# Day Care Centers: A Theoretical Model for **Computing Adult-Child** Ratios

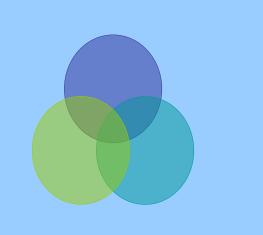
## Background

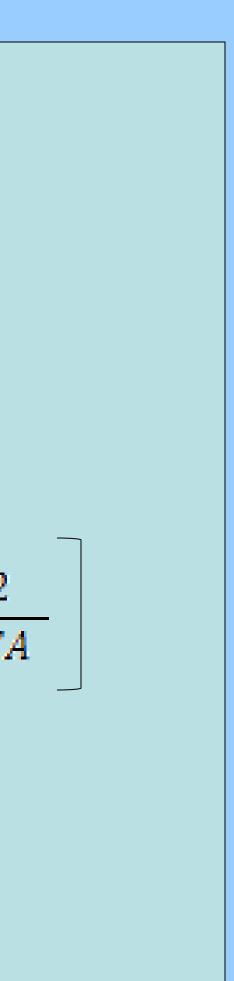
The staff-child ratio question is a very critical item when it comes to monitoring child care facilities. However, it has eluded proper measurement because of inadequate or time-consuming measures. Past methods have tried the direct approach of dividing the total number of children by the total number of teachers. This works, but does not give the overall day illustration; therefore it is only good as an incredibly gross measure. There have been discussions revolving around the dichotomous points of view of the states and the federal role in enforcing the various principles. Once it is decided what the ratios will be, how will compliance with the ratios be measured?

This is a new theoretical model for computing adult-child ratios that is not time-consuming and provides accurate information in an extremely concise fashion. With this new approach, all a day care monitor needs to do is ask six questions of the provider. Then put the data into a formula to find if the program is within compliance or not.

## Formulas

| Formula - # 1 CH         | = <u>NC (TH+TO)</u><br>2   |
|--------------------------|--|
| Formula - # 2<br>RWCH =  | $\frac{NC(TH + TO)}{2} \begin{bmatrix} 1\\ TA \end{bmatrix}$                             |
| Formula - # 3<br>RWCHR = | $\left[\frac{\sum NC_0 (TH_0 + TO_0)}{2}\right] \left[\frac{\sum \frac{2}{T}}{T}\right]$ |
| Formula - # 4            | $NC_0 = NCp + NCi + NCs$   |
| Formula - # 5            | $TH_0 = THp + THi + THs$   |
| Formula - # 6            | $TO_0 = TOp + TOi + TOs$   |





