

Collecting detailed COVID-19 vaccine history among Medicare beneficiaries

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Agenda

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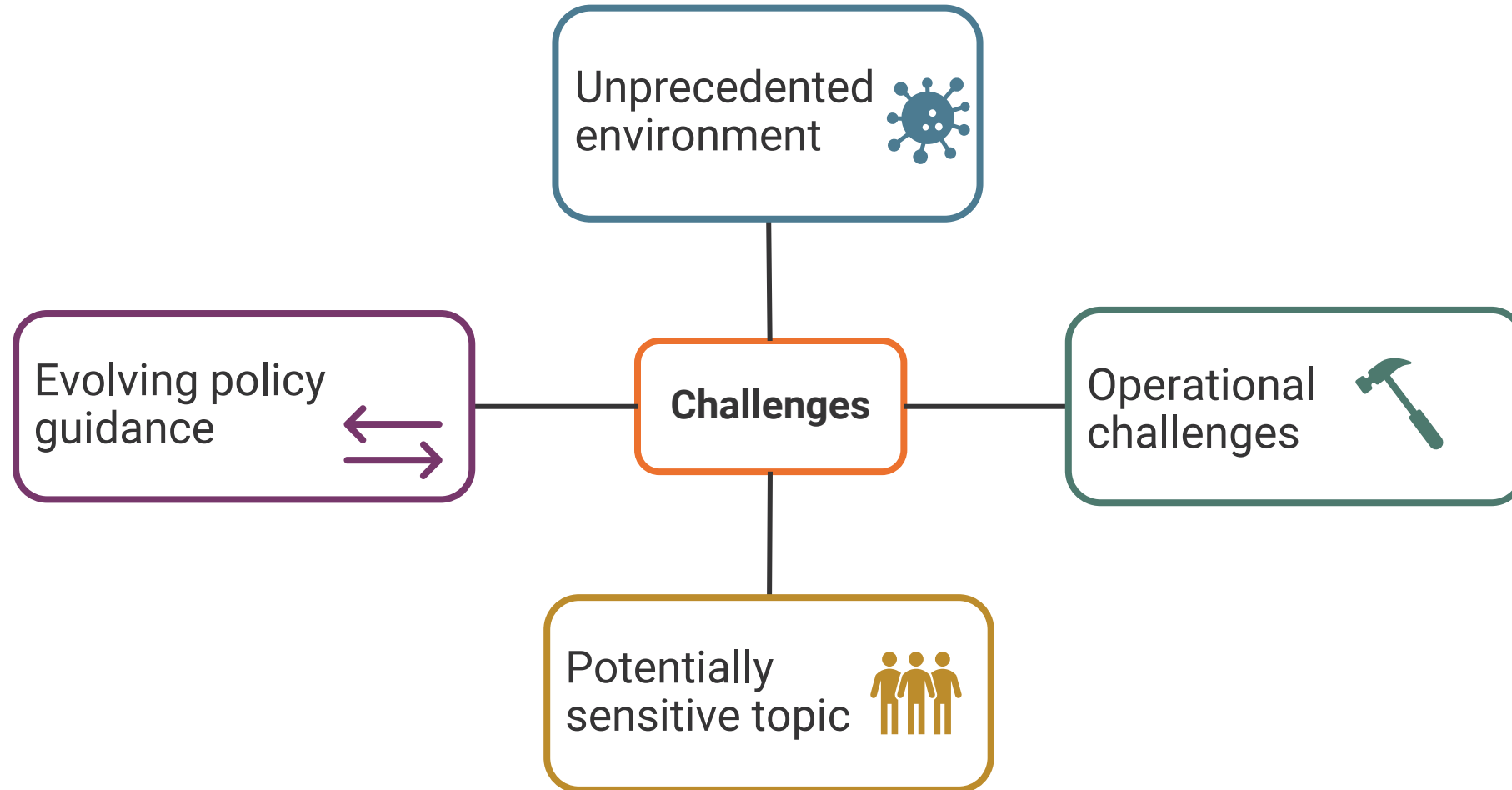
What is the MCBS?

