of program effects: children who attended the New Jersey program significantly outperformed similar children who did not attend in kindergarten, in second grade, and now in 4th and 5th grades. The study is ongoing, so future impacts will also be tracked.⁸

Long-term studies of model programs had already shown that early education can transform the lives of disadvantaged children. For example, studies of the Perry Preschool program that followed the participants over 40 years have found they were 44 percent more likely to graduate from high school, while those who did not attend were five times more likely to be chronic criminal offenders by age 27.⁹

The Chicago Child-Parent Centers took this approach to scale, having served over 100,000 children, with long-term results: children left out of the program were 70 percent more likely to be arrested for a violent crime by age 18 and 24 percent more likely to have been incarcerated as

young adults than similar children not served. Participants, on the other hand, were 40 percent less likely to be placed in special education and, by age 20, were 29 percent more likely to have graduated from high school.¹⁰

The researchers studying the New Jersey preschool program state that their results are on par with initial results for the Chicago Child-Parent Centers, so they expect, as the New Jersey children become adults, to see strong high school graduation and crime prevention results, as well as economic benefits exceeding program costs. Meanwhile, the New Jersey program is reducing the substantial costs associated with special education and children repeating a grade.¹¹

Studies in Other States and Cities

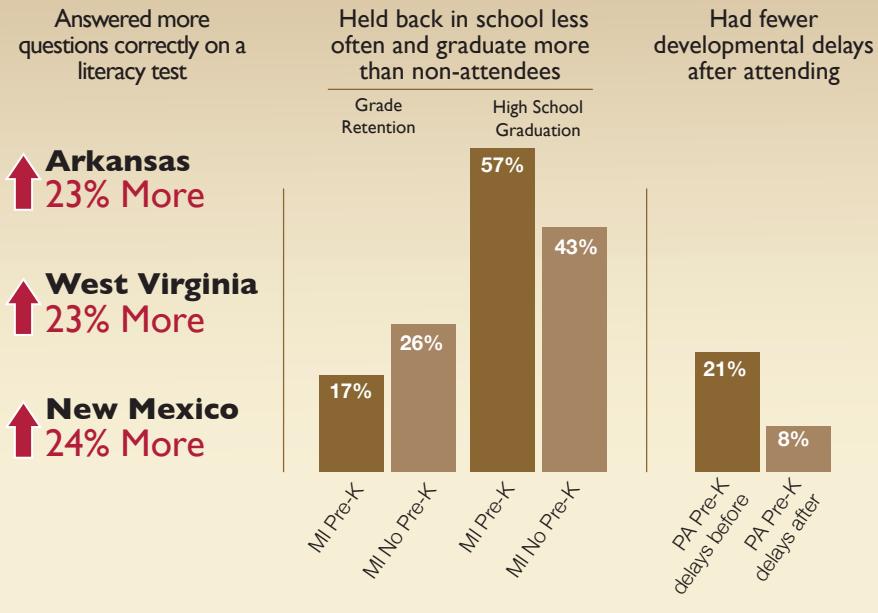
Studies of high quality early childhood education programs in other states and localities also report benefits such as impressive gains on literacy, and reductions in the numbers of children needing special education services or being held back in school.

Tennessee: A rigorous study of Tennessee's pre-K program found that literacy results and overall academic improvements for children who attended were 50 percent greater than for those who did not attend.¹²

Michigan: While most state pre-K evaluations do not yet have results on children's school performance beyond the



State Early Education Improves Educational Outcomes



Sources: Frede 2009; Maloffeva 2007; Lamy 2005; Hustedt 2007; Hustedt 2009; Bagnato 2009

early elementary school years, an evaluation of Michigan's Great Start Readiness Program (GSRP) shows longer-term results. GSRP participation had a dramatic impact on reducing grade repetition: children who attended were 51 percent less likely to be held back a grade by 8th grade when compared to a similar group of children who did not attend the program.¹³ And children who attended the GSRP were 35 percent more likely to graduate from high school on time than a comparison group of children not in the program.¹⁴

