Risk Adjustment Technical Steps and Risk Factor Specifications

OASIS-D
Last Updated: October 15, 2018

I.   Background

The Centers for Medicare & Medicaid Services (CMS) maintains, re-evaluates and implements changes to the OASIS data item set and also develops, implements, maintains and re-evaluates quality measures that are reflective of quality of care provided by home health agencies (HHAs) in the home setting. For outcome measures, the re-evaluation process includes evaluating and updating, as needed, the risk adjustment models used to adjust for patient characteristics at admission, to ensure they are adequately robust and allow for valid comparison across providers. OASIS-based home health outcome measures are risk-adjusted using OASIS items that are statistically significant and clinical relevant predictors of the outcome.

In the CY2018 Home Health Prospective Payment System (HH PPS) final rule (82 FR 51715), CMS finalized removal of 70 data elements from 24 OASIS items collected at the start or resumption of a care episode, some of which were used in the risk adjustment models for OASIS-based outcome measures. As a result, the risk adjustment models required recalibrating to include only OASIS items that will be present on OASIS-D, which has an effective date of January 1, 2019. More information on item removals by OASIS data collection time point is available here.

The OASIS-based outcome measures for which the updated risk adjustment models apply starting January 1, 2019 are:

- Improvement in Ambulation/Locomotion
- Improvement in Bathing
- Improvement in Bed Transferring
- Improvement in Bowel Incontinence
- Improvement in Confusion Frequency
- Improvement in Dyspnea
- Improvement in Lower Body Dressing
- Improvement in Upper Body Dressing
- Improvement in Management of Oral Medications
- Improvement in Pain Interfering with Activity
- Improvement in Status of Surgical Wounds
- Improvement in Toilet Transferring
- Discharge to Community

Section II describes the technical steps for calculating risk adjusted measures and describes the development the risk adjustment models. **Section III** contains the detailed specifications for each of the risk factors used in the risk adjustment models.

The document **Recalibrated Risk Adjustment Model_Risk Factors_Model Fit_Coefficients.pdf** contains the list of risk factors, model fit statistics, and the estimated covariate coefficients for each measure.

II.   Technical Approach

Calculating Risk Adjusted Quality Measures

The following steps are used to calculate the each quality measure:

A. Calculate the agency observed score **(steps 1 through 3)**

Step 1. Calculate the denominator count:

Calculate the total number of quality episodes with a selected target OASIS assessment in the measure time window that do not meet the exclusion criteria following each measure's specifications.[1]

Step 2. Calculate the numerator count:

Calculate the total number of quality episodes in the denominator whose OASIS assessments indicates meeting numerator criteria, following each measure's specifications.

Step 3. Calculate the agency's observed rate:

Divide the agency's numerator count by its denominator count to obtain the agency's observed rate; that is, divide the result of **step 2** by the result of **step 1**.

B. Calculate the predicted rate for each quality episode **(steps 4 and 5)**

Step 4. Determine presence or absence of the risk factors for each patient (technical specifications for risk factors are in **Section III**):

If dichotomous risk factor covariates are used, assign covariate values, either '0' for covariate condition not present or '1' for covariate condition present, for each quality episode for each of the covariates as reported at SOC/ROC, as described in the section above.

Step 5. Calculate the predicted rate for each quality episode with the following formula:

[1] Episode-level predicted QM rate = $1/[1+e^{-x}]$

Where e is the base of natural logarithms and X is a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [2], below).

[2] Quality measure triggered (yes=1, no=0) = B0 + B1*COVA + B2*COVB + ... BN*COVN

Where B0 is the logistic regression constant, B1 is the logistic regression coefficient for the first covariate, COVA is the episode-level rate for the first covariate, B2 is the logistic regression coefficient for the second covariate, and COVB is the episode-level rate for the second

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[1] Measure specifications are available in the Downloads section of the Home Health Quality Measures website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Measures.html

covariate, etc. The regression constant and regression coefficients are provided in *Recalibrated Risk Adjustment Model_Risk Factors_Model Fit_Coefficients.pdf.*[2]

C. Calculate the agency predicted rate **(step 6)**

Step 6. Once a predicted QM rate has been calculated for all quality episodes, calculate the mean agency-level predicted QM rate by averaging all episode-level predicted values for that agency.

D. Calculate national predicted rate **(step 7)**

Step 7. Calculate the national predicted rate:

Once a predicted QM value has been calculated for all episodes, calculate the mean national-level predicted QM rate by averaging all episode-level predicted values. Note that the sample will include only those quality episodes with non-missing data for the component covariates.

E. Calculate the agency's risk-adjusted rate **(step 8)**

Step 8. Calculate the agency-level risk-adjusted rate based on the: agency-level observed quality measure rate (step 3), agency-level mean predicted quality measure rate **(step 6)**, and national mean predicted QM rate **(step 7)**, using the following formula: agency risk

adjusted rate = agency observed rate + national predicted rate – agency predicted rate

If the adjusted rate is greater than 100%, the adjusted rate is set to 100%. Similarly, if the result is a negative number the adjusted rate is set to zero

Identifying Risk Factors

The risk adjustment model was developed using OASIS national repository data from assessments submitted between January 1, 2016 and December 31, 2016 (~6.4 million episodes of care). The population of 6.4 million episodes for calendar year 2016 was split in half such that 3.2 million episodes were used as a developmental sample and 3.2 million episodes were used as a validation sample. The following process was used to identify unique contributing risk factors to the prediction model:

1. Risk factors were identified based on OASIS items that will remain following the OASIS-D transition. The statistical properties of the items were examined to specify risk factors (e.g., item responses were grouped when there was low prevalence of certain responses). Team clinicians then reviewed all risk factors for clinical relevance and redefined or updated risk factors as necessary. These risk factors were divided into 35 content focus groups (e.g., functional status, ICD 10-based conditions, etc.). Where possible, risk factors were defined such that they flagged mutually exclusive subgroups within each content focus group. When modelling these risk factors, the exclusion category was set to be either the risk factor flag for most independent or the most frequent within each content focus group.

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[2] *Recalibrated Risk Adjustment Model_Risk Factors_Model Fit_Coefficients.pdf* containing risk factors, model fit statistics, and estimated coefficients is available in the Downloads section of the Home Health Quality Measures website: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Measures.html

2. A logistic regression specification was used to estimate coefficients among the full set of candidate risk factors. Those risk factors that are statistically significant at probability <0.001 are kept for further review.

3. The list of risk factors that achieved the probability <0.001 level were reviewed. For content focus groups that are explicitly tiered by increasing severity, either all risk factors are included within a content focus group or none of them. For example, if response option levels 1 and 2 for M1800 Grooming were statistically significant at probability <0.001 for a particular outcome, then response option level 3 for M1800 Grooming was added to the list even if it was not statistically significant. If none of the risk factors within an explicitly tiered content focus group is statistically significant at <0.001, the entire content focus group is removed from the model.

4. A logistic regression was computed on the list of risk factors that had achieved probability <0.001 in Step 3 above.

5. Goodness of fit statistics (McFadden's R^2 and C-statistic) were calculated to measure how well the predicted values generated by the prediction model were related to the actual outcomes. Separate bivariate correlations were constructed between the risk factors and the outcomes to confirm the sign and strength of the estimated coefficients in the logistic model.

6. The initial model was reviewed by a team of at least three experienced home health clinicians. Each risk factor was reviewed for its clinical plausibility. Clinicians were asked about the direction indicated by the coefficient in the risk adjustment model and how it compares to their perceived bivariate relationship given their experience treating patients in the home. Risk factors that were not clinically plausible were revised or eliminated if revisions were not possible.

7. The risk factors that were deemed not clinically plausible were revised or eliminated, and Steps 3, 4, and 5 in this process were repeated. The resulting logistic regression equation was designated as the risk adjustment model for the outcome.

8. The risk adjustment model was applied to the validation sample and goodness of fit statistics were computed. The statistics were similar to the goodness of fit statistics computed with the development sample. As additional testing, HHAs were stratified across several observable characteristics, and the distributions of the risk-adjusted outcomes were checked to confirm that values remained similar across strata.

