Integrating Survey-collected, Commercial, and Administrative Prescription Medicine Data

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SUMMARY

The Medicare Current Beneficiary Survey (MCBS) collects information from respondents about their prescription medicines, including medicine name, strength, and form. These medicines are linked to Centers for Medicare & Medicaid Services (CMS) administrative prescription medicine claims data.

In 2017, CMS and NORC revised a lookup tool built in 2015, which integrates a high-quality commercial medicine name database into the Computer-Assisted Personal Interviewing (CAPI) questionnaire. The revised tool allows interviewers to select medicine details directly from the database, minimizing manual entry of data.

This poster will present the results of a descriptive analysis of data quality that assesses the match rates for survey-reported medicines to claims data. The analysis includes:
- Comparing match rates of survey-reported medicines to claims data
- Assessing the impact of the commercial database on match rates
- Assessing the impacts of respondent characteristics and medicine name length on match rates

BACKGROUND

What is the MCBS?

The MCBS is a continuous, multipurpose survey of a nationally representative sample of the Medicare population, conducted by CMS through a contract with NORC at the University of Chicago.

The MCBS collects data from Medicare beneficiaries at three points per year over four consecutive years.

The survey covers topics such as health care use and costs, health insurance coverage, and health status and functioning.

Prescription medicine data on the MCBS

Linking survey-reported medicines to claims data is a key part of MCBS data processing.

Commercial Database → Data Collection and Processing + Claims Data → Survey-reported and Claims Matched Data
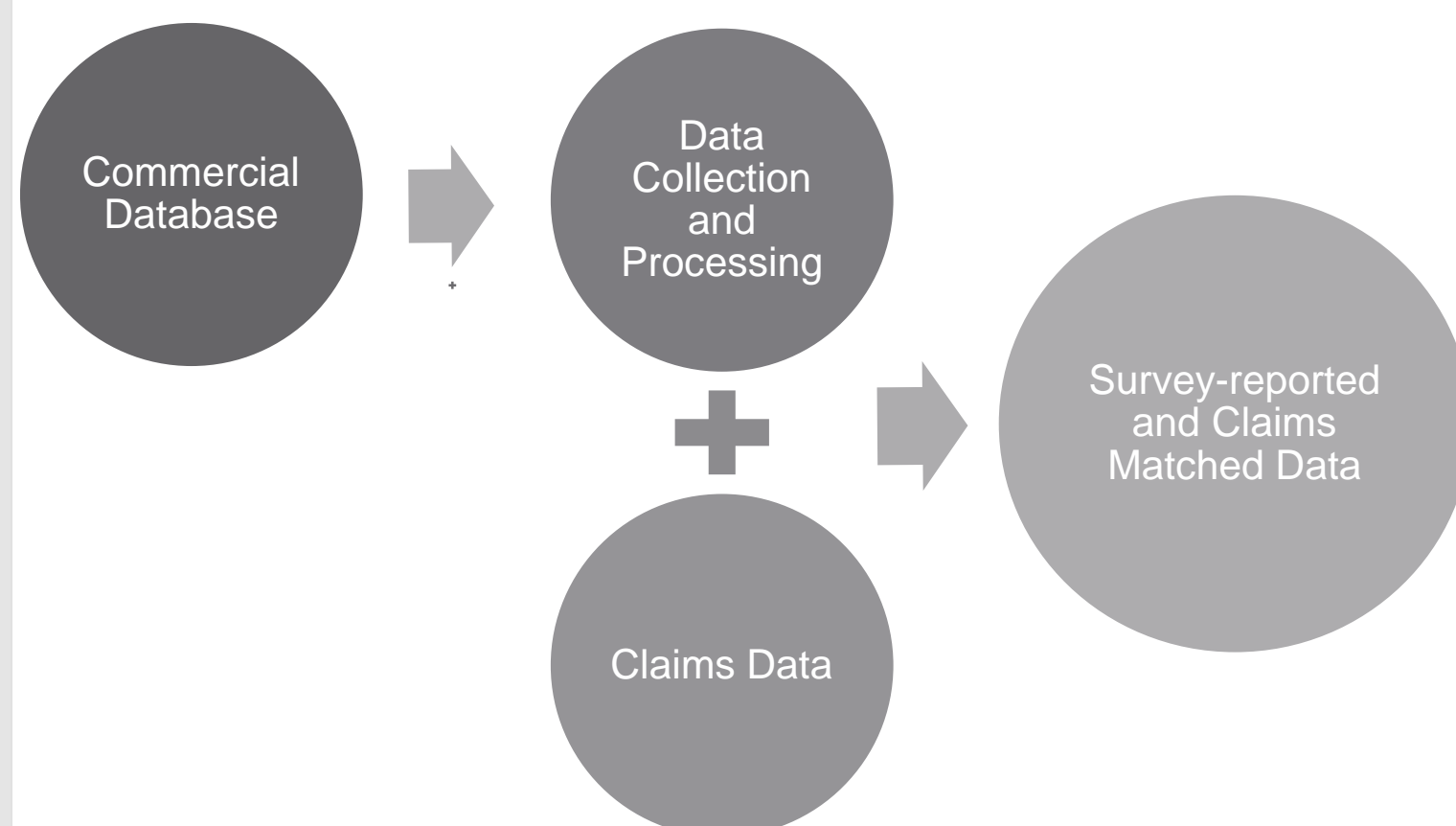
RESEARCH QUESTIONS