- The Medicare Current Beneficiary Survey (MCBS) is a **continuous, multi-purpose longitudinal survey**.
- The MCBS represents the population of Medicare beneficiaries aged 65 and over and beneficiaries aged 64 and under with certain disabling conditions living in the United States.
- The MCBS is sponsored by the Office of Enterprise Data and Analytics (OEDA) of the Centers for Medicare & Medicaid Services (CMS) and is conducted through a contract with NORC at the University of Chicago (NORC).
- The MCBS is designed to aid CMS in administering, monitoring, and evaluating the Medicare program. The MCBS is the most comprehensive and complete survey available on the Medicare population and is essential in providing important information on beneficiaries that is not otherwise collected through operational or administrative data from the Medicare program.

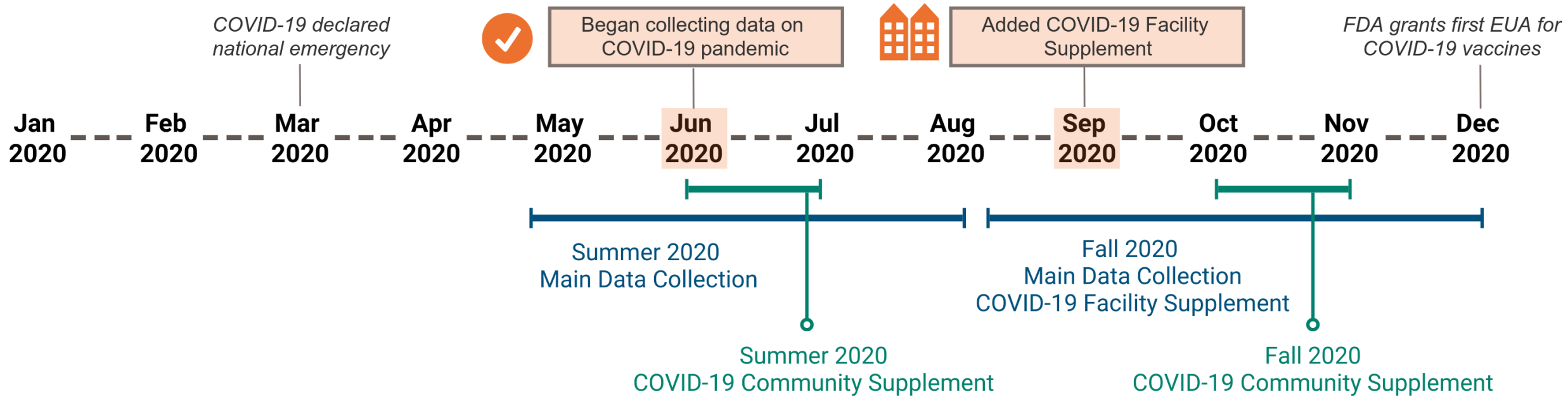
COVID-19 data collection in an **evolving** policy environment

- Complex public health situations like the COVID-19 pandemic require robust but ultimately flexible methodologies and data models.
- Federal health surveys are critical in providing public health officials, policymakers, and researchers with data on COVID-19 vaccine uptake, attitudes, and equity.
- The MCBS has been at the forefront of COVID-19 vaccine data collection, closing important policy gaps by providing more timely and complete data than administrative sources.

