Metrics Processing: Patient Selection

Osama Ahmed and Ted Fujimoto

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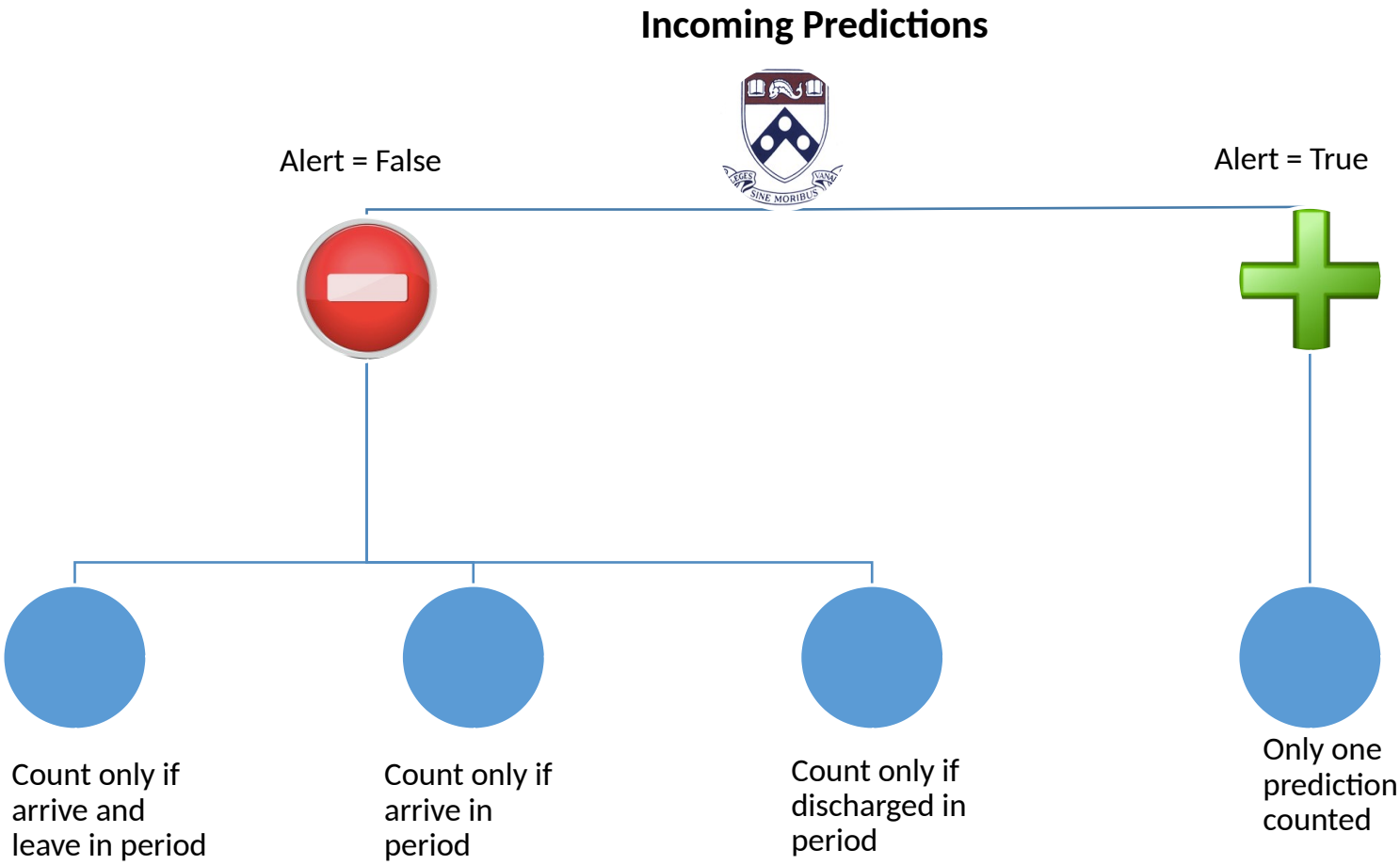
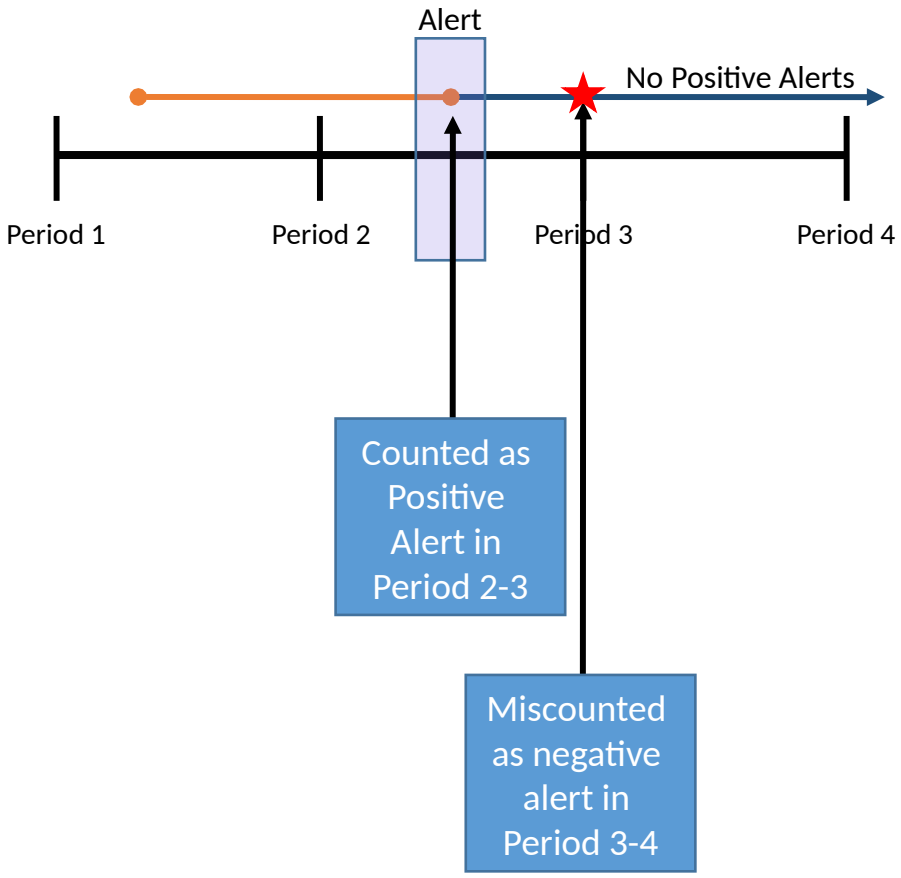
Problem Overview

