



ESTIMATING THE COST OF HIGH- QUALITY EARLY CHILDHOOD CARE AND EDUCATION

Virginia's Child Care Cost Estimation Model

September 21, 2023

ESTIMATING THE COST OF HIGH-QUALITY EARLY CHILDHOOD CARE AND EDUCATION

TABLE OF CONTENTS

<i>Background and Overview</i>	1
<i>Developing Virginia’s Alternative Methodology</i>	3
Planning and Pre-Approval.....	3
Model Development.....	3
Stakeholder Engagement.....	4
<i>Overview of Virginia’s Cost Estimation Model</i>	4
Accounting for Regional Variation in Cost.....	5
Modeling the Cost of Meeting Quality Expectations	5
Scenario Assumptions.....	6
Results.....	8
Unlicensed Family Day Homes.....	11
<i>Evaluating and Revising the Cost Estimation Model: Next Steps for Virginia</i>	12
<i>Appendix A: Virginia’s Cost Estimation Model: Technical Appendix</i>	13
<i>Appendix B. Counties and Localities Within Each Ready Region</i>	19

BACKGROUND AND OVERVIEW

The *Child Care and Development Block Grant (CCDBG) Act of 2014* requires states administering child care assistance programs to certify that provider payment rates are sufficient to ensure that children eligible for assistance have equal access to comparable child care services provided to children who are ineligible for CCDBG. Provider payment rates must be set using at least one of two methods: 1) a statistically valid market rate survey or 2) a pre-approved alternative methodology.¹ States are also required to demonstrate that payment rates cover the costs associated with higher-quality care.

Research has demonstrated that there are limitations to using market rate surveys to assess operating costs in the child care sector.² Market survey data may be skewed depending on response rates and the characteristics of providers that participate, particularly in localities with low child care supply. To be competitive in their local markets, the prices programs can charge are often limited by what parents can pay. As a result, many programs use revenue through other sources such as private grants or donations to fully cover operating costs, making prices appear artificially low—particularly in lower-income communities where a larger portion of care settings are subsidized in some capacity.

Basing provider payment rates on a proportion of the prevailing market rate was limiting Virginia’s potential to promote family choice among a variety of high-quality settings that promote school readiness. Virginia data demonstrated that market-based payment rates in the Child Care Subsidy Program (CCSP)—Virginia’s largest publicly-funded child care program—were correlated with:

- **Lower provider participation in the CCSP:** Low payment rates were one of the primary reasons that non-subsidized ECCE sites reported not participating in the CCSP. When fewer sites accept public funds, choice is inherently limited for families.
- **Higher costs for families:** Programs that chose to accept CCSP often reported private tuition rates that exceeded the Maximum Reimbursement Rate (MRR) offered through the CCSP. Many providers charge families the difference between their private tuition rate and what is paid by the state, resulting in higher costs for families. If families are unable to cover this difference, their choice of providers are limited to those whose rates are equal to or less than the MRR.
- **Lower compensation for teachers, on average:** Lead teachers at subsidized sites earn \$2 less per hour on average compared to lead teachers at privately funded sites. Lower pay is associate with higher teacher turnover, which can cause significant disruption for families and impact the quality of services delivered. This can also limit the number of slots provided, thus limiting choice for families. Research shows that Virginia providers

¹ 42 U.S.C. §9858c, Subsection (c) 4(B). Accessed: <https://www.govinfo.gov/content/pkg/USCODE-2015-title42/html/USCODE-2015-title42-chap105-subchapII-B.htm>.

² See for example, E. Davis et al., *Market Rate Surveys and Alternative Methods of Data Collection and Analysis to Inform Subsidy Payment Rates*, OPRE Report #2017-115, December 2017. Accessed: https://www.acf.hhs.gov/sites/default/files/documents/opre/ccepra_methods_for_informing_subsidy_rates_508_compliant_v2b.pdf; Bipartisan Policy Center, *The Limitations of Using Market Rates for Setting Child Care Subsidy Rates*, May 2020. Accessed: <https://bipartisanpolicy.org/report/the-limitations-of-using-market-rates-for-setting-child-care-subsidy-rates/>.

that participate in CCSP were more likely to have to turn away families than providers that do not participate.

Recognizing the urgent need for a new, innovative approach to establishing public payment rates, the General Assembly directed the Virginia Department of Education (VDOE) to develop a methodology to estimate the actual cost of providing high-quality early childhood services in community settings, and to use this methodology to establish public payment rates for early childhood care and education (ECCE) providers in community-based settings. This directive— included in the 2022 Special Session I Budget—also specified that the methodology should meet the federal requirements for alternative methodologies as described in the CCDBG Act of 2014.

Upon enactment of the biennial budget, VDOE quickly leveraged working relationships with key state partners and national experts in ECCE financing to develop a cost estimation model suited to Virginia’s unique context. While there are several approaches that states may pursue to set payment rates, cost estimation models are widely recognized as best-in-class practice for alternative methodologies. Cost estimation models are tools used to understand the relationship between available revenues and the expense of delivering quality child care and early education services. These tools incorporate data and assumptions of the costs incurred by child care providers under different program characteristics, such as program location, sponsorship, size, and type; and policy conditions, including health and safety standards and quality expectations.

