How Wisconsin’s child care quality rating and improvement system measures up

By Rob Grunewald & Michael Jahr

— Matt Snyder, Researcher
President’s Note

Each year, Wisconsin gives over $300 million in federal and state tax dollars to private child care providers so low-income parents can work and their young kids can start life on a level playing field.

As long as the quality of care is high, research indicates, such investment benefits both the children and society as a whole. So seven years ago, Wisconsin policymakers devised the YoungStar rating system — a 5-star rating scale that results in higher public subsidies for high-quality 4- and 5-star providers and no subsidies at all for those with a 1-star designation.

YoungStar is still a work in progress. Initial, limited research funded by the state in recent years has been unable to determine if higher-quality early child care programs result in better school readiness. But higher-quality programs do benefit children through warmer teacher-child interactions, activities, and better health and safety routines. If you want your child to be happy and safe, in other words, the YoungStar system is worth using.

There are, however, problems. As you’ll discover in the interactive map in Section III of the report we issue today, there are too few 4- and 5-star, high-quality providers in the poorest neighborhoods, where they could have the biggest impact. The relative dearth of high-quality providers, in fact, has made it difficult to come to definitive conclusions about the differences in outcomes between programs at different star levels.

Right now, high-quality programs (4s and 5s) make up just 17 percent of the total number of providers. In some of the poorest neighborhoods, there are no high-quality providers or slots at all. And those high-quality providers that do exist in other areas may not last because the financial incentives are not structured appropriately, according to our analysts’ review of the books.

Wisconsin needs to continue the YoungStar program and make sure tax dollars do not flow to substandard providers. And the state needs to do more to determine how — in addition to ensuring health and safety and happiness — high-quality providers can with absolute certainty prepare kids for entrance into school, especially in impoverished neighborhoods. We hope policymakers will use this report to structure YoungStar in a way that produces more 4s and 5s that directly, measurably help children succeed when they move on to school and life.

— Mike Nichols
Executive Summary

The latest research supports the care that substantial economic benefits from investing in early childhood education accrue both to the individual child and to society as a whole. Societal and economic benefits include increased earnings that generate higher tax revenue, fewer students requiring remedial education, a reduction in the need for social assistance a red less strain on the criminal justice system. The individual benefits for children include better health in adulthood, lower participation in crime, higher labor income and greater educational attainment.

This study builds on the findings of The Economic Power of Early Childhood Education in Wisconsin, a 2012 WPRI report by Rob Grunewald and Don Bezruki. The authors of that report concluded that “investment in young children supports economic development by boosting the long-run productivity of the labor force and reducing public costs.” The economic payoff, they wrote, had been estimated at as high as $16 for every $1 invested.1

When that report was issued, Wisconsin was just two years along with a key investment in the quality of the state’s child care providers, the YoungStar quality rating and improvement system (QRIS). YoungStar has a $9.2 million budget and is the cornerstone of state efforts to improve provider quality and deliver pertinent information to families about the quality of child care programs. Participating providers undergo a thorough YoungStar analysis, and the results are made available to parents in a 5-star rating format. One star represents a sub-standard provider and 5 stars are awarded to the highest-quality providers.

YoungStar measures and rates the quality level of thousands of child care providers, offers parents tools and information to help them assess their child care offerings and supports provider quality and deliver pertinent information to families about the quality of child care programs. Participating providers undergo a thorough YoungStar analysis, and the results are made available to parents in a 5-star rating format. One star represents a sub-standard provider and 5 stars are awarded to the highest-quality providers.

Today, more than 3,800 of Wisconsin’s approximately 5,000 regulated early child care providers participate in YoungStar.2 Those that earn a 2-star rating or higher are eligible for state and federal child care subsidies through Wisconsin Shares, a program that helps parents who receive public assistance gain access to child care. Since 2012, YoungStar has employed a carrot-and-stick incentive structure that rewards high-quality providers with larger Wisconsin Shares subsidies payments and reduces those of low-quality providers. Between January 2013 and December 2016, more than 1,100 programs moved up the rating scale.3 Yet high-quality (4- and 5-star-rated) programs make up just 17 percent of the total number of providers.

This report provides a link to an interactive state map that shows the number of child care slots, the percentage of slots with high-quality ratings and the percentage of children under age 5 in poverty broken down by ZIP code.

This information can help YoungStar and its partners identify areas with higher levels of poverty in order to focus efforts to improve child care supply and quality. The data can also help identify rural areas where child care offerings tend to be more limited. YoungStar and its partners could work with these communities to address the scarcity of quality child care.

Finally, this report provides data and analysis that illustrate how incentives, in at least some instances, do not sufficiently help sustain high-quality 4- and 5-star programs. It costs more to hire and maintain high-quality personnel, purchase a robust curriculum and provide a facility that contributes to earning a high-quality rating. This report includes two case studies that examine the economic viability of high-quality centers under the current funding structure.

In some ways, the efficacy of YoungStar remains unproven. A 2013 “14 study conducted by the University of Wisconsin-Madison found that YoungStar ratings correspond with differences in observed quality; in other words, YoungStar served as a valid quality-rating system.4 However, that study also found that the evidence for one of YoungStar’s key goals — early skill and behavior development — was inconclusive. Higher star ratings did not translate into increased school readiness.

One factor in this finding is the small sample size of child care programs at the 4- and 5-star level. To draw conclusions about the efficacy of early childhood education as a means of preparing children for school, more child care programs will need to achieve high-quality status, and more research will need to be done.

Nevertheless, the study provides an opportunity for YoungStar to assess rating-level criteria and their impact on child outcomes. For example, Minnesota recently undertook a process to update the state’s QRIS rating criteria based on a similar validation study.

The QRIS mechanism, although imperfect, is the primary vehicle states have to deliver coaching and training to providers and to educate parents about child care options and the impact of early education on child development. Early childhood research has identified program characteristics that are consistent with positive child outcomes. While there is more to learn, as science gets more specific about the factors that produce stronger child outcomes and how to scale them, these standards and coaching curriculum can be incorporated into YoungStar.

