



AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



Design of a Pilot Test of Businesses to Study the Effects of Omitting Select Survey Processes on Survey Response and Data Quality

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Disclaimers



- The views expressed in this presentation are those of the authors and no official endorsement by the Department of Health and Human Services, the Agency for Healthcare Research and Quality, or the U.S. Census Bureau is intended or should be inferred.
- The Census Bureau has reviewed this data product to ensure appropriate access, use, and disclosure avoidance protection of the confidential source data [Project No. P-6000376, Disclosure Review Board (DRB) approval numbers: CBDRB-FY23-ESMD002-007, CBDRB-FY23-ESMD002-012].

Presentation Outline

- **Introduction to MEPS**
- **Data collection**
- **Survey response**
- **2021 MEPS-IC pilot test**
 - ▶ Design & Methods
 - ▶ Results
- **Summary & Discussion**

Medical Expenditure Panel Survey (MEPS)



- **Household Component (HC)**
 - ▶ Annual survey of households
 - ▶ Administered by Westat

- **Medical Provider Component (MPC)**
 - ▶ Annual sample of providers of services to HC respondents
 - Physicians
 - Hospitals
 - Home health agencies
 - Pharmacies
 - ▶ Administered by RTI International

- **Insurance Component (IC)**
 - ▶ Annual survey of
 - U.S. business establishments
 - U.S. State & local governments
 - ▶ Administered by the U.S. Census Bureau

Overview of the MEPS-IC



- **Health Insurance Cost Study** (survey name on forms)
- **Annual survey**
 - ▶ Over 42,000 business establishments (individual locations)
 - ▶ Over 3,200 State and local governments
 - Not covered in this presentation
- **National & State-level estimates**
 - ▶ % of employers offering health insurance
 - ▶ # of enrolled employees
 - ▶ Health insurance premiums, copays & deductibles
- **Data Collection Modes**
 - ▶ Mail
 - ▶ Web
 - ▶ Telephone

Pre-COVID MEPS-IC Data Collection



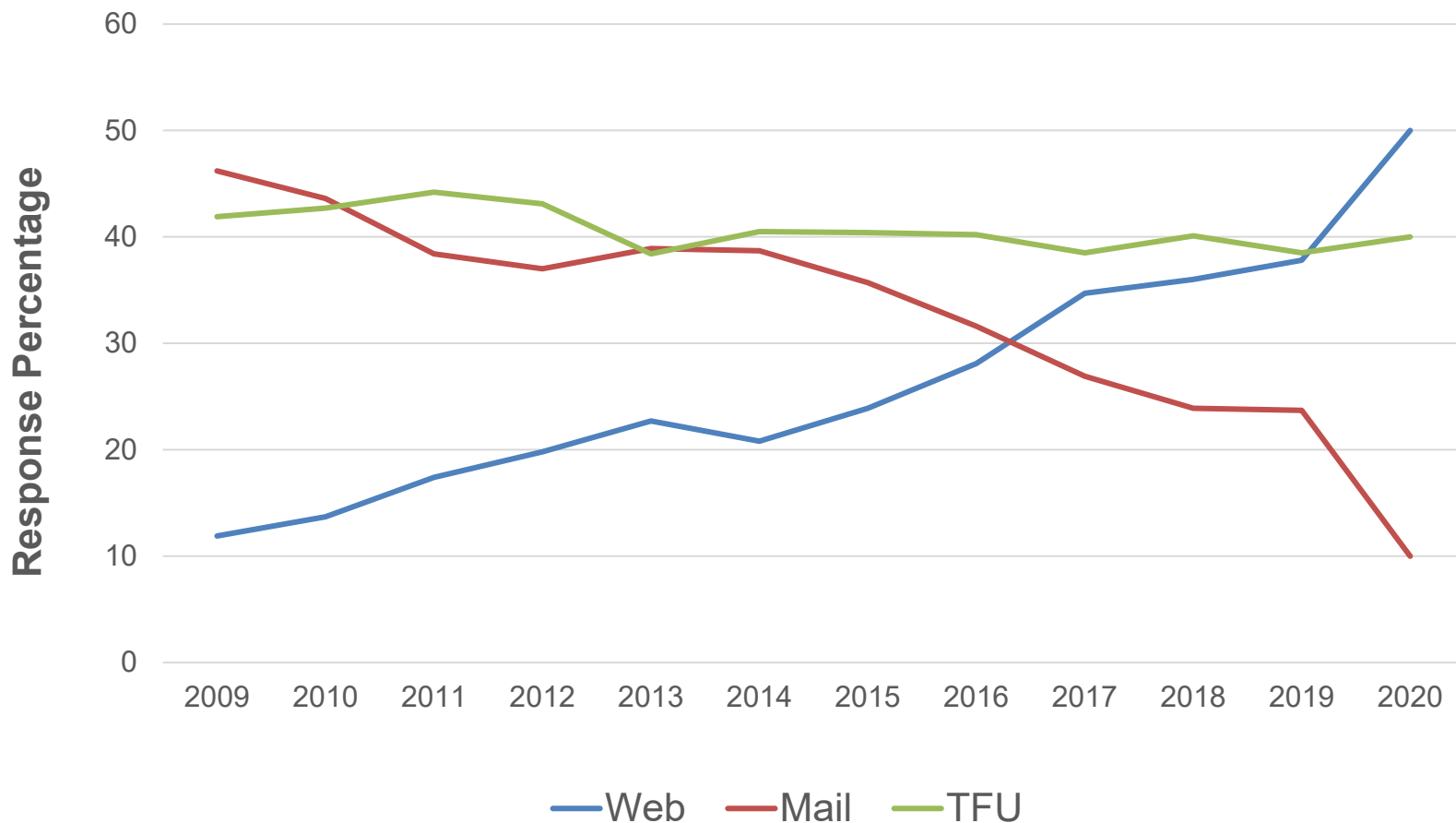
- **Research**
 - ▶ Update employer contact information & find best person to contact
- **Telephone Prescreener**
 - ▶ Determine if offer insurance. If no - end of survey
- **Mailed Survey Forms**
 - ▶ Sent if offer insurance or nonresponse to pre-screener
- **Internet (Web)**
 - ▶ Option given in introductory letter of the mailed survey forms packet and on the first page of the mailed survey form
- **Personal Visit**
 - ▶ Very few – only for the largest non-respondents
- **Telephone Follow-up (TFU)**
 - ▶ For establishments with no response via mail or internet

