



BEYOND PULSE AND RANDS: Integrating Online Surveys into the National Health Interview Survey

Stephen Blumberg, PhD

Director, Division of Health Interview Statistics

Jennifer Parker, PhD

Director, Division of Research and Methodology

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Providing Near-Real-Time COVID-19 Data with Experimental Online Surveys

Stephen J. Blumberg, Ph.D.

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NCHS Data Systems



National Vital
Statistics
System



National
Survey of
Family
Growth

NSFG

National
Health
Interview
Survey



National
Health and
Nutrition
Examination
Survey

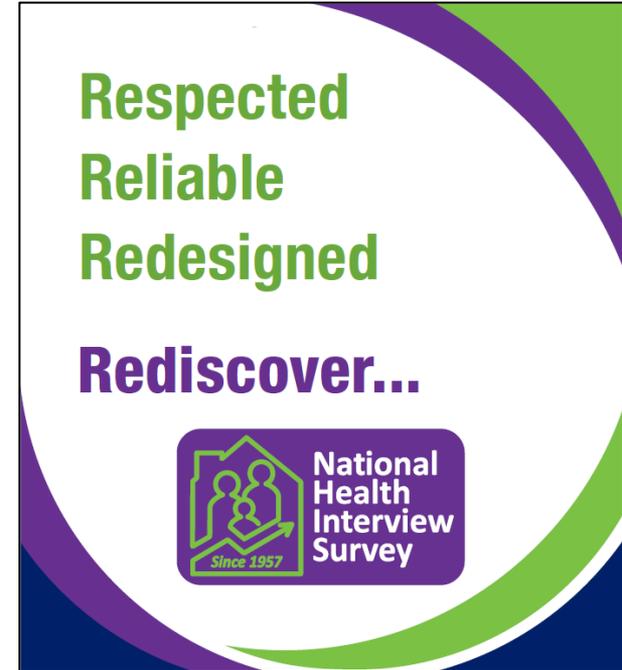


National
Health Care
Surveys



National Health Interview Survey

- “Gold standard” household health survey
- Robust coverage of the population
- Relatively high response rates (60%)
- Professional Census Bureau interviewers
- Extensive efforts to minimize error
 - Measurement errors
 - Coverage error
 - Nonresponse error
 - Processing errors



NHIS Early Release Program

- Positions the NHIS for the surveillance of sentinel health events
- Releases quarterly and biannual estimates of key health indicators within 6-9 months of data collection
 - January-March 2020 estimates were released in September
- Estimates are developed prior to final processing and weighting

Interactive data query systems for selected estimates based on the January 2019 to March 2020 NHIS can be accessed by clicking on the images below.



Biannual Estimates for the Total US Adult Population with a Focus on Demographic Subgroups



Quarterly Estimates for the Total US Adult Population

Additional Early Release products can be accessed by clicking on the pictures below.

 Health Insurance Coverage

 Selected Key Indicators

 Wireless Substitution

Preliminary microdata files

2019	2020
January — December 2019 Summary [PDF - 100 KB] Codebook [PDF - 323 KB]	January — March 2020 Summary [PDF - 100 KB] Codebook [PDF - 291 KB]

<https://www.cdc.gov/nchs/nhis/releases.htm>

Question for Today

Do you think augmenting NCHS in-person surveys with **online surveys** is the right strategy for producing data that are timely and responsive to changing data needs?