III. Risk Factor Technical Specifications

OASIS data items are referred to in this documentation using field names specified in OASIS Data Submission Specifications published by CMS. "[1]" is appended to the field name if the value is taken from the beginning of episode assessment (Start or Resumption of Care), and "[2]" is appended if the value is to be taken from the assessment conducted at the end of the episode (Discharge, Transfer, or Death).

1. Age

IF M0100_ASSMT_REASON[1] = 01
THEN

    IF MONTH(M0030_START_CARE_DT[1]) > MONTH(M0066_PAT_BIRTH_DT[1]) **OR** (MONTH(M0030_START_CARE_DT[1]) = MONTH(M0066_PAT_BIRTH_DT[1]) **AND** DAY(M0030_START_CARE_DT[1]) >= DAY(M0066_PAT_BIRTH_DT[1]))
    THEN

        AGE = YEAR(M0030_START_CARE_DT[1]) – YEAR(M0066_PAT_BIRTH_DT[1])
    ELSE

        AGE = YEAR(M0030_START_CARE_DT[1]) – YEAR(M0066_PAT_BIRTH_DT[1])-1
    END IF

ELSE

    IF MONTH(M0032_ROC_DT[1]) > MONTH(M0066_PAT_BIRTH_DT[1])**OR** (MONTH(M0032_ROC_DT[1]) = MONTH(M0066_PAT_BIRTH_DT[1]) **AND** DAY(M0032_ROC_DT[1]) >= DAY(M0066_PAT_BIRTH_DT[1]))
    THEN

        AGE = YEAR(M0032_ROC_DT[1]) – YEAR(M0066_PAT_BIRTH_DT[1])
    ELSE

        AGE = YEAR(M0032_ROC_DT[1]) – YEAR(M0066_PAT_BIRTH_DT[1])-1
    END IF

END IF

Age: 0-54
IF (AGE >= 18 **AND** AGE <= 54)
THEN

    AGE_0_54 = 1
ELSE

    AGE_0_54 = 0
END IF

Age: 55-59
IF (AGE >= 55 **AND** AGE <= 59)
THEN

    AGE_55_59 = 1
ELSE

    AGE_55_59 = 0
END IF

Age: 60-64
IF (AGE >= 60 **AND** AGE <= 64)
THEN
    AGE_60_64 = 1
ELSE
    AGE_60_64 = 0
END IF

Age: 65-69
IF (AGE >= 65 **AND** AGE <= 69)
THEN
    AGE_65_69 = 1
ELSE
    AGE_65_69 = 0
END IF

Age: 70-74
IF (AGE >= 70 **AND** AGE <= 74)
THEN
    AGE_70_74 = 1
ELSE
    AGE_70_74 = 0
END IF

Age: 75-79
IF (AGE >= 75 **AND** AGE <= 79)
THEN
    AGE_75_79 = 1
ELSE
    AGE_75_79 = 0
END IF

Age: 80-84
IF (AGE >= 80 **AND** AGE <= 84)
THEN
    AGE_80_84 = 1
ELSE
    AGE_80_84 = 0
END IF

Age: 85-89
IF (AGE >= 85 **AND** AGE = 89)
THEN
    AGE_85_89 = 1
ELSE
    AGE_85_89 = 0
END IF

Age: 90-94
IF (AGE >= 90 **AND** AGE <= 94)
THEN
       AGE_90_94 = 1
ELSE
       AGE_90_94 = 0
END IF

Age: 95+
IF (AGE >= 95)
THEN
       AGE_95PLUS = 1
ELSE
       AGE_95PLUS = 0
END IF

2. Gender

IF M0069_PAT_GENDER[1] = 2
THEN
       GENDER = 1
ELSE
       GENDER = 0
END IF

Patient is Female
IF GENDER = 1
THEN
       GENDER_FEMALE = 1
ELSE
       GENDER_FEMALE = 0
END IF

Patient is Male
IF GENDER = 0
THEN
       GENDER_MALE = 1
ELSE
       GENDER_MALE = 0
END IF

3. Payment Source

Payment Source: Medicare FFS only (%)

IF M0150_CPAY_MCARE_FFS[1] = 1 **AND** M0150_CPAY_NONE[1] = 0 **AND**
M0150_CPAY_MCARE_HMO[1] = 0 **AND** M0150_CPAY_MCAID_FFS[1] = 0 **AND**
M0150_CPAY_MCAID_HMO[1] = 0 **AND** M0150_CPAY_WRKCOMP[1] = 0 **AND**
M0150_CPAY_TITLEPGMS[1] = 0 **AND** M0150_CPAY_OTH_GOVT[1] = 0 **AND**
M0150_CPAY_PRIV_INS[1] = 0 **AND** M0150_CPAY_PRIV_HMO[1] = 0 **AND**
M0150_CPAY_SELFPAY[1] = 0 **AND** M0150_CPAY_OTHER[1] = 0 **AND** M0150_CPAY_UK [1] = 0
THEN
      PAY_MCARE_FFS = 1
ELSE
      PAY_MCARE_FFS = 0
END IF

Payment Source: Medicare HMO only (%)
IF M0150_CPAY_MCARE_HMO[1] = 1 **AND** M0150_CPAY_NONE[1] = 0 **AND**
M0150_CPAY_MCARE_FFS[1] = 0 **AND** M0150_CPAY_MCAID_FFS[1] = 0 **AND**
M0150_CPAY_MCAID_HMO[1] = 0 **AND** M0150_CPAY_WRKCOMP[1] = 0 **AND**
M0150_CPAY_TITLEPGMS[1] = 0 **AND** M0150_CPAY_OTH_GOVT[1] = 0 **AND**
M0150_CPAY_PRIV_INS[1] = 0 **AND** M0150_CPAY_PRIV_HMO[1] = 0 **AND**
M0150_CPAY_SELFPAY[1] = 0 **AND** M0150_CPAY_OTHER[1] = 0 **AND** M0150_CPAY_UK[1] = 0
THEN
      PAY_MCARE_HMO = 1
ELSE
      PAY_MCARE_HMO = 0
END IF

Payment Source: Medicare and Medicaid (%)
IF ((M0150_CPAY_MCARE_FFS[1] = 1 **AND** M0150_CPAY_MCAID_FFS[1] = 1) **OR**
(M0150_CPAY_MCARE_FFS[1] = 1 **AND** M0150_CPAY_MCAID_HMO[1] = 1) **OR**
(M0150_CPAY_MCARE_HMO[1] = 1 **AND** M0150_CPAY_MCAID_FFS[1] = 1) **OR**
(M0150_CPAY_MCARE_HMO[1] = 1 **AND** M0150_CPAY_MCAID_HMO[1] = 1) **OR**
(M0150_CPAY_MCARE_FFS[1] = 1 **AND** M0150_CPAY_MCARE_HMO[1] = 1 **AND**
M0150_CPAY_MCAID_FFS[1] = 1) **OR** (M0150_CPAY_MCARE_FFS[1] = 1 **AND**
M0150_CPAY_MCARE_HMO[1] = 1 **AND** M0150_CPAY_MCAID_HMO[1] = 1) **OR**
(M0150_CPAY_MCARE_FFS[1] = 1 **AND** M0150_CPAY_MCAID_FFS[1] = 1 **AND**
M0150_CPAY_MCAID_HMO[1] = 1) **OR** (M0150_CPAY_MCARE_HMO[1] = 1 **AND**
M0150_CPAY_MCAID_FFS[1] = 1 **AND** M0150_CPAY_MCAID_HMO[1] = 1)) **AND**
M0150_CPAY_NONE[1] = 0 **AND** M0150_CPAY_WRKCOMP[1] = 0
THEN
      PAY_MCAREANDMCAID = 1
ELSE
      PAY_ MCAREANDMCAID = 0
END IF

Payment Source: Medicaid Only (%)
IF (M0150_CPAY_MCAID_FFS[1] = 1 **OR** M0150_CPAY_MCAID_HMO[1] = 1) **AND**
M0150_CPAY_NONE[1] = 0 **AND** M0150_CPAY_MCARE_FFS[1] = 0 **AND**
M0150_CPAY_MCARE_HMO[1] = 0 **AND** M0150_CPAY_WRKCOMP[1] = 0 **AND**

