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# Behavior Change Techniques for Reducing Interviewer Contributions to Total Survey Error

Brad Edwards, Hanyu Sun, and Ryan Hubbard

Presented at the Symposium on Interviewer Effects and Total Survey Error, Lincoln, Nebraska February 26, 2019

## Key Words

CARI

Rapid Feedback

Interviewer Training

Behavior Coding

Continuous Quality  
Improvement

## Talk Outline

Background

Data and Methods

Rapid Feedback from CARI

Rapid Feedback of Alerts from Data

Impact on Key Survey Estimates

Conclusion

# Background

- Most interviewer training delivered *before* data collection, **BUT**
  - Most adults learn better on-the-job, just-in-time, by doing, with peers
- Field interviewers work remotely in face-to-face survey operations, so very hard to see what they are doing, **BUT**
  - Tools available now to bring field operations under much greater control
  - General field interview quality can be improved with rapid feedback (verbal and written combined) of results from behavior coding of CARI recordings

# Goals of This Research

- › Replicate research findings on impact of rapid feedback from CARI behavior coding on *general* interview quality
- › Determine whether rapid feedback from CARI can impact *specific* interview items that are instrumental in development of key survey statistics
- › Determine whether rapid feedback from automated analysis of survey data can impact data quality



# Medical Expenditure Panel Survey (MEPS): Calendar Series

Blaise 4.8 Data Entry - C:\wescap\MEPS\BFOS\CA\MEPSCAPI\Data\MEPSSpring2019\_P1000119A

Answer Options Help

Thanks for keeping these records. Let me review the records with you first.  
Please tell me who the record is for, and the type of record you're looking at, such as a calendar, or a provider or insurance statement, patient portal information, payment records, prescription records such as medicine bottles, or something else.

Do you have a calendar with health entries?

NAVIGATION: Complete the grid in order of respondent's answers.

☒ 1. YES, HAS CALENDAR WITH HEALTH CARE ENTRIES FOR LUCY ANN BROWN

☐ 2. NO, DOES NOT HAVE CALENDAR WITH HEALTH CARE ENTRIES FOR LUCY ANN BROWN


Records for RU member	CA30_01 Calendar with health care entries	CA30_02 Provider or Insurance Statements	CA30_03 Patient Portal	CA30_04 Payment Records	CA30_05 Rx Records/ Bottles	CA30_06 PR/MB Follow-Up	CA30_07 Other	CA30_08 Other Specify
LUCY ANN BROWN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

P1000119A CA30\_01 2/24/2019 11:00:39 AM Spring2019.fld.Beta.0001

# MEPS: Provider Probes Series

Blaise 4.8 Data Entry - C:\wescap\MEPS\BFOS\CA\MEPSCAP\Data\MEPSSpring2019\_P1000119A

[Answer](#) [Options](#) [Help](#)

 PP-1

The next set of questions help make sure we haven't missed any additional health care for any of the people living here.

As I ask the questions, please look at the corresponding show cards and think about any additional health care each person received.

Let's start with hospitals. Looking at card PP-1, since August 15, 2018, were you admitted to the hospital for any period of time?