Arkansas: An evaluation of the Arkansas Better Chance program found that children who attended pre-K developed an extra four months' worth of vocabulary knowledge, beyond the gains that would be expected as a child naturally ages. Pre-K attendance also resulted in 23 percent more correct answers on a literacy test and improved math scores. Researchers are following children for five years to evaluate the longer-term effects of the program.¹⁵

West Virginia: Over half of West Virginia's four-year-olds are enrolled in the voluntary West Virginia Universal Pre-K System. An evaluation of the program found that children made an extra three months of progress on their vocabulary development, answered 23 percent more items correctly on an early literacy test, and increased their average math scores, when compared to the progress that would normally be expected over the course of a year.¹⁶

New Mexico: New Mexico launched a pre-K program in 2005 that is already seeing strong results. Across the first three years of the initiative, participating children answered an average of 24 percent more questions correctly on a literacy test. Significant impacts were found in math for all three years and in vocabulary for two of the three initial years.¹⁷

Pennsylvania: A recent evaluation of Pennsylvania's Pre-K Counts (PKC) program showed especially strong results for children who might otherwise be in special education during their K-12 years. For example, 21 percent of children were classified as developmentally delayed and qualified for early intervention services as they began PKC. By the end of PKC, only eight percent of children were classified as delayed. Similarly, the portion of three-year-old children at risk for problematic social and self-control behavior fell from

21.5 percent at the start of the program to 3.6 percent at the end of PKC.¹⁸

Promising local studies show that very high quality programs produce even larger effects. A recent study of a very high-quality, universal pre-kindergarten program in the **Boston** Public Schools found that children who participated in the program had improvements in mathematics, literacy and language skills equivalent to seven months of additional learning by the end of the program, compared to children who did not attend. Both disadvantaged children and their more advantaged peers benefited from the program.¹⁹

A study of disadvantaged children in the **San Francisco Bay Area** who received high-quality pre-kindergarten for two years showed that the children actually outperformed more well-off children in reading by second grade: 61 percent of those attending the program for two years were proficient in reading, compared to 55 percent of students who did not attend the program (most of whom attended private preschool programs).²⁰

Reducing Obesity

There is also emerging evidence that teaching young children healthier eating and exercise habits can contribute to reversing the epidemic of childhood obesity. A randomized controlled

DECLINES IN CHILDHOOD OBESITY: Data in Philadelphia, Mississippi and New York City indicate that innovative preschool efforts to improve early childhood nutrition and physical activity and to educate parents in each locality may be part of the solution to childhood obesity.

LOCALITY	CHILDHOOD OBESITY MEASURED	DECLINE IN OBESITY
Philadelphia	Over a 4-year period, K-12 children, overall obesity measured	5% decline
Mississippi	Over a 6-year period, K-5 children, overweight & obesity measured	13% decline
New York City	Over a 4-year period, 5- to 6-year olds , obesity measured for all public-school children	7% decline
	Black	6% decline
	Hispanic	
	White	24% decline

Source(s): Pennsylvania School District, 2012; Journal of the Mississippi State Medical Association, 2012; Centers for Disease Control and Prevention, 2012; New York City of Health and Mental Hygiene, 2012; Robert Wood Johnson Foundation, 2012.

study in **Chicago** demonstrated that working with preschool-aged children and their parents can reduce weight gain: children not in the program gained 16 percent more weight over the next two years than those receiving the program.²¹ In **New York City, Philadelphia** and **Mississippi**, schools improved the nutritional quality of the food served to children, increased their physical activity, and coached their parents on children's healthy nutrition and physical activity needs. As a result of these efforts, along with other broader reforms, rates of childhood obesity dropped 5 to 24 percent.²²

In sum, research demonstrates that high-quality early learning programs can help solve the serious problems—poor educational achievement, criminal behavior and obesity—that cause the majority of our young people to be ineligible for military service. Solving these problems will have additional positive social and economic consequences because succeeding in school and avoiding criminal involvement also opens the doors to success in college and careers, whether young people choose to serve in the military or not.