M0150_CPAY_TITLEPGMS[1] = 0 **AND** M0150_CPAY_OTH_GOVT[1] = 0 **AND**
M0150_CPAY_PRIV_INS[1] = 0 **AND** M0150_CPAY_PRIV_HMO[1] = 0 **AND**
M0150_CPAY_SELFPAY[1] = 0 **AND** M0150_CPAY_OTHER[1] = 0 **AND** M0150_CPAY_UK[1] = 0
THEN

      PAY_MCAID_ONLY = 1

ELSE

      PAY_MCAID_ONLY = 0

END IF

Payment Source: Other Combinations (%)
IF PAY_MCARE_FFS = 0 **AND** PAY_MCARE_HMO = 0 **AND** PAY_MCAREANDMCAID = 0 **AND**
PAY_MCAID_ONLY = 0
THEN

      PAY_OTHER_COMBO = 1

ELSE

      PAY_OTHER_COMBO = 0

END IF

4. SOC/ROC and Admission Source

Discharged from facility in past 14 days
IF (M1000_DC_IPPS_14_DA[1] = 01 **OR** M1000_DC_SNF_14_DA[1] = 01 **OR** M1000_DC_IRF_14_DA[1] = 01 **OR**
M1000_DC_LTC_14_DA[1] = 01 **OR** M1000_DC_LTCH_14_DA[1] = 01 **OR** M1000_DC_PSYCH_14_DA[1] = 01)
THEN

      INPT_FACILITY = 1

ELSE

      INPT_FACILITY = 0

END IF

Start of Care - Further visits planned : Discharged from facility in past 14 days
IF (M0100_ASSMT_REASON[1] = 01 **AND** INPT_FACILITY = 1)
THEN

      SOC_INPT = 1

ELSE

      SOC_INPT = 0

END IF

Start of Care - Further visits planned : Not Discharged from facility in past 14 days
IF (M0100_ASSMT_REASON[1] = 01 **AND** INPT_FACILITY = 0)
THEN

      SOC_COMM = 1

ELSE

      SOC_COMM = 0

END IF

Resumption of care (after inpatient stay)
IF (M0100_ASSMT_REASON[1] = 3)

THEN

      ROC = 1

ELSE

      ROC = 0

END IF

5. Post-Acute Facility Admission Source

Not discharged from post-acute facility past 14 days

IF M1000_DC_SNF_14_DA[1] = 1 **OR** M1000_DC_IRF_14_DA[1] = 1 **OR** M1000_DC_NF_14_DA[1] = 1 **OR** M1000_DC_LTCH_14_DA[1] = 1 **OR** M1000_DC_PSYCH_14_DA[1] = 1

THEN

      INPT_NOPOSTACUTE = 0

ELSE

      INPT_NOPOSTACUTE = 1

END IF

Discharged from post-acute facility past 14 days

IF M1000_DC_SNF_14_DA[1] = 1 **OR** M1000_DC_IRF_14_DA[1] = 1 **OR** M1000_DC_NF_14_DA[1] = 1 **OR** M1000_DC_LTCH_14_DA[1] = 1 **OR** M1000_DC_PSYCH_14_DA[1] = 1

THEN

      INPT_POSTACUTE = 1

ELSE

      INPT_POSTACUTE = 0

END IF

6. IV Therapies

Receiving any nutrition or infusion therapy

IF M1030_THH_PAR_NUTRITION[1] = 1 **OR** M1030_THH_ENT_NUTRITION[1] = 1 **OR** M1030_THH_IV_INFUSION[1] = 1

THEN

      IVTHER_ANY = 1

ELSE

      IVTHER_ANY = 0

END IF

None of the Above

IF M1030_THH_NONE_ABOVE[1] = 1

THEN

      IVTHER_NONE = 1

ELSE

      IVTHER_NONE = 0

END IF

7. Risk of Hospitalization

Risk of Hospitalization: History of falls in past 12 months (%)
IF M1033_HOSP_RISK_HSTRY_FALLS[1] = 1
THEN

RISK_HSTRY_FALLS = 1

ELSE

RISK_HSTRY_FALLS = 0

END IF

Risk of Hospitalization: Unintentional weight loss in past 12 months (%)
IF M1033_HOSP_RISK_WEIGHT_LOSS[1] = 1
THEN

RISK_WEIGHTLOSS = 1

ELSE

RISK_WEIGHTLOSS = 0

END IF

Risk of Hospitalization: Multiple hospitalizations in past 6 months (%)
IF M1033_HOSP_RISK_MLTPL_HOSPZTN[1] = 1
THEN

RISK_MLTPL_HOSPZTN = 1

ELSE

RISK_MLTPL_HOSPZTN = 0

END IF

Risk of Hospitalization: Multiple ED visits in past 6 months (%)
IF M1033_HOSP_RISK_MLTPL_ED_VISIT[1] = 1
THEN

RISK_ED = 1

ELSE

RISK_ED = 0

END IF

Risk of Hospitalization: Recent decline mental/emotional decline in past 3 months (%)
IF M1033_HOSP_RISK_MNTL_BHV_DCLN[1] = 1
THEN

RISK_RCNT_DCLN = 1

ELSE

RISK_RCNT_DCLN = 0

END IF

Risk of Hospitalization: Difficulty complying with medical instruction in past 3 months (%)
IF M1033_HOSP_RISK_COMPLIANCE[1] = 1
THEN

RISK_COMPLY = 1

ELSE

RISK_COMPLY = 0

END IF

Risk of Hospitalization: Taking five or more medications (%)
IF M1033_HOSP_RISK_5PLUS_MDCTN[1] = 1
THEN
      RISK_5PLUS_MDCTN = 1
ELSE
      RISK_5PLUS_MDCTN = 0
END IF

Risk of Hospitalization: Reports Exhaustion (%)
IF M1033_HOSP_RISK_CRNT_EXHSTN[1] = 1
THEN
      RISK_EXHAUST = 1
ELSE
      RISK_EXHAUST = 0
END IF

Risk of Hospitalization: Other unlisted risk factors (%)
IF M1033_HOSP_RISK_OTHR_RISK[1] = 1
THEN
      RISK_OTHR = 1
ELSE
      RISK_OTHR = 0
END IF

Risk of Hospitalization: None of the Above (%)
IF M1033_HOSP_RISK_NONE_ABOVE[1] = 1
THEN
      RISK_NONE = 1
ELSE
      RISK_NONE = 0
END IF

8. Availability of Assistance

Availability of Assistance
Around the clock (%)
IF M1100_PTNT_LVG_STUTN[1] = 01 **OR** M1100_PTNT_LVG_STUTN[1] = 06 **OR**
M1100_PTNT_LVG_STUTN[1] = 11
THEN
      ASSIST_ARND_CLOCK = 1
ELSE
      ASSIST_ARND_CLOCK = 0
END IF

Regular daytime (%)

IF M1100_PTNT_LVG_STUTN[1] = 02 **OR** M1100_PTNT_LVG_STUTN[1] = 07 **OR**
M1100_PTNT_LVG_STUTN[1] = 12
THEN
      ASSIST_REGDAY = 1
ELSE
      ASSIST_REGDAY = 0
END IF

Regular nighttime (%)
IF M1100_PTNT_LVG_STUTN[1] = 03 **OR** M1100_PTNT_LVG_STUTN[1] = 08 **OR**
M1100_PTNT_LVG_STUTN[1] = 13
THEN
      ASSIST_REGNITE = 1
ELSE
      ASSIST_REGNITE = 0
END IF

Occasional/None (%)
IF M1100_PTNT_LVG_ STUTN[1] = 04 **OR** M1100_PTNT_LVG_STUTN[1] = 05 **OR**
M1100_PTNT_LVG_STUTN[1] = 09 **OR** M1100_PTNT_LVG_STUTN[1] = 10 **OR**
M1100_PTNT_LVG_STUTN[1] = 14 **OR** M1100_PTNT_LVG_STUTN[1] = 15
THEN
      ASSIST_OCC_NONE = 1
ELSE
      ASSIST_OCC_NONE = 0
END IF

Living Arrangement
Lives alone (%)
IF M1100_PTNT_LVG_STUTN[1] = 01 **OR** M1100_PTNT_LVG_STUTN[1] = 02 **OR**
M1100_PTNT_LVG_STUTN[1] = 03 **OR** M1100_PTNT_LVG_STUTN[1] = 04 **OR**
M1100_PTNT_LVG_STUTN[1] = 05
THEN
      LIV_ALONE = 1
ELSE
      LIV_ALONE = 0
END IF

