# Case Study 3: Applying the CCEE Heart Monitor to the "Sunshine Sprouts" Program

## Introduction: Understanding the CCEE Heart Monitor

The Child Care and Early Education Heart Monitor (CCEEHM) is a new, integrated system for assessing program quality. It builds upon the Contact Hour (CH) metric and the Key Indicator Methodology (KIM) to provide a unified platform for both licensors and quality assessors.

The core challenge in the Child Care and Early Education (CCEE) field is the need for a unified means to monitor both structural and process quality. Typically, these two domains are measured separately using distinct tools. The CCEEHM addresses this by unifying the monitoring and measurement of both structural and process quality into a single, integrated system.

The "heart monitor" metaphor helps clarify the system's purpose. **Structural quality** components—such as staff-child ratios, group sizes, and health and safety regulations—are essential for protecting children. However, **process quality**—the interactions between staff and children—is the true "heart" of a program. This is the "dance" between adult and child where meaningful development occurs. The CCEEHM integrates these two categories, placing the measurement of process quality squarely within the structural measurement strategy.

This document provides a practical, step-by-step case study of how the CCEEHM evaluates a fictional preschool program, "Sunshine Sprouts." This case will demonstrate a common and revealing scenario: a program with a dangerously high Contact Hour (CH) score, indicating severe overpopulation, that is simultaneously delivering a very low-quality experience. This highlights the unique insights the CCEEHM provides by looking at both quantity and quality together.

We will now introduce the fictional program at the center of our assessment.

# 1. Profile of the Fictional Program: Sunshine Sprouts

Sunshine Sprouts is a preschool classroom that will serve as the subject of our case study. To begin the CCEEHM assessment, an assessor gathers the following basic operational data, which is essential for calculating the Contact Hour metric.

| Program Data Point | Sunshine Sprouts Classroom |
|---|---|
| Facility Opens (TO1) | 6:00 AM |
| Facility Closes (TO2) | 6:00 PM |
| Number of Teaching Staff (TA) | 2 |
| Number of Children (NC) | 20 (Preschoolers) |
| Last Child Arrives (TH1) | 9:00 AM |
| First Child Leaves (TH2) | 4:00 PM |

With this profile established, we can proceed to the first part of the CCEEHM assessment: calculating the program's structural quality using the Contact Hour metric.

# 2. Part 1: Assessing Structural Quality with the Contact Hour (CH) Metric

The Contact Hour (CH) metric is the CCEEHM's tool for assessing **structural quality**. It serves as a more effective and efficient metric than traditional methods for measuring compliance with adult-child ratios and group sizes.

## The Six Core Questions

To begin, an assessor gathers the data needed for the calculation by asking six simple questions about the program's operations:

1. When does your first teaching staff arrive or when does your facility open (TO1)?
2. When does your last teaching staff leave or when does your facility close (TO2)?
3. Number of teaching/caregiving staff (TA)?
4. Number of children on your maximum enrollment day (NC)?
5. When does your last child arrive (TH1)?
6. When does your first child leave (TH2)?

## Calculating the CH for Sunshine Sprouts

Using the data gathered in the program profile, we can calculate the CH score.

- **First, we determine the total hours the facility is open (TO) and the hours at full enrollment (TH):**
  - TO = TO2 - TO1 = 6:00 PM - 6:00 AM = **12 hours**
  - TH = TH2 - TH1 = 4:00 PM - 9:00 AM = **7 hours**
- **Next, we select the appropriate formula.** Given that the hours of full enrollment (TH=7) are a significant portion of the total hours open (TO=12), this scenario is best represented by a rectangular density model, for which the appropriate formula is CH = (NC x TO) / TA;.
- **Finally, we calculate the CH score:**
  - CH = (20 children x 12 hours) / 2 staff
  - CH = 240 / 2
  - CH = 120

## Interpreting the CH Score

The raw CH score of **120** represents the program's "exposure time and density." To understand what this number means for regulatory compliance, we compare it to the Table 1: Contact Hour (CH) Conversion Table.

1. We locate the row corresponding to the number of children (**NC = 20**).
2. We then look across that row to find the maximum compliant Relatively Weighted Contact Hour (RWCH) value for a standard preschool ratio, such as 1 adult for every 10 children (1:10).
3. The table shows that for 20 children, the maximum compliant RWCH for a 1:10 ratio is **80**.

The key insight is that Sunshine Sprouts' calculated CH of 120 far exceeds the compliant value of 80. According to the CCEEHM methodology, this indicates the program is "over ratio on ACR standards, in other words, they would be overpopulated."

This high CH score corresponds to the final diagram in the "Potential Density Displays," which "clearly indicates a very high CH and non-compliance with ACR and GS."

While the CH metric has efficiently revealed a significant structural problem—overpopulation—it does not tell us about the *quality* of the interactions within the classroom. For that, we turn to the second part of the assessment.

