

**Goal:** Obtain counts of unique patients from encounter-based joined tables to calculate contact prevalence.

**Data search criteria:**

- Search dates: 01/01/2017 – 01/20/2020 (pre-covid -19)  
01/21/2020 – 12/31/2023 (during and post-covid-19)

- Target variables: patient key, encounter key, encounter date, UCSF calculated race and ethnicity, race, ethnicity, sex assigned at birth, gender identity, marital status, preferred language, religion, BMI, age at encounter, lab test results for HbA1c, fasting glucose, glucose tolerance

- Eligibility criteria:

1. Adults age between 35 to 70
2. BMI  $\geq 25$  kg/m<sup>2</sup> ( $\geq 23$  kg/m<sup>2</sup> Asian American)
3. Have not been diagnosed with type 2 diabetes.
4. No insulin therapies.
5. Not pregnant

- Calculations:

Among patients of different races, ethnicities, gender identities, sex, preferred languages, marital status, and religions:

1. Prevalence of diabetes screening in eligible patients
2. Prevalence of prediabetes among eligible groups (not yet calculated)
3. Frequency of testing among prediabetic patients

**General search strategy:**

- **Encounter dates:** (encounter fact table)  
Encounters where the encounter date is within the specified period and age at encounter is between 35 and 70 years old are selected.
- **Patients' demographics/vitals:** (encounter fact joined with patient dim using patient key – *to identify records at the time of encounters*)  
Patients with BMI and race combination that satisfies the requirement at time of encounter are selected. Additionally, patients with extreme heights and weights are filtered out (weights between 50 to 650 pounds, heights between 4 to 7 feet)
- **Existing diagnosis of type 2 diabetes:** (encounter fact joined with diagnosis event fact using encounter key. See separate tabs for codes and specification)  
Encounters with the following diagnoses during the defined period are EXCLUDED:
  - Type 2 diabetes: ICD9 - with the syntax of 250.x0 or 250.x2.
  - ICD10 - begins with E11.

- Diagnosis name search, excluding family histories/personal histories/declination of consultation.
- **Pregnancy:** (diagnosis event fact joined with encounter fact using encounter key, pregnancy fact joined with encounter fact using patient key)  
Encounters during which the patients are pregnant are EXCLUDED:
  - Pregnancy from diagnosis event fact - Incidental pregnancy:
    - ICD9 - begins with V22.
    - ICD10 - Z33, begins with Z34.
    - NOT filtered for: Pregnancy/childbirth/puerperium-related appointment: ICD9 - 630 to 679.14; ICD10 - O00 to O99 (begins with O))
  - Encounter date is within a non-historical pregnancy episode's estimated start and end dates from pregnancy fact.
- **Medication:** (diagnosis event fact joined with encounter fact)  
Encounters with the following diagnosis are EXCLUDED:
  - Presence of insulin pumps
    - ICD10 – Z96.41
  - Encounter for fitting and adjustment of insulin pump.
    - ICD10 - Z46.81
  - Long-term insulin use
    - ICD9 - V58.67
    - ICD10 - Z79.4
  - Malfunction
    - ICD9 – 996.57
    - ICD10 -
      - T85.72 Infection and inflammatory reaction due to insulin pump
      - T85.624 Displacement of insulin pump
      - T85.694 Other mechanical complication of insulin pump
      - T85.633 Leakage of insulin pump

**Contact prevalence:** number of unique patients with at least one encounter satisfying the followings/total number of unique, eligible patients filtered based on above during the period.

- For part 1:
  - **Diabetes Screening** (diagnosis event fact)
    - ICD9 - V77.1
    - ICD10 - Z13.1
    - Alternatively, diagnosis key 191679
- For part 2:

- **Prediabetes – lab test results** (from lab component result fact based on LOINC codes joined with encounter fact based on encounter key) **and diagnosis event fact**

*Originally, cpt codes or other codes from procedure fact but seems unreliable. Using CPT codes = 83036 for hba1c, 82950, 82951 for glucose tolerance test; 82947 for fasting glucose level return very few results)*

  - A fasting plasma glucose level of 100 to 125 mg/dL (5.55-6.94 mmol/L)
  - An HbA1c level of 5.7% to 6.4%
  - A 2-hour post load glucose level of 140 to 199 mg/dL (7.77-11.04 mmol/L) *Other tests and values? E.g. longer duration post load.*
  - ICD-10-CM code of R73.03. Diagnosis name search matching prediabetes, excluding history of prediabetes.
  
- **Billing:** (billing transaction fact joined with encounter fact)
  - Patients billed for nutrition counseling among eligible + prediabetes: using the code 97802~97804, G0270~G0271.  
*Information from clinical notes?*