Lives with Others (%)
IF M1100_PTNT_LVG_STUTN[1] = 06 **OR** M1100_PTNT_LVG_STUTN[1] = 07 **OR**
M1100_PTNT_LVG_STUTN[1] = 08 **OR** M1100_PTNT_LVG_STUTN[1] = 09 **OR**
M1100_PTNT_LVG_STUTN[1] = 10
THEN
      LIV_OTHERS = 1
ELSE
      LIV_OTHERS = 0
END IF

Lives in a Congregate Situation (%)
IF M1100_PTNT_LVG_STUTN[1] = 11 **OR** M1100_PTNT_LVG_STUTN[1] = 12 **OR**
M1100_PTNT_LVG_STUTN[1] = 13 **OR** M1100_PTNT_LVG_STUTN[1] = 14 **OR**
M1100_PTNT_LVG_STUTN[1] = 15
THEN
      LIV_CONGREGATE = 1
ELSE
      LIV_CONGREGATE = 0
END IF

9. Pain

Frequency of Pain: No Pain
IF (M1242_PAIN_ACTVTY_MVMT[1] = 00)
THEN
      PAIN0 = 1
ELSE
      PAIN0 = 0
END IF

Frequency of Pain: Pain does not interfere with activity
IF (M1242_PAIN_ACTVTY_MVMT[1] = 01)
THEN
      PAIN1 = 1
ELSE
      PAIN1 = 0
END IF

Frequency of Pain: Less often than daily
IF (M1242_PAIN_ACTVTY_MVMT[1] = 02)
THEN
      PAIN2 = 1
ELSE
      PAIN2 = 0
END IF

Frequency of Pain: Daily, but not constant
IF (M1242_PAIN_ACTVTY_MVMT[1] = 03)
THEN
      PAIN PAIN3 = 1
ELSE
      PAIN3 = 0
END IF

Frequency of Pain: Constant
IF (M1242_PAIN_ACTVTY_MVMT[1] = 04)

THEN

   PAIN4 = 1

ELSE

   PAIN4 = 0

END IF

10. Pressure Ulcers

None or Stage I Present

IF M1306_UNHLD_STG2_PRSR_ULCR[1] = 00 **AND**
(M1322_NBR_PRSULC_STG1[1] = 00 **OR** M1322_NBR_PRSULC_STG1[1] = 01 **OR**
M1322_NBR_PRSULC_STG1[1] = 02 **OR** M1322_NBR_PRSULC_STG1[1] = 03 **OR**
M1322_NBR_PRSULC_STG1[1] = 04)

THEN

   PU_NONE_STG1ONLY = 1

ELSE

   PU_NONE_STG1ONLY = 0

END IF

Stage II or Higher and Unstageable Present

IF M1311_NBR_PRSULC_STG2_A1[1] > 0 **OR** M1311_NBR_PRSULC_STG3_B1[1] > 0 **OR**
M1311_NBR_PRSULC_STG4_C1[1] > 0 **OR** M1311_NSTG_DRSG_D1[1] > 0 **OR**
M1311_NSTG_CVRG_E1[1] > 0 **OR** M1311_DEEP_TSUE _F1[1] > 0

THEN

   PU_STG2PLUS_UNSTG = 1

ELSE

   PU_STG2PLUS_UNSTG = 0

END IF

11. Stasis Ulcers

Stasis Ulcer: No observable stasis ulcers

IF M1330_STAS_ULCR_PRSNT[1] = 00 **OR** M1330_STAS_ULCR_PRSNT[1] = 03

THEN

   STAS_ULCR_NONE = 1

ELSE

   STAS_ULCR_NONE = 0

END IF

Stasis Ulcer: 1 observable stasis ulcer only

IF M1332_NBR_STAS_ULCR[1] = 1

THEN

   STAS_ULCR_OBS_1 = 1

ELSE

   STAS_ULCR_OBS_1 = 0

END IF

Stasis Ulcer: Multiple observable stasis ulcers
IF M1332_NBR_STAS_ULCR[1] = 2 **OR** M1332_NBR_STAS_ULCR[1] = 3 **OR** M1332_NBR_STAS_ULCR[1] = 4
THEN
       STAS_ULCR_OBS_2PLUS = 1
ELSE
       STAS_ULCR_OBS_2PLUS = 0
END IF

12. Surgical Wounds

Status of Surgical Wound: None
IF M1342_STUS_PRBLM_SRGCL_WND[1] = MISSING
THEN
       SRG_WND_OBS_NONE = 1
ELSE
       SRG_WND_OBS_NONE = 0
END IF

Status of Surgical Wound: Newly Epithelialized
IF M1342_STUS_PRBLM_SRGCL_WND[1] = 00
THEN
       SRG_WND_OBS_EPI = 1
ELSE
       SRG_WND_OBS_EPI = 0
END IF

Status of Surgical Wound: Fully granulating or early/partial granulation
IF M1342_STUS_PRBLM_SRGCL_WND[1] = 01 **OR** M1342_STUS_PRBLM_SRGCL_WND[1] = 02
THEN
       SRG_WND_OBS_GRAN = 1
ELSE
       SRG_WND_OBS_GRAN = 0
END IF

Status of Surgical Wound: Not healing
IF M1342_STUS_PRBLM_SRGCL_WND[1] = 03
THEN
       SRG_WND_OBS_NOHEAL = 1
ELSE
       SRG_WND_OBS_NOHEAL = 0
END IF

13. Dyspnea

Dyspnea: Not short of breath
IF (M1400_WHEN_DYSPNEIC[1] = 00)
THEN

DYSP0 = 1
ELSE
DYSP0 = 0
END IF

Dyspnea: Walking more than 20 feet, climbing stairs
IF (M1400_WHEN_DYSPNEIC[1] = 01)
THEN
DYSP1 = 1
ELSE
DYSP1 = 0
END IF

Dyspnea: Moderate exertion
IF (M1400_WHEN_DYSPNEIC[1] = 02)
THEN
DYSP2 = 1
ELSE
DYSP2 = 0
END IF

Dyspnea: Minimal to no exertion
IF (M1400_WHEN_DYSPNEIC[1] = 03 **OR** M1400_WHEN_DYSPNEIC[1] = 04)
THEN
DYSP34 = 1
ELSE
DYSP34 = 0
END IF

14. Urinary Status

Urinary incontinence/catheter: None
IF M1610_UR_INCONT[1] = 00
THEN
URINCONT_NONE = 1
ELSE
URINCONT_NONE = 0
END IF

Urinary incontinence/catheter: Incontinent
IF M1610_UR_INCONT[1] = 01
THEN
URINCONT_INCONT = 1
ELSE
URINCONT_INCONT = 0
END IF

Urinary incontinence/catheter: Catheter
IF M1610_UR_INCONT[1] = 02
THEN
      URINCONT_CATH = 1
ELSE
      URINCONT_CATH = 0
END IF

15. Bowel Incontinence

Bowel incontinence Frequency: Never or Very Rare
IF M1620_BWL_INCONT[1] = 00 **OR** M1620_BWL_INCONT[1] = UK
THEN
      BWL_NONE_UK = 1
ELSE
      BWL_NONE_UK = 0
END IF

Bowel incontinence Frequency: Less than once a week
IF M1620_BWL_INCONT[1] = 01
THEN
      BWL_FR1 = 1
ELSE
      BWL_FR1 = 0
END IF

Bowel incontinence Frequency: One to Three times a week
IF M1620_BWL_INCONT[1] = 02
THEN
      BWL_FR2 = 1
ELSE
      BWL_FR2 = 0
END IF

Bowel incontinence Frequency: Four to six times a week or more
IF M1620_BWL_INCONT[1] = 03 **OR** M1620_BWL_INCONT[1] = 04 **OR** M1620_INCONT[1] = 05
THEN
      BWL_FR345 = 1
ELSE
      BWL_FR345 = 0
END IF

Bowel incontinence Frequency: Ostomy for bowel elimination
IF M1620_BWL_INCONT[1] = NA
THEN
      BWL_OSTOMY = 1
ELSE

```
        BWL_OSTOMY = 0
END IF
```

16. Cognitive function

Cognitive Functioning: Alert and focused
IF M1700_COG_FUNCTION[1] = 00
THEN
        COGN0 = 1
ELSE
        COGN0 = 0
END IF

