

**HOME HEALTH AGENCY QUALITY MEASURES:  
TECHNICAL DOCUMENTATION OF  
POTENTIALLY AVOIDABLE EVENT MEASURES**

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# HOME HEALTH AGENCY QUALITY MEASURES: TECHNICAL DOCUMENTATION OF POTENTIALLY AVOIDABLE EVENT MEASURES

## Introduction

This document provides definitions of measures that appear in Home Health Agency Potentially Avoidable Event Reports, including detailed specifications for calculating these measures based on OASIS assessment data. It includes specifications for measures that appear on the reports used for Outcome-Based Quality Management, a subset of which measures appear on the C M S Home Health Compare web site.

## Episodes of Care Included in Reports

The unit of analysis for quality measures is an episode of care, defined as starting with a new admission to home health care or resumption of care after an inpatient facility stay (M0100 Reason for assessment = 01 or 03), and ending with a discharge from home health care, including discharge due to death, or admission to inpatient facility for 24 hours or more (M0100 Reason for assessment = 06, 07, 08, or 09). The data upon which these reports are based consist of OASIS assessments submitted by home health agencies to the states, which are then transmitted to a national OASIS repository residing on a secure database server maintained by C M S. Analysis records corresponding to episodes of care are constructed by matching up assessments for each individual served by a home health agency, sorting those assessments by effective date, then pairing up assessments that mark the beginning and end of an episode of care. Episodes of care for which either the beginning or end assessment is missing, or for which assessments are out of sequence, are not included in these reports.

## Creation of Episode of Care Records

The process of building episode-level records is as follows:

1. Sort assessments by home health agency ID<sup>1</sup>, patient ID and effective date, latest to earliest.
2. For each set of assessments having the same combination of home health agency ID and patient ID, step through the assessments, latest to earliest, until an assessment

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<sup>1</sup> When working with assessment records from the OASIS National Repository, home health agency ID is actually a combination of the two-character state abbreviation and Facility Internal ID, which is a numeric field generated when the OASIS assessment is added to the state database, and Patient ID is a combination of the state abbreviation and Resident Internal ID, also a system-generated value.

with M0100\_ASSMT\_REASON = 06, 07, 08, or 09 is found. Initialize a home health episode record with episode end date = M0906\_DC\_TRAN\_DTH\_DT.

3. Continue stepping through earlier assessments.
4. If an assessment with M0100\_ASSMT\_REASON = 06, 07, 08, or 09 is found before an assessment with M0100\_ASSMT\_REASON = 01 or 03 is found, discard the episode being built and start over with step 2.
5. When an assessment with M0100\_ASSMT\_REASON = 01 or 03 is found, the episode is complete. Create a completed episode record with home health agency ID, patient ID, beginning assessment ID, ending assessment ID, and begin and end dates for the episode. If there are more assessments for this patient, start building a new episode beginning with step 2.
6. If no assessment with M0100\_ASSMT\_REASON = 01 or 03 is found before the assessments for this patient are exhausted, discard the pending episode being built.

## **Home Health Potentially Avoidable Event Measures**

Measures are referred to as follows:

<b><u>Measure Domain &amp; Descriptive Measure Name</u></b>	<b><u>Short Measure Name</u></b>
Emergent Care for Potentially Avoidable Cause	
Emergent Care for Injury Caused by Fall .....	ED_Use_Fall
Emergent Care for Wound Infection, Deteriorating Wound Status .....	ED_Use_Wound_Status
Emergent Care for Improper Medication Administration or Medication Side Effects .....	ED_Use_Medications
Emergent Care for Hypo/Hyperglycemia.....	ED_Use_Blood_Sugar
Discharged with New, Worsening, or Unresolved Health Problem	
Development of Urinary Tract Infection.....	New_UTI
Increase in Number of Pressure Ulcers <sup>HHC</sup> .....	More_Pressure_Ulcers
Substantial Decline in 3 or more Activities of Daily Living .....	ADL_Decline
Substantial Decline in Management of Oral Medications	Oral_Med_Decline
Discharged to the Community with an Unhealed Stage II Pressure Ulcer .....	DC_w_Stg_II_Press_Ulc
Discharged with Unmet Needs.....	
Discharged to the Community Needing Wound Care or Medication Assistance .....	DC_Need _Wound_Care
Discharged to the Community Needing Toileting Assistance .....	DC_Need _Toilet_Assist
Discharged to the Community with Behavioral Problems .....	DC_Behavior_Problem

<sup>HHC</sup> Measure appears on Home Health Compare

## **Assumptions and Conventions**

The following transformations result in measures with numeric values. For process and outcome measures, including potentially avoidable event measures, “1” indicates that the outcome event occurred or the process was followed, while “0” indicates the outcome event did not occur or the process was not followed. When the instructions indicate that a measure is to be set to “MISSING”, the case is excluded from analysis for that particular measure, either because the measure is not applicable or because a data item on which that measure is based has been indicated as “unknown”.