- To process performance metrics in certain time periods, patients need to be bucketed into the time periods
- Many patients are not exclusively contained within each time bucket
- Leads to problem of over/undercounting patients and skewing metrics

High Level Overview



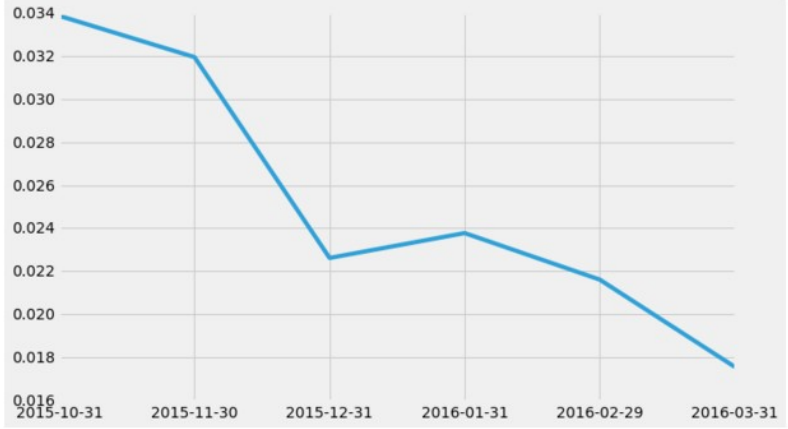
Positive Alerts Pose a Problem For Future Periods