Throughout the process of developing its innovative methodology, VDOE engaged deeply with private stakeholders to develop and integrate the following guiding principles:

- **Virginia’s unique public-private system should offer true choice for families.** “True choice” means that families are able to choose a public or publicly-funded private child care option based on what is best for their child and are not limited by affordability.
- **Rates should reflect higher quality expectations for which publicly-funded programs are now accountable.** All publicly-funded programs have the same quality expectations under the Unified Virginia Quality Birth to Five System³ (VQB5) and should have access to payment rates that support continuous quality improvement accordingly. Payment rates should reflect the supports educators need to foster strong teacher-child relationships, provide quality interactions on a consistent basis, and implement effective curricula.
- **Educator compensation should be competitive.** Compensation for early childhood educators should attract and help retain competent professionals and be pegged to public teacher salaries. Attracting top talent is a broader Virginia workforce strategy and is especially necessary for the workforce that supports the workforce.

This report summarizes Virginia’s approach to developing the alternative methodology, provides an overview of the cost estimation model and results, and how payment rates were determined for CCSP vendors. The report also provides a description of Virginia’s plans to evaluate the impact of the revised payment rates for providers in the CCSP.

³ More information on VQB5 is available at <https://www.doe.virginia.gov/teaching-learning-assessment/early-childhood-care-education/quality-measurement-and-improvement-vqb5>.

DEVELOPING VIRGINIA’S ALTERNATIVE METHODOLOGY

Planning and Pre-Approval

After extensive research, review of best practices in other states, and consultation with federal partners, VDOE opted to pursue a cost estimation model for its alternative methodology.

VDOE developed and submitted a proposal to the federal Office of Child Care (OCC) in April 2022 that included the following information:

- A summary of the proposed approach, including the proposed cost drivers and assumptions, and a summary of data elements used to inform the model;
- How the model will account for variations in cost by provider type, age of children, geographic location, and quality;
- A strategy for validating the model’s assumptions;
- A plan for stakeholder engagement with advocates and the field to inform the cost estimation model; and
- A description of how VDOE will set payment rates based on the results of the model.

OCC approved Virginia’s proposal in June 2022.

Model Development

VDOE worked with Prenatal to Five Fiscal Strategies⁴ (P5FS) to develop and refine a cost estimation model that captures Virginia’s unique care landscape; aligns with the OCC-provided cost model guidance;⁵ and meets the goals for increasing the quality of early childhood settings and expanding family choice as identified by the General Assembly.⁶

The best-in-class process for developing the model followed four general phases:

Phase	Key Activities
1. Identify key cost drivers, data sources, and data definitions	<ul style="list-style-type: none">• Review and affirm cost drivers identified in the proposal, including program characteristics and key policy conditions• Identify data source options and consider advantages and limitations of each data source• Compile data sources for P5FS analytic team
2. Review model results internally	<ul style="list-style-type: none">• Review preliminary model results to ensure model inputs and assumptions are being accurately captured and accounted for

⁴ [Prenatal to Five Fiscal Strategies \(P5FS\)](#) is led by national early childhood finance experts Jeanna Capito and Simon Workman. P5FS has developed cost estimation models for several states and communities, including New Mexico and the District of Columbia, the only other two states with an approved alternative methodology at the time of Virginia’s approval.

⁵ <https://www.acf.hhs.gov/occ/policy-guidance/ccdf-acf-pi-2018-01>

⁶ Item 129Q of the 2022 Virginia Appropriation Act. (2022). Accessed: <https://budget.lis.virginia.gov/secretariat/2022/2/HB30/Chapter/1/office-of-education/>.

3. Engage key stakeholders	<ul style="list-style-type: none"> • Share proposed methodology with key stakeholders to answer questions and accept feedback • Have national experts hear directly from Virginia stakeholders • Compile and summarize feedback for project team
4. Revise model based on feedback	<ul style="list-style-type: none"> • Agree upon model components to adjust based on internal review and feedback from advocates, child care providers, and other key partners

Stakeholder Engagement

VDOE hosted 16 stakeholder engagement sessions to garner feedback on the proposed methodology. Over 370 individuals participated in the sessions, representing the following entities:

- Private center- and home-based owners, operators, and directors;
- State and federal experts in child care financing and early childhood policy;
- State early childhood advocates;
- Child care resource and referral specialists across the state;
- Representatives of local departments of social services;
- Directors of Head Start programs;
- Regional early childhood liaisons;
- the Virginia Promise Partnership; and
- the general public.

VDOE also presented the alternative methodology to the Virginia Board of Education (BOE) and the Early Childhood Advisory Committee (ECAC). ECAC members include 22 representatives spanning the diversity of child care and early education programs, advocacy groups, and child development experts in the Commonwealth. The ECAC was established by the same legislation, effective 2021, that established the BOE and VDOE as responsible for oversight and administration of early care and education. The ECAC is responsible for advising the BOE on all programs, systems, and regulations related to Virginia’s unified early childhood system.

During the sessions, VDOE provided a structured overview of the cost estimation model and answered participants’ questions about the analyses and implications for setting payment rates. VDOE also accepted feedback from participants regarding the validity of key cost drivers and assumptions. Stakeholder feedback was incorporated into the final version of the model as appropriate and informed VDOE’s approach to setting rates.