Based on our analysis, we recommend that policymakers and the Wisconsin Department of Children and Families:

- Use the interactive map in Section III and work with community partners to identify places where families with young children have fewer providers and high-quality providers and help increase YoungStar participation, particularly in high-poverty and rural areas.
- Analyze the effectiveness of YoungStar’s reimbursement scale to create financial incentives for providers to improve quality.
- Work across YoungStar, Wisconsin Shares and Wisconsin 4K to identify policies and practices that increase children’s school readiness.
- Develop public-private partnerships and business community involvement to support YoungStar’s marketing and outreach efforts, support child care providers on business practices and explore the potential role of innovative financing mechanisms, such as Pay for Success.
- Better align YoungStar rating levels with their impact on children’s school readiness.
- Increase the number of providers in the rating system, particularly among family-based providers.

Introduction

In 2012, WPRI released a paper by Rob Grunewald and Don Bezruki titled The Economic Power of Early Childhood Education in Wisconsin. The report documented research on the economic benefits of investing in early childhood education, concluding that “investment in young children supports economic development by boosting the long-run productivity of the labor force and reducing public costs. In the cold calculus of economic analysis, repeated studies have not only confirmed the long-term value of early childhood education, but its economic payback has been estimated at as high as $16 for every $1.”5

At the time, Wisconsin was just two years into a key investment in the quality of the state’s child care providers, the YoungStar quality rating and improvement system (QRIS). YoungStar serves as the backbone of the state’s efforts to support provider quality and deliver information to families about the quality of providers in Wisconsin. Child care providers are rated in four key areas of care: providers’ education and training; learning environment and curriculum; professional and business practices; and children’s health and well-being. Providers are awarded between 1 and 5 stars.

In Wisconsin, 74.3 percent of children under age 6 have all of their parents in the labor force.” These children are cared for in a variety of settings outside the home. By supporting the quality of child care providers, YoungStar has the potential to...
foster healthy child development and help children prepare to succeed in elementary school and beyond.

Now that YoungStar has been fully implemented for five years, we can assess its progress. For example, how has provider participation changed since YoungStar’s inception? What impact has the rating system had on provider quality? Do children in higher-rated programs have stronger outcomes? Has the payment incentive structure had a positive impact on provider participation and the capacity to deliver high-quality programs?

Section I. The Economic Case for Investing in Young Children

I n the 2012 WPRI report, Grunewald and Bezruki reviewed the evidence for investing in the early education of young children, from both a child development and an economic perspective. Neuroscience and psychology indicate that the first few months and years of life are a critical period for development with lifelong implications. Every second in the infant brain, and more than a million new neural connections are formed, each shaped by a child’s experiences.1

Studies also reveal the types of early experiences that help children thrive, including stable and nurturing relationships with caregivers, language-rich environments, and encouragement to explore through movement and senses. However, excessive stress during early childhood, caused by such things as exposure to violence, abuse or neglect, or having an incarcerated or mentally ill parent, can lead to a brain wired for negligence or threat, which can impair learning, memory or the ability to self-regulate.2

The impact of learning environments can be observed in children before they arrive at kindergarten. One research study documented that, by the age of 3, children in families with college-educated parents have twice the vocabulary of children in low-income families.3

From an economics perspective, development during a child’s early years sets the foundation for learning skills needed in life. From an economic perspective, development during a child’s early years sets the foundation for learning skills needed in the mid-30s, lower participation in crime, higher labor income, higher IQ scores and greater educational attainment. In addition, their mothers’ labor income increased as a result of having access to reliable, full-time child care. Heckman et al. estimate the annual average rate of return at 13 percent, adjusted for inflation.4

Additional research from North Carolina was recently published evaluating two of the state’s early childhood initiatives, including preschool for disadvantaged 4-year-olds and county-level partnerships called Smart Start, which fund a variety of services for young children. The preschool program now enrolls about 25,000 children,5 while Smart Start is available in all 100 North Carolina counties.6

The researchers took advantage of timing differences in the statewide rollout of each of the initiatives and compared children in counties that received early funding with those in counties that received later funding. They found evidence that both initiatives had positive effects on third grade test scores in reading and math, and reduced the likelihood of special education placement, in turn reducing costs to school districts.7,8

Sustaining early childhood education gains

While long-term studies like Abecedarian demonstrate that the benefits of investing in young children can last well beyond the neighborhood development programs targeted to children from disadvantaged environments can have a positive impact that lasts well into adulthood. These studies include the Perry Preschool Project in Michigan (ages 3 to 4 years), the Chicago Child-Parent Centers program (ages 3 to 4 years), the Carolina Abecedarian Project in North Carolina (ages 3 months to 4 years), and the PreKindergarten/Early Infancy Project in Elmira, N.Y. (home visits by a registered nurse, prenatal to age 2).

Societal benefits accrue from fewer children needing remedial education services, the reduced need for social assistance, a decreased burden on the criminal justice system, and increased earnings and tax revenue. As described in the 2012 Grunewald and Bezruki report, annual rates of return, adjusted for inflation, range from 7 percent to just over 20 percent. And while children and families benefit from these investments, the majority of benefits accrue to the rest of society.

Recent research findings

Since 2012, additional research has helped clarify the benefits of investing in young children, but has also raised questions about how to ensure that early gains are sustained as children enter elementary school. In December 2016, Heckman and his colleagues published a second analysis of the Carolina Abecedarian Project, a prominent early childhood development program that started in 1976. In this study, disadvantaged children just a few months old were randomly assigned to a high-quality early learning program where they remained until they were 5 years old.

Compared with the control group, children who participated in this high-quality early learning program had better health in their mid-30s, lower participation in crime, higher labor income, higher IQ scores and greater educational attainment. In addition, their mothers’ labor income increased as a result of having access to reliable, full-time child care. Heckman et al. estimate the annual average rate of return at 13 percent, adjusted for inflation.9

Achieving high quality

Policy makers and program administrators must consider what elements to include as they plan their early childhood investments. For example, in response to the disappointing results of the Tennessee Preschool Study, the state legislature didn’t scrap the program, but rather passed a bill to provide a framework for improving its quality. The bill requires coordination between pre-K classrooms and elementary schools, includes a plan for engaging parents and families, and establishes a provision for delivering professional development to pre-K teachers.10

But as policymakers consider the features of early childhood investments, they need to keep in mind that programs that provide a higher quality experience for children tend to come with higher costs. Attaining high-quality teachers requires higher salaries, the biggest expense category for an early learning program. But other costs associated with professional development, curriculum, supplies and the facility can be higher as well.