OASIS data items are referred to in this documentation using field names specified in OASIS Data Submission Specifications published by C M S. "[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). The expression VALUE(FieldName) indicates conversion of a one or two character text field to a numeric value. The expression DATEVALUE(FieldName) indicates conversion of an eight character text field to a numeric value representing a date (number of days since 12/31/1899).

## Potentially Avoidable Event Measures Data Transformation Pseudo-Code

### Emergent Care for Potentially Avoidable Cause

#### Emergent Care for Injury Caused by Fall

```
IF M2310_ECR_INJRY_BY_FALL[2] = 1
THEN
    ED_USE_FALL = 1
ELSE IF M2300_EMER_USE_AFTR_LAST_ASMT[2] = 00 OR
    ((M2300_EMER_USE_AFTR_LAST_ASMT[2] = 01 OR
    M2300_EMER_USE_AFTR_LAST_ASMT[2] = 02) AND
    M2310_ECR_UNKNOWN[2] = 0)
THEN
    ED_USE_FALL = 0
ELSE
    ED_USE_FALL = MISSING
END IF
```

#### Emergent Care for Wound Infection, Deteriorating Wound Status

```
IF M2310_ECR_WND_INFCTN_DTRORTN[2] = 1
THEN
    ED_USE_WOUND_STATUS = 1
ELSE IF M2300_EMER_USE_AFTR_LAST_ASMT[2] = 00 OR
    ((M2300_EMER_USE_AFTR_LAST_ASMT[2] = 01 OR
    M2300_EMER_USE_AFTR_LAST_ASMT[2] = 02) AND
    M2310_ECR_UNKNOWN[2] = 0)
THEN
    ED_USE_WOUND_STATUS = 0
ELSE
    ED_USE_WOUND_STATUS = MISSING
END IF
```

#### Emergent Care for Improper Medication Administration or Medication Side Effects

```
IF M2310_ECR_MEDICATION[2] = 1
THEN
    ED_USE_MEDICATIONS = 1
ELSE IF M2300_EMER_USE_AFTR_LAST_ASMT[2] = 00 OR
    ((M2300_EMER_USE_AFTR_LAST_ASMT[2] = 01 OR
    M2300_EMER_USE_AFTR_LAST_ASMT[2] = 02) AND
    M2310_ECR_UNKNOWN[2] = 0)
```

**THEN**  
    ED\_USE\_MEDICATIONS = 0  
**ELSE**  
    ED\_USE\_MEDICATIONS = MISSING  
**END IF**

*Emergent Care for Hypo/Hyperglycemia*

**IF** M2310\_ECR\_HYPOGLYC[2] = 1  
**THEN**  
    ED\_USE\_BLOOD\_SUGAR = 1  
**ELSE IF** M2300\_EMER\_USE\_AFTR\_LAST\_ASMT[2] = 00 **OR**  
    ((M2300\_EMER\_USE\_AFTR\_LAST\_ASMT[2] = 01 **OR**  
    M2300\_EMER\_USE\_AFTR\_LAST\_ASMT[2] = 02) **AND**  
    M2310\_ECR\_UNKNOWN[2] = 0)  
**THEN**  
    ED\_USE\_BLOOD\_SUGAR = 0  
**ELSE**  
    ED\_USE\_BLOOD\_SUGAR = MISSING  
**END IF**

**Discharged with New, Worsening, or Unresolved Health Problem**

*Development of Urinary Tract Infection*

**IF** M0100\_ASSMT\_REASON[2] = 09  
**THEN**  
    **IF** M1600\_UTI[1] = 00 **AND** M1600\_UTI[2] = 01  
    **THEN**  
        NEW\_UTI = 1  
    **ELSE IF** M1600\_UTI[1] = 00 **AND** M1600\_UTI[2] = 00  
    **THEN**  
        NEW\_UTI = 0  
    **ELSE**  
        NEW\_UTI = MISSING  
    **END IF**  
**ELSE**  
    NEW\_UTI = MISSING  
**END IF**

