

MEDHX Scoring

The MEDHX CRF has a number of “top-level” questions (e.g., “Have you ever been diagnosed with having any psychiatric disease?”), followed by questions on individual sub-categories of the top-level question (e.g., “Have you ever been diagnosed with depression disorder?”) In theory, if a person answered “Yes” to the top-level question, there should be at least 1 “Yes” answer among the sub-questions. Similarly, if a person answered “No” to the top-level question, there should be NOT be any “Yes” answers among the sub-questions. However, actual responses received were not always consistent in that regard, and thus we used imputation follows:

- if any sub-question is answered as Yes, then change the top-level to Yes
- If no sub-qs are yes and top level is No, then change all sub-qs to No (not missing)
- If top-level is missing and all sub-qs are No, then change the top-level to No

To put this strategy into effect, do the following for each top-level/sub-level set:

1. Change all sub-level 88's to missing
2. Calculate the sum of all the sub-levels to see if it is ≥ 1 or not
3. Count the number of missing responses among the sub-qs
4. If the sum of the sub-levels is ≥ 1 , then
 - a. if the top-level is 1, no further action needed
 - b. if the top-level is 0, 88, or missing, change the top level to 1
5. If the sum of the sub-levels is 0 or missing, then
 - a. if the top-level is 0, then set all sub-levels that are missing to 0
 - b. if the top-level is 1, leave all as is
 - b. if the top-level is 88 or missing, then
 - i. If there are no missing sub-qs, then set the top-level to 0
 - ii. If there are one or more missing sub-qs, set the top-level to missing

Example SAS Code:

```
array cvds(5) dx_hypertension dx_high_chol dx_cad dx_stroke dx_arrhythmia;
do a = 1 to 5;
    if cvds(a) in (88 99) then cvds(a) = .;
end;
sum_cvds = sum(of dx_hypertension dx_high_chol dx_cad dx_stroke dx_arrhythmia);
nummiss_cvds = nmiss(of dx_hypertension dx_high_chol dx_cad dx_stroke
    dx_arrhythmia);
if sum_cvds ge 1 then dx_cvd = 1;
else do;
    if dx_cvd eq 0 then do;
        do b = 1 to 5;
            cvds(b) = 0;
        end;
    end;
    else if dx_cvd in (88 .) and nummiss_cvds eq 0 then dx_cvd = 0;
    else if dx_cvd in (88 .) and nummiss_cvds ge 1 then dx_cvd = .;
end;
```