High-quality programs like Abecedarian come with a relatively steep price tag, in this case about $18,500 annually per child. Another high-quality and successful program, Boston Pre-K, has shown moderate-to-large impacts on children’s language literacy, numeracy and mathematics skills, and also small impacts on executive function and emotional skills.11 The teachers in Boston Pre-K are paid the same as other teachers in the district, bringing the cost to over $12,000 annually per child.

Several long-term studies demonstrate that the cost of providing a high-quality early childhood development program can be well worth the expense. But to achieve those benefits, programs must have an appropriate level of resources. While research can guide these decisions, it doesn’t provide a specific formula.
Section II. YoungStar: A Brief History

The YoungStar program was created by the state in 2010 as a quality rating and improvement system for Wisconsin's child care centers and licensed family providers. The program was tasked with increasing the availability of high-quality child care and supplying parents and caregivers with information to help them select the best options for their children.

Housed within the Wisconsin Department of Children and Families (DCF), YoungStar established child care benchmarks and an evaluation tool/rating system to incentivize improvements in child care quality. The program also provides technical assistance and program improvement grants to child care providers.

YoungStar strategies for improving outcomes for Wisconsin children include:

- Objectively measuring child care quality, rating thousands of child care providers and awarding up to 5 stars for the best quality of care;
- Giving parents easy-to-use tools to compare their local child care options and find providers that match their family's lifestyle, budget and needs;
- Supporting providers with professional development, resources and tools to deliver high-quality care; and
- Setting a consistent standard for child care quality.29

Today, more than 3,800 of the approximately 5,000 regulated early child care providers in the state participate in YoungStar. Child care providers with a 2-star rating or higher are eligible for existing state and federal funding for child care subsidies through the Wisconsin Shares program.20

Prior to the statewide rollout of YoungStar, DCF was charged with laying the groundwork by providing immediate training and technical assistance to child care programs. This began in July 2010 and included support for programs in 10 counties with the greatest ratio of Wisconsin Shares families to private pay families (Milwaukee, Dane, Racine, Kenosha, Marathon, Waukesha, La Crosse, Rock, Eau Claire and Wood).20

At the end of 2010, YoungStar began enrolling group centers and family child care programs that served children ages birth to 5 years. In January 2011, YoungStar began to award and publish ratings online. School-age programs were included in the second phase of YoungStar beginning in March 2012. Day camp providers were included starting in March 2014.

YoungStar employs several strategies, including the use of “carrot-and-stick” financial incentives. Starting in the summer of 2012, YoungStar began to provide higher subsidies for high-quality providers (4s and 5s) and lower subsidies for low-quality providers (2s). The rating system and tiered reimbursement rates were designed to provide market incentives that would motivate low-quality providers to improve their services in order to attract families and receive higher payments.

From the beginning, the administration of the YoungStar program and the technical assistance offered to providers have been carried out through a contractual partnership with a consortium of nonprofit and advocacy organizations that serve the child care sector.30 In July 2016, DCF contracted with Supporting Families Together Association for the administration of all YoungStar services, including training programs, technical assistance, coaching and micro-grants.30 These services are provided through 11 local YoungStar offices around the state.

Early learning programs participating in YoungStar serve and impact an estimated 188,000 children statewide.30 On a monthly basis, approximately 46,500 of those children are from families receiving Wisconsin Shares benefits.30 According to DCF, some 75 percent of children with Wisconsin Shares authorizations are enrolled in 3-star or higher-rated programming, and more than 75 percent of all children in early learning programs are enrolled in a 3-star or higher-rated program.30 However, as of April 30, 2017, just over 24 percent of children whose parents were receiving Wisconsin Shares subsidies were enrolled in a high-quality program with a 4- or 5-star rating,32 and 32 percent of children enrolled in YoungStar-participating programs were enrolled in a 4- or 5-star program.32

The picture looks a little different when analyzing the number of providers rather than the number of children.

At the end of 2016, there were 12 providers at the 1-star level, 1,727 at the 2-star level, 1,290 at the 3-star level, 191 at the 4-star level and 433 at the 5-star level. Just under 200 additional providers were participating but not yet rated. These numbers show that only 17 percent of all providers (excluding those participating but not rated) are at the 4- or 5-star level. The fact that just over 24 percent of children whose families receive Wisconsin Shares subsidies and 32 percent of all children in YoungStar facilities are in these 4- and 5-star programs indicates that these high-quality providers are larger on average than the lower-quality providers.

Rating process and monitoring

In addition to the financial incentives provided by YoungStar, the rating system encourages improvement by bringing consumer pressure to bear on child care programs. Each provider goes through a 40-point evaluation process specific to its size and structure.30 The total number of points a program earns determines how many stars it receives. The more stars, the more appealing and marketable the provider is to parents. And as parents seek out higher quality programs, market forces encourage providers to increase quality.

Every participating provider in the YoungStar program receives a rating of 1 to 5 stars. The ratings are based on four key categories:

- The providers’ education and training
- The learning environment and curriculum
- The program’s business and professional practices
- The child’s health and well-being

Programs are evaluated using quality indicators in the four content areas to ensure that programs have a consistent standard and a balanced approach to quality, and are making improvements in all areas of programming, not just in one or two. There are two types of indicators included in each of the quality content areas: those that are required in order to earn certain star levels (difficulty increases as star levels increase); and those that are optional and add to the overall point total.30
Environment Rating Scale observer using established assessment tools.

The evaluation process begins when a program submits a YoungStar application or renewal application and selects an on-site rating. Programs that select an automated 2-star rating or a rating based on accreditation status are assigned a rating through an automated system within six weeks. The evaluation must be completed within four weeks for a 2- or 3-star rating assessment and within eight weeks for a 4- or 5-star rating assessment. Programs can elect to receive technical consultation and mentoring support for up to 20 weeks before they are rated.

Providers were initially evaluated on an annual basis, but beginning in 2017 the time between ratings increased to every two years. Programs are now assigned to an even or odd year rating cycle. A program can choose to be rated during its “off-year” and/or receive technical assistance in seeking a higher rating.11

Wisconsin Shares subsidies can also be used to fund “non-licensed” child care settings such as certified child care providers who offer care in the child’s own home; child care programs operated by a Wisconsin public school district; and out-of-state providers that are not regulated or monitored by Wisconsin but are regulated by their state of residence.12

YoungStar’s Incentive Structure

Eligibility for Wisconsin Shares subsidy payments is tied to participation in YoungStar. Regulated providers that do not receive Wisconsin Shares subsidies can participate in the program, but are not required to.

