Leveraging Medicare Current Beneficiary Survey to Assess Health Care Claims Estimation of Chronic Condition Prevalence

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Background

Administrative data are convenient for studying health care patterns, and it is unclear to what extent health care claims generated during the COVID-19 public health emergency (PHE) provide inaccurate or low estimates of chronic conditions among Medicare beneficiaries.[1]

Research Objectives

1. Estimate the difference in chronic condition prevalence in survey responses and claims-based definitions between 2019 (pre-PHE) and 2020-2021 (during the PHE)
2. Identify which characteristics are associated with meeting the survey definition of the chronic condition only compared with the claims-based definition only in 2019 (pre-PHE) and 2020-2021 (during the PHE)

Study Design

- Cross-sectional analysis of the Medicare Current Beneficiary Survey (MCBS), 2019-2021
- Cohort
  - Community-dwelling, fee-for-service Medicare beneficiaries continuously enrolled for at least one year
  - Four chronic condition cohorts—selected to include a variety of conditions affecting the study population:
    - Diabetes, depression, acute myocardial infarction (AMI), and intellectual disability
- Outcomes: condition prevalence using the Chronic Condition Data Warehouse (CCW) ever date or end of year flag,[2] and MCBS survey; meeting survey definition only or the CCW ever date claims-based definition only
- Exposures: age, race, sex, Medicare entitlement reason, Medicare-Medicaid dual eligibility, self-reported general health, education, English-speaking fluency