OVERVIEW OF VIRGINIA’S COST ESTIMATION MODEL

VDOE worked with P5FS to develop an Excel-based modeling tool with assumptions customized to Virginia’s public-private early childhood context. Many factors were considered in developing the model and are embedded within the model functionality, including child care licensing regulations, core program characteristics and quality enhancements, and available data on child care expenses and revenue sources. The model includes all aspects of program operations for center-based and family day home settings, serving children from birth to 12 years of age with full day, full year child care. To account for the differing business models and cost

drivers across center and family day home (FDH) settings, separate worksheets were built for each type of care. Details of the models include:

- Full day is defined as 10 hours per day.
- Full year is 52 weeks.
- All Virginia licensing standards for child care centers⁷ and family day homes⁸ are met through program operations included in the model.
- Licensing standards set the definitions of the ages of children in each category.

The model output includes estimates of total revenues and expenses at the provider level and at the individual child level to fully explicate variations in expenses and revenues for different ages of children. Expense data in the model is designed to incorporate the following factors that impact the cost of providing care:

- Health, safety, and licensing requirements, including ratios and group sizes.
- Staff and FDH provider compensation (salary and benefits).
- Staffing patterns to meet licensing requirements, support quality improvement, and administrative needs for full program operations.
- Enrollment levels.
- Facility size.

A detailed description of the model, including functionality and key variables, data sources, and assumptions is included in the Technical Appendix (Appendix A).

Accounting for Regional Variation in Cost

VDOE's model aligns to the Ready Regions, a new regional structure for the Commonwealth's public-private early childhood system.⁹ Ready Regions are responsible for coordinating childhood care and education services, guiding quality improvement of such services and coordinated access to such services for families, and implementing VQB5, Virginia's unified measurement and improvement system. A list of localities by Ready Region is available in Appendix B.

VDOE identified two primary variables that vary at the regional level: personnel expenses (primarily compensation) and nonpersonnel expenses. Additional details on these variables are available in Appendix A.

Regional estimates are generated for the high-quality scenario only. Workforce data is not available at the regional level.

Modeling the Cost of Meeting Quality Expectations

Beginning in the fall of 2023, all publicly funded programs will be required to participate in Virginia's new uniform quality measurement and improvement system, VQB5. A large body of

⁷ <https://www.childcare.virginia.gov/home/showpublisheddocument/139/638218349346770000>

⁸ <https://www.childcare.virginia.gov/home/showpublisheddocument/16210/638103496120770000>

⁹ This regional structure for the coordination of early childhood care and education programs and services is called for by Chapter 524 of the 2022 Acts of the General Assembly, available at <https://lis.virginia.gov/cgi-bin/legp604.exe?221+ful+CHAP0524>. More information on Ready Regions is available at <https://vecf.org/ready-regions/>.

research has linked targeted observational measures of teacher-child interactions to children’s learning gains, both academic and socio-emotional.¹⁰ Virginia is embracing such an approach to measuring quality and supporting continuous quality improvement, being sure to prioritize those measures that are shown to support positive child outcomes, namely teacher-child relationships. Specifically, Virginia selected two nationally recognized quality standard measurements for VQB5: interactions and curriculum.

Importantly, there are no mandatory costs associated with participating in VQB5 or achieving higher levels of quality. The model’s core assumption is that being able to attract and retain competent and competitive educators is the primary driver of quality and quality improvement. A supported, stable workforce is necessary to facilitate strong teacher-child interactions and child-focused, developmentally appropriate instruction in the classroom. Research from Virginia’s child care sector shows that competitive wages are a primary driver of staff retention, with staff in the lowest wage quartile being twice as likely to turn over in a given year relative to those in the highest wage quartile.¹¹ Higher, more competitive compensation is necessary to attract and retain prepared and well-qualified staff who can consistently meet Virginia’s increasing quality expectations, notably providing quality interactions every day that address the unique learning and developmental needs of the young children in their classrooms/settings.

As such, the model accounts for competitive compensation, benefits, and planning time to facilitate a stable and supported workforce for providers meeting or exceeding quality expectations.

Scenario Assumptions

VDOE’s cost-estimation model can be used to analyze different scenarios to estimate the cost per child under various program characteristics. VDOE primarily focused on two state-wide scenarios for child care centers and licensed family day homes (FDH)¹²: one “default” scenario assuming average wages for child care educators as reported in the most recent workforce survey, adjusted for inflation, and a “high-quality” scenario assuming competitive compensation as described above. Key assumptions about program types are otherwise consistent in each scenario.

Program size and enrollment information is provided in Table 1. These assumptions were informed by average capacity and ages served as reported by providers to VDOE’s Office of Child Care Health and Safety.

Table 1. Enrollment Assumptions in Cost Model Scenarios, by Program Type

	<i>Number of children served by age</i>	
--	---	--

¹⁰ Bassok, D., & Markowitz, A. (2020.). *The value of systemwide, high-quality data in early childhood education*. Brown Center Chalkboard.

¹¹ Bassok et al., *Teacher Turnover in Child Care: Pre-Pandemic Evidence from Virginia*, EdPolicyWorks at the University of Virginia, 2021, <https://files.elfsightcdn.com/022b8cb9-839c-4bc2-992e-cefccb8e877e/b8dd96c5-11e5-4fce-b7af-bd24e2ec9ad2.pdf>.

¹² Because there are not significant cost differences between the health and safety standards for licensed child day centers and unlicensed child day centers participating in the Child Care Subsidy Program, VDOE did not run scenarios for licensed vs. unlicensed centers. See p. 8-9 for a summary of the model for unlicensed family day homes.