Moving America Forward: Kentucky and Other States Are Already Investing in High-Quality Early Education

States understand that quality early learning programs provide an extraordinary return on investment and 40 states and the District of Columbia have preschool programs. The Kentucky Preschool Program (KPP) was established in 1990 and serves four-year-olds whose families have incomes below 150% of the federal poverty level or who are homeless or in foster care. It also serves three- and four-year-olds who

have disabilities. Children who do not meet eligibility requirements can attend KPP if space is available, using other funds. State funding is distributed to public schools, but services can be provided through schools or community-based centers.²³

Nationwide, the proportion of four-year-olds served in state preschool doubled over the past decade, growing from 14 to 28 percent.²⁴ Enrollment in state-funded pre-kindergarten in Kentucky has increased seven percent from 2001 to 2012 and, in 2012, the state served 30 percent of its four-year-olds.²⁵ Including the children served by Head Start, 46 percent of four-year-olds are served. In Kentucky, 49 percent of children are below 200 percent of the federal poverty level.²⁶

Support for quality programs from both Republican and Democratic policymakers demonstrates that this is a nonpartisan issue in many states. In 2013 alone, Republican and Democratic governors in **Colorado, Michigan, Mississippi, New Mexico, New York, North Dakota, Pennsylvania** and **Virginia** have proposed and /or signed into law expansions in quality early learning.²⁷

While significant progress has been made, access to preschool varies widely by state and most states fall well short of serving most of their preschool-aged children.²⁸ As of 2012:

- more than half of the states serve 30 percent or fewer of their four-year-olds: and
- another 10 states still have no state preschool programs.²⁹



John W. "Bill" Libby, former Maine Adjutant General, reads to children at a pre-kindergarten center in Bangor, Maine, June 2010.

Further, in 2011-2012, preschool enrollment stalled and state funding decreased significantly, due to lingering effects of the recession and the ending of the additional American Recovery and Reinvestment Act (ARRA) funding. More recently, unlike many other states, state per-child funding for preschool in Kentucky did not decrease in 2011-2012 year. However, the small increase in per-child funding was likely due to a small decrease in overall enrollment.³⁰

Clearly, a top national and state priority must be to increase the number of children served in early education programs. However, it is equally important to deliver high-quality programs. The research is clear that high-quality programs deliver stronger results.

High-Quality Early Childhood Education Benefits Society

In its 2014 budget proposal, **the federal Administration has proposed \$75 billion over 10 years for a state-federal partnership** to provide high-quality preschool programs to every low- and moderate-income four-year-old in the nation.³¹ The proposal also includes a \$750 million competitive grant program, to help states build their capacity for implementing high-quality preschool and an initiative to expand access to high-quality child care for children from birth through age three. The child care initiative proposes a new competitive grant program for child care partnerships with Early Head Start, as well as an increase in Child Care and Development Block Grant (CCDBG) funds. A comprehensive system of high-quality care and education, from child care through preschool,

will result in more children entering school prepared to succeed.

The new preschool initiative will allow states without state preschool to establish high-quality programs, as New Jersey and others have done. States with preschool could increase the number of slots or increase the quality of their existing programs, or do some combination of each. The quality of existing programs in Kentucky is high, so Kentucky might opt to add additional slots. The research shows that investing in high-quality preschool can result in substantial increases in graduation rates for more disadvantaged students.

Our projections of additional graduates conservatively assume there could be a 15 percent increase in graduation rates for low- and moderate-income children under 200 percent of the federal poverty level, if the state-federal partnership is implemented nationwide. We could have used Chicago's high-quality pre-kindergarten program's increased graduation rate of 29 percent, Perry Preschool's 44 percent, or Michigan's statewide Great Start program's 35 percent. But, to be conservative, we used the lower Chicago figure and then cut it roughly in half.