Cognitive Functioning: Requires prompting under stress
IF M1700_COG_FUNCTION[1] = 01
THEN
        COGN1 = 1
ELSE
        COGN1 = 0
END IF

Cognitive Functioning: Requires assist in special circumstances
IF M1700_COG_FUNCTION[1] = 02
THEN
        COGN2 = 1
ELSE
        COGN2 = 0
END IF

Cognitive Functioning: Requires considerable assist/totally dependent
IF M1700_COG_FUNCTION[1] = 03 **OR** M1700_COG_FUNCTION[1] = 04
THEN
        COGN34 = 1
ELSE
        COGN34 = 0
END IF

17. Confusion

Confused: Never
IF M1710_WHEN_CONFUSED[1] = 0 **OR** M1710_WHEN_CONFUSED[1] = NA
THEN
        CONF0 = 1
ELSE
        CONF0 = 0
END IF

Confused: In new or complex situations
IF M1710_WHEN_CONFUSED[1] = 01
THEN

       CONF1 = 1

ELSE

       CONF1 = 0

END IF

Confused: Sometimes
IF M1710_WHEN_CONFUSED[1] = 02 **OR** M1710_WHEN_CONFUSED[1] = 03
THEN

       CONF23 = 1

ELSE

       CONF23 = 0

END IF

Confused: Constantly
IF M1710_WHEN_CONFUSED[1] = 04
THEN

       CONF4 = 1

ELSE

       CONF4 = 0

END IF

18. Anxiety

Anxiety: None of the time
IF M1720_WHEN_ANXIOUS[1] = 00 **OR** M1720_WHEN_ANXIOUS[1] = NA
THEN

       ANX0 = 1

ELSE

       ANX0 = 0

END IF

Anxiety: Less often than daily
IF M1720_WHEN_ANXIOUS[1] = 01
THEN

       ANX1 = 1

ELSE

       ANX1 = 0

END IF

Anxiety: Daily, but not constantly
IF M1720_WHEN_ANXIOUS[1] = 02
THEN

       ANX2 = 1

ELSE

ANX2 = 0
END IF

Anxiety: All of the time
IF M1720_WHEN_ANXIOUS[1] = 03
THEN

ANX3 = 1
ELSE

ANX3 = 0
END IF

19. Depression Screening (PHQ-2 Score)

Set PHQ-2 scores to missing value for episodes without PHQ-2 Screenings
IF M1730_STDZ_DPRSN_SCRNG[1] = 00 **OR** M1730_STDZ_DPRSN_SCRNG[1] = 02 **OR**
M1730_STDZ_DPRSN_SCRNG[1] = 03
THEN

M1730_PHQ2_LACK_INTRST[1] = .
M1730_PHQ2_DPRSN[1] = .
END IF

No PHQ-2 Screen or Unable to Respond
IF M1730_STDZ_DPRSN_SCRNG[1] = 00 **OR** (M1730_STDZ_DPRSN_SCRNG[1] = 01 **AND**
(M1730_PHQ2_LACK_INTRST[1] = NA **OR** M1730_PHQ2_DPRSN[1] = NA)
THEN

PHQ2_NA = 1
ELSE

PHQ2_NA = 0
END IF

PHQ-2 Score: 3-6
IF PHQ2_NA = 1
THEN

PHQ2_SCOR_3PLUS = 0
ELSE

IF (VAL(M1730_PHQ2_DPRSN[1]) + VAL(M1730_PHQ2_LACK_INTRST [1])) >= 3 **OR**
M1730_STDZ_DPRSN_SCRNG = 2
THEN

PHQ2_SCOR_3PLUS = 1
ELSE

PHQ2_SCOR_3PLUS = 0
END IF
END IF

PHQ-2 Score: 1 or 2
IF PHQ2_NA = 1
THEN

PHQ2_SCOR_12 = 0
ELSE

        IF (VAL(M1730_PHQ2_DPRSN[1]) + VAL(M1730_PHQ2_LACK_INTRST [1])) = 1 **OR**
        (VAL(M1730_PHQ2_DPRSN[1]) + VAL(M1730_PHQ2_LACK_INTRST [1])) = 2
        THEN
                PHQ2_SCOR_12 = 1
        ELSE
                PHQ2_SCOR_12 = 0
        END IF
END IF

PHQ-2 Score: 0 or alt screen does not indicate further evaluation
IF PHQ2_NA = 1
THEN
        PHQ2_SCOR_0 = 0
ELSE

        IF (VAL(M1730_PHQ2_DPRSN[1]) + VAL(M1730_PHQ2_LACK_INTRST [1])) = 0 **OR**
        M1730_STDZ_DPRSN_SCRNG[1] = 03
        THEN
                PHQ2_SCOR_0 = 1
        ELSE
                PHQ2_SCOR_0 = 0
        END IF
END IF

20. Behavioral Symptoms

Behavioral: None
IF M1740_BD_NONE[1] = 01
THEN
        BEHAV_NONE = 1
ELSE
        BEHAV_NONE = 0
END IF

Behavioral: Memory Deficit
IF M1740_BD_MEM_DEFICIT[1] = 01
THEN
        BEHAV_MEM_DEFICIT = 1
ELSE
        BEHAV_MEM_DEFICIT = 0
END IF

Behavioral: Impaired decision making
IF M1740_BD_IMP_DECISN[1] = 01
THEN
        BEHAV_IMPR_DECISN = 1

ELSE

      BEHAV_IMPR_DECISN = 0

END IF

Behavioral: Verbally disruptive, physical aggression, disruptive, or delusional
IF M1740_BD_VERBAL[1] = 01 **OR** M1740_BD_PHYSICAL[1] = 01 **OR**
M1740_BD_SOC_INAPPRO[1] = 01 **OR** M1740_BD_DELUSIONS[1] = 01
THEN

      BEHAV_OTHR = 1

ELSE

      BEHAV_OTHR = 0

END IF

21. Disruptive Behavior Frequency

Frequency of Disruptive Behavior: Never
IF M1745_BEH_PROB_FREQ[1] = 00
THEN

      BEHPFR0 = 1

ELSE

      BEHPFR0 = 0

END IF

Frequency of Disruptive Behavior: Once a month or less
IF M1745_BEH_PROB_FREQ[1] = 01 **OR** M1745_BEH_PROB_FREQ[1] = 02
THEN

      BEHPFR12 = 1

ELSE

      BEHPFR12 = 0

END IF

Frequency of Disruptive Behavior: Several times a month
IF M1745_BEH_PROB_FREQ[1] = 03
THEN

      BEHPFR3 = 1

ELSE

      BEHPFR3 = 0

END IF

Frequency of Disruptive Behavior: Several times a week
IF M1745_BEH_PROB_FREQ[1] = 4
THEN

      BEHPFR4 = 1

ELSE

      BEHPFR4 = 0

END IF

Frequency of Disruptive Behavior: At least once daily
IF M1745_BEH_PROB_FREQ[1] = 5
THEN
> BEHPFR5 = 1
ELSE
> BEHPFR5 = 0
END IF

22. Grooming

Grooming: Able to groom self unaided
IF M1800_CRNT_GROOMING[1] = 00
THEN
> GROOM0 = 1
ELSE
> GROOM0 = 0
END IF

Grooming: Grooming utensils must be placed within reach
IF M1800_CRNT_GROOMING[1] = 01
THEN
> GROOM1 = 1
ELSE
> GROOM1 = 0
END IF

Grooming: Assistance neeeded
IF M1800_CRNT_GROOMING[1] = 02
THEN
> GROOM2 = 1
ELSE
> GROOM2 = 0
END IF

Grooming: Entirely dependent upon someone else
IF M1800_CRNT_GROOMING[1] = 03
THEN
> GROOM3 = 1
ELSE
> GROOM3 = 0
END IF

23. Upper Body Dressing

Ability to Dress Upper Body: No help needed
IF M1810_CRNT_DRESS_UPPER[1] = 00
THEN
> UPPER0 = 1

ELSE

UPPER0 = 0

END IF

Ability to Dress Upper Body: Needs clothing laid out
IF M1810_CRNT_DRESS_UPPER[1] = 01
THEN