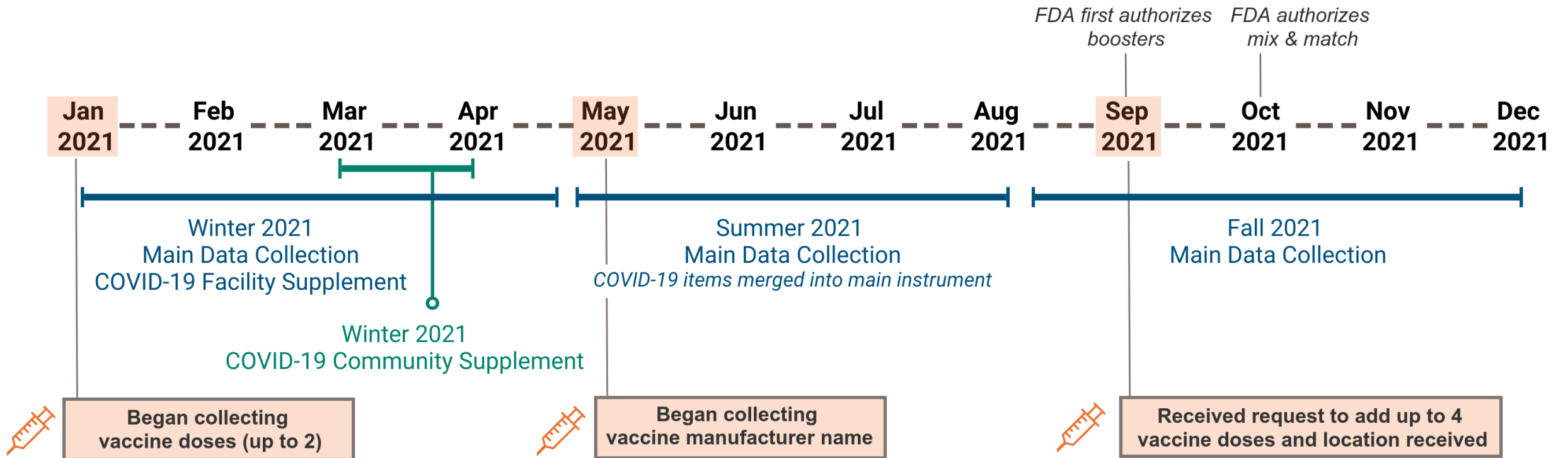
Challenges to collecting COVID-19 vaccination data



2020



2021



2022

Redesigning COVID-19 vaccination data collection


- In response to these challenges, MCBS COVID-19 vaccination data collection was redesigned in Winter 2022.
- Goal: Add **flexibility** around policy changes and improve **data quality**.
- Method: Use a roster to create a **comprehensive vaccination history**.
- Considerations:

Existing items on MCBS and other federal surveys	Longitudinal design of the MCBS	Data and questionnaire structure
Recall and data quality	Eligibility for booster shots or additional doses	Ability to mix and match vaccines

End Result: the MCBS COVID-19 Vaccine Roster

- The **COVID-19 vaccine dose roster** is a flexible, longitudinal data collection method that provides information for each dose reported for beneficiaries in both community and facility settings, including:
 - Name or manufacturer (e.g., Pfizer)
 - Month and year received
 - Vaccination site (e.g., doctor's office, mass vaccination site)
- Vaccine doses reported in prior interviews are displayed to prompt recall and minimize redundant data collection.
- Because the dose roster mirrors roster designs used elsewhere in the questionnaire, interviewers and respondents can easily navigate entering multiple doses.

The roster displays prior vaccinations and **prompts** for additional doses.

(CVQ) Covid-19Recording: ✓

Case: 12345678

Question: VACROST


You previously reported the following COVID-19 vaccines.

Dose	MM	YYYY	Vaccine name
1	2	2021	MODERNA
2	3	2021	MODERNA

Have you received any additional doses of a COVID-19 vaccine?

YES
 NO

Interviewers are encouraged to add data **chronologically**.



(CVQ) Covid-19

Recording: ✔

Case: 12345678 Question: VACDAT

Dose	MM	YYYY	Vaccine name
1	2	2021	MODERNA
2	3	2021	MODERNA

When did you receive this dose of the COVID-19 vaccine?

IF NEEDED: You may have been given a "COVID-19 Vaccination Record Card" with this information on it. It could be helpful to refer to that card if it is available.

PLEASE ENTER COVID-19 VACCINE DOSES IN THE ORDER THEY WERE RECEIVED, STARTING FROM THE EARLIEST DOSE RECEIVED TO THE MOST RECENT DOSE RECEIVED.

MONTH:

YEAR:

An “other” category offers **flexibility** in case additional vaccines are approved during data collection.

Case: 12345678

Question: VACNME

Which COVID-19 vaccine did you get? Examples include Pfizer-BioNTech/Comirnaty, Moderna/Spikevax, and Johnson & Johnson/Janssen.

IF NEEDED: You may have been given a “COVID-19 Vaccination Record Card” with this information on it. It could be helpful to refer to that card if it is available.

ONLY USE THE 'OTHER' CATEGORY TO ADD VACCINE MANUFACTURERS APPROVED IN AN FI MEMO

- PFIZER-BIONTECH/COMIRNATY
- MODERNA/SPIKEVAX
- JOHNSON & JOHNSON/JANSSEN
- OTHER

Collection of vaccination site information **fills gaps** in administrative data.