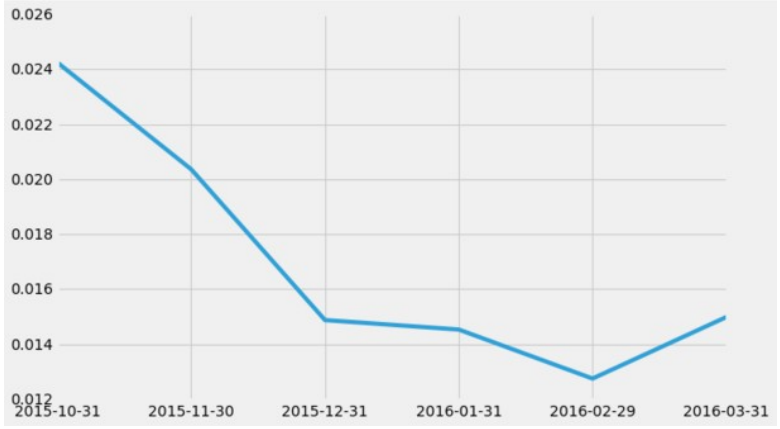
- Positive alerts are only counted only once for each visit number
- Extracted using query that searches for 'Alert = True' and "VISIT_NUMBER " → Unique
- HOWEVER, this poses a problem for later periods as prediction is counted as negative with positive outcome
- This increases false negative rate and thus decreases negative predictive value over time
- **Solution**: Keep a running list of patients that have been alerted true in previous periods and exclude them from future periods

Evidence in Data of this occurring

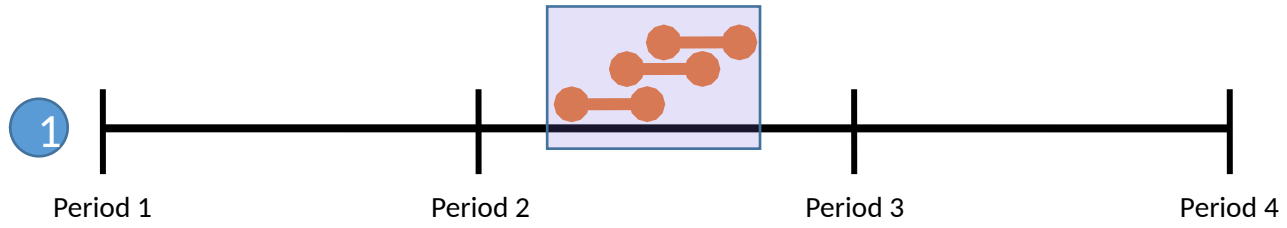
Has Sepsis Code NPV



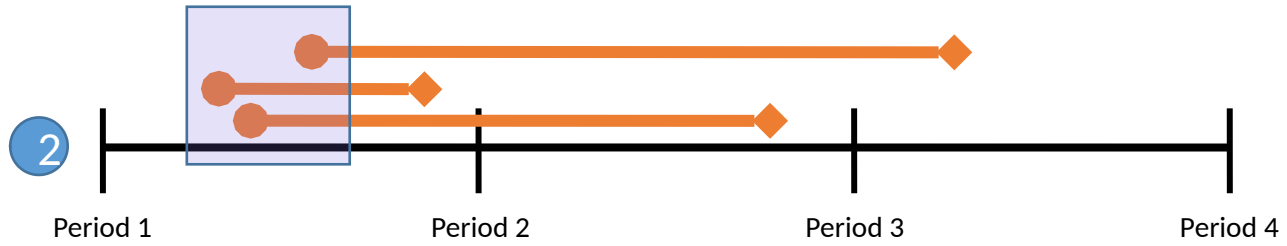
Deceased or Hospice NPV



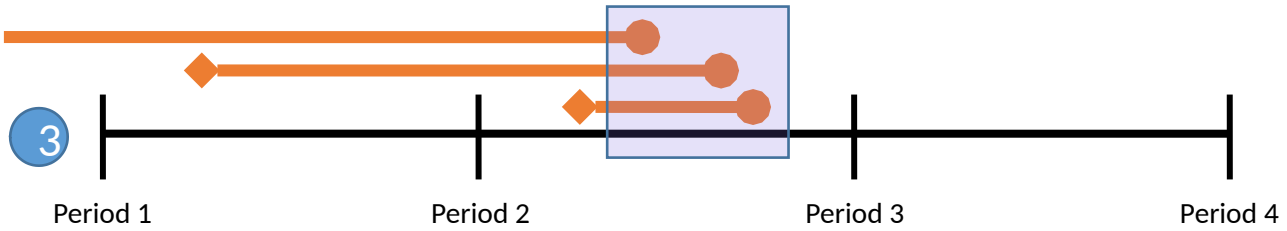
There are 3 Methods of Counting Negative Alert Patients in Each Period