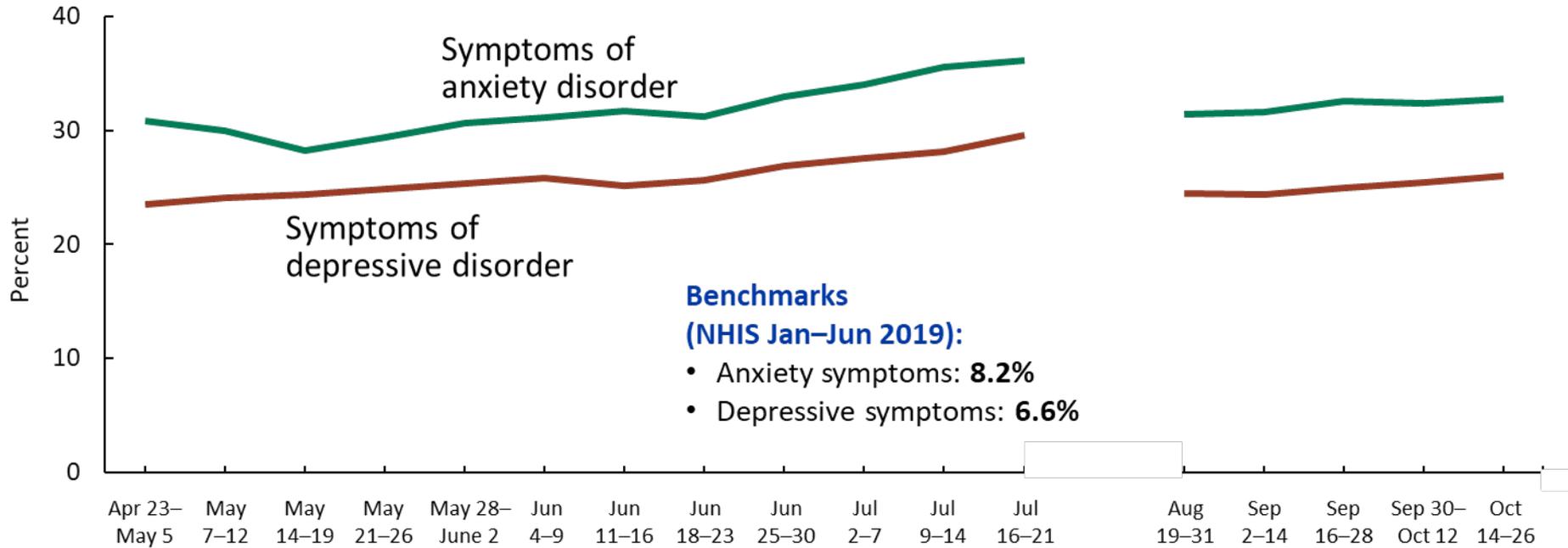


Household Pulse Survey

- **Purpose:** To ascertain the impact of the pandemic on individuals and households
- **Health content:** Anxiety, depression, mental health care use and unmet need, health insurance, delayed and foregone care due to pandemic
- **Sample:** Email and cell-phone contact frames matched to Census Bureau's Master Address File (MAF) records
- **Mode:** Email and text invitations to take an online survey
- **Launched:** April 23, 2020
- **Current sample size:** Nearly 100,000 adults every 2 weeks
- **Response rate:** About 10%



Symptoms of anxiety or depression: Household Pulse Survey, April 23 – October 26, 2020