UPPER1 = 1

ELSE

UPPER1 = 0

END IF

Ability to Dress Upper Body: Needs assistance needed putting on clothing
IF M1810_CRNT_DRESS_UPPER[1] = 02
THEN

UPPER2 = 1

ELSE

UPPER2 = 0

END IF

Ability to Dress Upper Body: Entirely dependent upon someone else
IF M1810_CRNT_DRESS_UPPER[1] = 03
THEN

UPPER3 = 1

ELSE

UPPER3 = 0

END IF

24. Lower Body Dressing

Ability to Dress Lower Body: No help needed
IF M1820_CRNT_DRESS_LOWER[1] = 00
THEN

LOWER0 = 1

ELSE

LOWER0 = 0

END IF

Ability to Dress Lower Body: Needs clothing/shoes laid out
IF M1820_CRNT_DRESS_LOWER[1] = 01
THEN

LOWER1 = 1

ELSE

LOWER1 = 0

END IF

Ability to Dress Lower Body: Assist needed putting on clothing

IF M1820_CRNT_DRESS_LOWER[1] = 02

THEN

      LOWER2 = 1

ELSE

      LOWER2 = 0

END IF

Ability to Dress Lower Body: Entirely dependent upon someone else

IF M1820_CRNT_DRESS_LOWER[1] = 03

THEN

      LOWER3 = 1

ELSE

      LOWER3 = 0

END IF

25. Bathing

Bathing: Independently in shower/tub

IF M1830_CRNT_BATHING[1] = 00

THEN

      BATH0 = 1

ELSE

      BATH0 = 0

END IF

Bathing: With the use of devices in shower/tub

IF M1830_CRNT_BATHING[1] = 01

THEN

      BATH1 = 1

ELSE

      BATH1 = 0

END IF

Bathing: With intermittent assistance in shower/tub

IF M1830_CRNT_BATHING[1] = 02

THEN

      BATH2 = 1

ELSE

      BATH2 = 0

END IF

Bathing: Participates with supervision in shower/tub

IF M1830_CRNT_BATHING[1] = 03

THEN

      BATH3 = 1

ELSE

      BATH3 = 0

END IF

Bathing: Independent at sink, in chair, or on commode
IF M1830_CRNT_BATHING[1] = 04
THEN

       BATH4 = 1

ELSE

       BATH4 = 0

END IF

Bathing: Participates with assist at sink, in char, or commode
IF M1830_CRNT_BATHING[1] = 05
THEN

       BATH5 = 1

ELSE

       BATH5 = 0

END IF

Bathing: Unable to participate; bathed totally by another
IF M1830_CRNT_BATHING[1] = 06
THEN

       BATH6 = 1

ELSE

       BATH6 = 0

END IF

26. Toilet Transferring

Toilet Transferring: No assistance needed
IF M1840_CRNT_TOILTG[1] = 00
THEN

       TLTTRN0 = 1

ELSE

       TLTTRN0 = 0

END IF

Toilet Transferring: To/from/on/off toilet with human assist
IF M1840_CRNT_TOILTG[1] = 01
THEN

       TLTTRN1 = 1

ELSE

       TLTTRN1 = 0

END IF

Toilet Transferring: Able to self-transfer to bedside commode
IF M1840_CRNT_TOILTG[1] = 02
THEN

TLTTRN2 = 1
ELSE
            TLTTRN2 = 0
END IF

Toilet Transferring: Unable to transfer to/from toilet or commode
IF M1840_CRNT_TOILTG[1] = 03 **OR** M1840_CRNT_TOILTG[1] = 04
THEN
            TLTTRN34 = 1
ELSE
            TLTTRN34 = 0
END IF

27. Toilet Hygiene

Toilet Hygiene Assistance: None needed
IF M1845_CRNT_TOILTG_HYGN[1] = 00
THEN
            TLTHYG0 = 1
ELSE
            TLTHYG0 = 0
END IF

Toilet Hygiene Assistance: Needs supplies laid out
IF M1845_CRNT_TOILTG_HYGN[1] = 01
THEN
            TLTHYG1 = 1
ELSE
            TLTHYG1 = 0
END IF

Toilet Hygiene Assistance: Needs assistance
IF M1845_CRNT_TOILTG_HYGN[1] = 02
THEN
            TLTHYG2 = 1
ELSE
            TLTHYG2 = 0
END IF

Toilet Hygiene Assistance:
IF M1845_CRNT_TOILTG_HYGN[1] = 03
THEN
            TLTHYG3 = 1
ELSE
            TLTHYG3 = 0
END IF

28. Transferring

Transferring: No assistance needed
IF M1850_CRNT_TRNSFRNG[1] = 00
THEN
       TRNFR0 = 1
ELSE
       TRNFR0 = 0
END IF

Transferring: With minimal human assist or with device
IF M1850_CRNT_TRNSFRNG[1] = 01
THEN
       TRNFR1 = 1
ELSE
       TRNFR1 = 0
END IF

Transferring: Bears weight and pivots only
IF M1850_CRNT_TRNSFRNG[1] = 02
THEN
       TRNFR2 = 1
ELSE
       TRNFR2 = 0
END IF

Transferring: Unable or bedfast
IF M1850_CRNT_TRNSFRNG[1] = 03 **OR** M1850_CRNT_TRNSFRNG[1] = 04 **OR**
M1850_CRNT_TRNSFRNG[1] = 05
THEN
       TRNFR345 = 1
ELSE
       TRNFR345 = 0
END IF

29. Ambulation

Ambulation/Locomotion: Walk Independently
IF M1860_CUR_AMBLTN[1] = 00
THEN
       AMB0 = 1
ELSE
       AMB0 = 0
END IF

Ambulation/Locomotion: One-handed device on all surfaces
IF M1860_CUR_AMBLTN[1] = 01
THEN

AMB1 = 1
ELSE
                AMB1 = 0
END IF

Ambulation/Locomotion: Two-handed device/human assist on steps
IF M1860_CUR_AMBLTN[1] = 02
THEN
                AMB2 = 1
ELSE
                AMB2 = 0
END IF

Ambulation/Locomotion: Walks only with supervision or assist
IF M1860_CUR_AMBLTN[1] = 03
THEN
                AMB3 = 1
ELSE
                AMB3 = 0
END IF

Ambulation/Locomotion: Chairfast or bedfast
IF M1860_CUR_AMBLTN[1] = 04 **OR** M1860_CUR_AMBLTN[1] = 05 **OR** M1860_CUR_AMBLTN[1] = 06
THEN
                AMB456 = 1
ELSE
                AMB456 = 0
END IF

30. Feeding or Eating

Eating: Independent
IF M1870_CRNT_FEEDING[1] = 0
THEN
                EAT0 = 1
ELSE
                EAT0 = 0
END IF

Eating: Requires set up, intermittent assist or modified consistency
IF M1870_CRNT_FEEDING[1] = 1
THEN
                EAT1 = 1
ELSE
                EAT1 = 0
END IF

Eating: Unable to feed self and must be assisted throughout meal
IF M1870_CRNT_FEEDING[1] = 2
THEN
      EAT2 = 1
ELSE
      EAT2 = 0
END IF

Eating: Requires tube feedings, or no nutrients orally or via tube
IF M1870_CRNT_FEEDING[1] = 03 **OR** M1870_CRNT_FEEDING[1] = 04 **OR** M1870_CRNT_FEEDING[1] = 05
THEN
      EAT345 = 1
ELSE
      EAT345 = 0
END IF

31. Oral Medication Management

Management of Oral Meds: Independent
IF M2020_CRNT_MGMT_ORAL_MDCTN[1] = 00
M2020_CRNT_MGMT_ORAL_MDCTN[1] = NA **OR**
M2020_CRNT_MGMT_ORAL_MDCTN[1] = ^ **OR**
M2020_CRNT_MGMT_ORAL_MDCTN[1] = MISSING
THEN
      ORMED0 = 1
ELSE
      ORMED0 = 0
END IF

Management of Oral Meds: Advance dose prep/chart needed
IF M2020_CRNT_MGMT_ORAL_MDCTN[1] = 01
THEN
      ORMED1 = 1
ELSE
      ORMED1 = 0
END IF

Management of Oral Meds: Reminders needed
IF M2020_CRNT_MGMT_ORAL_MDCTN[1] = 02
THEN
      ORMED2 = 1
ELSE
      ORMED2 = 0
END IF