	<i>Total capacity</i>	<i>Infants</i>	<i>Toddlers</i>	<i>Two's</i>	<i>Preschool</i>	<i>School-age</i>
Child Care Centers	90	8	10	16	20	36
Licensed FDH	12	2	2	2	3	3

Note: Enrollment assumptions are based on the maximum group sizes allowable under applicable child care licensing regulations.

In the “default” scenario, wages are based on the 2017 Virginia Early Childhood Workforce Survey,¹³ adjusted by 18 percent for inflation. The default scenario assumes 5 paid sick days and 5 paid vacation days per year, and no employer-sponsored health insurance. This scenario is intended to represent what child care programs are generally able to compensate staff based on market rates alone.

In the “high-quality” scenario, lead teacher salaries are pegged to elementary teacher salaries¹⁴ and prorated to account for differences in preparation requirements. Salaries for directors, assistant directors, assistant teachers, and other staff are anchored around lead teacher salaries based on the average difference between salaries reported by the Bureau of Labor Statistics Occupational Employment and Wages for Virginia in 2021.¹⁵ The high-quality scenario assumes 10 paid vacation days, 10 paid sick days, and employer-sponsored health insurance. This scenario is intended to represent the competitive compensation required to meet expectations in VQB5.

In licensed FDH scenarios, owner/operator salaries are equal to lead teacher salaries, and assistant salaries are equal to assistant teacher salaries in the center-based model. All licensed FDH are assumed to operate with an assistant.

Statewide salary inputs are presented in Table 2. Additional details on salary estimates, including regional salaries, are provided in the technical appendix.

¹³ <https://vecf.org/wp-content/uploads/2021/06/VECFChildrensWorkforceSurvey-12.19.pdf>

¹⁴ 2021-2022 Teacher Salary Survey
<https://www.doe.virginia.gov/home/showpublisheddocument/2682/637976374587670000>

¹⁵ Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics, “May 2021 State Occupational Employment and Wage Estimates: Virginia,” available at:
https://www.bls.gov/oes/2021/may/oes_va.htm

Table 2. Statewide Annual Salary Inputs, by Program Type and Scenario

	<i>Default Scenario</i>	<i>High-Quality Scenario</i>
<i>Centers</i>		
Director	\$54,693	\$79,766
Assistant Director	\$43,754	\$63,813
Administrative Assistant	\$29,324	\$53,666
Lead Teacher	\$31,195	\$55,231
Assistant Teacher/Floater	\$23,783	\$38,389
<i>Licensed family day homes</i>		
Owner/Operator	\$31,195	\$55,231
Assistant	\$23,783	\$38,389

Results

Cost estimates generated by the model are on a per-child basis. Statewide results are presented in Table 3a (see the Technical Appendix for results by Ready Region). Table 3b presents the 2018 Maximum Reimbursement Rates (MRR) in the CCSP, established using the 2018 market rate survey, for comparison.

Cost-per-child results are calculated based on assigning individual cost drivers to a classroom, and then dividing among the children in that classroom or across all the children in the program. Classroom personnel are first divided by classroom and then children, which results in classrooms with smaller group sizes having a higher cost per child than those with larger group sizes. Similarly, occupancy costs are first divided by classrooms and then by the children within that classroom. Classroom personnel costs are 100 percent allocated to the school age room, while other site-wide costs are allocated at 60 percent to school-age children, accounting for the less-than-full-time attendance.

The cost-per-child calculation in FDH settings does not provide a different cost for infants, toddlers, and preschoolers, due to the program operating as one single group of children rather than age-defined classrooms.

Table 3a. Cost-Per-Child Results for Default and High-Quality Scenarios

	<i>Default Scenario</i>		<i>High-Quality Scenario</i>	
	Weekly	Annually	Weekly	Annually
<i>Centers</i>				
Infant	\$335	\$17,418	\$478	\$24,830
Toddler	\$294	\$15,270	\$414	\$21,509
2-year-old	\$232	\$12,048	\$318	\$16,526
Preschool	\$211	\$10,974	\$286	\$14,865
School-age	\$107	\$5,558	\$140	\$7,300
<i>Family day homes</i>				
Licensed, all ages	\$175	\$9,076	\$272	\$14,119