Prevalence Differences by Chronic Condition Definition
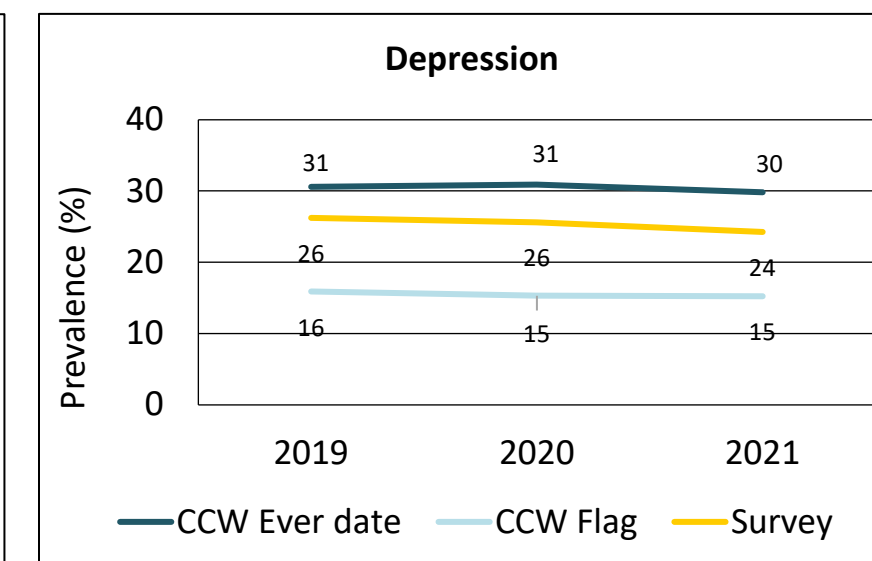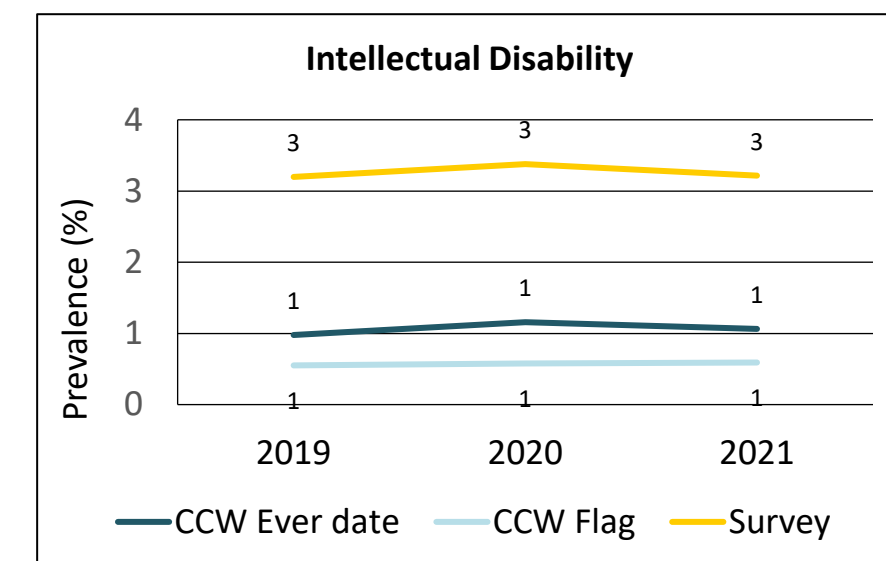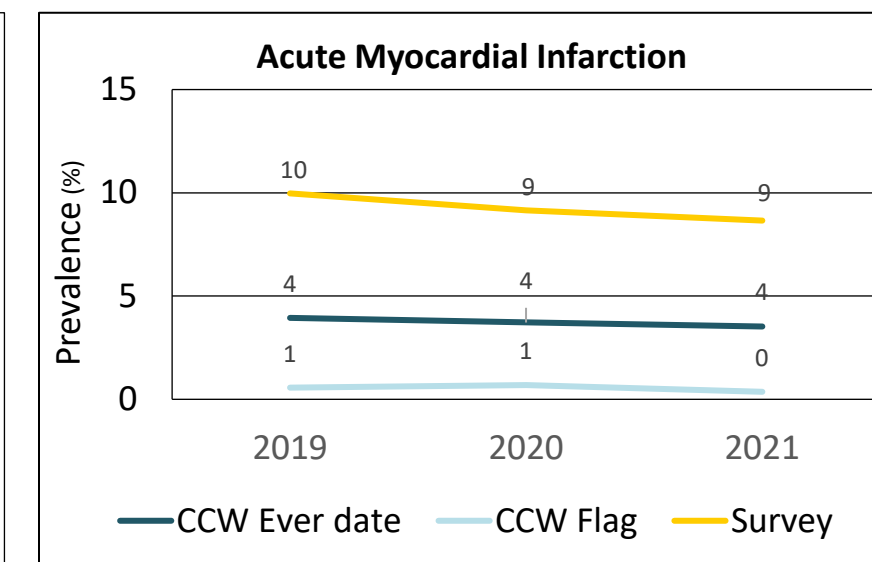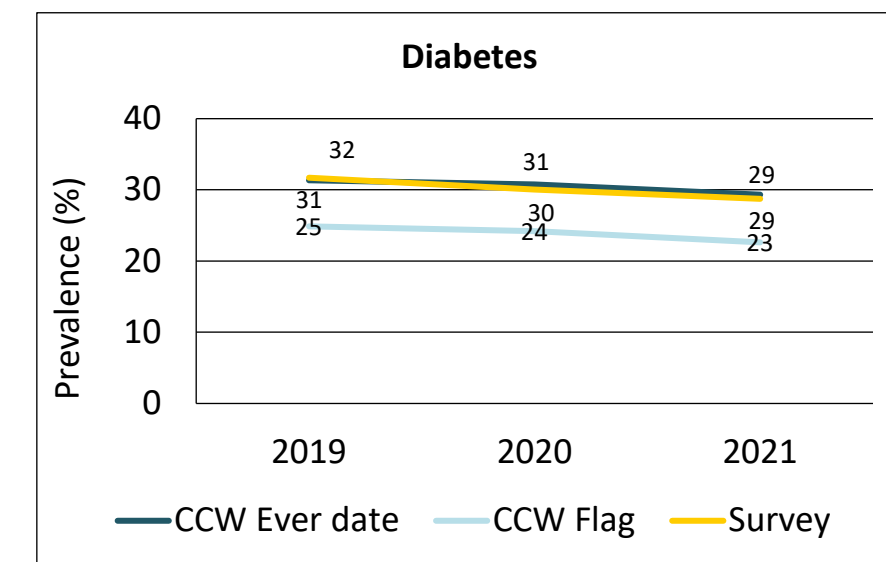
- In 2019, survey response-based condition prevalence was higher than the claims-based prevalence for diabetes, AMI, and intellectual disability—and lower for depression.
- Diabetes, depression, and AMI prevalence differences were smaller between 2020 and 2019 than 2021 and 2019 (all within 3 percentage points), whereas intellectual disability was nearly unchanged.
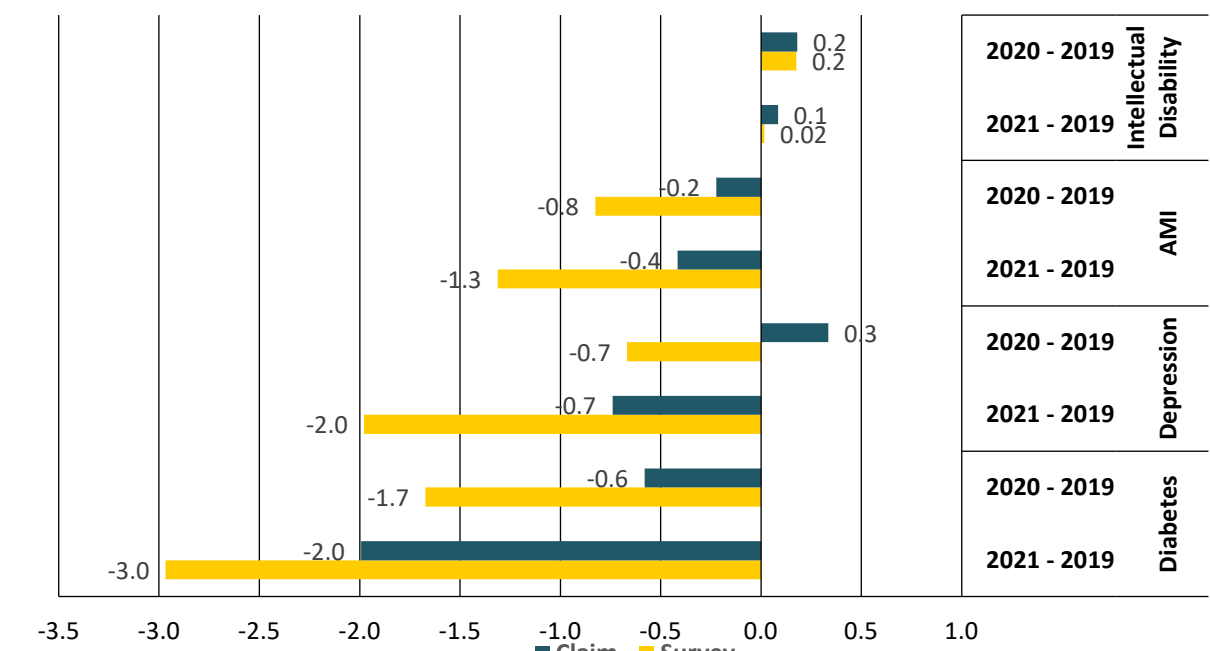
Statistical Analyses

