

Suppression Rules for School Report Card

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Suppression Rules for Computations with dichotomous (Yes or No) proportions such as graduation rate, number/% ELs excluded, number/% alternately assessed students, % tested, etc.

N = Denominator (e.g. Expected Graduates—number of students in adjusted cohort)
 n = Numerator (e.g. Actual Graduates—number of students in adjusted cohort who graduated within 4 years or 5 years, for 4-year and 5-year rates, respectively).
 p = Percent of Graduates = Graduation Rate

Small cell sizes: less than the N-size for confidentiality:

- If $N < 10$ suppress n, N, p and populate the cell with "N<10"

Fuzzy Suppression to Avoid Indirect Disclosure and/or Uniformity of Result

NOTE: We use fuzzy suppression to prevent indirect disclosure of cell sizes less than 10 or indirect disclosure through uniformity such as top or bottom values (0 or 100%) that would reveal all students belong to a category (graduated or not graduated). For fuzzy suppression we use the size of the denominator (N) to create uncertainty around the number of students contributing to the rate or percent and when the rate or percent equals the top or bottom percent value (0 or 100).

1. If $10 \leq N < 200$ and if $(n < 10 \text{ or } N - n < 10)$ then suppress n and N by populating cell with "RV" for Restricted Value and populate the graduation rate of p in the cell.
 - a. You suppress n here because it is less than 10
 - b. You suppress N because otherwise they can calculate n by knowing p and N .
 - c. You don't suppress p because it is the statistic of interest to be reported.
2. If $10 \leq N < 200$ and if $(p < 5\% \text{ or } p > 95\%)$ then suppress n and N by populating cell with "RV" for Restricted Value and populate the graduation rate cell with $< 5\%$ or $> 95\%$, respectively.
 - a. You suppress n here because either the n is less than 10 (when $p < 5\%$) or the $N - n$ is less than 10 (when $p > 95\%$).
 - b. You suppress N because you need to create uncertainty to avoid disclosing a small n through backwards calculation.
 - c. You publish p as $< 5\%$ or $> 95\%$ to avoid publishing a uniform statistic that discloses that all students met a particular status.

For the higher N ranges below, you can publish the N if you suppress n and fuzzy the p to achieve the same protection for higher N cases.

3. If $200 \leq N < 400$ and if $(p < 5\% \text{ or } p > 95\%)$ then suppress n by populating cell with "RV" for Restricted Value and populate the graduation rate cell with $< 5\%$ or $> 95\%$, respectively.
4. If $400 \leq N < 1000$ and if $(p < 3\% \text{ or } p > 97\%)$ then suppress n by populating cell with "RV" for Restricted Value and populate the graduation rate cell with $< 3\%$ or $> 97\%$, respectively.
5. If $N \geq 1000$ and if $(p < 1\% \text{ or } p > 99\%)$ then suppress n by populating cell with "RV" for Restricted Value and populate the graduation rate cell with $< 1\%$ or $> 99\%$, respectively.

These rules address concerns about direct or indirect disclosure within the row.

- For subgroups that are not additive (Hispanic + African American + White may not equal All Students) you may not need to do suppression across multiple rows.
- It may still be necessary to look at fuzzy suppression and/or complimentary suppression for cross-tab rows that are mutually exclusive such as Non-CWD + CWD = All students, Male + Female = All students.

Examples:

Case 1: $N=30, n = 5, p = 16.67\%$ $N = RV, n = RV, p = 16.67\%$

Case 2a: $N=199, n = 9, p = 4.5\%$ $N = RV, n = RV, p < 5.00\%$

Case 2b: $N = 150, n = 150, p = 100\%$ $N = RV, n = RV, p > 95.00\%$

Case 3: $N= 367, n = 356, p = 97.00$ $N = 367, n = RV, p > 95.00\%$

Case 4: $N=500$, $n = 10$, $p = 2.00\%$ $N = 500$, $n = RV$, $p < 3.00\%$

Case 5: $N = 1200$, $n = 1,189$, $p = 99.08\%$ $N = 1200$, $n = RV$, $p > 99.00\%$

Suppression Rules for Computations such as Mean/Averages such as for Value-Added Growth Scores

For mean or average statistics you can suppress all data for N's less than 10 with "N < 10" including suppressing the mean.

Suppression Rules for Computations with Multiple Categories (Three or More Levels) of proportions such as number and percent of students at each Achievement Level

N = Denominator (Number of students tested)

n = Numerator (Number of students at an achievement level. For example, 3 students *In Need of Support*, 6 students *Close*, 10 students *Ready*, 11 students *Exceeds*).

p = Percent (Percent of students at each achievement level)

Small cell sizes: less than the N-size for confidentiality:

- If $N < 10$ suppress n, N, p and populate all cells with "N<10"

Fuzzy Suppression to Avoid Indirect Disclosure and/or Uniformity of Result

NOTE: We use fuzzy suppression to prevent indirect disclosure in additional cases such as when $n < 10$ or indirect disclosure through uniformity such as top or bottom values (0 or 100%) or achievement level cells with 0 or 100 that would reveal all students belong to a category (e.g., In Need of Support). For fuzzy suppression we use the size of the denominator (N) to create uncertainty around the number of students contributing to the achievement level percent and when the achievement level percent equals the top or bottom percent value (0 or 100).

- If $10 \leq N < 200$ and if ($n < 10$) then suppress n and N by populating cell with "RV" for Restricted Value and populate p in the achievement level cell. See *Complimentary Suppression for Multiple Levels* for additional suppression requirements in cases of $n < 10$.
- If $10 \leq N < 200$ and if ($p < 5\%$ or $p > 95\%$) then suppress n and N by populating cell with "RV" for Restricted Value and populate the achievement level cell for p with $< 5\%$ or $> 95\%$, respectively.

- If $200 \leq N < 400$ and if ($p < 5\%$ or $p > 95\%$) then suppress n and N by populating cell with “RV” for Restricted Value and populate the achievement level cell for p with $< 5\%$ or $> 95\%$, respectively.
- If $400 \leq N < 1000$ and if ($p < 3\%$ or $p > 97\%$) then suppress n and N by populating cell with “RV” for Restricted Value and populate the achievement level cell for p with $< 3\%$ or $> 97\%$, respectively.
- If $N \geq 1000$ and if ($p < 1\%$ or $p > 99\%$) then suppress n and N by populating cell with “RV” for Restricted Value and populate the achievement level cell for p with $< 1\%$ or $> 99\%$, respectively.

Complementary Suppression for Multiple Levels

Complementary Suppression must also be employed when the values remaining in the row might allow for mathematically deducing the value in a restricted cell.

If only 1 achievement level is suppressed (which must have the smallest n among the four achievement levels), then suppress the level where n is the second smallest. Both levels will have n and p marked as ‘RV’ for restricted value.