*Increase in Number of Pressure Ulcers*

**IF** M0100\_ASSMT\_REASON[2] = 09



```

THEN
  IF M1306_UNHLD_STG2_PRSR_ULCR[2] = 1
  THEN
    IF M1306_UNHLD_STG2_PRSR_ULCR[1] = 0
    THEN
      More_Pressure_Ulcers = 1
    ELSE IF (VALUE(M1308_NBR_PRSULC_STG2[1]) +
      VALUE(M1308_NBR_PRSULC_STG3[1]) +
      VALUE(M1308_NBR_PRSULC_STG4[1]) +
      VALUE(M1308_NSTG_DRSG[1]) +
      VALUE(M1308_NSTG_CVRG[1]) +
      VALUE(M1308_NSTG_DEEP_TISUE[1])) <
      (VALUE(M1308_NBR_PRSULC_STG2[2]) +
      VALUE(M1308_NBR_PRSULC_STG3[2]) +
      VALUE(M1308_NBR_PRSULC_STG4[2]) +
      VALUE(M1308_NSTG_DRSG[2]) +
      VALUE(M1308_NSTG_CVRG[2]) +
      VALUE(M1308_NSTG_DEEP_TISUE[2]))
    THEN
      More_Pressure_Ulcers = 1
    ELSE
      More_Pressure_Ulcers = 0
    END IF
  ELSE
    More_Pressure_Ulcers = 0
  END IF
ELSE
  More_Pressure_Ulcers = MISSING
END IF

Substantial Decline in 3 or more Activities of Daily Living
ADL_Temp1 = 0
IF M1800_CUR_GROOMING[1] = 03 OR M1800_CUR_GROOMING[1] = 02
THEN
  ADL_Temp1 = ADL_Temp1 + 1
END IF
IF M1830_CRNT_BATHG[1] = 06 OR M1830_CRNT_BATHG[1] = 05
THEN
  ADL_Temp1 = ADL_Temp1 + 1
END IF

```

```

IF M1840_CUR_TOILTG[1] = 04 OR M1840_CUR_TOILTG[1] = 03
THEN
    ADL_Temp1 = ADL_Temp1 + 1
END IF
IF M1845_CUR_TOILTG_HYGN[1] = 03 OR M1845_CUR_TOILTG_HYGN[1] = 02
THEN
    ADL_Temp1 = ADL_Temp1 + 1
END IF
IF M1850_CUR_TRNSFRNG[1] = 05 OR M1850_CUR_TRNSFRNG[1] = 04
THEN
    ADL_Temp1 = ADL_Temp1 + 1
END IF
IF M1860_CRNT_AMBLTN[1] = 06 OR M1860_CRNT_AMBLTN[1] = 05
THEN
    ADL_Temp1 = ADL_Temp1 + 1
END IF
IF M1870_CUR_FEEDING[1] = 05 OR M1870_CUR_FEEDING[1] = 04
THEN
    ADL_Temp1 = ADL_Temp1 + 1
END IF
IF M0100_ASSMT_REASON[2] = 09 AND ADL_Temp1 < 5
THEN
    ADL_Temp2 = 0
    IF VALUE(M1800_CUR_GROOMING[2]) >
        VALUE(M1800_CUR_GROOMING[1]) + 1
    THEN
        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF VALUE(M1830_CRNT_BATHG[2]) > VALUE(M1830_CRNT_BATHG[1]) + 1
    THEN
        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF VALUE(M1840_CUR_TOILTG[2]) > VALUE(M1840_CUR_TOILTG[1]) + 1
    THEN
        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF VALUE(M1845_CUR_TOILTG_HYGN[2]) >
        VALUE(M1845_CUR_TOILTG_HYGN[1]) + 1
    THEN

```

```

        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF VALUE(M1850_CUR_TRNSFRNG[2]) >
        VALUE(M1850_CUR_TRNSFRNG[1]) + 1
    THEN
        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF VALUE(M1860_CRNT_AMBLTN[2]) > VALUE(M1860_CRNT_AMBLTN[1]) + 1
    THEN
        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF VALUE(M1870_CUR_FEEDING[2]) > VALUE(M1870_CUR_FEEDING[1]) + 1
    THEN
        ADL_Temp2 = ADL_Temp2 + 1
    END IF
    IF ADL_Temp2 >= 3
    THEN
        ADL_Decline = 1
    ELSE
        ADL_Decline = 0
    END IF
ELSE
    ADL_Decline = MISSING
END IF

```

Substantial Decline in Management of Oral Medications

```

IF M0100_ASSMT_REASON[2] <> 09 OR
    M2020_CRNT_MGMT_ORAL_MDCTN[2] = NA OR
    M2000_DRUG_RGMN_RVW[1] = NA OR
    M2020_CRNT_MGMT_ORAL_MDCTN[1] <> 00
THEN
    Oral_Med_Decline = MISSING
ELSE
    IF M2020_CRNT_MGMT_ORAL_MDCTN[2] = 03 AND
        M2020_CRNT_MGMT_ORAL_MDCTN[1] = 00
    THEN
        Oral_Med_Decline = 1
    ELSE
        Oral_Med_Decline = 0
    END IF