How does the match rate to administrative claims data for medicines vary by:

1. Whether the enhanced data collection and processing approach is used?
2. Medications found and not found in the database?
3. Respondent (age) and medicine (name length) characteristics?

RESULTS

Results are based on:
- Medicines reported in **fall 2016** (prior to implementation of the database)
- Medicines reported in **fall 2017** (the first data collection period after implementation of the database)

Match status is determined by whether the survey-reported medicine was linked to claims data.

1. Did overall match rates improve after implementing the database?

Percentage Point Difference in Overall Match Rate

Match Rate — Fall 2016, Fall 2017 — 2%

P < 0.001
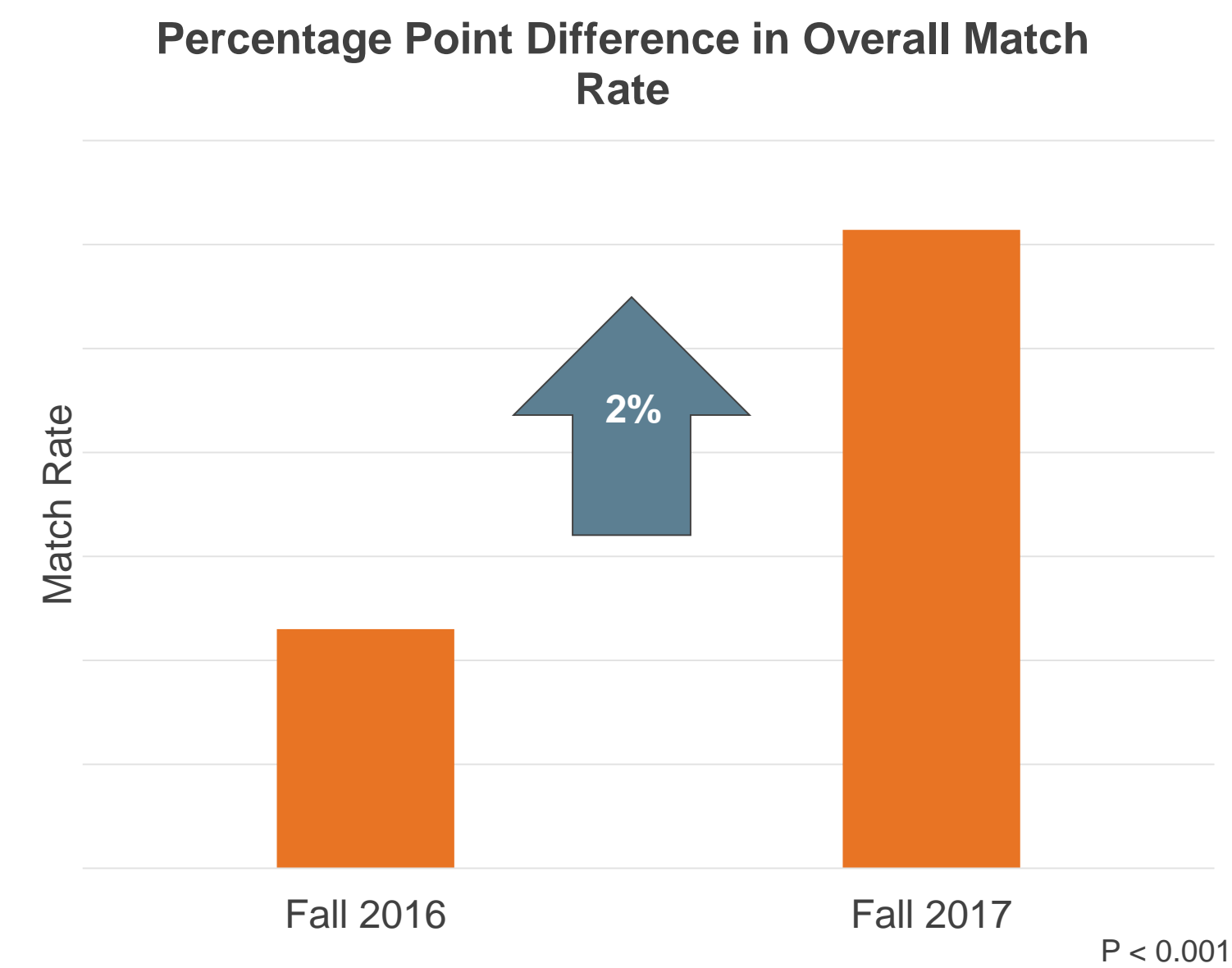
Prescription medicines collected when the commercial database was first implemented have a higher overall claims match rate than prescription medicines collected one year prior
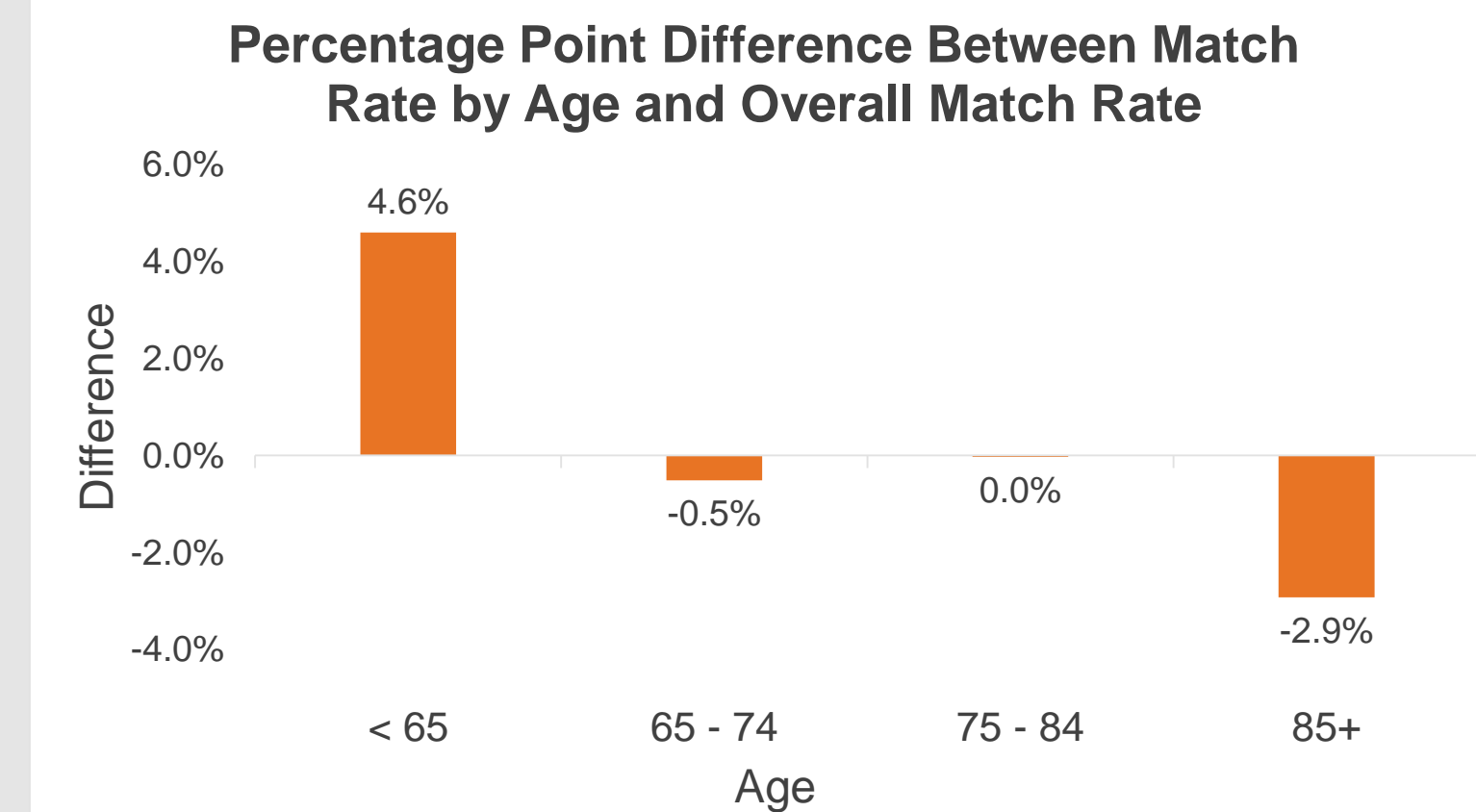
RESULTS, CONTINUED