Table 3b. 2018 CCSP MRR - Licensed Centers and Family Day Homes

	<i>Daily Maximum Reimbursable Rates for Full Day Care</i>								
	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9
<i>Centers</i>									
Infant – Average	\$27	\$33	\$29	\$43	\$42	\$39	\$86	\$55	\$38
Min / Max	\$25 - \$39	\$26 - \$44	\$28 - \$43	\$31 - \$60	\$36 - \$57	\$35 - \$47	\$82 - \$98	\$38 - \$81	\$28 - \$55
Toddler – Avg.	\$25	\$31	\$27	\$40	\$38	\$36	\$82	\$51	\$37
Min / Max	\$20 - \$38	\$23 - \$41	\$25 - \$40	\$27 - \$56	\$34 - \$49	\$33 - \$47	\$78 - \$96	\$30 - \$77	\$26 - \$52
Preschool – Avg.	\$23	\$27	\$23	\$34	\$33	\$33	\$73	\$45	\$33
Min / Max	\$20 - \$35	\$19 - \$34	\$20 - \$26	\$25 - \$46	\$24 - \$43	\$29 - \$41	\$70 - \$85	\$27 - \$69	\$23 - \$45
School-age – Avg.	\$22	\$25	\$22	\$29	\$29	\$27	\$64	\$40	\$30
Min / Max	\$16 - \$33	\$19 - \$30	\$20 - \$24	\$24 - \$40	\$22 - \$34	\$25 - \$33	\$61 - \$70	\$27 - \$60	\$23 - \$45
<i>Family day homes</i>									
Infant – Average	\$22	\$28	\$30	\$32	\$31	\$31	\$59	\$42	\$31
Min / Max	\$20 - \$32	\$27 - \$32	\$27 - \$32	\$29 - \$36	\$20 - \$36	\$30 - \$34	\$55 - \$70	\$28 - \$55	\$28 - \$36
Toddler – Avg.	\$21	\$25	\$26	\$29	\$27	\$28	\$56	\$40	\$29
Min / Max	\$20 - \$30	\$22 - \$30	\$22 - \$30	\$20 - \$33	\$18 - \$34	\$27 - \$30	\$52 - \$70	\$25 - \$52	\$24 - \$35
Preschool – Avg.	\$21	\$24	\$20	\$27	\$26	\$27	\$54	\$38	\$27
Min / Max	\$20 - \$24	\$22 - \$27	\$18 - \$27	\$25 - \$30	\$17 - \$32	\$25 - \$30	\$50 - \$70	\$25 - \$50	\$18 - \$32
School-age – Avg.	\$20	\$23	\$19	\$24	\$23	\$24	\$50	\$34	\$25
Min / Max	\$20 - \$20	\$20 - \$26	\$15 - \$26	\$20 - \$25	\$18 - \$28	\$23 - \$28	\$45 - \$63	\$25 - \$50	\$17 - \$29

Unlicensed Family Day Homes

FDH that serve 4 or fewer children are generally not required to be licensed in Virginia. However, many are regulated in some capacity. Unlicensed, regulated FDH comprise approximately 10 percent of all licensed and regulated programs in Virginia and 15 percent of all publicly-funded community-based sites. Because these sites are generally small, they account for less than 1 percent of all licensed and regulated slots in publicly-funded centers and family day homes.

There are four types of unlicensed, regulated FDH, each with slightly different health and safety standards at baseline. If publicly funded through the CCSP, the corresponding health and safety standards would also apply, but unlicensed FDH would be required to participate in VQB5 only if they are serving at least 3 children in the fall of each program year.

The four types of unlicensed, regulated FDH include:

- **Voluntarily Registered FDH** meet a set of basic health and safety standards, and in return have access to additional supports and resources through VDOE or contracted partners across the state.
- **Unlicensed FDH Approved by Local Ordinance** are required under local ordinance to meet certain health and safety requirements and register with the locality, even if they are not subject to state licensure. This type of FDH is limited to Alexandria City, Arlington County, and Fairfax County.
- **Family Day System-Approved Homes** are monitored and supported by the Infant Toddler Family Day Care (ITFDC) system in Northern Virginia. ITFDC is in turn licensed and overseen by VDOE. System-approved homes may serve up to 9 children.
- **Subsidy-Approved Unlicensed FDH** participate in the CCSP and are required to meet the subsequent health and safety standards accordingly.

VDOE's cost estimation model assesses the cost of meeting state licensing standards and meeting quality expectations in VQB5. Given the variety of contexts under which unlicensed FDH operate, it was not possible to generate a model that was fully representative for all unlicensed FDH program types.

The unlicensed FDH model assumes four enrolled children in a mixed-age group setting and compliance with health and safety standards for FDH in the CCSP. The model does not assume an assistant staff person. Salary estimates for unlicensed FDH educators/operators are equal to assistant teachers in a licensed FDH setting, given lower enrollment and corresponding revenue. All other default settings in the model are consistent with the licensed FDH model. Model results for unlicensed FDH by region are reported in the technical appendix.

EVALUATING AND REVISING THE COST ESTIMATION MODEL: NEXT STEPS FOR VIRGINIA

Payment rates for publicly-funded community-based sites in the Child Care Subsidy Program (CCSP) and the Mixed Delivery grant program are now based on VDOE's cost estimation model. VDOE is committed to continuous improvement, including rigorous evaluation of the assumptions in the model and the impact of the proposed payment rates.

Based on available data regarding the importance of well-qualified educators and staff retention for teacher-child interactions, VDOE chose to heavily emphasize compensation as the primary cost driver for quality in its initial model. However, following the first full year of participation in VQB5, VDOE will have statewide data for all publicly-funded programs in the Commonwealth, including but not limited to:

- Teacher-child interaction quality;
- Use of curriculum;
- Workforce characteristics;
- Teacher compensation; and
- Teacher retention.

These data will allow VDOE to better understand the characteristics of programs that are meeting or exceeding quality expectations in VQB5 and to adjust the model accordingly.

VDOE will also evaluate the extent to which revisions to the model are needed to reflect other policy and contextual changes, including proposed revisions to the *Standards for Licensed Child Day Centers*; recent legislative requirements for programs to stock and/or receive training on administering epinephrine; and updating salary data.

APPENDIX A: VIRGINIA’S COST ESTIMATION MODEL: TECHNICAL APPENDIX

Prenatal to Five Fiscal Strategies worked with Virginia child care leaders and key constituents to develop an Excel-based modeling tool with assumptions customized to Virginia’s context. This technical appendix describes the model, including key variables and inputs and the data sources and assumptions used to generate results. It also provides a summary of the outputs generated by the model.

