Early Care and Education Program Characteristics: Effects on Expenses and Revenues

Introduction

The Provider Cost of Quality Calculator (PCQC) is an easy-to-use, dynamic Web-based tool from the Office of Child Care's (OCC) National Center on Child Care Quality Improvement (NCCCQI), available for use by state and territory policymakers to help them understand the costs associated with high-quality early care and education.[1] The tool can be used to demonstrate the financial implications for a provider to produce a given level of quality. The design of quality initiatives and financial supports can be informed by the size of the gap between revenue and expenses at different quality levels and for various provider types.

The purpose of this issue brief is to demonstrate how the PCQC can be used to model and understand the impact of program characteristics on the revenue and expenses of an early childhood center or family child care (FCC) home. The brief discusses the effects of the following variables on provider financial health and viability:

1. Participation in the Child and Adult Care Food Program (CACFP);
2. Program size and ages of children accepted into care;
3. Enrollment efficiency; and
4. Bad debt or uncollected revenues.

Understanding how these variables affect program finances can help inform policy and business decisions for child care providers and policymakers. For example, some States are promoting participation in the CACFP as an underutilized source of new revenue; this brief illustrates the impact on net revenue of participating in the program. Data illustrating the higher cost of caring for infants and toddlers can be used to better target financial resources such as grants and tiered reimbursement. The tool can also be used in child care administration courses to illustrate the impact of child care providers' business decisions (including, for example, the negative impact of low enrollment levels in a small child care center).

Content

Base Scenario

The base scenarios presented in Table 1 for centers and Table 2 for homes use revenue data (subsidy and tuition) and typical regulations averaged across all States, personnel salary data based on U.S. averages, and nonpersonnel data averaged across approximately seven States. While these baseline data are useful in illustrating the impact of various factors on costs, States are encouraged to utilize data specific to their State when available when using the PCQC. For a complete list of the assumptions built into the base scenario, please consult the Appendix at the end of this issue brief.

Base Scenario Results: Center

In the base scenario, the center is a moderate sized center for as many as 66 children enrolling infants, toddlers, and preschoolers. The program receives CACFP and the percent of children receiving subsidy is projected at 25 percent, a common proportion in settings that accept subsidy. In this scenario, a center can break even with net revenue of $2,537, which is 0.5 percent of total revenue.

Table 1. Revenue and Expense Details for Base Center Scenario

EXPENSES		REVENUE	
Salary Costs	$261,687	Subsidized Children	$143,702
Mandatory Benefits	$27,831	Tuition-based Children	$434,538
Additional Benefits	$5,850	**Tuition Total**	**$578,240**
Salary Subtotal	$299,833	CACFP	$31,188
Substitutes	$4,464	Bad Debt and Enrollment Inefficiency	-$106,159
Total Personnel Expenses	**$299,833**	**TOTAL REVENUE**	**$503,269**
Total Nonpersonnel Expenses	**$200,900**		
TOTAL EXPENSES	**$500,732**		

NET REVENUE	
Net Revenue	$2,537

Base Scenario Results: Home

Using the base scenario, the home can achieve net revenue of $34,237 or approximately 75 percent of total revenue. Because the home is a small for-profit business, this represents the provider's income, as there are no personnel expenses for a provider working alone.

Table 2. Revenue and Expense Details for Base Home Scenario

EXPENSES	
TOTAL EXPENSES	**$11,381**

REVENUE	
Subsidized Children	$13,728
Tuition-Based Children	$42,783
Tuition Total	**$56,511**
CACFP	$6,193
Bad Debt and Enrollment Inefficiency	-$17,087
TOTAL REVENUE	**$45,617**

NET REVENUE	
Net Revenue	**$34,237**
Net Revenue As Pct. of Total	**75.1%**

Estimating the Impact of Provider Characteristics

By adjusting the provider characteristics assumed in the baseline scenario, we can examine how these changes affect the revenue and expense (R&E) statement and net revenue for a center or home. This section explores adjustments to four provider characteristics: participation in the CACFP, changes to the age distribution of enrolled children, changes to the program's efficiency in maintaining full enrollment, and the proportion of uncollectible revenue (bad debt).