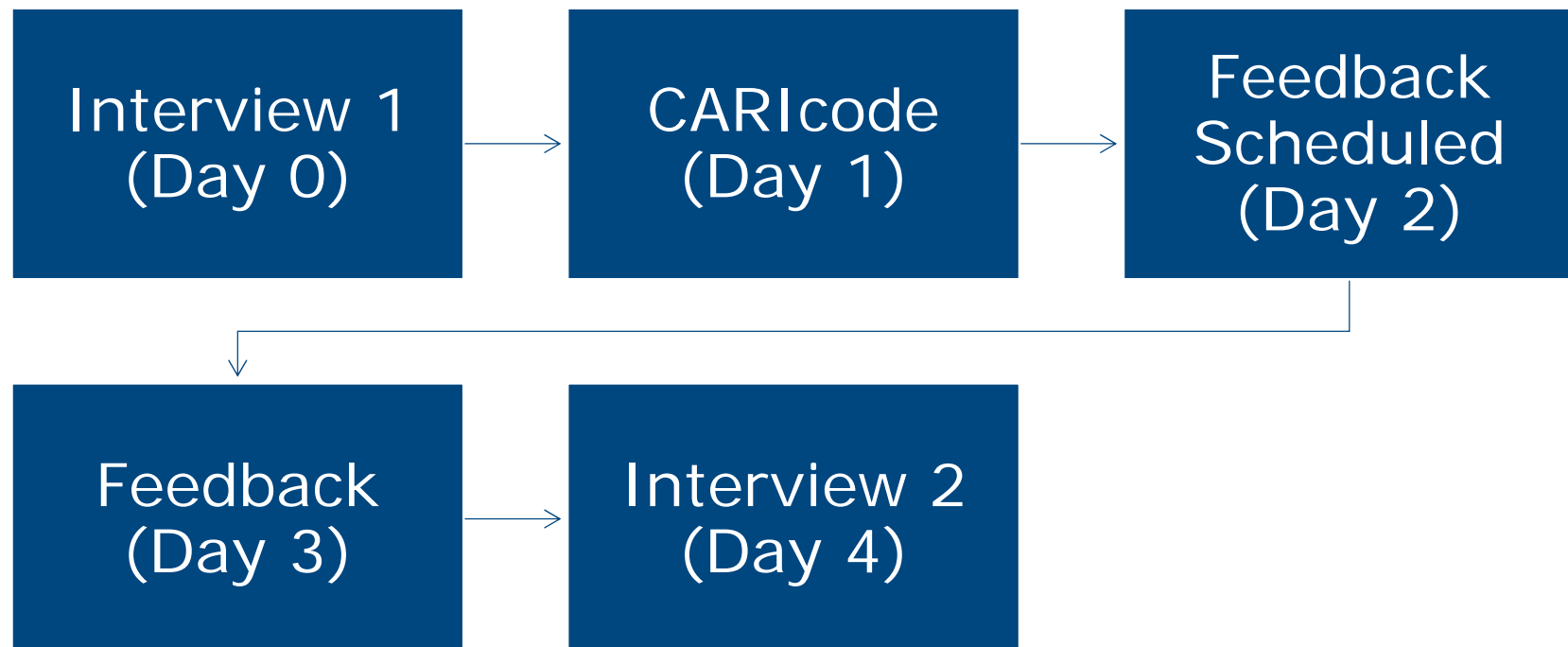
☐ 1. YES

☒ 2. NO

Lucy Ann Brown ☒ No

P1000119A PP10 2/24/2019 11:34:13 AM Spring2019.fid.Beta.0001

# CARlcode Rapid Feedback Process



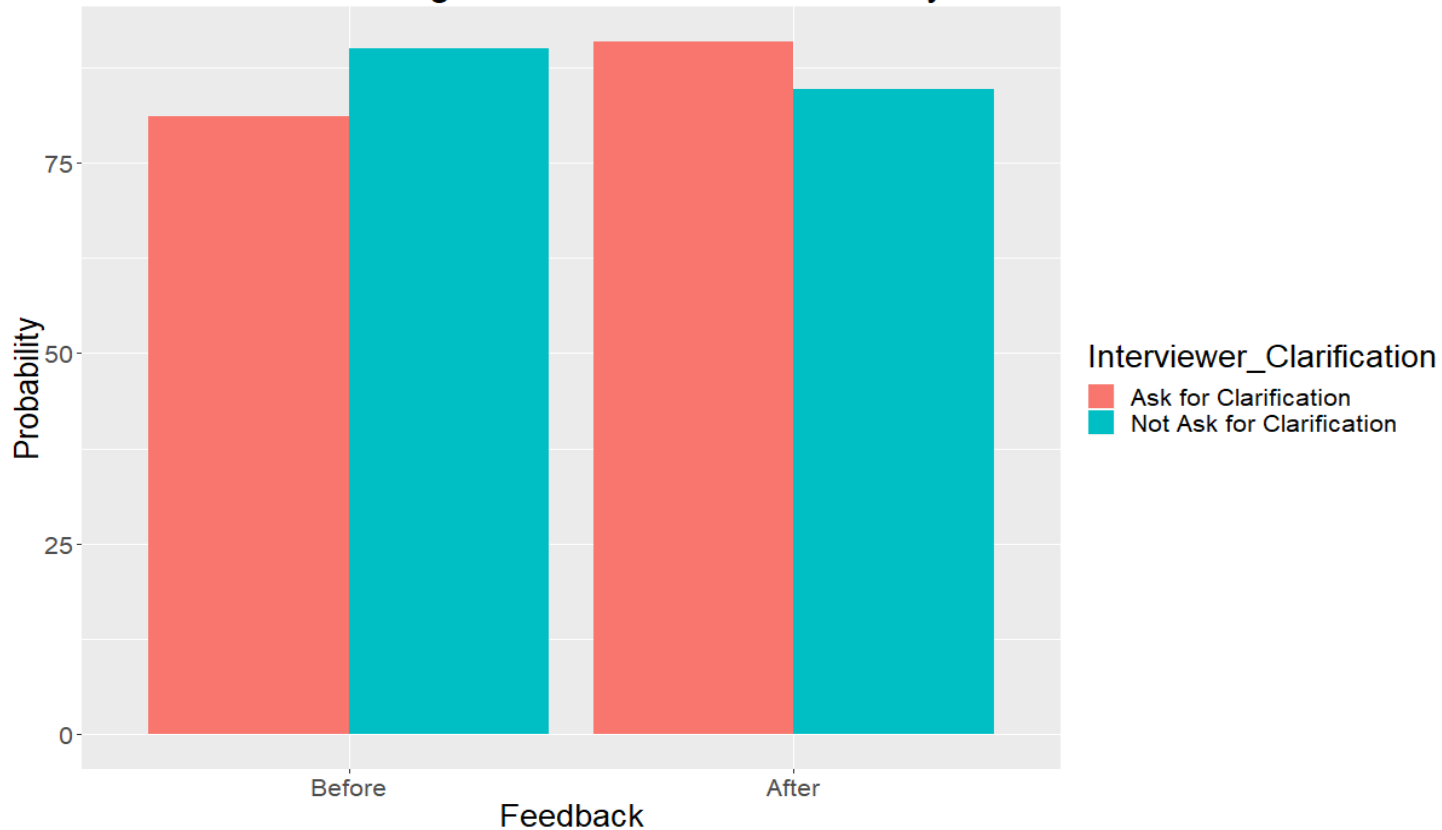


## Both Question Series, CARL code Results

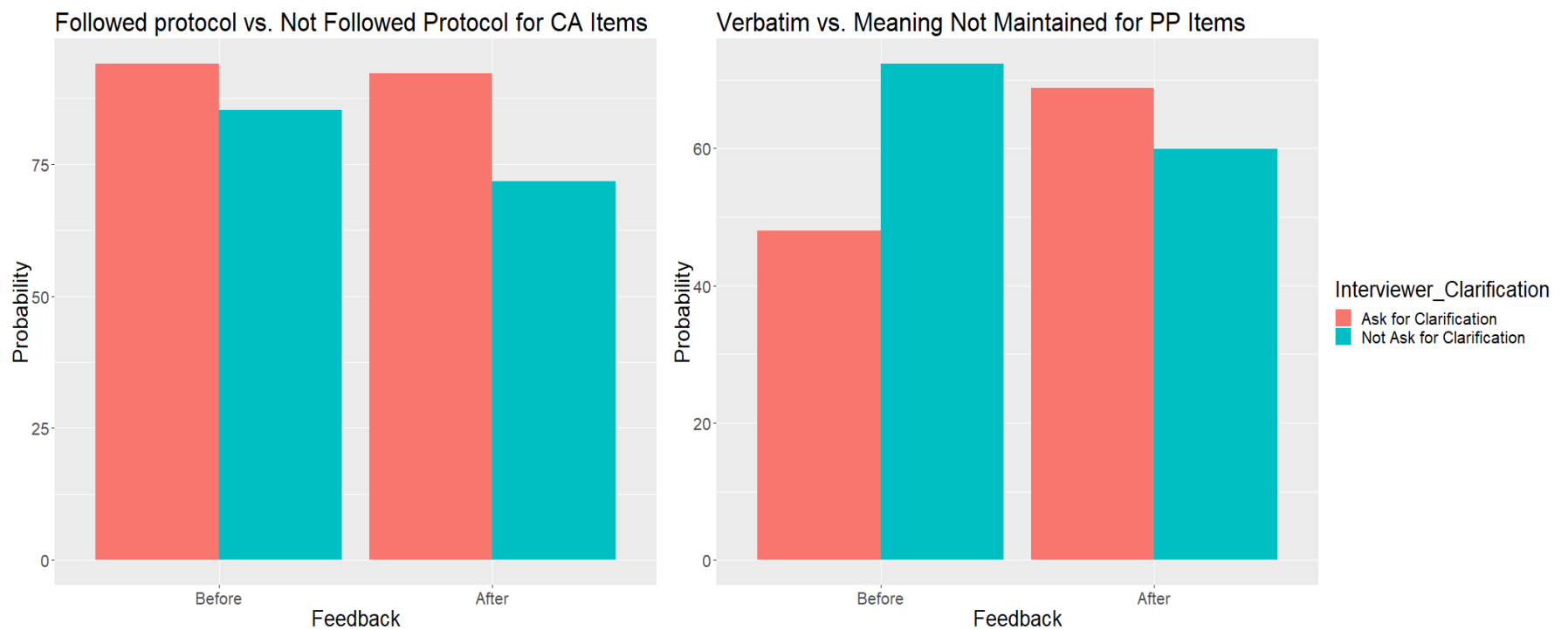
Interviewer Behavior	Before Feedback	After Feedback
Followed Protocol Exactly (Verbatim for PP, Respondent's Order for CA)	33.4%	43.4%
Maintained Meaning but Did Not Follow Protocol Exactly	56.8%	52.9%
Meaning Not Maintained	9.8%	3.7%
<i>N</i>	3072	2187

