**Instructions for the Million Hearts Hypertension Prevalence Estimator Tool**

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**Report name**: MillionHearts\_HTN\_v1

**Purpose**: This report displays an output table that summarizes patient characteristics and can be used to populate the Million Hearts Hypertension Prevalence Estimator Tool (the tool and further explanation can be found at <https://nccd.cdc.gov/MillionHearts/Estimator/>).

**Parameters:** Measurement period start and end dates. These define the period from which patient primary care medical visits are drawn. The measurement period end date is that last date that blood pressure or BMI can be included.

**Population:** The report Data Sheet displays unduplicated patients in rows. These are all patients between 18 and 85 years of age (at the end of the measurement period) with at least one encounter with a primary care medical provider in the measurement period. No further filters are needed

**Diagnosis Codes:** The report includes columns that indicate if the patient has hypertension or certain comorbidities. These are identified using diagnosis codes appearing on the patient’s Problem List. These codes are listed below (source <https://nccd.cdc.gov/MillionHearts/Estimator/OnlineHelp/PatientInformation>). Note that these codes may differ from those used by other standard BridgeIT reports.

* Hypertension: 401\*, 402\*, 403\*, or 404\*(ICD-9); I10\*, I11\*, I12\* or I13\* (ICD-10)
* Diabetes: 250\* (ICD-9); E10\* or E11\* (ICD-10)
* Chronic Kidney Disease: 403\*, 404\* or 585\* (ICD-9); I12\*, I13\* or N18\* (ICD-10)

The BridgeIT report uses two methods to identify patients with obesity:

* An obesity diagnosis code on the Problem List (not listed on the Million Hearts website): 278.0\* but not 278.02 (ICD-9); E66\* but not E66.3 (ICD-10).
* A value equal to or greater than 30 kg/m2 on the last BMI measured before the end of the measurement period.

**Unique Report Columns:** the report uses some basic demographics columns that appear on other reports of the RCHC BridgeIT Annual Clinical Report Set. However, there are other columns that may not be familiar and these are explained below.

* Age\_Group: the age group corresponding to the groups on the Estimator Tool
* Race\_Ethn\_Combined: the race-ethnicity group corresponding to the groups on the Estimator Tool
* Hypertension\_diagnosis: Will display “Yes” if the patient has a hypertension diagnosis code on the Problem List (see the codes above)
* DM\_Comorbid: Will display “Yes” if the patient has a diabetes diagnosis code on the Problem List
* CKD\_Comorbid: Will display “Yes” if the patient has a chronic kidney disease diagnosis code on the Problem List
* Obesity\_Comorbid: Will display “Yes” if the patient has a obesity diagnosis code on the Problem List or has a value of 30 or higher recorded as the last BMI in the measurement period
* BMI\_Class\_CDC: The BMI class (underweight, normal, overweight or obese) as defined by the CDC
* Total\_Comorbid: Number of co-morbidities the patient has (a number from zero to three). Each co-morbidity counts as one: diabetes, chronic kidney disease, or obesity.
* LastBPDatePeriod: Date of the last blood pressure before the end of the measurement period
* LastBPValuePeriod: Value of the last blood pressure before the end of the measurement period
* BPSys: Value of the last systolic blood pressure before the end of the measurement period
* BPDias: Value of the last diastolic blood pressure before the end of the measurement period
* LastBPStatus\_Detailed: Blood pressure categories using the standard of 140/90 mmHg (used on the UDS report)
* LastBPStatus\_QIP: Blood pressure categories using the JNC8 measure definition (used on the QIP report)[[1]](#footnote-1)
* HighBPs: This column will identify patients who have had two or more high blood pressures in the year prior to the end of the measurement period. A high blood pressure is defined as being over 140/90 mmHg.
* HTN\_Diag\_Any\_AssessmClaim: Will display “Yes” if the patient had a diagnosis code (ICD-9 or ICD-10) for hypertension on any claim or assessment in the past

**Output Sheets**: The Million Hearts Hypertension Prevalence Estimator Tool has an online component and an optional Excel workbook that group patients according to age, race/ethnicity, number of comorbidities, and gender. There are output sheets that attempt to display a summary of patients in the same format as the tables in the Estimator Tool and workbook. However, one complication is that the race and ethnicity categories that appear on the Tool are different than the categories used in eCW. Another complication is that health centers sometimes have non-standard text entered into the race field. The BridgeIT report attempts to interpret the text in the race and ethnicity fields and transform them into the race-ethnicity categories used by the Tool. However, the health center should verify this.

There is an output sheet named “Check Race and Ethnicity Categories.” This sheet features a pivot table with the eCW entries in the rows and the converted Million Hearts categories in the columns. If it looks like the conversion is correct, the output sheet “Million Hearts Summary” should be used to summarize the data. If the conversion is not correct because of non-standard text in the race or ethnicity fields of eCW, the table on the output sheet “Million Hearts Summary Raw Race Ethn” should be copied to an Excel file on your own computer, and manually organized and summarized.

The output sheet named “Hypertension Prevalence” displays the prevalence of hypertension among all patients in the population displayed on the data sheet. The prevalence is the row “Yes” divided by the row “Grand Total.” There are filters on this output sheet in case you want to calculate the prevalence based on age group, gender, or co-morbidities.

**Identifying Patients With Potentially Undiagnosed Hypertension.** To get a list of candidates for further examination, apply the suggested filters to the Data Sheet described below. Run the report with a measurement period of one year.

1. Patients WITHOUT hypertension diagnosis on Problem List but at least 2 blood pressure readings on different dates in past year over 140/90 mmHg

* PrimCareVisitsPeriod > 1
* ActivePt = “Active”
* Hypertension\_diagnosis = “No”
* HighBPs = “Had two or more BPs over 140/90 mmHg in past year”

2. Patients WITHOUT hypertension diagnosis on Problem List but a hypertension diagnosis code on any assessment or claim in the past

* PrimCareVisitsPeriod > 1
* ActivePt = “Active”
* Hypertension\_diagnosis = “No”
* HTN\_Diag\_Any\_AssessmClaim = “Yes”

3. Patients WITHOUT hypertension diagnosis on Problem List but with co-morbidities commonly associated with high blood pressure

* PrimCareVisitsPeriod > 1
* ActivePt = “Active”
* Hypertension\_diagnosis = “No”
* Total\_Comorbid = “1” or “2 – 3”
1. In brief, to be included in the numerator, patients between 18 and 59 years or patients between 60 and 85 years with diabetes have to have a blood pressure under 140/90mmHg. Furthermore, patients between 60 and 85 years without diabetes have to have a blood pressure under 150/90mmHg. [↑](#footnote-ref-1)