Early Education Quality Matters

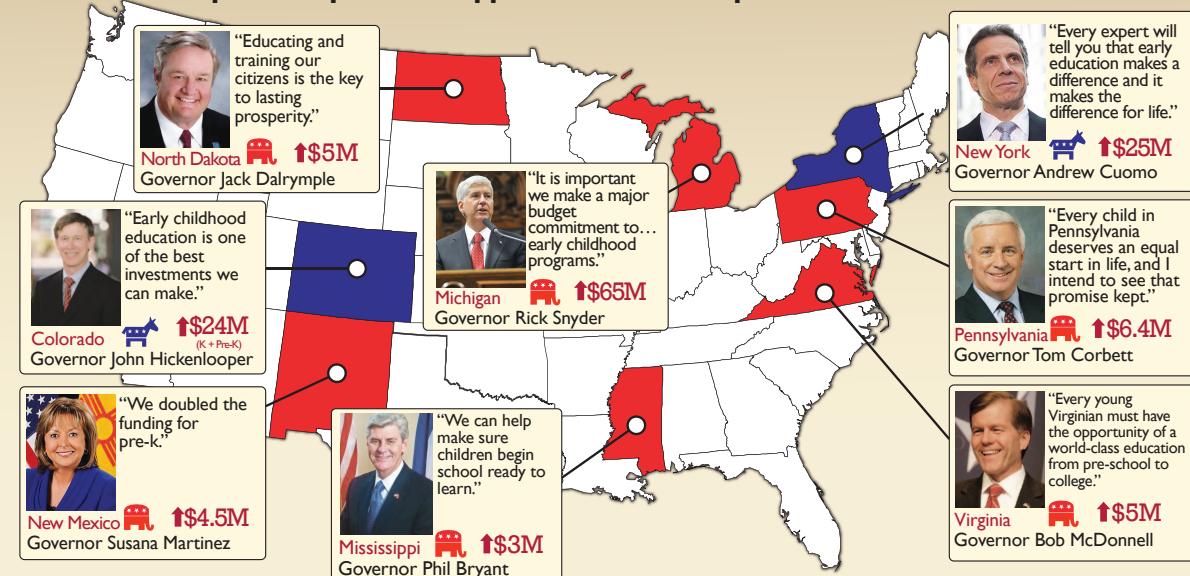
Numerous research studies have documented the key characteristics of high-quality early learning programs, including:

- Highly skilled teachers with appropriate compensation;³⁵
- Comprehensive and age-appropriate curricula;³⁶
- Strong family involvement and effective parent coaching;³⁷
- Higher staff-to-child ratios to ensure each child gets sufficient attention;³⁸
- Small, age-appropriate class sizes;³⁹ and
- Screening and referral services for developmental, health or behavior problems.⁴⁰

These are the key features of early learning programs that research indicates are essential for delivering good early education and care.

Support for Pre-K Transcends Partisan Politics

Examples of Bipartisan Support for New or Expanded Pre-K in 2013



Sources: National Conference of State Legislatures, 2013; National Women's Law Center, 2013

Even with such a modest estimate, **the 15 percent increase in graduation rates for these children would raise their graduation rates from 70 percent nationally to 81 percent.** That would total nearly two million more graduates nationwide from the proposed ten-year increase in pre-kindergarten funding. (See www.missionreadiness.org for an explanation of the methodology.)

Many people are understandably concerned about the cost of early childhood education programs in a time when budget cuts are the norm. But failing to make effective investments in children when they are very young means a higher cost to society down the road. A child who drops out of school, uses drugs and becomes a career criminal costs society, on average, \$2.5 million.³²

An independent analysis of the research studies shows that **high-quality early learning programs cut crime, welfare and other societal costs so much that they produce average net benefits to society of \$15,000 for every child served.**³³ These benefits result from outcomes such as schools avoiding the cost of giving children an extra year of education when they are held back, lower special education costs, fewer children in detention facilities and fewer adults in prison, and fewer direct expenses for victims of crime, as well as savings from lower welfare costs.

Using the \$15,000 net benefits analysis **yields roughly \$15 billion in net benefits to society from the state-federal early education proposal, after subtracting costs.**³⁴ Other

estimates, based on the higher-quality programs, produce even greater financial benefits.