Child and Adult Care Food Program Participation

The United States Department of Agriculture's Child and Adult Care Food Program (CACFP) provides financial reimbursement for meals served to children at nonprofit programs or for-profit centers that enroll at least 25 percent children from low-income families. Providers may choose to accept or not accept CACFP funding. This decision has a significant impact on revenues and, therefore, financial viability.

The base scenario for centers described above assumes that the provider does accept CACFP, and that 12.5 percent of children are in families below 100 percent of Federal Poverty Income Guidelines (FPIG) (and receive free meals which are reimbursed at the highest rate), while 12.5 percent are in families between 100 percent and 185 percent of FPIG (and receive reduced price meals). The remaining children are eligible for meals at the paid meal rate (lowest reimbursement rate). If this center chose not to participate in the CACFP, it would face a net loss of nearly $24,000, or 5.0 percent of total revenues. If the home provider in the base scenario chose not to participate in the CACFP, his or her net revenue would be reduced from slightly more than $34,000 to about $29,700.

It follows that revenues increase if more children are eligible to receive CACFP at the free or reduced rates. For example, if 50 percent of children receive the CACFP subsidy (split evenly between free and reduced), a center's

net revenue increases to more than $19,000, or 3.7 percent of total revenue. Thus, the PCQC demonstrates that the decision to accept CACFP has a significant impact on a site's bottom line—especially if a large proportion of children are from low-income families.

Program Size and Ages of Children Accepted into Care

The base scenario for a center assumes an age distribution of one infant classroom, one toddler classroom, one 3-year-old preschool classroom, and one 4-year-old preschool classroom. The PCQC can model the significant impact that changing the distribution of children and the number of overall classrooms has on a center's revenue. Table 3 summarizes several scenarios that involve changing the number of classrooms and age distributions. As detailed in the table, adding a preschool classroom increases the profit to 4 percent of net revenue, from 0.5 percent in the base scenario. If the center serves infants and toddlers only, it would lose more than $109,000, or nearly 20 percent of revenues. A center that only serves preschool children also loses money, with a net revenue loss of 3.5 percent. Replacing infants with toddlers does not significantly affect revenue in this scenario because the total center capacity increases to 72, triggering the inclusion of a part-time education coordinator. Significantly increasing the size of the center to serve 234 children provides a profit of $108,629 or 6.2 percent of net revenue.

Table 3: Implications of Changing Classroom Age Distributions and Size in Centers

| Scenario | Number of Classrooms and Capacity by Age Group | | | | Total Capa-city | Number of Staff | Net Revenue | Net Revenue as % of Total |
	Infant	Toddler	3-year old	4-year-old				
Base Scenario	1 classroom 8 children	1 classroom 14 children	1 classroom 20 children	1 classroom 24 children	66	8 Teachers* FT Director 1 Admin Asst.	$2,537	0.5%
Add 4-year-old preschool classroom	1 classroom 8 children	1 classroom 14 children	1 classroom 20 children	2 classrooms 48 children	90	10 Teachers FT Director PT Ed Coord. 1.5 Admin Asst.	$26,908	4.0%
Infants and Toddlers only	3 classrooms 24 children	3 classrooms 42 children	None	None	66	12 Teachers FT Director 1 Admin Asst.	-($109,443)	-19.8%
Preschool only	None	None	2 classrooms 40 children	2 classrooms 48 children	88	8 Teachers FT Director PT Ed Coord. 1.5 Admin Asst.	-($22,189)	-3.5%
Replace infants with	None	2 classrooms	1 classroom 20	1 classroom	72	8 Teachers FT Director PT Ed	$2,966	0.5%

| Scenario | Number of Classrooms and Capacity by Age Group | | | | Total Capa-city | Number of Staff | Net Revenue | Net Revenue as % of Total |
	Infant	Toddler	3-year old	4-year-old				
toddlers		28 children	children	24 children		Coord. 1.25 Admin Asst.		
Large program	2 classrooms 16 children	3 classrooms 42 children	4 classrooms 80 children	4 classrooms 96 children	234	26 Teachers FT Director FT Ed Coord. 4 Admin Asst.	$108,629	6.2%

*Note: In our base scenario, a "coverage factor" of 20 percent is added for each teacher that accounts for costs to cover staff breaks and longer work days.