Model Functionality: Key Variables, Inputs, and Assumptions

The Virginia cost estimation model has many opportunities for customization and input. The following sections describe the settings for the key program variables.

Region

The cost model includes the ability to estimate the cost of care in nine regions of the Commonwealth, aligned with Ready Regions. The model can also run statewide results which provide an average across all nine regions. Choosing a region will change the salary and non-personnel expenses used in the calculation.

Size of Program

For centers, size is represented as the number of classrooms by age range—infants, toddlers, two-year-olds, preschoolers, and school-age – and users can model a program with any number of different classroom configurations. The number of children in each classroom is determined by staff-to-child ratios and group-size requirements for licensed programs.

The licensed FDH model allows users to run scenarios for a program serving up to 12 children. The model automatically identifies the number of staff needed to comply with licensing regulations based on the number and ages of children being served.

The unlicensed FDH model allows users to run scenarios for a program serving up to 4 children.

Staffing and personnel expenses

The personnel calculations are based on a standard staffing pattern typical of most centers and family day homes, with the following assumptions:

Non-teaching staff

- Director or Family Day Home Owner/Provider (1 full time)
- Assistant Director or Program Supervisor (0.5 full-time equivalent or FTE if enrollment is less than 30, 1 FTE if greater)
- Administrative Assistant (0.5 FTE if enrollment is less than 30, 1 FTE if greater)

Teaching staff

In center-based programs, the number of teachers and assistant teachers in each classroom is driven by Virginia licensing requirements for ratio and group size regulations. Each classroom has a lead teacher, with additional staff counted as an assistant teacher to meet ratio requirements. In addition, the model includes 0.2 FTE per classroom teaching staff to allow for

coverage throughout the day for breaks and opening/closing. This assumption reflects that most programs are open more than 40 hours per week and must always maintain ratios, which requires additional staffing capacity. The model also includes the cost of substitutes to cover for staff to attend required training.

In family day homes, the model includes the owner/lead teacher for all settings. If the program serves more than 6 children, the model also includes an assistant teacher.

Compensation

VDOE utilized salary data from the VDOE 2020-2021 Teacher Salary Survey Results¹⁶ to generate regional compensation targets scaled to elementary educator salaries for the cost estimation model. VDOE converted estimated SFY 2022 salaries for elementary teachers into hourly wages and calculated a weighted average hourly wage by region. VDOE then prorated these salary estimates to account for educational requirements for child care educators.

Prorated salary estimates were used for lead teachers and family day home operators. Salary levels for Program Director, Administrative Assistant, Assistant Teachers, and Floater/Aides are calculated as a percentage of the Lead Teacher Salary, based on the current percentage increase or decrease for each position relative to a Lead Teacher using data from BLS for Virginia. Salary data input into the model are provided in Table 1.

Benefits

All mandatory expenses related to employees are built into the model, including federal and state requirements, unemployment insurance and workers compensation. FICA-Social Security is included at 6.2 percent, Medicare at 1.45 percent, unemployment insurance at 0.5 percent and workers compensation at 2 percent.

The model includes discretionary benefits in the form of \$5,249 annual contribution to health insurance per full time equivalent (FTE).¹⁷ The model also includes 10 days paid sick leave and 10 days paid vacation, in addition to federal and state holidays. The cost of paid time off is accounted for by including resources to hire substitutes or additional floaters to cover when employees are on paid leave.

¹⁶ 2021-2022 Teacher Salary Survey

<https://www.doe.virginia.gov/home/showpublisheddocument/2682/637976374587670000>

¹⁷ This is the average employer contribution to employer-based health insurance in Virginia, based on 2020 data from the [Kaiser Family Foundation](#).

Table 1: Regional Compensation Inputs for VDOE Child Care Cost Estimation Model, by Ready Region¹⁸

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	State
Program Director	\$66,659	\$72,877	\$68,641	\$76,061	\$77,833	\$73,508	\$110,397	\$94,385	\$77,533	\$79,766
Asst Director	\$53,327	\$58,301	\$54,913	\$60,849	\$62,267	\$58,806	\$88,317	\$75,508	\$62,026	\$63,813
Administrative Asst	\$44,848	\$49,031	\$46,181	\$51,173	\$52,366	\$49,456	\$74,274	\$63,502	\$52,164	\$53,666
Lead Teacher	\$46,155	\$50,461	\$47,528	\$52,666	\$53,893	\$50,898	\$76,440	\$65,354	\$53,685	\$55,231
Assistant Teacher	\$32,081	\$35,074	\$33,035	\$36,606	\$37,459	\$35,377	\$53,131	\$45,425	\$37,315	\$38,389
Aide/Floater	\$32,081	\$35,074	\$33,035	\$36,606	\$37,459	\$35,377	\$53,131	\$45,425	\$37,315	\$38,389
FDH Provider	\$46,155	\$50,461	\$47,528	\$52,666	\$53,893	\$50,898	\$76,440	\$65,354	\$53,685	\$55,231
FDH Asst Teacher	\$32,081	\$35,074	\$33,035	\$36,606	\$37,459	\$35,377	\$53,131	\$45,425	\$37,315	\$38,389

Table 2: Non-Regionally Adjusted Salary Data Included in Model

	BLS Data ¹⁹	Percent difference from Lead Teacher salary
Program Director	\$58,740	44% higher
Asst Director	\$46,992	16% higher
Admin Asst	\$39,520	3% lower
Lead Teacher	\$40,672	--
Assistant Teacher	\$28,270	30% lower
Aide/Floater	\$22,880	44% lower
FCC Provider	\$40,672	--
FCC Assistant Teacher	\$28,270	30% lower

¹⁸ Estimates based on data from the 2020-2021 Teacher Salary report. Lead Teacher and FDH Provider positions are prorated based on weighted average salaries for elementary educators. Other positions are adjusted by a percentage increase/decrease from a lead teacher based on defaults provided in Provider Cost of Quality Calculator using Bureau of Labor Statistics data (see Table 2).