The returns may vary, but Kentucky is fairly typical in terms of costs to run the programs. We estimate, using the above process, that **Kentucky could save more than \$2 billion.** The excellent news from the research so far is that the higher the investment in quality, the much higher the payoff in benefits. Alternatively, watering down the programs to serve more children is like watering down a vaccine to serve more children—an approach that is not advised.

Conclusion

Our nation has prioritized investments that keep America's military the most technologically advanced in the world. But we will need educated, fit and moral individuals who are ready to serve in tomorrow's modern battlefields – sophisticated weapon systems alone cannot protect us. Many states, including Kentucky, are making solid progress in early education -- states with both Republican and Democratic governors and legislatures. But there are still too many children unserved. As retired admirals and generals, we know that voluntary early education, from birth to kindergarten entry, is essential for a strong America. This is not just an essential investment in a 21st century education system. It is an essential investment in our national security.



Kentucky Projections and Data



If the new state-federal partnership is implemented and high-quality preschool is offered to all 4-year-olds up to 200 percent of the poverty line, we project a 15 percent increase in their graduation rate and net savings of \$15,000 for every child served from the **10-year investment**. For Kentucky this means:

\$2 Billion

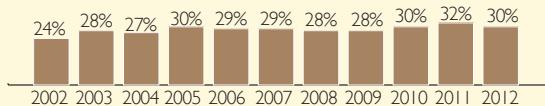
Total Net Benefits for Kentucky*

(from higher graduation rates and lower education, crime and welfare costs)

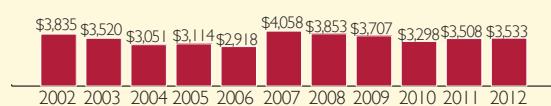
*See pages 5 and 6 of this report for an explanation of these projections. See the appendix of our national report, *A Commitment to Pre-Kindergarten is a Commitment to National Security* and our web site for the full methodology used to generate these estimates at www.missionreadiness.org

National Institute for Early Education Research (NIEER) Data

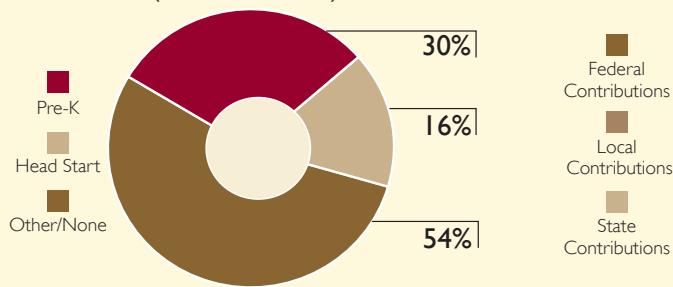
PERCENT OF STATE POPULATION ENROLLED (4 YEAR-OLDS)



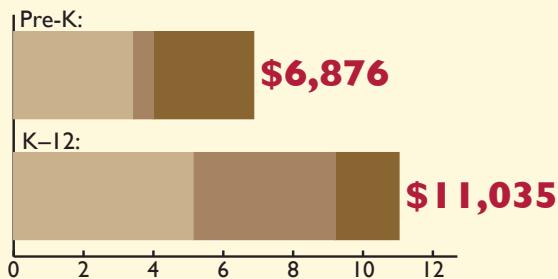
STATE SPENDING PER CHILD ENROLLED (2012 DOLLARS)



STATE PRE-K ENROLLMENT AS PERCENTAGE OF THE POPULATION (4 YEAR OLDS)



SPENDING PER CHILD ENROLLED



Quality Benchmarks Met

- Comprehensive Early Learning Standards
- Teachers with BA Degree
- Teachers with Early Childhood Training
- Assistant Teacher with CDA or Equivalent
- Teacher In-Service Training
- Maximum Class Size 20 or Less
- Staff: Child Ratio 1:10 or Better
- Screening/Referral & Support Services
- Meals: At Least 1 per Day
- Monitoring with Site Visits