The change in net annual revenue in these scenarios is primarily caused by changes on the revenue side, which are a result of being able to serve additional children. Note also that a larger program can more easily absorb the increased costs associated with serving infants and toddlers.

In order for a center to be financially viable, it is important to enroll a mix of ages. In general, the scenarios that involve a mix of classrooms including infants make a profit, whereas those that only serve one or two age groups do not. The additional cost of serving infants, due primarily to the small class size supporting the cost of necessary teaching staff, can be offset by serving the older age groups in which larger numbers of children are supporting the cost of the teaching staff. A center that focuses only on the older age groups is able to serve more children, given the higher staff:child ratios and larger class sizes; however, its tuition and subsidy rates are lower and its larger capacity requires additional support staff.

> In order for a center to be financially viable, it is important to enroll a mix of ages.

Typically infant and toddler rates are lower than actual costs and are "cross-subsidized" by preschool and school-age rates which are higher than actual costs. This kind of pricing structure is designed to reduce the "sticker shock" of infant care tuition and ease the financial burden of families over time, as they will pay less when the child is a preschooler. Removing preschool children from centers and replacing them with younger children creates financially unsustainable operations.

For homes, changing the number of children served also has an impact on net revenue, but to a lesser degree than in centers. The base scenario is a home with capacity for eight children with one caregiver. If more than two of these children are infants, the provider is required to employ an assistant.

Table 4 summarizes several scenarios involving varying age distributions for homes. If more infants are added in place of older children, the revenue decreases from slightly more than $34,000 to $18,730 because an assistant is now required. If the provider only serves preschoolers, revenue decreases by about $1,200 due to lower subsidy and tuition rates. Because home providers are small for-profit businesses and the net revenue represents a provider's salary, a provider needs to operate at or near full capacity in order to provide a reasonable income. In the scenario where only 4 children are served, the provider makes more than $12,000 per year, which is less than minimum wage, compared to more than $18,000 in all the scenarios where 8 children are served.

> Because home providers are small for-profit businesses and the net revenue represents a provider's salary, a provider needs to operate at full or near full capacity in order to provide a reasonable income.

Table 4: Implications of Changing Classroom Age Distributions in Homes

Scenario	Number of Children and Capacity by Age Group				Total Capacity	Number of Staff (including owner)	Net Revenue
	Infant	Toddler	3-year old	4-year old			
Base Scenario	2	1	3	2	8	1	$34,237
Add infants, remove 4-year olds	4	1	3	0	8	2	$18,730
Infant and Toddler only	4	4	0	0	8	2	$19,496
Preschoolers only	0	0	4	4	8	1	$33,073
Small Program	2	2	0	0	4	1	$12,265

Enrollment Efficiency

Financial sustainability is largely determined by three factors, sometimes called the "iron triangle" of financial sustainability.[2] To be financially viable, a provider must strive for full enrollment every day, in every classroom of the center, collect tuition and fees in full and on time, and ensure the annual revenue will cover annual expenses.

Enrollment efficiency is expressed as the percentage of a provider's capacity that is currently filled. Achieving 100 percent enrollment efficiency is unattainable even for a provider with high demand supported by extensive waiting lists; such a provider might achieve 95 percent enrollment efficiency. The industry standard is to keep enrollment at or above 85 percent of desired capacity.

The base scenario described above assumes efficiency of 85 percent for centers and 75 percent for homes.[3] For a center, increasing efficiency to 95 percent increases the profit to $61,745, or 11 percent of net revenue, which is a dramatic increase from the 0.5% net revenue at 85 percent enrollment efficiency. Conversely, if the center only achieves enrollment efficiency of 80 percent, it would lose more than $27,000, or 5.7 percent of net revenue. For home providers, enrollment efficiency also has an impact, but to a lesser extent. For example, increasing efficiency to 85 percent raises the net revenue approximately $6,000 to slightly more than $40,000, while decreasing efficiency to 65 percent reduces revenue to slightly more than $28,000.