# Clarification in Feedback Session

Verbatim vs. Meaning Not Maintained: Feedback by Interviewer Clarification



# Clarification Effect during Feedback Driven by Provider Probes



# Rapid Feedback: Discussion

- › Interviewer experience did not explain different effects of asking clarification
- › CA series' flexible grid requires "off-the-grid" interviewer navigation
  - perhaps even after getting clarification, some interviewers just don't get it
- › Nature of question content differs between 2 series
  - maybe some interviewers don't believe CA makes a difference, even after getting clarification



# Quality Alerts from Data

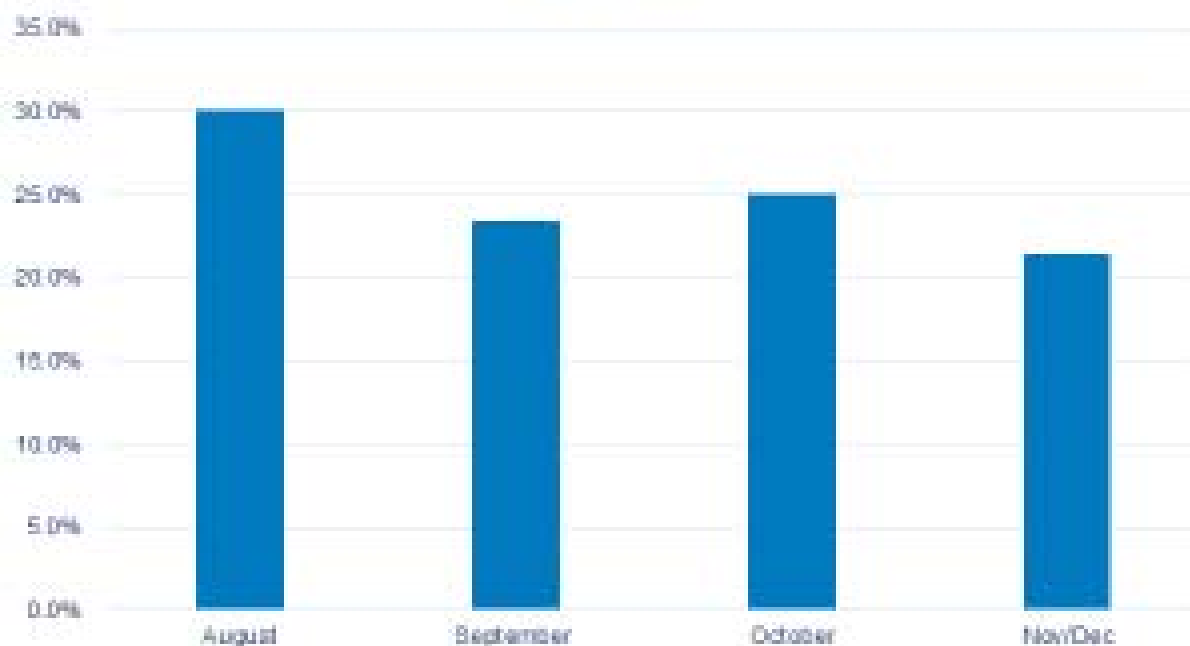
- › Implemented through field supervisor dashboard
- › Data transmitted overnight from interviewers in the field automatically checked for specific anomalies that needed immediate attention
- › Anomalies popped up on supervisor dashboard the next morning
- › Supervisors reviewed anomalies with interviewers and documented status in the alert section of the dashboard