2021 MEPS-IC Data Collection Processes

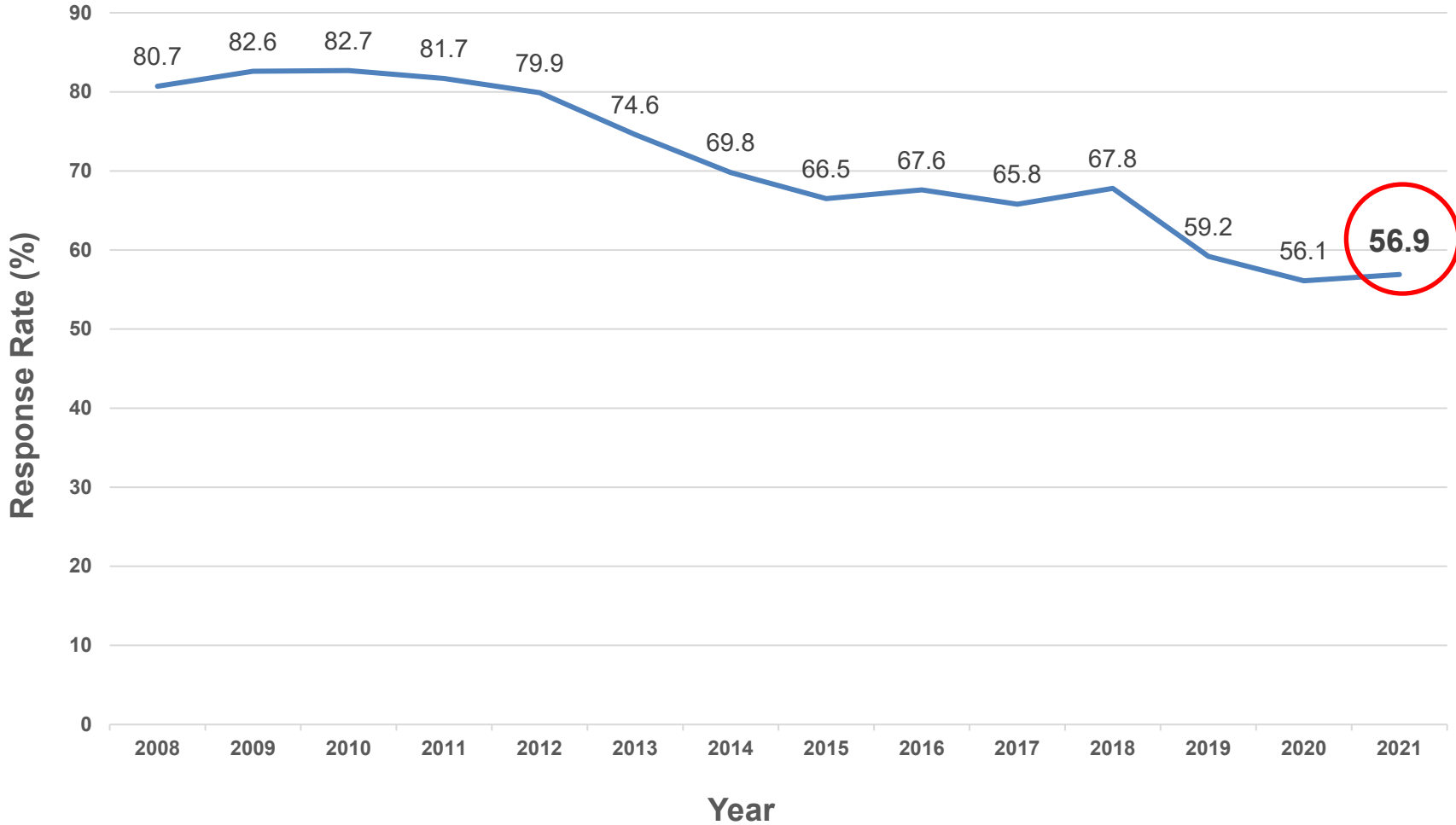


- **Research** – update employer contact information
- **Prescreener** – brief phone call to determine if offer insurance
- **Initial Email** – email invitation to respond to the survey via web
- **Initial Mail** – letter invitation to respond to the survey via web
- **Follow-Up Procedures**
 - ▶ Reminder Email
 - ▶ 1st Mail Follow-Up
 - ▶ 2nd Mail Follow-Up – full questionnaire package mailed
 - ▶ 1st Email Follow-Up
 - ▶ **Telephone Follow-Up (TFU)**
 - ▶ 2nd Email Follow-Up
 - ▶ 3rd Email Follow-Up

MEPS-IC Response Mode Percentages



MEPS-IC Private Sector Overall Response Rate (AAPOR RR2)



2021 Pilot Test - Background



- **2020 – Covid health pandemic forced several labor-intensive MEPS-IC survey operations to shut down as data collection was about to begin**
 - ▶ Prescreener
 - ▶ Research
 - ▶ Survey forms mailout
 - ▶ Survey forms reception

- **Covid mitigation brainstorming**
 - ▶ Make the survey web only?
 - ▶ Effects of removing labor-intensive processes
 - Generally the most costly operations

Definitions of Terms

- **Establishment** – a specific business location
- **Firm (Company)** – has one or more establishments
 - ▶ **Single Unit** – a company with only one business location
 - ▶ **Multiunit** – a company with more than one business location
 - ▶ **Single Multiunit** – only one establishment of a multiunit company sampled into the survey

2021 Pilot Test - Design

- **Pilot test establishments sampled independently from the regular survey (“production”) cases**
 - ▶ Establishments can’t be in both pilot test & production (regular survey)
 - ▶ No overlap of pilot test & production establishments within firms
 - Decision made to only sample single unit & single multiunit establishments into the pilot test → sample of only smaller firms