2. Are match rates for fall 2017 medications found in the database higher than for those not found?

Percentage Point Difference in Match Rate

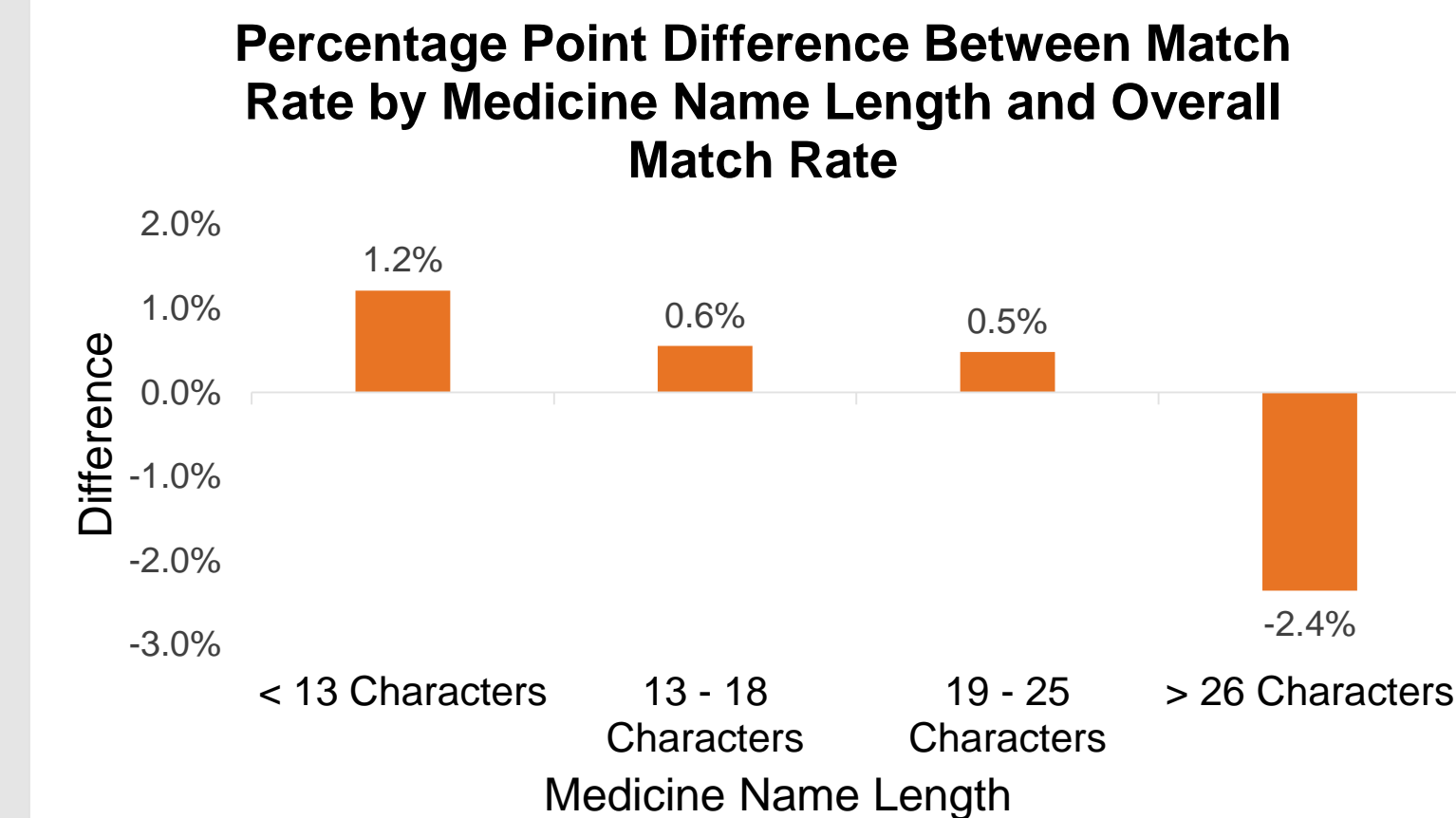Match Rate — Medicine Not in Database, Medicine in Database — 16%