## <sup>3</sup> Adult-Child Ratio Table

| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$  | TABLE OF CONVERSIONSTO = 8TH = 8FOR ADULT-CHILD RATIO |  |  |  |
|---|---|--|--|--|
| 18888+88216161616+1616324242424+2424432323232+3232540404040+4040648244848+3637-48756285656+4243-56864323264+3233-48972363672+3637-541080404080+4041-601188294444+3738-441296324848+4041-4813104355252+4344-5214112375656+3738-46  | RELATIVELY WEIGHTED<br>CONTACT HOURS RANGE            |  |  |  |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | S   |  |  |  |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 8+  |  |  |  |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 16+   |  |  |  |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | 24+   |  |  |  |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | 32+<br>40+  |  |  |  |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 40+<br>49+  |  |  |  |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 57+   |  |  |  |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 49+   |  |  |  |
| 1188294444+3738-44441296324848+4041-484413104355252+4344-524414112375656+3738-4644  | 55+   |  |  |  |
| 12   96   32   48   48+   40   41-48   4     13   104   35   52   52+   43   44-52   4     14   112   37   56   56+   37   38-46   4  | 61+   |  |  |  |
| 13   104   35   52   52+   43   44-52 | 45+   |  |  |  |
| 14 112 37 56 56+ 37 38-46   | 49+<br>52+  |  |  |  |
|   | 53+<br>47+  |  |  |  |
|   | 47+<br>51+  |  |  |  |
|   | 54+   |  |  |  |
|   | 57+   |  |  |  |
| 18 144 36 48 72+ 42 43-55   | 56+   |  |  |  |
|   | 58+   |  |  |  |
|   | 61+   |  |  |  |
|   | 47+   |  |  |  |
|   | 48+<br>50+  |  |  |  |
|   | 501<br>54+  |  |  |  |
|   | 55+   |  |  |  |
|   | 52+   |  |  |  |
| 27 216 36 54 72+ 45 46-55   | 56+   |  |  |  |
|   | 57+   |  |  |  |
|   | 54+   |  |  |  |
|   | 62+<br>50+  |  |  |  |
|   | 50+<br>58+  |  |  |  |
|   | 60+   |  |  |  |
|   | 61+   |  |  |  |
| 35 280 40 56 70+ 48 49-56   | 57+   |  |  |  |
|   | 61+   |  |  |  |
|   | 62+   |  |  |  |
|   | 58+<br>60+  |  |  |  |
|   | 60+<br>61+  |  |  |  |
|   | 52+   |  |  |  |
|   | 53+   |  |  |  |
| 43 344 38 49 69+ 43 44-54   | 55+   |  |  |  |
|   | 56+   |  |  |  |
|   | 57+   |  |  |  |
|   | 57+<br>58+  |  |  |  |
|   | 58+<br>59+  |  |  |  |
|   | 60+   |  |  |  |
|   | 62+   |  |  |  |
|   | 54+   |  |  |  |
|   | 55+   |  |  |  |
|   | 57+   |  |  |  |
|   | 57+<br>58+  |  |  |  |
|   | 58+<br>57+  |  |  |  |
|   | 58+   |  |  |  |
|   | 59+   |  |  |  |
|   | 60+   |  |  |  |
| 60 480 40 53 80+ 46 47-60 0   | 61+   |  |  |  |

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## 4 More Details

The six basic questions are as follows:

- 1) When does your first staff member (teaching) arrive?
- 2) When does your last staff member (teaching) leave?
- 3) What is the number of teaching staff?
- 4) What is the total number of children present on your maximum enrollment day? What are their ages? Which staff members are assigned to each age group (if there is vertical grouping)?
- 5) When does your last child arrive? 6) When does your first child leave (if vertical grouping, give breakdown)
- according to age)?

After these questions are answered, then the day care monitor will compute the number of contact hours (CH) between staff and children using the above formulas. In Formula # 1; NC = total number of children present on the maximum enrollment day; TO = total number of hours the center is open; TH = total number of hours at full enrollment; CH = contact hours between staff and children in any type of caring arrangement. After the CH is computed, the data is then put into another formula, which will determine the relatively weighted contact hours for horizontal grouping (RWCH), or the relatively weighted contact hours range (RWCHR) for a vertically grouped program.

In the formulas above,  $NC_0$  = total number of children on the maximum enrollment day.  $TO_0$  = total number of hours the center is open.  $TH_0$  = total number of hours at full enrollment. RWCH = relatively weighted contact hours – indicator of compliance for horizontally grouped programs. RWCHR = relatively weighted contact hours range – indicator of compliance for vertically grouped programs. TA = total number of teaching staff. NCi =total number of infants. NCp = total number of preschoolers. <math>NCs = totalnumber of school age children. THp = total number of hours at fullenrollment with preschoolers. THi = total number of hours at full enrollmentwith infants-toddlers. TH $\mathfrak{s}$  = total number of hours at full enrollment with school-age children. Once the RWCH or the RWCHR figures are computed, it can be determined if the programs are within compliance by using Table of Conversions for RWCH and RWCHR (see Table).

This Table is computed from an ideal where TO and TH both equal eight hours. In other words, all staff and children arrive and leave at the same time, which is an ideal programmatic set-up. By using the Table of Conversions, it is relatively easy to compute if a program is within compliance. In the Table of Conversions I = infant-toddlers; P =preschoolers; S = school-age children. For example, in the Table of Conversions, look under the NC column and match the number with the same on in the formula. Then look under the CH column and match the number with the same one in the formula. Now look under RWCH in the P (preschoolers) column. In reading the Table of Conversions, if a program received a score equal to or less than the score on the Table it will always be within compliance. If the program receives a score greater than the score on the Table for that particular category, then the program will always be out of compliance. The aspect of the above theoretical model is that it takes both time and numbers of staff into account. It is a simple one-shot mathematical calculation, and it can determine if a program is within compliance or not.

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