 - Discarded establishments in multiunits that were selected in the production survey to prevent possible TFU overlap → weights redistributed within the stratum
- **Pilot test cases processed and tabulated separately from the production cases**
 - ▶ Data collection methods different
 - ▶ Pilot test cases should not be used to impute production cases
 - ▶ Separate tabulations allows for comparison of estimates

2021 Pilot Test - Methods

- **5,000 small businesses drawn independently from the same frame as the “production” survey**
 - ▶ Establishments in firms with 1-91 employees (stratum bound)
- **Data collected concurrently with production cases**
 - ▶ No Research
 - ▶ No Prescreener
 - ▶ No Telephone Follow-Up (TFU)
- **Data processed separately from production cases**
 - ▶ Separate edit & imputation processes
 - ▶ Modified nonresponse weight adjustment procedure
 - ▶ Pilot cases won't contribute to survey estimates
- **Data tabulated separately from production cases**

2021 Pilot Test Data Collection Processes



- ~~Research~~ – update employer contact information
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2021 Response Rates

	Sample Size (in scope)	Response Rate (AAPOR RR2)
Overall MEPS-IC	39,935	56.9 %
1 - 91 MEPS-IC Sample	19,108	58.7 %
1 – 91 Pilot Test Sample	4,729	42.9 %

2021 Pilot Test – Results Estimates



- **Compared 1 – 91 firm size MEPS-IC establishment to Pilot Test estimates at U.S. level**
- **Establishment-based estimates including:**
 - ▶ % Establishments offering health insurance
 - ▶ % Women employees
 - ▶ Total # part-time employees in establishments offering health insurance
- **Health insurance plan estimates including:**
 - ▶ % Employees enrolled in single & family coverage plans
 - ▶ Average single & family coverage premiums
 - ▶ Average individual & family deductibles