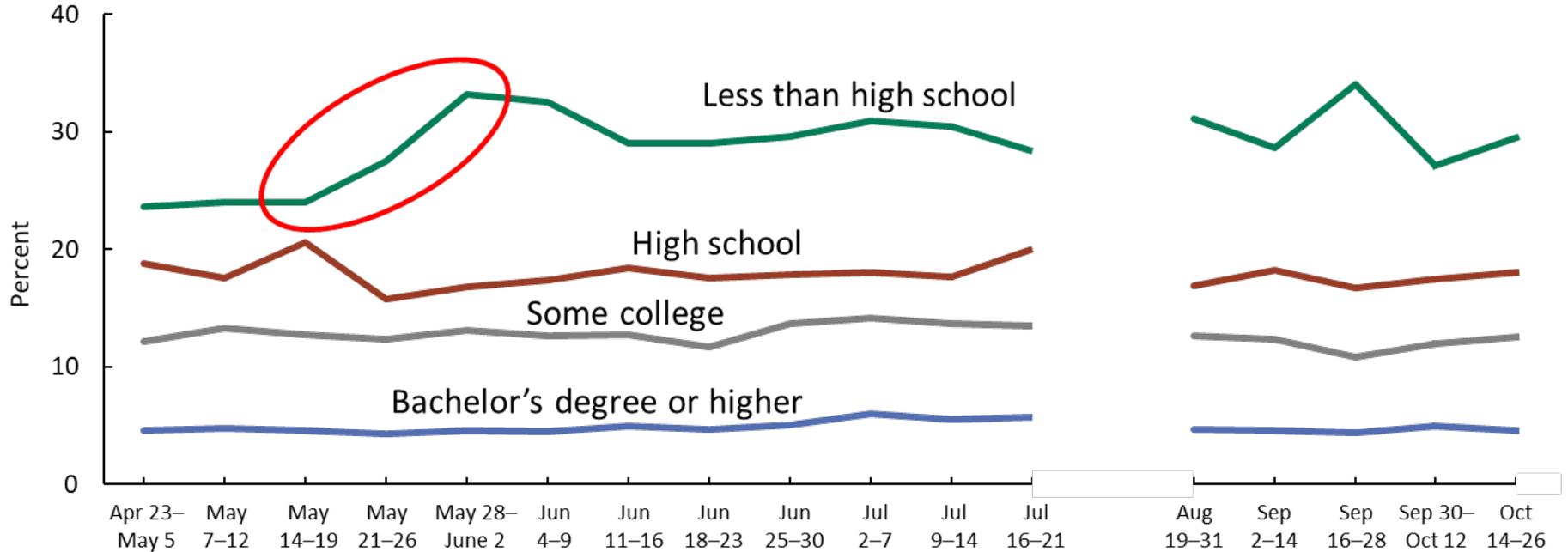


PHASE 1

PHASE 2

Uninsured adults, by education:

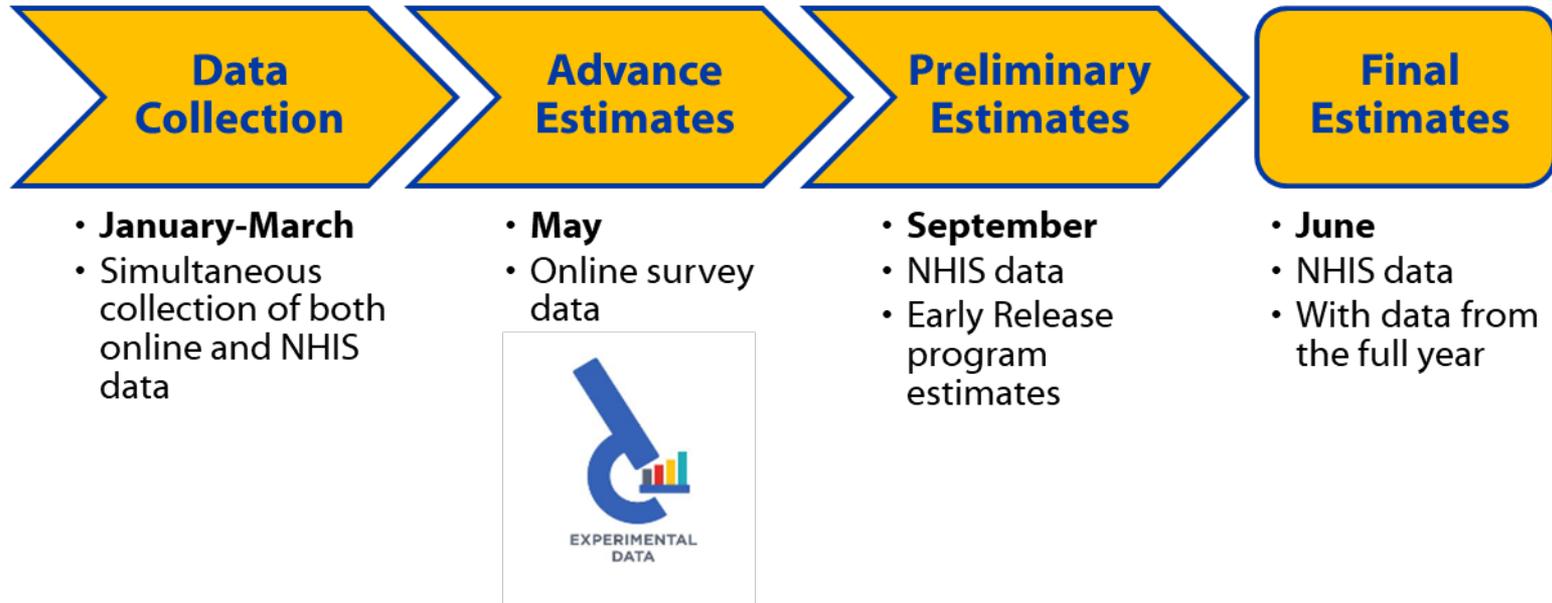
Household Pulse Survey, April 23 – October 26, 2020