In 2016, Wisconsin Shares had a $807 million budget that was funded by the Child Care Development Fund ($153 million) and the Temporary Assistance for Needy Families program ($123.6 million), both federal block grant programs. An additional $29 million came from state general purpose revenue dollars, and $1.6 million was generated by child care licensing fees.13

Payments are administered locally by Wisconsin counties and tribes. Low-income working families with children under the age of 13 and with a gross monthly income equal to or less than 185 percent of the Federal Poverty Level (FPL) may be eligible for Wisconsin Shares. Families may continue to be eligible until their monthly income reaches 200 percent FPL.14 If a child has a special need, the child may remain eligible until the child’s 19th birthday.15 Families participating in Wisconsin Shares are eligible for a tiered subsidy based on the quality of the provider they select. In the case of families that choose a 3-, 4- or 5-star provider, the program will receive Wisconsin Shares payments directly from families through a state-issued electronic benefit transfer (EBT) card. Each family’s subsidy amount will be calculated by taking the county maximum or the provider’s price (whichever is lower) and subtracting the family’s copayment.

Five-star providers, which meet the highest levels of quality standards, receive a separate YoungStar quality adjustment for up to 25 percent of current Wisconsin Shares authorization amounts. Four-star providers, which meet ‘elevated levels’ of quality standards, also receive a separate YoungStar quality adjustment for up to 10 percent of current Wisconsin Shares authorization amounts. If a family selects a 2-star provider, the authorized subsidy amount will be reduced by 5 percent.16

Families are not eligible for Wisconsin Shares subsidy payments if they send their child to a 1-star-rated program. These providers’ child care licenses or certifications have been revoked, denied or suspended, or their Wisconsin shares payments were ended due to fraud or suspected fraud.17

Trends in provider ratings

A relatively large share of providers has participated in the rating system since 2012 (see Figure 3), due in large part to the requirement that providers must achieve at least a 2-star rating to receive Wisconsin Shares payments. Most other states do not require providers to participate in their quality rating and improvement systems in order to receive child care subsidy payments. As a result, Wisconsin has one of the highest participation levels in its QRIS. In 2016, 66 percent of licensed family child care providers in Wisconsin held a YoungStar rating, while 80 percent of licensed child care centers were rated.

Under Wisconsin law, a license to operate a child care center is required for any person providing care and supervision for four or more children under the age of 7 for less than 24 hours a day. Certification is required for those who provide child care for one to three children or who are not otherwise required to be licensed as a child care center.

Since 2012, the overall number of providers rated has decreased due primarily to a decline in the number of providers in the state and some providers leaving the YoungStar program (see Figure 4). From 2012 to 2016, the number of rated certified family providers decreased 56 percent, while the number of licensed family providers decreased 26 percent. Meanwhile, the number of center-based child care providers increased 2 percent. The share of center-based providers participating in YoungStar has remained relatively steady since 2012, while the share of certified family and licensed family providers participating in YoungStar decreased about 5 percentage points.

Between January 2013 and December 2015, a total of 974 programs moved up the rating scale: 416 in 2013, 281 in 2014, and 277 in 2015. DCF reports that an additional 190 programs improved their rating in 2016.18 In 2016, center-based, or licensed group providers, represented over 50 percent of providers participating in YoungStar, while licensed family-based providers represented 30 percent. Certified family and about 200 public school-based programs made up less than 20 percent of providers (see Figure 5).

Since YoungStar began, there has been a significant decrease in the number of 1- and 2-star providers. In 2013, there were nearly 3,100 programs with 1- or 2-star ratings. As of December 2016, that number had dropped to 1,740. Since 2012, the share of programs offering higher-quality care (3, 4 or 5 stars) has doubled, from 26 percent to nearly 53 percent at the end of 2016. During that same time period, the number of children receiving a Wisconsin Shares subsidy who attend a
higher quality program rose from 40 percent to nearly 75 percent.\textsuperscript{20} Since 2012, a larger share of center-based programs achieved 3-star or higher ratings than family-based programs. In 2016, 69 percent of center-based programs had a 3-star or higher rating, while 43 percent of family-based providers had a 3-star or higher rating (see Figure 6). In addition, the share of center-based providers with a 4- or 5-star rating was much larger than for family-based programs.

Similar to other states, center-based programs in Wisconsin are more likely to participate in quality rating and improvement systems and on average achieve higher ratings than family-based programs. While measures used for ratings and technical assistance are tailored for each program type, center-based programs have larger economies of scale and on average have more resources to make program improvements, such as teacher training and implementing new curriculum. Family-based programs are usually operated by one person, which presents challenges for attending professional development opportunities and adopting new practices. An encouraging sign is that the growth rate in 3-star and higher-rated programs among family-based providers is about the same as the growth rate for center-based programs.

**YoungStar’s outreach to parents**

According to a November 2016 report published by the Wisconsin Council on Children and Families, “YoungStar is one of the most developed quality rating systems in the country.”\textsuperscript{6} While similar programs in other states only reach a modest proportion of their child care providers, in Wisconsin more than 70 percent of licensed child care providers participate in YoungStar, and all children subsidized by Wisconsin Shares attend a rated provider. Since most child care providers that serve subsidized low-income children also serve non-subsidized children, YoungStar’s quality improvement system is likely benefiting far more children than those in the Wisconsin Shares program, according to the report.\textsuperscript{31} DCF officials attribute the growth in the number of parents selecting higher-quality providers to an outreach and media campaign designed to educate parents about YoungStar and the importance of quality early childhood education.\textsuperscript{42}

The goals of this campaign, according to DCF, are to make parents and families aware of the rating system, emphasize the importance of quality child care and early brain development, and alert families to the impact of stress on young children. The campaign includes focus groups, community outreach, print and video content, and radio public service announcements. DCF maintains a website (childcarefinder.wisconsin.gov) to assist families searching for child care or seeking more information on a specific program. The site provides detailed information about YoungStar ratings and compliance records for licensing and certification. According to DCF, the site received nearly 175,000 visits in 2015.\textsuperscript{34} More resources for parents are available at https://dfc.wisconsin.gov/youngstar/parents.