2021 Pilot Test – Results

Establishment Estimates



Establishment-Level Estimate	Pilot Est	Pilot SE	IC Est	IC SE	Sig Diff
% Establishments that offer health insurance	32.7	2.10	34.0	0.72	NS
% Women employees	40.4	1.27	44.3	0.46	0.01
% Employees 50+ years of age	25.9	1.03	26.8	0.35	NS
% Employees low wage (< \$13.50/hour)	19.8	1.16	19.5	0.43	NS
% Employees offered paid vacation leave	76.8	1.62	78.7	0.55	NS
% Employees offered paid sick leave	65.0	1.69	68.9	0.63	0.05
Total employees in establishments	40,101,016	796,923.1	41,447,071	382,860.9	NS
% Employees in establishments that offer health insurance	57.1	1.80	57.6	0.67	NS
% Employees eligible for health ins in estabs that offer	77.8	1.60	79.4	0.62	NS
% Employees eligible for health ins that are enrolled	69.3	1.57	66.7	0.62	NS
Total part time employees in establishments	10,859,216	547,430.1	11,508,567	221,764.6	NS
% Enrollees in family coverage plans	21.9	1.08	21.5	0.56	NS
% Enrollees in grandfathered plans	13.6	1.81	11.4	0.72	NS

2021 Pilot Test – Results

Plan-Level Estimates

Plan-Level Estimate	Pilot Est	Pilot SE	IC Est	IC SE	Sig Diff
Exclusive providers plan	30.0	2.66	29.0	1.01	NS
Any providers plan	13.4	1.54	12.9	0.71	NS
Mixture of preferred and any providers plan	56.6	2.74	58.1	1.10	NS
Gatekeeper or physician required for specialist referral	32.4	2.55	35.6	1.06	NS
Plan purchased from insurance underwriter	87.3	1.58	83.8	0.86	0.10
Plan self-insured	12.7	1.58	16.2	0.86	0.10
% Employees enrolled in single coverage	61.0	1.63	63.4	0.66	NS
Average single coverage premium	7,489	170.6	7,350	71.8	NS
Average family coverage premium	20,063	544.6	20,442	260.9	NS
Average individual deductible	2,545	72.2	2,444	38.1	NS
Average family deductible	5,175	255.6	4,895	123.6	NS
% Enrollees in plans with a deductible	85.3	1.79	86.8	0.76	NS

2021 Pilot Test – Data Quality

Item Nonresponse & Edit Failure Rates



Estimate	Pilot Test Item NR	Pilot Test Edit Failures	Survey Item NR	Survey Edit Failures
% Teleworking employees	2.6	1.1	3.7	1.5
% Women employees	3.2	0.0	4.8	0.1
# Active employees enrolled	2.2	0.0	4.4	0.0
Type of provider	5.9	0.0	5.8	0.0
Total single coverage premium	15.3	1.6	19.2	3.3
Total family coverage premium	19.4	1.8	25.5	3.3
Average individual deductible	7.5	11.0	11.8	10.6
Average family deductible	12.6	6.5	17.8	7.3

2021 Pilot Test – Data Quality

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Summary

- **Comparing Pilot Test results to MEPS-IC survey estimates (establishments in firms with 1 – 91 employees) at the U.S. level:**
 - ▶ Estimates: Pilot Test similar to MEPS-IC
 - ▶ Data Quality: Pilot Test generally better than MEPS-IC
 - Item nonresponse rates
 - Edit failure rates
- **Unit response rate lower for Pilot Test**
 - ▶ 42.9% Pilot Test
 - ▶ 58.7% MEPS-IC (1 – 91 employees)

Discussion

- **Pilot Test data quality**
 - ▶ Pilot test mode primarily web
 - ▶ Web generally better quality than mail or telephone response
 - Aided by automated edits in the web instrument (“soft edits”)
- **Mode effects (based on a selection of variables used in this analysis)**
 - ▶ Pilot test item NR rate from mail increases ~ 40% over web only
 - ▶ IC (1 - 91 employees) item NR rate from mail & phone increases ~ 60% over web only
 - ▶ Pilot test edit failure rate from mail increases ~ 5% over web only
 - ▶ IC (1 – 91 employees) edit failure rate from mail & phone increases ~ 15% over web only
- **Significant cost savings** realized from omitting labor-intensive processes: Research, Prescreener & Telephone Follow-Up

Discussion – Data Collection Methods

- **Pilot test vs MEPS-IC survey**
 - ▶ No Research
 - ▶ No Prescreener
 - ▶ No Telephone Follow-Up (TFU)
- **Best method? Need to consider data quality & cost vs unit response**
 - ▶ Pilot test estimates differed from MEPS-IC survey:
 - At national level (not so much)
 - By firm size (generally a bit more)
 - By industry (generally more)
 - ▶ Bias considerations due to unit & item nonresponse
- **Important caveat: pilot test of only smaller businesses**
 - ▶ Larger businesses go through TFU at a much higher rate
 - ▶ Thus, any conclusions can only be applied to smaller businesses

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Questions?



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