PHASE 1



Hypothetical Data Collection and Release Schedule

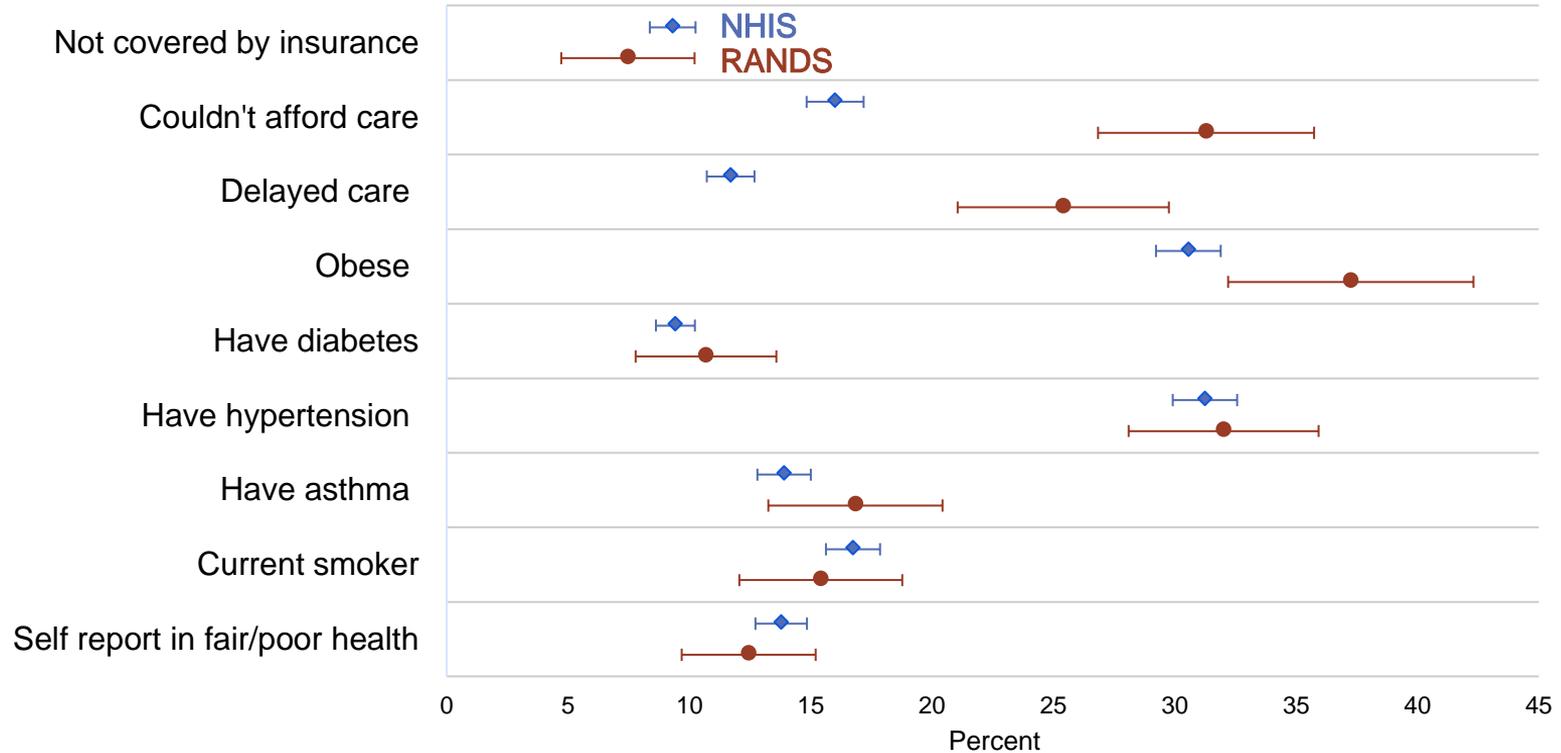


RANDS – Research and Development Survey

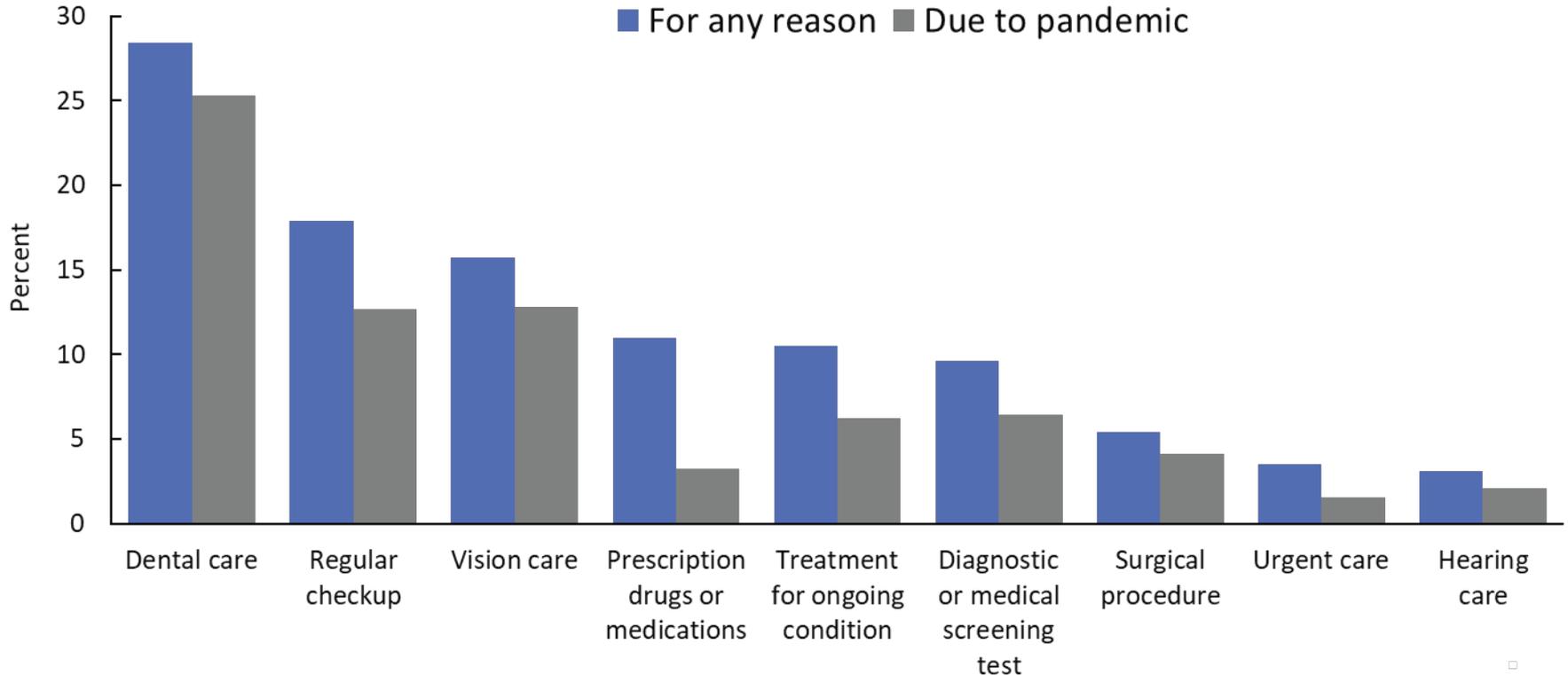
- **Purpose:** Methodological survey program that primarily uses web-based survey panels for evaluating measurement and estimation questions
- **RANDS COVID-19 content:** Work loss due to illness, telemedicine, and reduced access to care
- **RANDS COVID-19 dates:** June 9-July 6 (*Round 1*), August 3-20 (*Round 2*)
- **Sample:** NORC AmeriSpeak panel, with both internet and phone panels
- **Sample size:** 6,000 adults in each round
- **Completion rate (Round 1):** 78%
- **Response rate (Round 1):** 23%