### Section III. Analysis and Recommendations

**Impact of YoungStar on provider quality and child outcomes**

A quality rating and improvement system such as YoungStar is designed to increase the quality of child care programs in a geographic area leading to improvements in school readiness among children who attend child care. Some states have conducted validation studies of QRIS programs to determine whether the rating levels are associated with differences in observed quality and child outcomes, since rating levels of an effective system should accurately rank programs by quality and child outcomes.

In 2013-’14, the state of Wisconsin hired the Institute for Research on Poverty at UW-Madison to conduct a study of the YoungStar rating system. The university’s Katherine Magnuson and Ying-Chun Lin conducted the study, largely funded by a state grant, in an effort to determine whether the rating scale can differentiate programs based on observed quality measures, and whether children who attend more highly rated programs gain more in school readiness than children who attend lower-rated programs.

The researchers used the Environment Rating Scales (ERS) for center-based and family-based programs to measure the observed quality of 239 providers. ERS assesses program space and furnishings, program activities, teacher credentials, and parent engagement, among other aspects. The data collection was completed in April 2014. For child outcomes, the researchers assessed 887 children in fall 2013 and 725 of the same children in the spring of 2014. In the 2014 assessment, 327 of the selected children were in 2-star programs, 305 were in 3-star programs, 25 were in 4-star programs and 68 were in 5-star programs. Children were assessed by field staff on language, literacy and problem-solving skills, while teachers assessed children on behavior.\textsuperscript{47}

Based on ERS scores, programs rated 3-star and above had higher scores than 2-star-rated programs; the study authors described the difference as significant and meaningful. The study also examined the relationship between YoungStar rating points that serve as the basis for star rating assignments and ERS scores. Results show that the number of YoungStar rating points in each of the four rating domains predicted observed quality, and the total number of points predicted differences in observed quality. The authors note that “this suggests as a measure of child care quality, the YoungStar rating system has achieved validity.”\textsuperscript{46} In regard to school readiness, on average, children in YoungStar programs were “meeting developmental expectations and learning an important range of skills during the time period of the study. This suggests that on average these children were likely to enter formal schooling ready to learn.”\textsuperscript{46} However, the study did not find differences in school readiness measures between children attending 2-star programs and children attending 3-star or higher programs. This result was found across academic skills and teachers’ observations of behavior.

Magnuson and Lin note that other QRIS studies have found similar results; that is, generally a lack of associations between rating scale levels and children’s early skills and behavior. In addition, because of the relatively small sample of 4- and 5-star programs, the study was not designed to test for differences in observed quality of child outcomes among programs with 3-, 4-, and 5-star ratings. The authors note that the results are most conclusive in showing that in terms of school readiness, there are no meaningful differences between 2- and 3-star providers.

The only meaningful differences between 2-star and 4-star/5-star providers were that children in 5-star providers had higher ratings on teachers’ reports of learning behavior.\textsuperscript{48} It is possible that 4- and 5-star providers do improve school readiness, but the small sample size makes discerning a difference from lower-rated providers difficult. Increasing the number of 4- and 5-star providers would make evaluating the impact of these high-quality programs on school readiness more feasible.

These findings suggest that the ratings are not associated with differences in child outcomes and that the broad dimensions of child care quality assessed by YoungStar may not necessarily be related to the specific goal of improving children’s pre-academic skills and learning behavior, according to the study authors. The findings from the YoungStar validation study are also similar to those found in several other QRIS evaluations. That is, QRIS ratings are often associated with improvements in quality measures — such as safety, program activities and teacher credentials — but not necessarily child outcomes.
On one hand, the results of the validation study are discouraging. That is, without discerning differences in child outcomes by star rating, the system isn’t achieving a key goal. On the other hand, the report found that ERS scores were higher for the 3- to 5-star-rated providers, indicating better quality in terms of the materials available, scheduling regularity, the “warmth of teacher-child interactions,” and health and safety routines. The study results also provide a basis for YoungStar to review its rating criteria, coaching, and training offerings and align with practices associated with better child outcomes.

A challenge, as discussed in Section 1, is that researchers are still investigating the program characteristics most important for improving school readiness. For example, research shows that teachers have a key impact on child outcomes as the interactions between teachers and children foster child learning. However, the field has yet to definitively isolate characteristics of teachers that lead to positive child outcomes, such as teacher education attainment levels. However, Magnuson and Lin note that “prior studies of other preschool settings indicate that the aspects of classrooms that are specifically aligned with particular skill-building activities and interactions, such as implementing specific curriculum or supportive instructional practices, produce increased gains in early academic skills and learning related behaviors.”

As research findings such as these come to light, they can inform future efforts to improve YoungStar.

Minnesota is an example of a state that recently undertook a process to determine whether its QBIS (known as Parent Aware) standards and indicators were fair, accurate and meaningful. The process was conducted in collaboration with a national research institution that specializes in studying these programs, and included a validation study, a review of research on what makes a difference for children’s outcomes, and soliciting feedback from experts, child care and early education leaders, and families. Using the information collected, the Minnesota Department of Human Services released an update to the Parent Aware standards and indicators in October 2016. The new standards, indicators, and other improvements will go into effect on July 1, 2017.

In conclusion, while research on program quality is still under way, lessons learned from research to date could help better align YoungStar with its impact on children’s school readiness. In addition, increasing the number of 4- and 5-star providers would allow for a better assessment of the impact of these providers on school readiness.

Provider participation and increasing the number and share of higher ratings

As described in Section II, a relatively large share of providers participates in YoungStar — 66 percent of family-based providers and 79 percent of center-based providers in 2016 — largely due to the requirement that providers achieve a 2-star rating in order to receive Wisconsin Shares child care subsidy payments. The total number of YoungStar providers has decreased since 2012, primarily due to a decline in the number of providers in the state. The total share of providers participating in YoungStar decreased from 2015 to 2016 (see Figure 7). Even as more center-based and family-based providers achieve higher ratings, each year, the share of providers at the 4-star and 5-star levels remains relatively small — 12 percent of family-based providers and 25 percent of center-based providers.

Figure 7

There is room for YoungStar to increase the number of providers in the rating system and increase the number of higher-rated programs, particularly among family-based providers. Even though family-based providers had a smaller share of higher-rated programs compared with center-based providers in 2016, the growth rate of higher-rated family-based providers since 2012 is about the same as center-based providers.