¹⁹ U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics, “May 2021 State Occupational Employment and Wage Estimates: Virginia”.

Efficiency

No program is 100 percent full all the time. To accurately capture the true revenue that programs receive to help cover their costs, the model accounts for the percent of enrollment efficiency (or how full the program is on average across the year) and the bad debt (or how much of expected revenue is not collected). VDOE's model assumes industry defaults of 85 percent enrollment efficiency and 3 percent bad debt.

Nonpersonnel Expenses

The cost estimation model includes nonpersonnel expenses that allow for the safe and legal operation of the program, meeting health and safety and licensing requirements. The model accounts for variations in operating cost across the Commonwealth by using a modified version of the Cost of Competing Adjustment (COCA) measure that is used by the Virginia Department of Education to adjust per-child costs for K-12 school divisions in certain areas of the state with higher overall costs of living.²⁰ VDOE applied a 9.83 percent increase to nonpersonnel expenses in regions 7 and 8, where approximately 66 percent or more children live in a locality that is eligible for COCA.

The specific nonpersonnel costs considered for centers and family day homes varies slightly, detailed below.

Center-based nonpersonnel expense categories:

- **Education/Programming**, including
 - For children: Food/food related, classroom/child supplies, medical supplies, postage, advertising, field trips, family transportation, child assessment materials.
 - For staff: Professional consultants, training, professional development, conferences, staff travel
- **Occupancy**: Rent/lease or mortgage, real estate taxes, maintenance, janitorial, repairs, and other occupancy-related costs
- **Program Management and Administration**: Office supplies, telephone, internet, insurance, legal and professional fees, permits, fundraising, memberships, administration fees

*Family day home nonpersonnel expense categories:*²¹

- **Admin/Office**: This category includes expenses such as advertising, insurance, legal and professional fees, office supplies, and repairs, maintenance, and cleaning of the space used for child care.
- **Programmatic expenses** (calculated per child): This category includes classroom supplies, medical supplies, food, and educational supplies. This amount varies based on the number of children in the program.
- **Occupancy – Shared Use of Business and Home**: Home-based businesses may count a certain percentage of their occupancy costs as business expenses, including rent/lease/mortgage costs, property taxes, homeowners insurance, utilities, and household supplies. The model follows Internal Revenue Service

²⁰ For background on the Cost of Competing Adjustment see <http://jlarc.virginia.gov/pdfs/reports/Rpt434.pdf>

²¹ Nonpersonnel costs in the family day home model align with the expense categories that home-based providers report on their federal taxes (Internal Revenue Service Schedule C).

Form 8829 to estimate a time-space percentage for how these expenses apply to the business.

In addition, the model includes a contribution to an operating reserve fund. This is intended to cover the cost of annual contributions to an operating reserve fund—a practice that contributes to long-term financial sustainability. The amount is set at 5 percent by default.

The model uses nonpersonnel default data from the Provider Cost of Quality Calculator. Adjustments are made for Regions 7 and 8 to account for higher cost of living. Table 3 details the nonpersonnel values used in the child care center and family day home scenarios in the model.

Table 3: Nonpersonnel Expense Inputs for VDOE Child Care Cost Estimation Model

Setting	Region	Education Program Expenses	Occupancy Expenses	Program Management and Administration
Child Care Center	Regions 1-6, 9	\$1,929 per child	\$17,451 per classroom	\$281 per child
	Regions 7 & 8	\$2,116 per child	\$19,166 per classroom	\$309 per child
Family Day Home	Regions 1-6, 9	\$8,069 per home	\$5,270 per home	\$4,125 per home
	Regions 7 & 8	\$8,862 per home	\$5,788 per home	\$4,530 per home
Unlicensed FDH	Regions 1-6, 9	\$4,035 per home	\$2,635 per home	\$2,062 per home
	Regions 7 & 8	\$4,431 per home	\$2,894 per home	\$2,265 per home

Revenue

The model includes three revenue sources by default to illustrate the sufficiency of revenue streams to cover the cost of care:

Child Care Subsidy Program

Child care subsidy reimbursement rates are included in the cost model based on the rates in place at the time of model development, June 2022. These are based on the 2018 market rate survey.²² An average subsidy rate for each Ready Region is created based on the county rates within each region.

²² M. Theis, *Virginia’s Child Care Subsidy Program: 2018 Market Rate Survey Report*, Virginia Department of Social Services, 2019. Accessed: <https://www.childcare.virginia.gov/reports-resources/research-reports-and-resource/subsidy-program-market-rate-survey-report>.

Private Tuition

For children who are not in families eligible for child care subsidy, the model calculates revenue based on the most recent market price survey. The model uses the 70th percentile of the 2018 market rate survey, with an average for each Ready Region created based on the counties within each region.

Child and Adult Care Food Program

By default, the model includes revenue from the federal Child and Adult Care Food Program (CACFP). The model uses the number of children receiving subsidy to determine the proportion of children that are covered by free, reduced price, or paid rates for CACFP. The model uses the 2021-2022 CACFP rates²³ and assumes breakfast, lunch, and two snacks.