P < 0.001
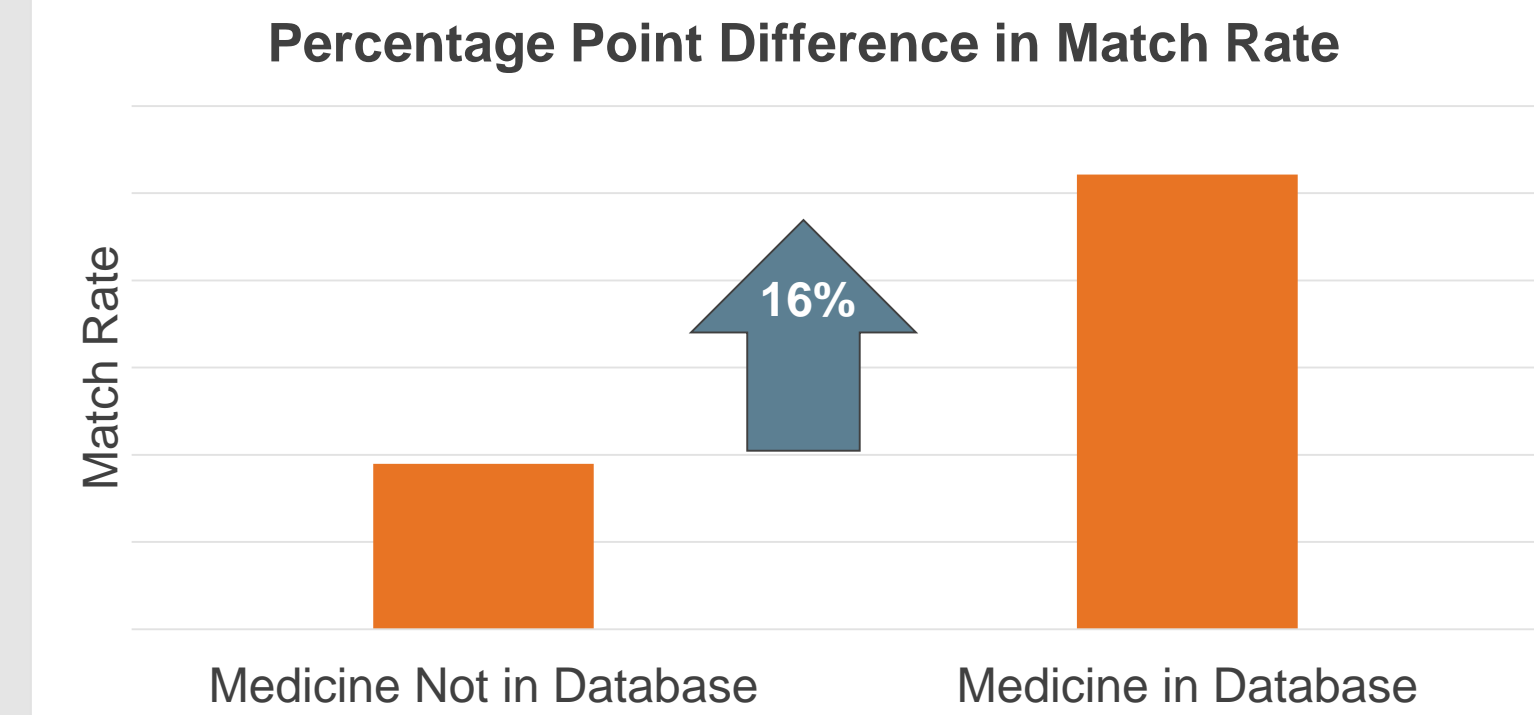
Match rates specific to medicines found in the commercial database during fall 2017 data collection have a significantly higher match rate than medicines not found in the database.

3. How do fall 2017 match rates vary by respondent age and medicine name length?

Percentage Point Difference Between Match Rate by Age and Overall Match Rate

Difference — < 65: 4.6%, 65 - 74: -0.5%, 75 - 84: 0.0%, 85+: -2.9%

Age

Match rates for respondents under the age of 65 were over 4 percentage points higher than the overall match rate.

Percentage Point Difference Between Match Rate by Medicine Name Length and Overall Match Rate

Difference — < 13 Characters: 1.2%, 13 - 18 Characters: 0.6%, 19 - 25 Characters: 0.5%, > 26 Characters: -2.4%

Medicine Name Length

In fall 2017, medicines with the longest names were matched to claims less often than medicines with shorter names.

DISCUSSION

This analysis assesses the impact of introducing a commercial database to prescription medicine data collection and data processing to improve data quality. The database is leveraged in a lookup tool used by field interviewers when inquiring about respondent medicine use as well as in data processing.

Improvements are measured by changes in the rate of successful linkage of MCBS survey-collected medicine events to Medicare administrative prescription medicine claims data.

Results suggest that introducing the database has improved the overall quality of MCBS survey-reported prescription medicine data.

This analysis uses the introduction of a commercial database to MCBS prescription medicine data collection and data processing as an example; however, this effort can inform other efforts to integrate survey-collected, commercial, and administrative data.

A vast amount of commercial data is available to survey researchers, and its use may offer cost- and time-savings. The largest potential benefit, however, may be a substantial improvement in data quality.

This analysis illustrates the potential gains in data quality.

LIMITATIONS

Limitations include:

- The analysis is not weighted and inference to the MCBS population is not addressed.

- MCBS prescription medicine data is matched to administrative claims data annually. However, this analysis only considers one of three annual data collection periods.

- For fall 2017 analyses, no distinction is made between medicines newly reported after implementing the database in fall 2017 and those first reported prior to fall 2017 and re-reported in fall 2017.

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