



MEPS – Provider Look-up Enhancement

Marie Stagnitti

Adam Biener

Agency for Healthcare Research and Quality

Angie Kistler

Westat

CE Survey Methods Symposium, BLS

July, 2018



Disclaimer

The views expressed are those of the authors, and do not necessarily represent those of the Agency for Healthcare Research and Quality or the US Department of Health and Human Services.

Introduction

The purpose of this talk is to showcase a new technological enhancement, a look-up feature for reporting medical care providers, added to the Medical Expenditure Panel Survey (MEPS).

Background: MEPS Survey Components

- **MEPS-HC: Household Component**
 - Annual survey of 15,000 households
 - Provides national estimates of health care use, expenditures, insurance coverage, sources of payment, access to care and health care quality
- **MEPS-MPC: Medical Provider Component**
 - Follow-back survey of medical providers linked to respondents of the HC

Background: Medical Provider Component

- Survey of approximately 5,000 hospitals, 12,000 office based providers (OBPs), 7,500 pharmacies, 500 home health care agencies, and 12,000 separately billing doctors linked to respondents of the HC
- *The MPC collects data that household respondents cannot accurately provide, such as dates of visit, charges and payments, diagnosis and procedure codes*
 - ▶ Essential for accuracy of MEPS expenditure estimates

Goals of MEPS-HC enhancements

- Reduce cognitive burden of responding
- Reduce response errors that impede MPC data collection
- Simplify interview administration / reduce survey costs

Provider Look-up Enhancement has...

- Reduce cognitive burden of responding
 - ▶ Google style look-up less burdensome than previous CAPI provider enumeration
 - ▶ One step entry
 - ▶ No required parameters for search - allows respondent to report what they can, in order they prefer
- Reduce response errors that impede MPC data collection
- Simplify interview administration / reduce survey costs

Provider Look-up Enhancement has...

- Reduce cognitive burden of responding
 - ▶ Google style look-up less burdensome than current CAPI provider enumeration
 - ▶ One step entry
 - ▶ No required parameters for search - allows respondent to report what they can, in order they prefer
- Reduce response errors that impede MPC data collection
 - ▶ Fewer opportunities for entry errors
- Simplify interview administration / reduce survey costs

Provider Look-up Enhancement has...

- **Reduce cognitive burden of responding**
 - ▶ Google style look-up less burdensome than current CAPI provider enumeration.
 - ▶ One step entry; no required parameters for search - allows respondent to report what they can, in order they prefer
- **Reduce response errors that impede MPC data collection**
 - ▶ Fewer opportunities for entry errors
- **Simplify interview administration / reduce survey costs**
 - ▶ Interviewer has short list of high likelihood matches to use in interview
 - ▶ Less time required to abstract hand entered providers
 - ▶ Fewer Authorization Forms (AFs), consolidation of MPC requests reduce provider duplication and improve MPC fielding

Provider Look-up Enhancement

- Provider Directory
 - ▶ Free registry of providers with active National Provider Identifier (NPI) maintained by CMS National Plan and Provider Enumeration System (NPPES)
- Provider Look-up
 - ▶ The Blaise system supports a smart search engine called *trigram* search
 - ▶ Google style look-up that matches search string to records in NPI directory in real time

Blaise Trigram Search

- Interviewer types in search string

Blaise Trigram Search

- Interviewer types in search string
- All relevant fields (name, address, phone) for each record in NPI directory concatenated into a single text string (*index*)

Blaise Trigram Search

- Interviewer types in search string
- All relevant fields (name, address, phone) for each record in NPI directory concatenated into a single text string (index)
- Search string and indices are cut into three-character strings called *trigrams* (leading and following spaces added)

Blaise Trigram Search

- Interviewer types in search string
- All relevant fields (name, address, phone) for each record in NPI directory concatenated into a single text string (index)
- Search string and indices are cut into three-character strings called trigrams (leading and following spaces added)
- ***Match score*** calculated based on how many trigrams from search string are present in the directory indices

Blaise Trigram Search

- Interviewer types in search string
- All relevant fields (name, address, phone) for each record in NPI directory concatenated into a single text string (*index*)
- Search string and indices are cut into three-character strings called trigrams (leading and following spaces added)
- Match score calculated based on how many trigrams from search string are present in the directory indices
- Records with highest match scores above a threshold are displayed

MEPS Specific Enhancements

- **Provider Directory**
 - ▶ Directory for each interview tailored for respondent
 - ▶ Restricted to providers within a 100-mile radius of respondents zip code
 - ▶ Will add national centers for excellence in the near future

- **Provider Look-up**
 - ▶ Optimal search heuristics developed by AHRQ and WESTAT and tested by Field Interviewers
 - Start with phone number and/or unique text in provider name; more likely to whittle down to exact match than generic provider name, which may have many erroneous matches

DEMO

- Interface between Blaise CAPI interview and search tool
- Different approaches for search strings, focusing on “unique” information
- Variations in search results

Preliminary results with Look-Up Enhancement

- In prior version of look-up, the “match” rate had dropped to below 60%
- Using the enhanced look-up, we observe a little over an 76% match rate
- Using same approach for looking up Pharmacy providers, we observe a 87% match rate

Applications of Look-up Enhancements

- Could be used for quick search of other large databases, such as ICD10, etc.
 - ▶ Like MEPS, prior information on survey population can help to do further enhancements and refine search/selection process to further reduce burden and time of interview
- Simplifies interviewer training – familiarity with typical search engines (Bing, Google)
 - ▶ Less “new learning”

Conclusion

New provider look-up tool can improve HC and MPC collection:

- Reduce interview burden – Improve interviewers ability to work with respondent to select providers
- NPI directory can result in more accurate provider data
- Better data can streamline MPC data collection
 - ▶ Fewer contact groups, fewer AFs due to less duplication
 - ▶ More accurate/complete/consistent provider address/phone number information reduce amount of contacts to locate a provider
 - ▶ Fewer contacts lower survey costs
- Technology can be generalized to other computer-assisted interviews when a large database is available

Thank you!