

REGULATORY SCIENCE RESEARCH BRIEF

Smarter Staff-to-Child Ratios: The Fiene Model

A Fairer, Time-Sensitive Method for Measuring Daycare Compliance

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THE PROBLEM: THE FLAW OF SIMPLE DIVISION

In childcare regulation, staff-to-child ratios are critical for child safety and developmental quality. However, traditional monitoring methods often measure ratios using simple division: dividing the total number of children present by the total number of teachers on-site at a single snapshot in time.

This "gross measure" is deeply flawed. It fails to account for the overall flow of the day—such as staggered staff shifts, part-time children arriving and leaving, or "vertical" age grouping (infants and preschoolers mixed in the same room). Historically, measuring these dynamics was too time-consuming for busy state licensing inspectors.

THE SOLUTION: THE 6-QUESTION INTAKE

Dr. Richard Fiene developed a mathematical model that factors both **numbers and time** into a single, rapid calculation. Instead of hours of tracking, a licensing monitor asks the daycare provider only six simple questions:

- 1

When does your first teaching staff member arrive?
- 2

When does your last teaching staff member leave?
- 3

How many teaching staff are employed?
- 4

How many children are present on your maximum enrollment day? (Including ages & staff assignments).
- 5

When does your last child arrive?
- 6

When does your first child leave?

HOW COMPLIANCE IS CHECKED

Once the monitor calculates the program's **RWCH** (or **RWCHR** range for mixed ages), they compare it against a standardized **Table of Conversions**.

This table represents the programmatic ideal where all staff and children are present for an aligned 8-hour period. If the center's computed score is **equal to or less than** the threshold in the table, they are in compliance. If it is **greater**, they are flagged as out of compliance.

REAL-WORLD EXAMPLE COMPARISON

The table below demonstrates how two different scenarios are analyzed under this model. In both cases, a monitor uses the calculations to flag non-compliance that a simple "snapshot" division might easily miss or misinterpret.

SCENARIO	INPUTS COLLECTED	FIENE MODEL CALCULATION	COMPLIANCE RESULT
Example A (Compliant)	• 35 children (Age 4) • 6 teachers • Open 11 hours (6:30 AM - 5:30 PM) • Full enrollment: 5.75 hours	• CH: 287.07 contact hours • RWCH: 47.97 weighted score	IN COMPLIANCE (Below the target table threshold of 56.00)
Example C (Non-Compliant)	• 20 children (Age 4) • 3 teachers • Open 12 hours (6:00 AM - 6:00 PM) • Full enrollment: 10.00 hours	• CH: 220.00 contact hours • RWCH: 73.33 weighted score	OUT OF COMPLIANCE (Exceeds the target table threshold of 53.00)

Based on Fiene, R. (1980). "Theoretical Model For Computing Adult-Child Ratios in Day Care Centers." National Association for Regulatory Administration (NARA) News, Vol. 1, No. 7, pp. 9-11.

STEP 1: CALCULATE CONTACT HOURS (CH)

First, calculate total contact hours—measuring the actual time coverage of care:

$$CH = \frac{1}{2} * NC * (TH + TO)$$

- **NC** = Total children present on peak day

• **TO** = Total hours the center is open

• **TH** = Total hours at full enrollment (time between the last arrival and first departure)

STEP 2: WEIGHTED CONTACT HOURS (RWCH)

Next, adjust the contact hours based on the size of the teaching staff (TA):

$$RWCH = CH * (1 / TA)$$

- **TA** = Total number of teaching staff

• For mixed-age (vertical) groups, a range formula (**RWCHR**) is used to balance varying ratio rules for infants vs. preschoolers.