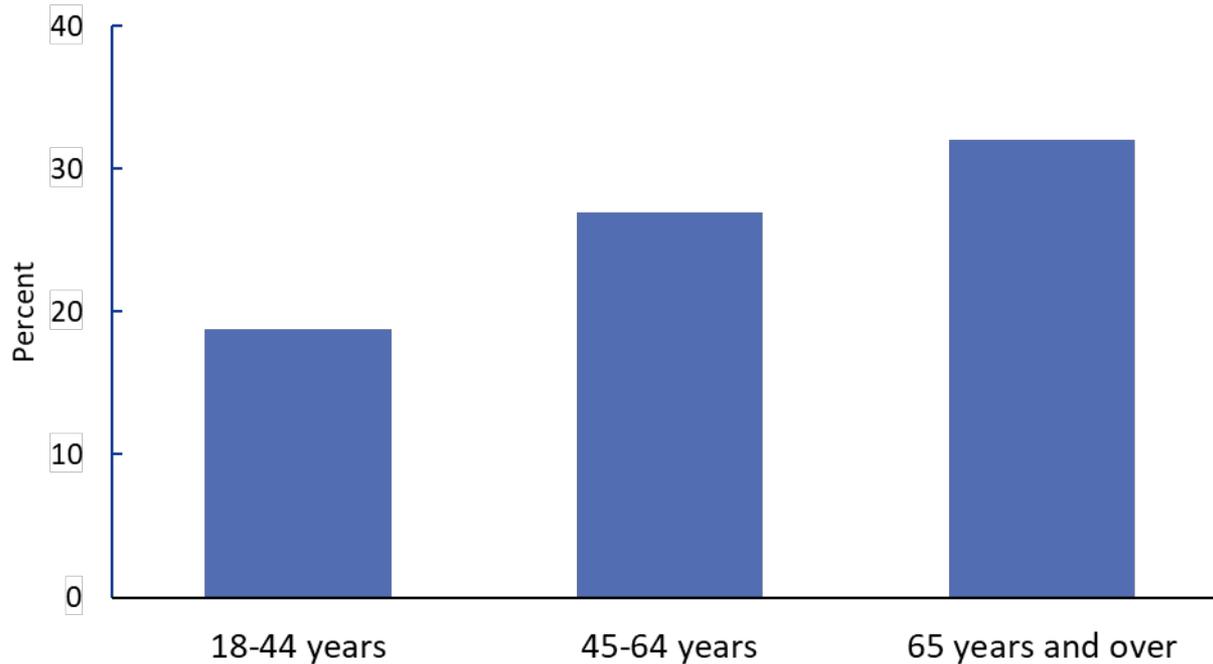
Differences Between RANDS 1 and NHIS



Unmet need for care in last 2 months, by type of care and reason for unmet need: RANDS, June 9 – July 6, 2020



Scheduled one or more telemedicine appointments in last 2 months, by age: RANDS, June 9 – July 6, 2020



NCHS is Exploring Enhancing its Surveys with Supplemental Online Surveys

- **To advance question evaluation**
 - *providing insight into interpretation of NCHS survey results*
- **To address emerging topics**
 - *that are not currently addressed by NCHS surveys*
- **To include more targeted, detailed questions**
 - *when space is limited on NCHS surveys*
- **To provide alternative mechanisms for production of timely estimates**
 - *when urgency is needed*