Management of Oral Meds: Unable
IF M2020_CRNT_MGMT_ORAL_MDCTN[1] = 03

THEN

      ORMED3 = 1

ELSE

      ORMED3 = 0

END IF

32. Injectable Medication Management

Management of Injectable Meds: Independent (excluded)

IF M2030_CRNT_MGMT_INJCTN_MDCTN[1] = 0 **OR** M2030_CRNT_MGMT_INJCTN_MDCTN[1] = NA **OR**
M2030_CRNT_MGMT_INJCTN_MDCTN[1] = ^ **OR** M2030_CRNT_MGMT_INJCTN_MDCTN[1] = - **OR**
M2030_CRNT_MGMT_INJCTN_MDCTN[1] = MISSING

THEN

      INJECT0 = 1

ELSE

      INJECT0 = 0

END IF

Management of Oral Meds: Advance dose prep/chart needed

IF M2030_CRNT_MGMT_INJCTN_MDCTN[1] = 1 **OR** M2030_CRNT_MGMT_INJCTN_MDCTN[1] = 2 **OR**
M2030_CRNT_MGMT_INJCTN_MDCTN[1] = 3

THEN

      INJECTANY = 1

ELSE

      INJECTANY = 0

END IF

33. Supervision and Safety Assistance

None needed

IF M2102_CARE_TYPE_SRC_SPRVSN[1] = 00

THEN

      SPRVSN_ NONE_NEEDED = 1

ELSE

      SPRVSN_ NONE_NEEDED = 0

END IF

Caregiver currently provides

IF M2102_CARE_TYPE_SRC_SPRVSN[1] = 01

THEN

      SPRVSN_CG_PROVIDES = 1

ELSE

      SPRVSN_CG_PROVIDES = 0

END IF

Caregiver training needed

IF M2102_CARE_TYPE_SRC_SPRVSN[1] = 02

THEN

      SPRVSN_NEED_TRAINING = 1

ELSE

      SPRVSN_NEED_TRAINING = 0

END IF

Uncertain/unlikely to be provided

IF M2102_CARE_TYPE_SRC_SPRVSN[1] = 03 **OR** M2102_CARE_TYPE_SRC_SPRVSN[1] = 04 **OR** M2102_CARE_TYPE_SRC_SPRVSN[1] = MISSING

THEN

      SPRVSN_CG_UNCERTAIN_NONE = 1

ELSE

      SPRVSN_CG_UNCERTAIN_NONE = 0

END IF

34. Therapy Visits

Therapy Amounts: None

IF M2200_THER_NEED_NBR[1] = 0 **OR** M2200_THER_NEED_NBR[1] = NA

THEN

      THER_NONE = 1

ELSE

      THER_NONE = 0

END IF

Therapy Amounts: Low

IF VAL(M2200_THER_NEED_NBR[1]) >= 1 **AND** VAL(M2200_THER_NEED_NBR[1]) < 5

THEN

      THER_LOW_LT5 = 1

ELSE

      THER_LOW_LT5 = 0

END IF

Therapy Amounts: Medium

IF VAL(M2200_THER_NEED_NBR[1]) >= 5 **AND** VAL(M2200_THER_NEED_NBR[1]) <= 13

THEN

      THER_MED_5_13 = 1

ELSE

      THER_MED_5_13 = 0

END IF

Therapy Amounts: High

IF VAL(M2200_THER_NEED_NBR[1]) > 13

THEN

      THER_HIGH_GT13 = 1

ELSE

      THER_HIGH_GT13 = 0

END IF

35. Home Care Diagnoses

Note: Several intermediate variables are calculated for use in the calculation of these measures.

HC_DIAG1 = M1021_PRIMARY_DIAG_ICD[1]
HC_DIAG2 = M1023_OTH_DIAG1_ICD[1]
HC_DIAG3 = M1023_OTH_DIAG2_ICD[1]
HC_DIAG4 = M1023_OTH_DIAG3_ ICD [1]
HC_DIAG5 = M1023_OTH_DIAG4_ICD[1]
HC_DIAG6 = M1023_OTH_DIAG5_ICD[1]

Infections/parasitic diseases (%)
IF (HC_DIAG1 >= "A00" and HC_DIAG1 <= "B99") **OR** (HC_DIAG2 >= "A00" and HC_DIAG2 <= "B99") **OR** (HC_DIAG3 >= "A00" and HC_DIAG3 <= "B99") **OR** (HC_DIAG4 >= "A00" and HC_DIAG4 <= "B99") **OR** (HC_DIAG5 >= "A00" and HC_DIAG5 <= "B99") **OR** (HC_DIAG6 >= "A00" and HC_DIAG6 <= "B99")
THEN
    HC_DX_INFECT = 1
ELSE
    HC_DX_INFECT = 0
END IF

Neoplasms (%)
IF (HC_DIAG1 >= "C00" and HC_DIAG1 <= "D49") **OR** (HC_DIAG2 >= "C00" and HC_DIAG2 <= "D49") **OR** (HC_DIAG3 >= "C00" and HC_DIAG3 <= "D49") **OR** (HC_DIAG4 >= "C00" and HC_DIAG4 <= "D49") **OR** (HC_DIAG5 >= "C00" and HC_DIAG5 <= "D49") **OR** (HC_DIAG6 >= "C00" and HC_DIAG6 <= "D49")
THEN
    HC_DX_NEOPLASM = 1
ELSE
    HC_DX_NEOPLASM = 0
END IF

Endocrine/nutrit./metabolic (%)
IF   (HC_DIAG1 >= "E00" and HC_DIAG1 <= "E89") **OR** (HC_DIAG2 >= "E00" and HC_DIAG2 <= "E89") **OR** (HC_DIAG3 >= "E00" and HC_DIAG3 <= "E89") **OR** (HC_DIAG4 >= "E00" and HC_DIAG4 <= "E89") **OR** (HC_DIAG5 >= "E00" and HC_DIAG5 <= "E89") **OR** (HC_DIAG6 >= "E00" and HC_DIAG6 <= "E89")
THEN
    HC_DX_ENDOCRINE = 1
ELSE
    HC_DX_ENDOCRINE = 0
END IF

Blood diseases (%)
IF (HC_DIAG1 >= "D50" and HC_DIAG1 <= "D89") **OR** (HC_DIAG2 >= "D50" and HC_DIAG2 <= "D89") **OR** (HC_DIAG3 >= "D50" and HC_DIAG3 <= "D89") **OR** (HC_DIAG4 >= "D50" and HC_DIAG4 <= "D89") **OR** (HC_DIAG5 >= "D50" and HC_DIAG5 <= "D89") **OR** (HC_DIAG6 >= "D50" and HC_DIAG6 <= "D89")

THEN

       HC_DX_BLOOD = 1

ELSE

       HC_DX_BLOOD = 0

END IF

Mental diseases (%)

IF (HC_DIAG1 >= "F01" and HC_DIAG1 <= "F99") **OR** (HC_DIAG2 >= "F01" and HC_DIAG2 <= "F99") **OR** (HC_DIAG3 >= "F01" and HC_DIAG3 <= "F99") **OR** (HC_DIAG4 >= "F01" and HC_DIAG4 <= "F99") **OR** (HC_DIAG5 >= "F01" and HC_DIAG5 <= "F99") **OR** (HC_DIAG6 >= "F01" and HC_DIAG6 <= "F99")

THEN

       HC_DX_MENTAL = 1

ELSE

       HC_DX_MENTAL = 0

END IF

Nervous system diseases (%)

IF (HC_DIAG1 >= "G00" and HC_DIAG1 <= "G99") **OR** (HC_DIAG2 >= "G00" and HC_DIAG2 <= "G99") **OR** (HC_DIAG3 >= "G00" and HC_DIAG3 <= "G99") **OR** (HC_DIAG4 >= "G00" and HC_DIAG4 <= "G99") **OR** (HC_DIAG5 >= "G00" and HC_DIAG5 <= "G99") **OR** (HC_DIAG6 >= "G00" and HC_DIAG6 <= "G99")

THEN

       HC_DX_NERVOUS = 1

ELSE

       HC_DX_NERVOUS = 0

END IF

Diseases of the eye (%)