Model Output

Model results are presented as an annual, monthly, and weekly cost per child. The model also calculates the monthly gap between the estimated cost per child and the current subsidy rate.

Cost per child results are calculated based on assigning individual cost drivers to a classroom, and then divided among the children in that classroom, or dividing them across all the children in the program. Classroom personnel are first divided by classroom and then children, which results in classrooms with smaller group sizes having a higher cost per child than those with larger group sizes. Similarly, occupancy costs are first divided by classrooms and then by the children within that classroom. The cost per child for school age children is adjusted to account for the combination of full and part time that these children attend across the year. Classroom personnel costs are 100 percent allocated to the school age room, while other site-wide costs are allocated at 60 percent to school-age children, accounting for the less-than-full-time attendance.

The cost per child calculation in FDH settings does not provide a different cost for infants, toddlers, and preschoolers, due to the program operating as one single group of children rather than age-defined classrooms. School-age cost per child is lower to account for the annualized reduced number of hours that school-age children require child care.

²³ “Child and Adult Care Food Program: National Average Payment Rates, Day Care Home Food Service Payment Rates, and Administrative Reimbursement Rates for Sponsoring Organizations of Day Care Homes for the Period July 1, 2021 Through June 30, 2022,” 86 FR 35731, pp 35731-35733. Accessed: <https://www.federalregister.gov/documents/2021/07/07/2021-14435/child-and-adult-care-food-program-national-average-payment-rates-day-care-home-food-service-payment>.

APPENDIX B. COUNTIES AND LOCALITIES WITHIN EACH READY REGION

Region 1: Ready Region Southwest	Region 2: Ready Region West
<ul style="list-style-type: none"> • Bland County • Bristol City • Buchanan County • Carroll County • Dickenson County • Floyd County • Galax City • Giles County • Grayson County • Lee County • Montgomery County • Norton City • Pulaski County • Radford City • Russell County • Scott County • Smyth County • Tazewell County • Washington County • Wise County • Wythe County 	<ul style="list-style-type: none"> • Alleghany County • Bath County • Botetourt County • Buena Vista City • Covington City • Craig County • Franklin County • Henry County • Highland County • Lexington City • Martinsville City • Patrick County • Roanoke City • Roanoke County • Rockbridge County • Salem City
Region 3: Ready Region Southside	Region 4: Ready Region Central
<ul style="list-style-type: none"> • Amelia County • Amherst County • Appomattox County • Bedford County • Brunswick County • Campbell County • Charlotte County • Cumberland County • Danville City • Halifax County • Lunenburg County • Lynchburg City • Mecklenburg County • Nottoway County • Pittsylvania County • Prince Edward County 	<ul style="list-style-type: none"> • Charles City County • Chesterfield County • Colonial Heights City • Dinwiddie County • Emporia City • Goochland County • Greensville County • Hanover County • Henrico County • Hopewell City • New Kent County • Petersburg City • Powhatan County • Prince George County • Richmond City • Surry County • Sussex County

Region 5: Ready Region Southeastern	Region 6: Ready Region Chesapeake Bay		
<ul style="list-style-type: none"> • Accomack County • Chesapeake City • Franklin City • Isle of Wight County • Norfolk City • Northampton County • Portsmouth City • Southampton County • Suffolk City • Virginia Beach City 	<ul style="list-style-type: none"> • Essex County • Gloucester County • Hampton City • James City County • King and Queen County • King William County • Lancaster County • Mathews County • Middlesex County • Newport News City • Northumberland County • Poquoson City • Richmond County • Westmoreland County • Williamsburg City • York County 		
Region 7: Ready Region Capital Area	Region 8: Ready Region North Central		
<ul style="list-style-type: none"> • Alexandria City • Arlington County • Fairfax • Falls Church City 	<ul style="list-style-type: none"> • Caroline County • Culpeper County • Fauquier County • Fredericksburg City • King George County • Loudoun County • Manassas City • Manassas Park City • Prince William County • Spotsylvania County • Stafford County 		
Region 9: Ready Region Blue Ridge			
<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> • Albemarle County • Augusta County • Buckingham County • Charlottesville City • Clarke County • Fluvanna County • Frederick County • Greene County • Harrisonburg City • Louisa County • Madison County • Nelson County </td> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> • Orange County • Page County • Rappahannock County • Rockingham County • Shenandoah County • Staunton City • Warren County • Waynesboro City • Winchester City </td> </tr> </table>		<ul style="list-style-type: none"> • Albemarle County • Augusta County • Buckingham County • Charlottesville City • Clarke County • Fluvanna County • Frederick County • Greene County • Harrisonburg City • Louisa County • Madison County • Nelson County 	<ul style="list-style-type: none"> • Orange County • Page County • Rappahannock County • Rockingham County • Shenandoah County • Staunton City • Warren County • Waynesboro City • Winchester City
<ul style="list-style-type: none"> • Albemarle County • Augusta County • Buckingham County • Charlottesville City • Clarke County • Fluvanna County • Frederick County • Greene County • Harrisonburg City • Louisa County • Madison County • Nelson County 	<ul style="list-style-type: none"> • Orange County • Page County • Rappahannock County • Rockingham County • Shenandoah County • Staunton City • Warren County • Waynesboro City • Winchester City 		