## Data Quality Alert Distribution

Alert Type	Count	Percent
Record usage (general) All medical events	1968	84.4
Record usage Prescribed Medicines (65+)	243	10.4
Zero night hospital stays (admission and discharge on same day)	117	5.0
Respondent under 18	4	0.2
<b>Total</b>	<b>2332</b>	<b>100.0</b>

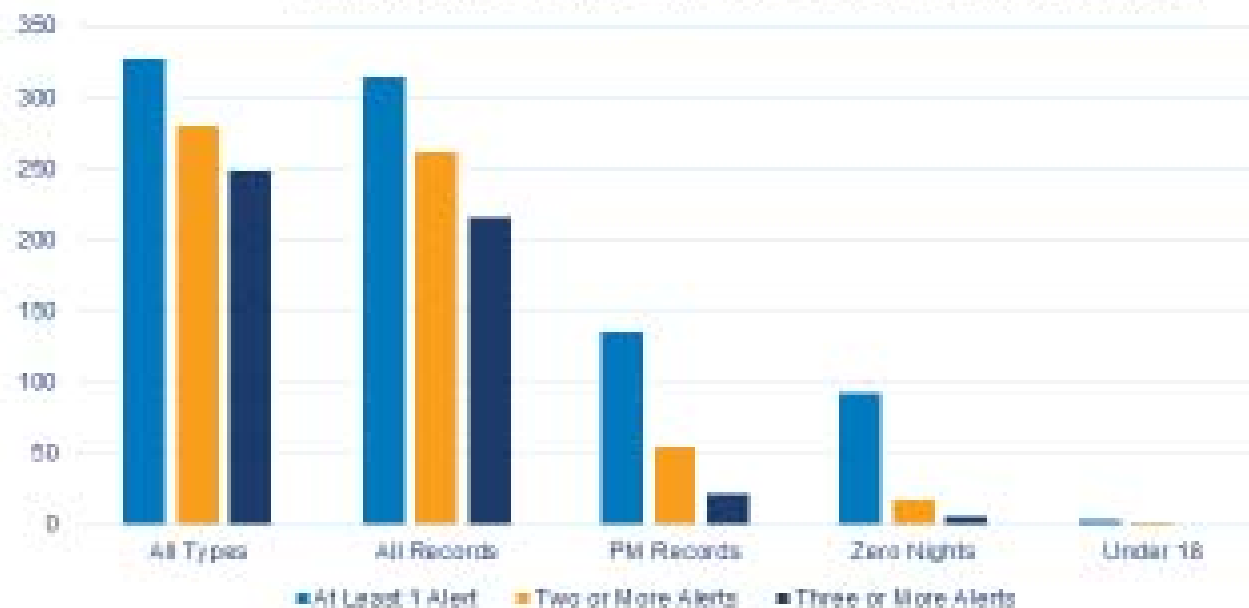
# Caseload-adjusted Alert Counts Over Field Period

All Types



# Alert Occurrence Among Interviewers

Distribution of Alerts Among Interviewers  
(Interviewer Counts out of 350-375 Field Interviewers)





# Key MEPS Statistics: Rx for Older People, 2016

Description	Statistic
Population with expense	46,409,000
Proportion with expense	90.2%
Number of prescription events	1,304,000
Mean events/person	25.4
Mean expenditures/event	\$117
<b>Mean</b> expenditures/person w/event	<b>\$3,289</b>
<b>Median</b> expenditures/person wi/event	<b>\$1,100</b>
Total expenditures	\$152,602,000,000

# Conclusion

- › Rapid feedback on techniques for asking specific questions related to key survey statistics can improve interviewer performance
- › Rapid feedback on raw data collected in the interview can improve interviewer performance
- › Rapid feedback can be an effective form of interviewer training
- › Improved interviewer performance = improved respondent performance
- › Rapid feedback can improve the quality of key survey statistics

# Thank You

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