```

END IF

Discharged to the Community with an Unhealed Stage II Pressure Ulcer

IF M0100\_ASSMT\_REASON[2] = 09

THEN

IF M2420\_DSCHRG\_DISP[2] = 01 AND

(M1306\_UNHLD\_STG2\_PRSR\_ULCR[2] = 1 AND

((M1307\_OLDST\_STG2\_AT\_DSCHRG[2] = 02 AND

DATEVALUE(M0906\_DC\_TRAN\_DTH\_DT[2]) –

DATEVALUE(M1307\_OLDST\_STG2\_ONST\_DT[2]) > 30) OR

(M1307\_OLDST\_STG2\_AT\_DSCHRG[2] = 01 AND

M0100\_ASSMT\_REASON[1] = 01 AND

DATEVALUE(M0906\_DC\_TRAN\_DTH\_DT[2]) –

DATEVALUE(M0030\_START\_CARE\_DT[1]) > 30) OR

(M1307\_OLDST\_STG2\_AT\_DSCHRG[2] = 01 AND

M0100\_ASSMT\_REASON[1] = 03 AND

DATEVALUE(M0906\_DC\_TRAN\_DTH\_DT[2]) –

DATEVALUE(M0032\_ROC\_DT[1]) > 30)

THEN

DC\_w\_Stg\_II\_Press\_Ulc = 1

ELSE

DC\_w\_Stg\_II\_Press\_Ulc = 0

END IF

ELSE

DC\_w\_Stg\_II\_Press\_Ulc = MISSING

END IF

Discharged with Unmet Needs

Discharged to the Community Needing Wound Care or Medication Assistance

IF M0100\_ASSMT\_REASON[2] = 09

THEN

IF M2420\_DSCHRG\_DISP[2] = 01 AND

(VALUE(M2100\_CARE\_TYPE\_SRC\_MDCTN[2]) > 2 OR

VALUE(M2100\_CARE\_TYPE\_SRC\_PRCDR[2]) > 2) AND

(M1710\_WHEN\_CONFUSED = NA OR

VALUE(M1710\_WHEN\_CONFUSED[2] > 2) AND

(M1324\_STG\_PRBLM\_ULCER[2] = 03 OR

M1324\_STG\_PRBLM\_ULCER[2] = 04 OR

M1334\_STUS\_PRBLM\_STAS\_ULCR[2] = 03 OR

```

        M1342_STUS_PRBLM_SRGCL_WND[2] = 03 OR
        M2020_CRNT_MGMT_ORAL_MDCTN[2] = 03)
    THEN
        DC_Need _Wound_Care = 1
    ELSE
        DC_Need _Wound_Care = 0
    END IF
ELSE
    DC_Need _Wound_Care = MISSING
END IF

Discharge to the Community Needing Toileting Assistance
IF M0100_ASSMT_REASON[2] = 09
THEN
    IF M2420_DSCHRG_DISP[2] = 01 AND
        (VALUE(M2100_CARE_TYPE_SRC_ADL[2]) > 2) AND
        (VALUE(M1840_CUR_TOILTG[2]) = 4 OR
        VALUE(M1845_CUR_TOILTG_HYGN[2] = 3))
    THEN
        DC_Need _Toilet_Assist = 1
    ELSE
        DC_Need _Toilet_Assist = 0
    END IF
ELSE
    DC_Need _Toilet_Assist = MISSING
END IF

```

Discharge to the Community with Behavioral Problems

```

IF M0100_ASSMT_REASON[2] = 09
THEN
    IF M2420_DSCHRG_DISP[2] = 01 AND
        VALUE(M2100_CARE_TYPE_SRC_SPRVSN[2]) > 2 AND
        (VALUE(M0610_BD_MEM_DEFICIT[2]) +
        VALUE(M1740_BD_IMP_DECISN[2]) +
        VALUE(M1740_BD_VERBAL[2]) +
        VALUE(M1740_BD_PHYSICAL[2]) +
        VALUE(M1740_BD_SOC_INAPPRO[2]) +
        VALUE(M1740_BD_DELUSIONS[2])) > 1
    THEN
        DC_Behavior_Problem = 1
    END IF
END IF

```

```
ELSE
    DC_Behavior_Problem = 0
END IF
ELSE
    DC_Behavior_Problem = MISSING
END IF
```

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