While a key incentive for YoungStar participation is eligibility to receive Wisconsin Shares child care subsidy payments, 23 percent of providers participate in YoungStar voluntarily since they do not provide services to children enrolled in Wisconsin Shares. This suggests that YoungStar provides incentives other than just subsidy eligibility. For example, as families learn about YoungStar ratings, they may be more likely to demand programs with higher ratings, which can encourage programs to join the rating system.

Reaching low-income children and rural areas

YoungStar is designed to benefit children and, in Wisconsin, recognizing the benefits of reaching children from low-income families. This section analyzes the ability of YoungStar to reach children from low-income families with higher-rated child care options and whether there are disparities in availability by urban and rural areas.

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While all parents want what is best for their children regardless of income status, children from low-income families tend to have fewer resources to support their education and are more likely to face other types of adversity. Research shows that on average, children from low-income families receive more benefits from attending a high-quality early learning program than children from higher-income families. Therefore, policymakers should evaluate whether there are inequities in the availability of high-quality child care programs in Wisconsin among areas that have a relatively high concentration of low-income families compared with areas that have a low concentration.

The number of child care provider slots (spaces for child enrollment in a program) in areas can affect the overall number of high-quality slots available for children. In areas with more child care providers and slots, there is a larger base of providers that can advance through the YoungStar ratings and become high-quality providers. In addition, in 2012 some areas started with a larger concentration of high-quality slots per child.

The map of southeastern Wisconsin on Page 15 provides a snapshot by ZIP code of the number of child care slots per 1,000 children under age 5 (size of the bubbles), the percentage of child care slots that are high quality with a 4- or 5-star rating (color of the bubbles) and the percentage of children under age 5 in poverty (background color of the ZIP code). For example, a relatively large and dark blue bubble in a red-shaded area denotes a ZIP code with higher levels of child poverty and a relatively large and higher quality pool of child care options. These data are available for the whole state through an interactive mapping tool at www.wpri.org/Page-15.

Data for both child care availability and concentration of high quality vary across the southeastern region and the state as a whole. There is only a modest correlation between the number of slots per child and the percentage of slots that are high-quality. For example, ZIP codes with a relatively high number of slots per child can have either small shares of high-quality slots or large shares of high-quality slots.

Looking statewide, Figure 9 shows child care slots per 1,000 children under age 5 by poverty quintiles. ZIP codes with the lowest levels of poverty have the largest availability of total child care slots and high-quality slots compared with the other four quintiles. Among the higher poverty quintiles there isn’t much variation; however, the highest poverty quintile has the second largest concentration of child care availability, but also the second lowest concentration of high-quality slots. Note that the lowest poverty quintile includes the fewest children under age 5 (51,636), while the highest poverty quintile has the largest number (91,913).

Generally, the higher the poverty level in an area, the fewer high-quality providers or slots. For example, Milwaukee’s 53205 ZIP code has a 70 percent poverty rate for children under 5 and no high-quality slots. The neighboring 53206 ZIP code has the same poverty rate level and more than 2,500 children under 5, and yet only three high-quality slots. The 53207 ZIP code (Greenwood) in Clark County has a 55 percent poverty rate for children under five and no high-quality slots. The same is true for the 53146 ZIP code (Kenosha) in Kenosha County, which has a 38 percent child poverty level. Just as there are differences in the availability of quality providers by poverty concentration, there are also differences by population density. Figure 10 shows the concentration of children under age 5 live in counties designated as part of a Metropolitan Statistical Area, Counties in MSAs have a larger share of child care slots and high-quality slots per 1,000 children under age 5 compared with counties not in an MSA. Among non-MSA counties, those with an urban population above 20,000 have a larger concentration of child care slots and high-quality slots compared with counties that have an urban population under 20,000. These data likely reflect that high-quality child care providers are sparser in rural areas, even after accounting for a lower population of young children.

The data in this section can help YoungStar and its partners identify areas with higher levels of poverty in order to focus efforts to improve child care supply and quality. The data can also help identify rural areas where child care offerings tend to be more limited. YoungStar and its partners could work with these communities to address the scarcity of quality child care.

**Cost of child care quality and YoungStar quality adjustment**

YoungStar’s “carrot and stick” approach to Wisconsin Shares child care subsidy recipients includes incentives for providers to improve quality. As discussed in Section II, YoungStar provides the following quality adjustments to Wisconsin Shares child care subsidy payments: 5 percent reduction for 2-star providers, 10 percent increase for 4-star providers and 25 percent increase for 5-star providers.

YoungStar quality adjustments are not only intended to provide incentives to boost quality, but reflect the fact that providing a higher-quality program costs more than a lower-quality program. This raises the question: Are YoungStar quality adjustments set at appropriate levels to encourage programs to improve quality and provide enough revenue for them to remain profitable? To shed light on this we first look at the context of costs and revenue sources for child care programs. We then analyze two case studies of high-quality child care programs and their child care subsidy payments.

The largest cost area in an early learning program is staffing, as child care is a relatively labor-intensive industry. In addition, teachers with more training and experience earn higher wages than those with lower levels of training and experience. On the revenue side, parents, who are usually in their early and relatively lean earning years of their careers, face child care payments that often rival college tuition. In addition, child care subsidy reimbursement rates often lag the cost of the program. The combination of a labor-intensive business model with constrained revenue sources usually results in thin profit margins — at best — for child care providers.

The Provider Cost of Quality Calculator (available online at the U.S. Department of Health & Human Services, Administration for Children & Families (http://childcare.cdc.gov)) gauges the implications of increasing costs that can impact quality, such as lower ratios of children to teachers or increasing staff compensation.

For example, adjusting the ratios of children to teachers and the group sizes of children required by licensing to those applied in research studies like Perry and Abecedarian increases costs by more than 20 percent. Meanwhile, raising the salaries of child care teachers and assistants to the average salary paid to Wisconsin K-12 teachers and assistants increases costs by almost 20 percent. Combined, these adjustments raise costs by about 50 percent.

Two case studies compiled by Higher Expectations for Racine County also illustrate some of the challenges associated with offering a high-quality child care program (see Page 19). The first study uses financial data from a 5-star-rated program that closed in 2015. Even with a 25 percent Wisconsin Shares child care subsidy bonus from YoungStar, the program ran a 5.5 per
cent loss. The case study also estimates labor costs associated with staff wages related to lower-quality providers. The findings raise questions about the financial benefits of operating a high-er quality program relative to a lower-quality program.

