# Post-Approval Observational Cohort Study to Evaluate the Safety of the COMIRNATY 2023-2024 Formula in the United States

**First published:** 03/01/2024

**Last updated:** 06/05/2026

Study Finalised

## Administrative details

**EU PAS number**

EUPAS108135

**Study ID**

108136

**DARWIN EU® study**

No

**Study countries**

United States

**Study description**

This study aims to answer the following research question: What is the incidence of pre-specified safety events of interest among individuals who receive the COMIRNATY 2023-2024 Formula in the United States?

In Phase 1, the primary objective is to estimate the incidence of pre-specified safety events of interest following vaccination with the COMIRNATY 2023-2024 Formula compared to the incidence of these events during a control window (i.e. expected rates of these events).

In Phase 2, the primary objective is to estimate the incidence of pre-specified safety events of interest among individuals who receive the COMIRNATY 2023-2024 Formula compared to individuals with no recorded vaccination with the COMIRNATY 2023-2024 Formula. The secondary objective is to estimate the incidence of pre-specified safety events of interest among individuals who receive the COMIRNATY 2023-2024 Formula compared to individuals with no recorded vaccination with the COMIRNATY 2023-2024 Formula among subgroups of individuals with concomitant administration of a non-COVID-19 vaccine, immunocompromised individuals, individuals with specific comorbidities, individuals with prior SARS-CoV-2 infection, individuals with prior COVID-19 vaccination, pregnant women, pediatric subjects, and the elderly, if sample size permits. This is a non-interventional observational study utilizing an administrative claims database in the US. Phase 1 will utilize a self-controlled risk interval (SCRI) design, and Phase 2 will utilize a matched comparative safety cohort design.

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**Study status**

Finalised

## Research institutions and networks

## Institutions

### Pfizer

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**Institution**

### OptumInsight Life Science, Inc.

## Contact details

**Study institution contact**

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**Study contact**

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**Primary lead investigator**

Ian Stryker

**Primary lead investigator**

## Study timelines

**Date when funding contract was signed**

Planned: 09/11/2023

Actual: 09/11/2023

**Study start date**
Planned: 15/01/2024

Actual: 15/01/2025

**Date of interim report, if expected**
Planned: 30/06/2024

Actual: 28/06/2025

**Date of final study report**
Planned: 30/04/2026

Actual: 30/04/2026

## Sources of funding

- Pharmaceutical company and other private sector

## More details on funding

Pfizer

## Study protocol

C4591062_PROTOCOL AND STATISTICAL ANALYSIS PLAN_V1.0_12DEC2023.pdf (682.6 KB)

C4591062_PROTOCOL AND STATISTICAL ANALYSIS PLAN V2.0_29AUG2025.pdf (716.96 KB)

C4591062_PROTOCOL AND STATISTICAL ANALYSIS PLAN_V3 AMENDMENT 2_18MAR2026.pdf (1.02 MB)

## Regulatory

**Was the study required by a regulatory body?**

Yes

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**Is the study required by a Risk Management Plan (RMP)?**

Not applicable

# Methodological aspects

## Study type

## Study type list

**Study topic:**

Disease /health condition

Herbal medicinal product

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**Study type:**

Non-interventional study

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**Scope of the study:**

Safety study (incl. comparative)

**Data collection methods:**

Secondary use of data

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**Study design:**

This is a non-interventional observational study utilizing an administrative claims database in the US. Phase 1 will utilize a self-controlled risk interval

(SCRI) design, and Phase 2 will utilize a matched comparative safety cohort design

**Main study objective:**
To estimate the incidence of pre-specified safety events of interest following vaccination with the COMIRNATY 2023-2024 Formula compared to the incidence of these events during a control window (i.e. expected rates of these events).

## Study Design

**Non-interventional study design**
Cohort

## Study drug and medical condition

**Study drug International non-proprietary name (INN) or common name**
COVID-19 MRNA VACCINE (NUCLEOSIDE-MODIFIED)

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**Anatomical Therapeutic Chemical (ATC) code**
(J07BN01) covid-19, RNA-based vaccine
covid-19, RNA-based vaccine

## Population studied

**Age groups**

- Infants and toddlers (28 days – 23 months)
- Children (2 to < 12 years)

- Adolescents (12 to < 18 years)
- Adults (18 to < 46 years)
- Adults (46 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

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**Estimated number of subjects**

160.000

## Study design details

**Setting**

The source population for this study will consist of all individuals with at least one medical or pharmacy claim from 11 September 2023 through 31 March 2024. The end date of 31 March 2024 was chosen based on the assumption that vaccine uptake will be similar to uptake during the 2022-2023 season. During the 2022-2023 COVID-19 season, the end of March reflected the time when uptake of the bivalent booster was no longer increasing (i.e., most individuals who received the bivalent booster dose had done so prior to March 2023), and COVID-19 cases declined substantially from their peak (CDC, 2020).

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**Outcomes**

The pre-specified safety outcomes of interest include the following: acute disseminated encephalomyelitis (ADEM), anaphylaxis, Bell’s palsy, cerebral venous sinus thrombosis (CVST), convulsions/seizures (non-febrile), encephalomyelitis, glomerulonephritis, Guillain-Barré syndrome, herpes zoster, immune-mediated myositis,

immune thrombocytopenia, Kawasaki disease, multi inflammatory syndrome (in children and adults), multiple sclerosis (MS), myocardial infarction (MI), myocarditis/pericarditis, pulmonary embolism (PE), hemorrhagic stroke, ischemic stroke, and transverse myelitis. Study outcomes will be identified through claims indicators using published validated claims-based algorithms with high performance when available.

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**Data analysis plan**

For the phase 1 SCRI design, the observed incidence rates of the pre-specified safety outcomes of interest will be estimated in the risk window and the control window. Among individuals who experience an outcome of interest, an exact conditional Poisson regression model with the natural logarithm of the person-time as the offset will be used to calculate the rate ratio and corresponding 95% confidence interval (CI) of events occurring during the risk period relative to the control period. The results from the SCRI utilizing the Optum pre-adjudicated claims database will be presented in the interim report, while results utilizing the ORD will be presented in the final report. Please see the protocol for a description of the data analysis plan for the phase 2 cohort study.

# Data management

## ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

## Data sources

**Data source(s), other**

Optum pre-adjudicated claims database United States, Optum Research Database United States

**Data sources (types)**

Administrative healthcare records (e.g., claims)

## Use of a Common Data Model (CDM)

**CDM mapping**

No

## Data quality specifications

**Check conformance**

Unknown

**Check completeness**

Unknown

**Check stability**

Unknown

**Check logical consistency**

Unknown

## Data characterisation

**Data characterisation conducted**

No