Bad Debt

Bad debt is the proportion of revenue (tuition, fees, and copayments) that is uncollectible. The industry standard is to limit bad debt to less than three percent of revenue; programs with clear tuition payment policies and effective collection practices may do better. Those that are attempting to collect large co-payments from low-income families may do worse.

Small changes in bad debt can have a significant impact on a center's profitability. For example, if bad debt increases to 5 percent of revenue, the center will lose $7,293, while if bad debt is reduced to only 2 percent of

[2] Alliance for Early Childhood Finance. (2010). The Iron Triangle: A Simple Formula for Financial Policy in ECE Programs. Retrieved from http://www.earlychildhoodfinance.org/downloads/2010/IronTriangle_10.2010.pdf.
[3] Homes tend to be less fully enrolled than centers based on data from center and home-based providers in seven States in which cost estimation studies have been done, and in the professional judgment of the developers of the PCQC.

revenue, the center increases its profit by approximately $5,000. These scenarios illustrate the importance of developing and implementing clear tuition payment policies, effective collection practices, and operating as close to enrollment capacity as possible.

Changes to bad debt also affect net revenues in homes, though not as significantly as for centers. For example, a reduction in bad debt from 3 percent to 2 percent results in additional profit of about $500, while an increase in bad debt from 3 percent to 5 percent results in a reduction in revenue of more than $1,000. These figures are less variable than in a center because of the smaller scale on which a home operates.

Conclusion

Provider revenue is impacted by a number of different factors. This brief has illustrated the effect of four key drivers of net revenue: CACFP, age distribution, enrollment efficiency, and bad debt. Providers should be encouraged to participate in CACFP, serve a mix of ages, and operate as close to capacity as possible, with effective collection practices to minimize bad debt. The PCQC can be used to model the impact of these and other factors. By using state-specific data or the defaults in the calculator along with provider-specific details, the PCQC can provide an informed estimate of the net revenue a home or a center can expect under various scenarios. States can use the tool to model the impact on providers of a change in reimbursement rates or other policies.

For additional information about the PCQC, or for additional details on the assumptions used in this analysis, contact NCCCQI at OCCQualityCenter@icfi.com.

Appendix: Base Scenario Assumptions

This appendix describes the data and assumptions used for the scenarios described in this issue brief. The assumptions are based on national data, data from center and home-based providers in seven States in which cost estimation studies have been done, and the professional judgment of the developers of the PCQC. The scenarios represent a provider in a hypothetical State and aim to illustrate the lessons that can be learned in using the PCQC with state-specific data.

Age Group Categories for Homes and Centers

The following age group categories were used:

♦ Infants –younger than18 months;

♦ Toddlers – 18 months to 3 years old;

♦ Preschool 3 – 3-year-olds; and

♦ Preschool 4 – 4-year-olds.

Expenses

Centers

Personnel

Salaries: For all positions, 80 percent of U.S. mean wage values per Bureau of Labor Statistics data are used:

♦ Director - http://www.bls.gov/oes/current/oes119031.htm

♦ Education Coordinator - http://www.bls.gov/oes/current/oes119031.htm

♦ Teacher - http://www.bls.gov/oes/current/oes252011.htm -

♦ Teacher Assistant - used *Child Care Worker* - http://www.bls.gov/oes/current/oes399011.htm

♦ Administrative Assistant - http://www.bls.gov/oes/current/oes430000.htm

	Director and Education Coordinator	Classroom Teacher	Teacher Assistant	Admin Assistant
United States Mean	$51,060	$30,750	$21,310	$34,410
Level 1 (80% of mean)	$40,337	$24,293	$16,835	$27,184

Ratios and Group Size: The base scenario includes one classroom for each of these age groups, for a total of 66 children enrolled:

♦ One infant room (staff:child ratio of 1 to 4 with a maximum group size of 8);

♦ One toddler room (ratio 1 to 7 with a maximum group size of 14);

- One room of 3-year-olds (ratio 1 to 10 with a maximum group size of 20); and

- One room of 4-year-olds (ratio 1 to 12 with a maximum group size of 24).