(CVQ) Covid-19

Recording: ✓

Case: 12345678


Question: VACSITE

Where did you go for this dose of the COVID-19 vaccine?

A MASS VACCINATION SITE IS A LOCATION THAT WAS SET UP ESPECIALLY TO ADMINISTER COVID-19 VACCINES, OFTEN ORGANIZED BY A LOCAL, STATE, OR FEDERAL AGENCY. MASS VACCINATION SITES MAY BE LOCATED AT A SHOPPING CENTER, CONVENTION CENTER, SPORTING FACILITY, CHURCH, LIBRARY, HOSPITAL OR OTHER COMMUNITY LOCATION.

- PHARMACY/DRUG STORE
- DOCTORS OFFICE OR GROUP PRACTICE
- MASS VACCINATION SITE
- MANAGED CARE PLAN CENTER/HMO
- NEIGHBORHOOD/FAMILY HEALTH CENTER/MEDICAL CLINIC
- COMPANY CLINIC/WORKPLACE
- WALK-IN URGENT CENTER
- HOSPITAL
- VA FACILITY
- HEALTH DEPARTMENT OFFICE
- AT HOME
- OTHER, SPECIFY

New doses appear in the roster in **real-time**.

(CVQ) Covid-19Recording: ✓

Case: 12345678Question: VACMOR

Dose	MM	YYYY	Vaccine name
1	2	2021	MODERNA
2	3	2021	MODERNA
3	12	2021	MODERNA

Have you had any other COVID-19 vaccine doses?

PLEASE ENTER COVID-19 VACCINE DOSES IN THE ORDER THEY WERE RECEIVED, STARTING FROM THE EARLIEST DOSE RECEIVED TO THE MOST RECENT DOSE RECEIVED.

YES
 NO

Preliminary operational results are positive

As of Winter 2022...

- **High data quality and completeness**
 - There are low rates of missingness (< 3%) across all fields.
 - Fewer than 0.5% of respondents reported doses out of chronological order.
- **Captures less common vaccine situations**
 - A small proportion report mix-and-match vaccines or a total of four or more doses.
- **Few issues reported by field interviewers**
 - Easy to use and mirrors existing questionnaire functionality.
 - No indication that vaccination is a sensitive topic for respondents or interviewers.



Takeaway: When designing COVID-19-related data collection...

- Consider an approach that is flexible given evolving policy constraints
- When possible, use previously collected information to prompt recall

Policy analysts can explore detailed research questions.

Vaccination data can be analyzed in the context of other MCBS sociodemographic and health data to answer questions like:

- Which subgroups were the first to receive COVID-19 vaccines? Are there sociodemographic differences in date of vaccine series completion or booster doses?
- Which vaccine manufacturers are most prevalent in different regions of the United States?
- Where do Medicare beneficiaries most commonly receive COVID-19 vaccinations? Have mass vaccination sites and other nontraditional methods of health care delivery succeeded in reaching underserved populations?



Takeaway: MCBS COVID-19 vaccination data support a range of analyses

- Understanding vaccination trends over time
- Looking at beneficiaries' vaccine histories in conjunction with a wealth of other data

Discussion

- The redesign of COVID-19 vaccination data collection in the MCBS adds flexibility around evolving policy and guidance by:
 - Allowing all doses received by the beneficiary to be entered
 - Eliminating logic around eligibility criteria or the number of doses recommended by manufacturer
- The roster design displays the beneficiary's full vaccine history, improving both respondent recall and data quality.
 - However, since items were added incrementally as the pandemic evolved, some information (e.g. vaccine manufacturer) is not available for all vaccine doses
- The roster design can also be used for cross-sectional surveys that want to collect vaccine histories.
- Including COVID-19 vaccine data collection in the MCBS allows for in-depth longitudinal analysis of vaccine uptake by key sociodemographic and health characteristics that are otherwise not available in administrative claims data.

Conclusions

- The vaccine dose roster design allows for comprehensive data collection of Medicare beneficiary COVID-19 vaccine history with low rates of missing data and high data quality.
- Using these data, researchers and policymakers can answer questions about the vaccine and booster uptake, health care delivery, and equity in vaccine distribution.
- A flexible design is ideal in emerging contexts, mitigating future revisions to the questionnaire and data collection structure.

Thank you.

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