Only include patients that are contained in a period

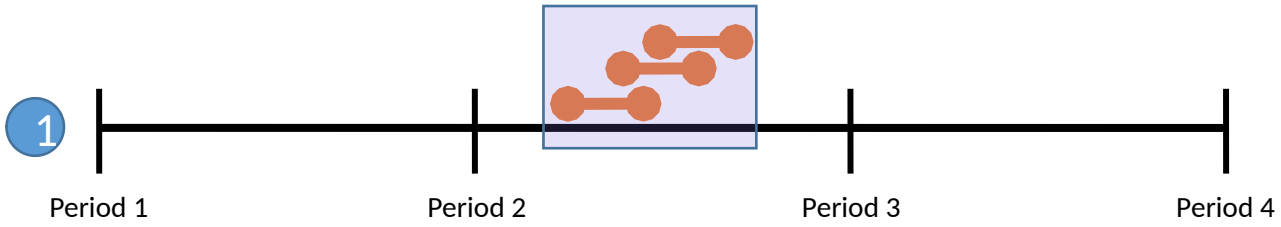


Only include patients that are admitted in a period



Only include patients that are discharged in a period

Method 1: Contained Patients



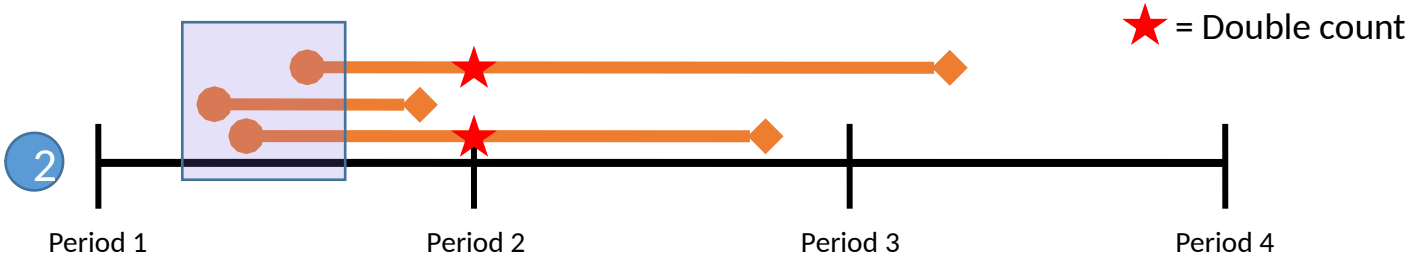
Pros and Cons

- Avoids all possibility of double counting patients
- Do not need to keep track of patients from previous time periods
- Excludes patients that are in between time periods

Implementation

1. Query unique VISIT_NUMBERS with first WCT past the initial period time boundary (ensure that WCT is after initial time boundary)
2. Query ps_Raw database for discharge date

Method 2: Admitted Patients



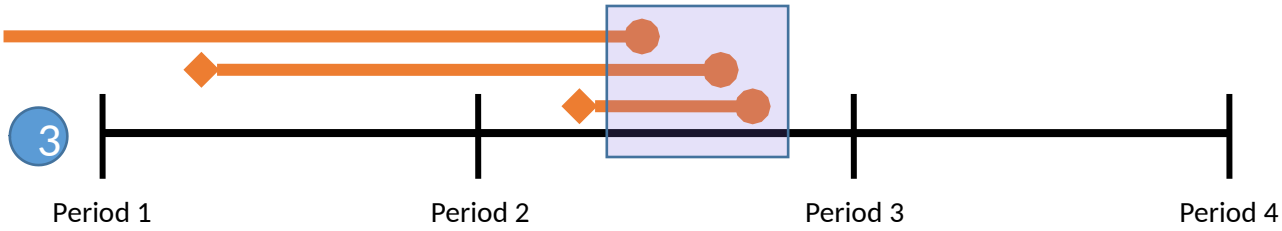
Pros and Cons

- Does not exclude any patient
- Might double count patients from previous periods if implementation does not include method to prevent double counting

Implementation

1. Query unique VISIT_NUMBERS with first WCT past the initial period time boundary (ensure that WCT is after initial time boundary)
2. (Alternatively) find a way to keep list of all patients already included in previous time periods and exclude

Method 3: Discharged Patients



Pros and Cons

- Does not exclude any patient
- Close to discharge date
- Need to query two databases to determine if patient has been discharged

Implementation

1. Query each unique visit number in ps_Preds
2. Assign discharge date to each visit number from ps_Raw
3. Include in time period if discharge date in current period