For example, if a 2-star program can operate with relatively low labor costs, Wisconsin Shares payments even with the 5 percent penalty may still provide enough income to remain a viable business. However, if the quality requirements to operate a 4 or 5-star program require higher paid staff, 10 percent and 25 percent Wisconsin Shares bonuses, respectively, may not provide enough income to cover expenses.

The second case study considers a business plan for expanding a Wisconsin 3K and 4K program to full day serving exclusive-ly Wisconsin Shares-eligible children. Like the previous case study, the 5-star-rated program would operate at a projected loss even with the 25 percent quality adjustment.

YoungStar could benefit from conducting further analysis on the effectiveness of its reimbursement scale to create finan-cial incentives for providers to improve quality. If the quality adjustment levels don’t provide enough resources for providers to operate at a higher level of quality, the result could be a per-verse incentive to remain at a lower star rating.

In addition, the Wisconsin Shares base level of reimburse-ment rate for all eligible programs is below the 75th percentile of market rates, which is the federally recommended level. This level gives families access to 75 percent of the providers in a community. Analysis by the National Women’s Law Center suggests that in Milwaukee County, the monthly reimburse-ment rate is about 25 percent below the 75th percentile of current market rates.12 This means a 25 percent bonus for 5-star providers may only be enough to bring total reimbursement to the 75th percentile of market rates. This indicates that there may be justification for adjusting the tiered reim-bursement levels or increasing the base level of funding for reimbursement.

Interaction of YoungStar with Wisconsin Shares and Wisconsin 4K
YoungStar operates in the context of Wisconsin Shares and Wisconsin 4K, the state’s preschool program for 4-year-olds. Facets of these two programs can affect the ability of child care providers to foster school readiness. For example, fami-lies enrolled in Wisconsin Shares complete paperwork about their eligible work or education activities and income, and are required to update their status as income or activities change. Shifts in status or missed deadlines for submitting authoriza-tion forms can lead to families losing eligibility, which in turn can disrupt enrollment.

Inconsistent attendance interrupts a child care program’s ability to provide consistent care and education, which is detrimental to healthy child development. State administrators have the challenge of finding a balance between the process requirements to verify family eligibility and providing continuity of care.

About 58 percent of Wisconsin’s 4K school districts use a 4K Community Approach, which brings together a broad range of local early childhood providers to coordinate the provision of 4K.13 This approach can provide opportunities for high-quality child care providers to partner with local school districts and provide services to children.

However, in communities where 4K is primarily or exclusive-ly delivered through classrooms in public schools, child care businesses could face challenges through integrated com-petition. From a business perspective, child care programs often rely on providing care for 4-year-old children, which have relatively higher child-to-teacher ratios (serving more children per teacher), to make up for thin margins or even losses in caring for infants and toddlers, which have rela-tively lower child-to-teacher ratios. State officials and policy-makers should be aware of the possible effects of 4K on local child care markets.

Public-private partnerships and business community involvement
The YoungStar program and participating child care providers can benefit from public-private partnerships and business community involvement. Among other things, these partners could support YoungStar’s outreach efforts, mentor child care providers, and support innovative financing mechanisms. First, there could be opportunities for the private sector to partner with YoungStar to support marketing and parent outreach. In Minnesota, a nonprofit organization, Parent Awareness in School Readiness (PASR), supported Parent Aware by providing in-kind marketing and web design expertise, as well as a validation study. The PASR board primarily consist-ed of business leaders. Through PASR’s efforts, Parent Aware reached more families and helped implement a user-friendly interface on its website.14 As detailed in Section II, DCF has conducted an ongoing media campaign to reach parents about YoungStar. There could be a role for the private sector to augment these efforts.

Second, most child care providers are independent small businesses. YoungStar provides ratings and technical advice to business operators and professional practices. For example, business practices required for a 3-star rating include “an ongoing yearly budget, completes accurate taxes and demon-strates sound recordkeeping practices.” Business leaders have an opportunity to support the business side of child care by providing guidance on marketing, business planning, finance and governance.

Volunteers from the private sector could work with individ-ual programs or with an intermediary that facilitates private sector-child care partnerships. For example, in a number of states, First Children’s Finance has created opportunities for business leaders to volunteer as mentors or serve on advi-sory boards to support the business side of child care.15 In addition, business leaders could investigate and potentially implement shared services strategies where child care centers and family-based providers work together to share costs for back-office services such as payroll, billing and fee collection, and professional development.

Third, there is growing interest in innovative financing mechanisms for public investments that can accrue measur-able returns, such as social impact bonds and pay for success (PFS) contracts. In Utah, Chicago, and South Carolina, PFS financing has been used to expand preschool programs and a nurse-based home visiting program for vulnerable families with expectant mothers or babies.16 The private sector plays an important role in these projects by facilitating feasibility studies and providing capital for the projects. (For more infor-mation about these financing mechanisms, see WPRI report Badger Bonds: A smart approach to reducing recidivism and increasing employment in Wisconsin.)17

Impact of YoungStar on Facilities Serving Children Ages 0-5
Next Generation was a 5-star Racine facility that served 90 children ages 0-5 until it closed its doors in 2015. Approx-imately 90-95 percent of the children in the program were Wisconsin Shares recipients. Table 1 shows figures from the program’s most recent budget, adjusted for 2017 costs. Even with the cur-rent 25 percent YoungStar bonus for a 5-star rating, the center would have operated at a net loss of $59,909. The table also shows the reimbursement levels neces-sary to allow the center to break even or earn a small profit for financial sustainability.