Number of Staff: For personnel cost drivers, the number of teachers and assistant teachers is driven by ratios, as is the number of administrative assistants (ratio of 1 to 60 children). Other required staff are calculated based on enrollment:

- A full-time director is included when there are 60 or more children enrolled.

- A part-time educational coordinator is included when there are 70 or more children enrolled.

- A full-time educational coordinator is included when there are 120 or more children enrolled.

- The base scenario has an enrollment of 66 children and therefore includes a director and a full-time administrative assistant.

- All scenarios that have an enrollment between 60 and 66 children include a director and a full-time administrative assistant.

- The scenarios that have fewer than 60 children include a part-time director and no administrative assistant.

- Scenarios with between 70 and 120 children also include a part-time education coordinator and more than one full-time administrative assistant.

- Scenarios with more than 120 children include a full-time education coordinator and at least two full-time administrative assistants.

Insurance and Paid Leave: Unemployment insurance is projected at 2 percent and workers' compensation at 1.2 percent and no disability insurance is provided. Staff have 10 paid holidays and 5 days of paid leave annually.

NonPersonnel

- The PCQC's default nonpersonnel cost driver assumptions are used.

- Homes

- Eight children with one provider: two infants, one toddler, three 3-year-olds, and two 4-year-olds.

- The assumption is that the provider is working 55 hours per week.

- Unemployment insurance is projected at 2 percent and workers' compensation at 1.2 percent, and no disability insurance is included.

- The tool's default cost driver assumptions for home providers are used for business expenses.

Revenue

- Full attendance is set at 52 weeks to model a full-day, full-year program.

- The program receives CACFP, and current CACFP rates for centers and homes are used for the 48 contiguous States. The assumption is that breakfast, lunch, and two snacks are served daily.

♦ In these scenarios, it is projected that 12.5 percent of the families have income below 100 percent FPIG and 12.5 percent are between 100-185 percent FPIG. The remainder have incomes above 185 percent FPIG.

♦ The percent of children receiving subsidy is projected at 25, a common proportion in settings that accept subsidy.

♦ Under Efficiency Factors, enrollment efficiency is set at 85 percent for centers and 75 percent for homes. The efficiency for homes is lower as they tend to be less fully enrolled than centers, based on data from center and home-based providers in seven States in which cost estimation studies have been done, and in the professional judgment of the developers of the PCQC.

♦ Bad debt is set at the default of 3 percent for both centers and homes.

Subsidy Reimbursement

♦ Subsidy reimbursement rates are derived from state data in the National Women's Law Center's *Pivot Point State Child Care Assistance Policies 2013* (available at http://www.nwlc.org/sites/default/files/pdfs/final_nwlc_2013statechildcareassistancereport.pdf).

♦ The highest and lowest monthly state reimbursement rates for centers among States for 1-year-olds and 4-year-olds were averaged for each age and calculated as weekly rates.

♦ The center rates at each level are discounted to 80 percent for homes, with the exception of infant rates, which are discounted to 70 percent (this was done so that the subsidy rates would not be higher than private tuition).

Weekly Subsidy Rates

Age Categories	Centers	Homes
Infants	$210	$144
Toddlers	$173	$138
Preschool 3	$158	$126
Preschool 4	$158	$126

Weekly Tuition

♦ Tuition levels were derived using 2012 data from Child Care Aware of America, *Parents and the High Cost of Child Care: 2013 Report* (available at http://www.usa.childcareaware.org/costofcare).

▪ The average annual cost for the highest and lowest tuition rates among States were averaged for each age and care type and then calculated as weekly rates (see "Appendix 1. Average Annual Cost of Full-Time Care by State" in the above referenced report).

Weekly Tuition

Age Categories	Centers	Homes
Infants	$210	$144
Toddlers	$173	$139
Preschool 3	$160	$134
Preschool 4	$160	$134

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