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# 3. Part 2: Assessing Process Quality with the Program Quality Indicators (PQI)

The Program Quality Indicators (PQI) are the CCEEHM's tool for measuring **process quality**. This is the component that assesses the "heart" of the program—the nature of the staff-child interactions, the learning environment, and the curriculum.

## Illustrating Low Quality through Key Indicators

An assessor would evaluate Sunshine Sprouts against all relevant indicators. To illustrate the process, we will walk through a fictional assessment of three specific PQIs that demonstrate the program's low quality.

- **PQI 2: Stimulating and Dynamic Environment**
    - **Observation:** An assessor observes the classroom and finds very few materials accessible to children. No child artwork is displayed, and the designated learning centers are disorganized and uninviting. Of the 11 items on the checklist, only 2 are marked 'Y'.
    - **Scoring:** (2 / 11) * 100% = **18%**. Based on the scoring chart (1 = 0 to 25%), this results in a score of **Level 1**.
- **PQI 6: Educators Encourage Children to Communicate (Preschool)**
    - **Observation:** During a 15-minute observation period, the assessor notes that staff primarily give commands ("Stop that," "Time to clean up") and rarely engage in back-and-forth conversations with the children. No specific activities are used to encourage communication, and very few materials like

puppets or toy phones are accessible. Opportunities for rich, back-and-forth conversation during a block-building activity were missed entirely.
    - **Scoring:** The observations directly align with the criteria for a Level 1 score (6.1 and 6.2). The program therefore scores a **Level 1**.
- **PQI 10: Educators Speak Warmly to Children**
    - **Observation:** Over ten separate 2-minute observation periods, the assessor consistently notes that educators speak in harsh, flat tones. They frequently seem preoccupied with cleaning tasks and do not make eye contact when addressing children, even when a child was visibly distressed. The average Likert score across the ten observations is 1.2.
    - **Scoring:** An average score of 1.2 is rounded down to the nearest whole number, resulting in a score of **Level 1**.

## Summarizing the Final PQI Score

After assessing all relevant indicators for a preschool classroom, the fictional scores for Sunshine Sprouts are compiled:

- **PQI 1:** Level 1
- **PQI 2:** Level 1
- **PQI 3:** Level 1
- **PQI 4:** Level 2
- **PQI 5:** 1 Point
- **PQI 6:** Level 1
- **PQI 8:** Level 1
- **PQI 9:** Level 1
- **PQI 10:** Level 1

The total score is calculated by summing the level for each indicator: 1+1+1+2+1+1+1+1+1 = 10.

According to the Program Quality Indicators Artificial Intelligence (PQIAI) Scoring Protocol table, a total score of **10** for a preschool program (where the threshold is 15 or less) falls squarely in the **Low Quality** category.

Now that we have both the structural (CH) and process (PQI) scores, we can synthesize them to get a complete and insightful picture of the Sunshine Sprouts program.

# 4. Synthesis: The CCEEHM's Holistic Picture of Sunshine Sprouts

The power of the CCEEHM lies in its ability to integrate structural and process quality data into a single, understandable assessment.

## Summary of Findings

| Metric | Finding | Implication |
|---|---|---|
| **Contact Hour (CH)** | Score: 120 (**Very High**) | Indicates non-compliance with staff-child ratios; the classroom is overpopulated. |
| **Program Quality (PQI)** | Score: 10 (**Low Quality**) | Indicates poor interactions, an unstimulating environment, and a lack of quality curriculum. |

## The Combined Insight

Looking at either the CH or PQI score alone would provide an incomplete and potentially misleading picture. A traditional structural assessment might only note the ratio violation, while a separate process quality observation might miss the underlying structural stressor of overpopulation. The CCEEHM's integrated approach reveals the critical story for Sunshine Sprouts. This allows us to draw a direct line from the structural failure (too many children for the staff to manage effectively) to the subsequent process quality collapse (stressed, unresponsive educators who lack the capacity for warm, engaging interactions). Overpopulation is not just a compliance violation; it is the root cause of the poor developmental experience documented by the PQI score. The CCEEHM moves beyond simple compliance checking to measure the true developmental experience of the children in the program.

This holistic view is crucial for providing targeted support and making meaningful improvements.

## 5. Conclusion: Why an Integrated Approach Matters

The Sunshine Sprouts case study demonstrates how the CCEEHM can identify a program with a dangerously high CH score indicating severe overpopulation that is simultaneously providing a low-quality developmental experience (a low PQI score). This scenario, where a structural failure is intertwined with a process failure, is precisely what single-focus assessment tools often miss.

By unifying the measurement of structural and process elements, the CCEEHM provides a more cost-effective, efficient, and comprehensive understanding of program quality. This integrated picture is essential for truly understanding the challenges programs face and for implementing targeted interventions that can improve the daily experiences and long-term outcomes for children.