- **Prevalence** of chronic condition
- **Absolute Difference** between claims and survey prevalence, 2020-2019 and 2021-2019
- **Logistic regression:** Predictors of having the chronic condition on survey only versus claims only
- Used MCBS **survey weights**

Factors Associated with Meeting Survey- vs Claims-Only Definition

- Differences in characteristics associated with increased likelihood of having a condition identified by questionnaire vs claims-only for diabetes, depression, and AMI (not intellectual disability possibly due to lack of power)—yet the differences remained consistent across years.
  - Predictors of survey- vs. claims-only: Younger age, non-dual eligibility, good health, college graduate, and not speaking English well
- NS indicates non-significant difference

Logistic regression results comparing those who meet survey-only condition definition compared to claims-only in 2019:				
	Diabetes	**AMI**	**Depression**	**Intellectual Disability**
Age	Older less likely	75+ less likely	Older less likely	NS
Sex	NS	NS	Females less likely than males	NS
Race	NS	NS	NS	NS
Dual eligibility	Duals less likely	Duals less likely	Duals less likely	NS
Good health	More likely	More likely	NS	NS
Education	College/grad/ professional more likely to report on survey only compared to <=8th grade	NS	NA	NS

Conclusions

- When survey data are considered the source of truth for having a chronic condition, claims-based definitions may over- or under-estimate the actual condition prevalence, as observed in four conditions studied.
- The degree of underreporting of chronic health conditions using Medicare claims-based definitions during the COVID-19 PHE ranged from very small to nearly nothing.

Policy Implications

- Quantifying the degree of underreporting of chronic conditions in administrative claims provides context to estimates generated from administrative data.
- Despite reductions in seeking health care for some Medicare beneficiaries—and generating fewer claims—during the COVID-19 PHE, identifying Medicare beneficiaries with chronic conditions can be done with confidence, and chronic condition prevalence estimates are likely fairly accurate.

Limitations

- Medical claims and survey responses both may have been affected by the COVID-19 PHE.
- Survey questionnaire wording and claims-based definitions may have captured prevalence more than incidence of chronic condition. Incidence may have been more affected by the PHE (e.g., people delaying care).