Ongoing Modernization Work at NCHS

- Creating the next generation of NCHS surveys
- Understanding differences between RANDS and NHIS estimates by population subgroups and classes of health outcomes
- Identifying new calibration methods for improving RANDS estimates using health and demographic benchmarks from NHIS
- Exploring model-based estimates with multiple data sources

Questions for CDC Senior Leaders

- How can we effectively communicate the differences in the quality of information provided from the various types of surveys we administer?
- Do you think augmenting NCHS in-person surveys with alternative methods is the right strategy to produce closer-to-real-time data that are responsive to changing data needs?

What We Heard from CDC Senior Leaders

- Value of timely data
- Importance of NCHS having a mechanism for producing close-to-real-time data that are responsive to changing data needs
- Concerns about quality of online survey data

PROPOSED:

Commercial Panels for Online Quarterly Data Collection

- **Timely:** Could provide either direct “advance estimates” or data for forecasts of key indicators, for publication within 1-2 months
- **Flexible:** Could provide quick-turn-around estimates on novel and emerging topics
- **Extensible:** Can also be used for question evaluation research and data quality assessments
- **But more methodological research is needed, for example:**
 - Comparisons of direct estimates to NHIS estimates
 - Calibration methods to established benchmarks
 - Establishment of nowcasting and forecasting models
 - Head-to-head panel comparisons

Discussion Questions

- **Quality of Online Survey Estimates**
- **Prioritization of Efforts to Improve Timeliness**
- **Identification of Key Health Outcomes**
- **Communicating Quality**

Quality of Online Survey Estimates

- **Do you think augmenting NHIS with online surveys will yield estimates of sufficient quality for NCHS to stand behind?**
- **What paths would you recommend to enhance quality and credibility?**
 - One panel or many? Internet only or multi-mode?
 - Report direct estimates from online surveys? Or use online surveys with older NHIS data to estimate change and model a “nowcast” of the official estimate?
 - Report point estimates based on online survey data? Or use online surveys as just an early indication of direction of change?
 - Other options to consider?

Prioritization of Efforts to Improve Timeliness

- **Will more timely “advance estimates” increase credibility?**
- **Would you recommend that quarterly data from commercial panels be a priority relative to producing ER estimates faster?**
 - Advance estimates based on online surveys would stand up an ongoing mechanism for rapidly responding to changing data needs
 - Augmenting NHIS data with online survey data may enhance granularity of estimates in addition to timeliness
 - But relative to advance estimates, ER estimates are likely to be more accurate predicting the eventual final NHIS estimate

Value of More Timely Data from NHIS

- ER estimates are now published 5-6 months after data collection
 - For which key indicators are more timely estimates most needed?

Early Release Indicators for Redesigned NHIS

Health Insurance Coverage (18-64 years)

- Lack of health insurance
- Public health plan coverage
- Private health insurance coverage

Health Status

- Disability status
- Workdays missed due to health
- Diagnosed hypertension
- Asthma episode
- Regularly experience chronic pain
- Regularly felt worried, nervous, or anxious
- Regularly felt depressed

Health Behaviors

- Current cigarette smoking
- Current electronic cigarette use

Health Care Access

- Did not get needed medical care due to cost
- Did not take medication as prescribed to reduce costs
- Did not get needed mental health care due to cost

Health Care Service Utilization

- Doctor visit
- Hospital emergency department visit
- Influenza vaccination
- Blood pressure check
- Counseled by a mental health professional
- Dental exam or cleaning

Telephone Ownership

- Adults living in wireless-only households

Communicating Quality

- **How can we effectively communicate the differences in the quality of information provided by different types of estimates?**
 - The Census Bureau approach: “Experimental data”
 - RANDES during COVID-19: “Experimental Estimates”
- **How can we effectively communicate revisions or updates to estimates that may arise from new data or updated methods?**