Endnotes

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- 2** Stillwell, R., & Sable, J. (2013). Public school graduates and dropouts from the Common Core of data: School year 2009-10. Washington, DC: US Department of Education. Kentucky does not yet report graduation data using the four-year regulatory graduation rate currently used by the U.S. Department of Education and most other states. Therefore, comparison of Kentucky's graduation rates with those for other states should be made with caution.
- 3** Theokas, C. (2010). *Shut out of the military: Today's high school education doesn't mean you're ready for today's Army*. Washington, DC: The Education Trust. Retrieved on February 12, 2013 from http://www.edtrust.org/sites/edtrust.org/files/publications/files/ASVAB_4.pdf
- 4** Center for Accessions Research (CAR), United States Army Accessions Command, Fort Knox, KY. Data provided by Lt. Colonel Gregory Lamm, Chief, Marketing and Research Analysis Division, February 25, 2010.
- 5** Uniform Crime Reports, Arrests by state, 2011. Retrieved May 14, 2013 from: http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u-s/2011/crime-in-the-u-s-2011/tables/table_69_arrest_by_state_2011.xls
- 6** Center for Accessions Research (CAR), United States Army Accessions Command, Fort Knox, KY. Data provided by Lt. Colonel Gregory Lamm, Chief, Marketing and Research Analysis Division, February 25, 2010; Cawley, J., & Maclean, J.C. (2010). Unfit for service: The implications of rising obesity for US Military recruitment. Cambridge, MA: National Bureau of Economic Research. The Accession Command's estimate that 27 percent of 17- to 24-year-old Americans are too heavy to join is based in part on a survey done for them by the Lewin Group in 2005. The National Bureau Economic Research (NBER) study is an analysis of data from the National Health and Nutrition Examination Survey (NHANES) study. The NBER analysis looks at eligibility rates for males and females based on BMI, body fat and exclusion criteria broken out for the different services. Based on the NBER analysis, we conclude that approximately 23 percent of adults eligible by age would not be able to join the Army because of excess body fat. Taking both studies into account – the NBER analysis of NHANES data and the Accessions Command's analysis – we conclude that approximately one-quarter of young Americans would be too heavy to join the military if they chose to do so. For a more recent military reference to the one in four figure see: Associated Press. (February 10, 2012). Military to fight fat in food upgrade. Boston Globe. Retrieved on February 24, 2012 from <http://www.bostonglobe.com/news/nation/2012/02/10/military-fight-fat-food-upgrade/9Aw1M6HOruUVXFzAA6BAP/story.htm>
- Data from the Center for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) was used to estimate three-year weighted averages of the proportion of 18- to 24-year-olds who are overweight and obese according to the standard Body Mass Index cutoffs of 25.0 for overweight and 30.0 for obesity. We used three-year weighted averages to obtain an acceptable sample size. Centers for Disease Control and Prevention. (2011). Behavioral Risk Factor Surveillance System – Prevalence trends and data. Atlanta, GA: Author. Retrieved on February 10, 2012 from <http://apps.cdc.cdc.gov/BRFSS/page.asp?cat=OB&yr=2010&state>All#OB>
- 8** Barnett, W. S., Jung, K., Youn, M., & Frede, E. C. (2013, March 20). Abbott Preschool Program longitudinal effects study: Fifth grade follow-up. New Brunswick, NJ: National Institute for Early Education Research, Rutgers-The State University of New Jersey.
- 9** Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The High/Scope Perry Pre-kindergarten study through age 27*. Ypsilanti, MI: High/Scope Press; Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40*. Ypsilanti, MI: High/Scope Press.
- 10** Reynolds, A. J., Temple, J. A., Robertson, D. L., & Mann, E. A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest. *Journal of the American Medical Association*, 285(12), 2339-2380; Reynolds, A.J., Temple, J.A., Ou, S.R., Robertson, D.L., Mersky, J.P., Topitzes, J.W., et al. (2007). Effects of a school-based, early childhood intervention on adult health and well-being: A 19-year follow-up of low-income families. *Archives of Pediatric and Adolescent Medicine*, 161(8), 730-739.
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