Higher-quality child care centers have higher expenses, primarily due to the wages necessary to sustain high-quality services at 4- and 3-star ratings. For example, teachers generally have higher levels of educa-tion and experience and are frequently offered benefits (health and dental), which are often not available at lower-quality centers. Also, higher-quality providers tend to offer higher pay for administrative staff and hire additional staff to support programming. This analysis suggests that the bonus payments offered to 4-star and 5-star providers may not be sufficient to cover

<table>
<thead>
<tr>
<th>Table 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Expenses ($)</strong></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,143,269</td>
</tr>
<tr>
<td>Teacher Wages: Total (and Hourly Rate), ~20 FTE</td>
<td>533,684 (13/hr)</td>
</tr>
<tr>
<td>Child care management wages</td>
<td>157,300</td>
</tr>
<tr>
<td>Other Staffing-Related Expenses (Insurance, Worker’s Comp, Payroll Taxes)</td>
<td>155,164</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
</tr>
<tr>
<td>YoungStar Incentive Bonus Rates</td>
<td></td>
</tr>
<tr>
<td>Net income ($)</td>
<td></td>
</tr>
<tr>
<td>Profit Margin</td>
<td></td>
</tr>
<tr>
<td>Current rate: 25%</td>
<td>-5.5%</td>
</tr>
<tr>
<td>Break Even: 31%</td>
<td>0%</td>
</tr>
<tr>
<td>Small Profit Incentive: 36.1%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Case Studies: The Economic Feasibility of High-Quality Centers
expenses, and a larger bonus rate would be required to create stronger incentives for programs to absorb the expenses associated with higher rating levels.

In the model, dropping average teacher wages to $8.50 or $9 per hour, a scenario plausible in 2- or 3-star rated providers, and decreasing administration costs, shows that lower-rated providers could at least break even despite the 5 percent penalty for a 2-star provider.

**Impact of YoungStar on 3K and 4K facilities**

AIM Now is a 5-star, full-day 3- and 4-year-old kindergarten (3K and 4K) program based in Living Faith Lutheran Church in Racine. The center has aspirations of expanding its offerings to four total classrooms of full-day 3K and 4K, exclusively serving Wisconsin Shares-eligible children.

Using its 2016 budget as a baseline, Table 2 is a model of the provider’s annual financial picture if it undertook that expansion, highlighting key budget items.

This model includes higher teacher hourly wage rates in order to be more competitive with local school district rates and reduce teacher turnover, a common challenge for child care providers. The model also assumes collecting approximately 43 percent of parent pay billed, which has been the actual collection rate of the center after accounting for program-sponsored scholarships and follow-up efforts with parents who face significant financial difficulties.

Despite receiving the 25 percent YoungStar 5-star bonus, the model shows a net loss for the program of nearly $18,000. Alternatively, if the YoungStar bonus was increased to 30 percent, the center would break even and a bonus rate of 33.3 percent would provide the center with a 2 percent profit margin, which could support the provider’s sustainability and investments in services for children and teacher development.

Note that a limitation of both case studies is that they reflect incentives for programs to absorb the expenses, and a larger bonus rate would be required to create stronger incentives for programs to absorb the expenses associated with higher rating levels.

**Table 2**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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<tr>
<td>Total Expenses</td>
<td>594,447</td>
</tr>
<tr>
<td>Teacher Wages: Total (and Hourly Rate)</td>
<td>234,624</td>
</tr>
<tr>
<td>8 teachers (4 lead, 4.8 assistants) (15/hr lead, 11/hr assist)</td>
<td></td>
</tr>
<tr>
<td>Non-Teacher wages (facility director, accounting, cook, van driver)</td>
<td>71,228</td>
</tr>
<tr>
<td>Other Staffing-Related Expenses (Insurance, Worker’s Comp, Payroll Taxes)</td>
<td>93,285</td>
</tr>
<tr>
<td>With current YoungStar bonus for 5-star facility: 25%</td>
<td></td>
</tr>
<tr>
<td>Total Income</td>
<td>576,449</td>
</tr>
<tr>
<td>Parent pay</td>
<td>61,640</td>
</tr>
<tr>
<td>Total Wisconsin Shares subsidy ($202 base avg. weekly revenue for 18 students/class with a 67% attendance rate)</td>
<td>448,391</td>
</tr>
<tr>
<td>State Nutrition Program Reimbursement</td>
<td>64,418</td>
</tr>
<tr>
<td>Net Income</td>
<td>-17,998</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>-3.1%</td>
</tr>
<tr>
<td>Break Even Scenario: YoungStar bonus: 30%</td>
<td></td>
</tr>
<tr>
<td>Total Wisconsin Shares subsidy</td>
<td>466,389</td>
</tr>
<tr>
<td>Net Income</td>
<td>0</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>0%</td>
</tr>
<tr>
<td>Small Profit Incentive Scenario: YoungStar bonus: 33.3%</td>
<td></td>
</tr>
<tr>
<td>Total Wisconsin Shares subsidy</td>
<td>478,233</td>
</tr>
<tr>
<td>Net Income</td>
<td>11,844</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>2%</td>
</tr>
</tbody>
</table>

**About the Authors**

**Rob Grunewald** is an economist with the Federal Reserve Bank of Minneapolis. He co-authored the WPRI report “The Economic Power of Early Childhood Education in Wisconsin” in 2012 and has written several reports and articles on the economic and social impact of early learning.

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Special acknowledgements to **Kat Neubauer** and **Steve Jenkins** for their support in developing the case studies.

**Endnotes**


2. Joe Scialfa. This number is based on information provided by the Wisconsin Department of Children and Families.

3. Joe Scialfa. This number is based on information provided by the Wisconsin Department of Children and Families.


6. American Community Survey, one-year estimate, 2015


20 Joe Scialfa. This number is based on information provided by the Wisconsin Department of Children and Families.

21 Ibid.


24 This number is as of April 30, 2017, and is based on information provided by the Wisconsin Department of Children and Families.

25 Just over 63 percent of Wisconsin Shares children are between birth and their sixth birthday as of April 2017. The remaining 37 percent are between 6 and 17 years old. These are children with special needs or children receiving wraparound or summer care. Children ages 0-5 drive the business model of child care.

26 This number is based on information provided by the Wisconsin Department of Children and Families.

27 This information is updated monthly and can be found at https://dcf.wisconsin.gov/youngstar/#/program/impact.

28 DCF notes that this percentage does not include the number of children attending unregulated child care or the number of private-pay children attending a child care facility that is not participating in the YoungStar Program.


31 This number is based on information provided by the Wisconsin Department of Children and Families.

32 This number is based on information provided by the Wisconsin Department of Children and Families.

33 Ibid.


35 Ibid.

36 Ibid.

37 Ibid.

38 Ibid.


41 Ibid.

42 This number is based on information provided by the Wisconsin Department of Children and Families.

43 Ibid.


45 Ibid.

46 Ibid.


48 Ibid.


51 Correspondence with the Minnesota Department of Human Resources. April 2017.

52 Minnesota Cost of Child Care Survey. Minnesota Department of Human Services. 2004


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