IF (HC_DIAG1 >= "H00" and HC_DIAG1 <= "H59") **OR** (HC_DIAG2 >= "H00" and HC_DIAG2 <= "H59") **OR** (HC_DIAG3 >= "H00" and HC_DIAG3 <= "H59") **OR** (HC_DIAG4 >= "H00" and HC_DIAG4 <= "H59") **OR** (HC_DIAG5 >= "H00" and HC_DIAG5 <= "H59") **OR** (HC_DIAG6 >= "H00" and HC_DIAG6 <= "H59")

THEN

       HC_DX_EYE = 1

ELSE

       HC_DX_EYE = 0

END IF

Diseases of the ear (%)

IF (HC_DIAG1 >= "H60" and HC_DIAG1 <= "H95") **OR** (HC_DIAG2 >= "H60" and HC_DIAG2 <= "H95") **OR** (HC_DIAG3 >= "H60" and HC_DIAG3 <= "H95") **OR** (HC_DIAG4 >= "H60" and HC_DIAG4 <= "H95") **OR** (HC_DIAG5 >= "H60" and HC_DIAG5 <= "H95") **OR** (HC_DIAG6 >= "H60" and HC_DIAG6 <= "H95")

THEN

       HC_DX_EAR = 1

ELSE

       HC_DX_EAR = 0

END IF

Circulatory system diseases (%)
IF (HC_DIAG1 >= "I00" and HC_DIAG1 <= "I99") **OR** (HC_DIAG2 >= "I00" and HC_DIAG2 <= "I99") **OR**
(HC_DIAG3 >= "I00" and HC_DIAG3 <= "I99") **OR** (HC_DIAG4 >= "I00" and HC_DIAG4 <= "I99") **OR**
(HC_DIAG5 >= "I00" and HC_DIAG5 <= "I99") **OR** (HC_DIAG6 >= "I00" and HC_DIAG6 <= "I99")
THEN
      HC_DX_CIRCULATORY = 1
ELSE
      HC_DX_CIRCULATORY = 0
END IF

Respiratory system diseases (%)
IF (HC_DIAG1 >= "J00" and HC_DIAG1 <= "J99") **OR** (HC_DIAG2 >= "J00" and HC_DIAG2 <= "J99") **OR**
(HC_DIAG3 >= "J00" and HC_DIAG3 <= "J99") **OR** (HC_DIAG4 >= "J00" and HC_DIAG4 <= "J99") **OR**
(HC_DIAG5 >= "J00" and HC_DIAG5 <= "J99") **OR** (HC_DIAG6 >= "J00" and HC_DIAG6 <= "J99")
THEN
      HC_DX_RESPIRATORY = 1
ELSE
      HC_DX_RESPIRATORY = 0
END IF

Digestive system diseases (%)
IF (HC_DIAG1 >= "K00" and HC_DIAG1 <= "K95") **OR** (HC_DIAG2 >= "K00" and HC_DIAG2 <= "K95") **OR**
(HC_DIAG3 >= "K00" and HC_DIAG3 <= "K95") **OR** (HC_DIAG4 >= "K00" and HC_DIAG4 <= "K95") **OR**
(HC_DIAG5 >= "K00" and HC_DIAG5 <= "K95") **OR** (HC_DIAG6 >= "K00" and HC_DIAG6 <= "K95")
THEN
      HC_DX_DIGESTIVE = 1
ELSE
      HC_DX_DIGESTIVE = 0
END IF

Skin/subcutaneous diseases (%)
IF (HC_DIAG1 >= "L00" and HC_DIAG1 <= "L99") **OR** (HC_DIAG2 >= "L00" and HC_DIAG2 <= "L99") **OR**
(HC_DIAG3 >= "L00" and HC_DIAG3 <= "L99") **OR** (HC_DIAG4 >= "L00" and HC_DIAG4 <= "L99") **OR**
(HC_DIAG5 >= "L00" and HC_DIAG5 <= "L99") **OR** (HC_DIAG6 >= "L00" and HC_DIAG6 <= "L99")
THEN
      HC_DX_SKIN = 1
ELSE
      HC_DX_SKIN = 0
END IF

Musculoskeletal sys. diseases (%)
IF (HC_DIAG1 >= "M00" and HC_DIAG1 <= "M99") **OR** (HC_DIAG2 >= "M00" and HC_DIAG2 <= "M99") **OR**
(HC_DIAG3 >= "M00" and HC_DIAG3 <= "M99") **OR** (HC_DIAG4 >= "M00" and HC_DIAG4 <= "M99") **OR**
(HC_DIAG5 >= "M00" and HC_DIAG5 <= "M99") **OR** (HC_DIAG6 >= "M00" and HC_DIAG6 <= "M99")
THEN
      HC_DX_MUSCL_SKEL = 1
ELSE

HC_DX_ MUSCL_SKEL = 0
END IF

Genitourinary diseases (%)
IF (HC_DIAG1 >= "N00" and HC_DIAG1 <= "N99") **OR** (HC_DIAG2 >= "N00" and HC_DIAG2 <= "N99") **OR**
(HC_DIAG3 >= "N00" and HC_DIAG3 <= "N99") **OR** (HC_DIAG4 >= "N00" and HC_DIAG4 <= "N99") **OR**
(HC_DIAG5 >= "N00" and HC_DIAG5 <= "N99") **OR** (HC_DIAG6 >= "N00" and HC_DIAG6 <= "N99")
THEN
        HC_DX_GEN_URINARY = 1
ELSE
        HC_DX_GEN_URINARY = 0
END IF

Symptoms, signs, abnormal findings (%)
IF (HC_DIAG1 >= "R00" and HC_DIAG1 <= "R99") **OR** (HC_DIAG2 >= "R00" and HC_DIAG2 <= "R99") **OR**
(HC_DIAG3 >= "R00" and HC_DIAG3 <= "R99") **OR** (HC_DIAG4 >= "R00" and HC_DIAG4 <= "R99") **OR**
(HC_DIAG5 >= "R00" and HC_DIAG5 <= "R99") **OR** (HC_DIAG6 >= "R00" and HC_DIAG6 <= "R99")
THEN
        HC_DX_INT_ABNORM = 1
ELSE
        HC_DX_INT_ ABNORM = 0

Injury, poisoning, other external causes (%)
IF (HC_DIAG1 >= "S00" and HC_DIAG1 <= "T88") **OR** (HC_DIAG2 >= "S00" and HC_DIAG2 <= "T88") **OR**
(HC_DIAG3 >= "S00" and HC_DIAG3 <= "T88") **OR** (HC_DIAG4 >= "S00" and HC_DIAG4 <= "T88") **OR**
(HC_DIAG5 >= "S00" and HC_DIAG5 <= "T88") **OR** (HC_DIAG6 >= "S00" and HC_DIAG6 <= "T88")
THEN
        HC_DX_EXT_INJURY = 1
ELSE
        HC_DX_EXT_INJURY = 0
END IF

External causes of morbidity (%)
IF (HC_DIAG1 >= "V00" and HC_DIAG1 <= "Y99") **OR** (HC_DIAG2 >= "V00" and HC_DIAG2 <= "Y99") **OR**
(HC_DIAG3 >= "V00" and HC_DIAG3 <= "Y99") **OR** (HC_DIAG4 >= "V00" and HC_DIAG4 <= "Y99") **OR**
(HC_DIAG5 >= "V00" and HC_DIAG5 <= "Y99") **OR** (HC_DIAG6 >= "V00" and HC_DIAG6 <= "Y99")
THEN
        HC_DX_EXT_MORB = 1
ELSE
        HC_DX_EXT_MORB = 0
END IF

Influences of health status (%)
IF (HC_DIAG1 >= "Z00" and HC_DIAG1 <= "Z99") **OR** (HC_DIAG2 >= "Z00" and HC_DIAG2 <= "Z99") **OR**
(HC_DIAG3 >= "Z00" and HC_DIAG3 <= "Z99") **OR** (HC_DIAG4 >= "Z00" and HC_DIAG4 <= "Z99") **OR**
(HC_DIAG5 >= "Z00" and HC_DIAG5 <= "Z99") **OR** (HC_DIAG6 >= "Z00" and HC_DIAG6 <= "Z99")
THEN
        HC_DX_HLTH_FACTORS = 1

ELSE

       HC_DX_HLTH_FACTORS = 0

END IF