A Post-Marketing Near Real-Time Safety Surveillance of Respiratory Syncytial Virus Vaccine for Guillain-Barre Syndrome (GBS) among Older Adults in the United States

First published: 16/08/2024

Last updated: 23/06/2026

Study Finalised

Administrative details

EU PAS number

EUPAS1000000267

Study ID

1000000267

DARWIN EU® study

No

Study countries

United States

Study description

The United States (U.S.) Food and Drug Administration (FDA) approved RSVpreF (Abrysvo) RSV vaccine on 31 May 2023 in individuals ≥60 years and on 21 August 2023 in pregnant individuals at 32 through 36 weeks gestational age. GBS is an important potential risk, which is mentioned in the Abrysvo Risk Management Plan.
Across all RSVpreF clinical trials, inflammatory neurologic events were reported in 3 of 20,255 adults aged ≥60 years within 42-days after vaccination with RSVpreF (1 case of GBS, 1 case of Miller Fisher syndrome [a variant of GBS] and 1 case reported as undifferentiated motor-sensory axonal polyneuropathy). On 09 November 2023, FDA informed Pfizer of a few potential cases of GBS among older adults receiving ABRYSVO that were reported to the FDA's Vaccine Adverse Event Reporting System (VAERS).

To rapidly monitor the risk of GBS, Pfizer proposes to conduct a near real-time surveillance of Abrysvo among older adults in the U.S.
This study will utilize both Rapid Cycle Analysis (RCA) and Self-Controlled Risk Interval (SCRI) analyses to detect and evaluate the risk of GBS following Abrysvo vaccination.
RCA is an established method of near real-time surveillance that periodically assesses data for safety signal as exposures accrue.
The SCRI study design is a commonly used self-controlled method in vaccine safety studies, to evaluate the association between a transient exposure, such as vaccination, and an acute event, such as an adverse reaction. The complementary approaches of conducting an active surveillance study using an RCA for signal detection and a comparative SCRI analysis for signal evaluation is essential for a robust vaccine safety study, which combines the advantage of timely signal detection and the ability to perform an in-depth analysis that is hypothesis-driven and well-controlled for time-invariant confounders.

Study status
Finalised

Research institutions and networks

Institutions

Pfizer

First published: 01/02/2024

Last updated: 01/02/2024

Institution

IQVIA

United Kingdom

First published: 12/11/2021

Last updated: 22/04/2024

Institution | Non-Pharmaceutical company | ENCePP partner

Contact details

Study institution contact

Andrea Leapley andrea.leapley@pfizer.com

Study contact

andrea.leapley@pfizer.com

Primary lead investigator

Juan (Joanne) Wu

Primary lead investigator

Study timelines

Date when funding contract was signed
Planned: 27/03/2024

Actual: 27/03/2024

Study start date
Planned: 19/08/2024

Actual: 19/08/2024

Data analysis start date
Planned: 16/09/2025

Actual: 16/09/2025

Date of interim report, if expected
Planned: 20/12/2024

Actual: 20/12/2024

Date of final study report
Planned: 30/01/2026

Actual: 30/01/2026

Sources of funding

- Pharmaceutical company and other private sector

More details on funding

Pfizer 100%

Study protocol

C3671054_PROTOCOL- RSV NEAR REAL TIME SURVEILLANCE CLEAN_V1.0_14AUG2024.pdf (1.04 MB)

C3671054_PROTOCOL- RSV NEAR REAL TIME SURVEILLANCE STUDY_V2.0_23APR2025.pdf (1.61 MB)

Regulatory

Was the study required by a regulatory body?

Yes

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

Not applicable

Other study registration identification numbers and links

C3671054

Methodological aspects

Study type

Study type list

Study topic:

Human medicinal product

Study type:

Non-interventional study

Scope of the study:

Safety study (incl. comparative)

Data collection methods:

Secondary use of data

Study design:

This is a non-interventional cohort study among adults ≥ 65 years enrolled in CMS Medicare database and adults 60-64 years enrolled in IQVIA PharMetrics Plus database.
The surveillance period will span 2 RSV seasons (2023/2024 and 2024/2025 seasons), beginning on Abrysvo's approval 31 May 2023.

Main study objective:

• To conduct near real-time monitoring of the incidence of GBS following vaccination with Abrysvo among individuals aged 65 years of age or older enrolled in CMS Medicare databases among individuals aged 60-64 years of age or older enrolled in IQVIA PharMetrics Plus database; and

• To assess if there is an elevated risk of GBS following vaccination with Abrysvo among individuals aged 65 years of age or older enrolled in CMS Medicare databases and individuals aged 60-64 years of age or older enrolled in IQVIA PharMetrics Plus database, using RCA and SCRI complementary study designs; and

• To descriptively monitor the incidence of GBS following vaccination with ABRYSVO in individuals aged 60-64 years enrolled in PharMetrics Plus database.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Medicinal product name

ABRYSVO

Anatomical Therapeutic Chemical (ATC) code

(J07BX05) respiratory syncytial virus vaccines

respiratory syncytial virus vaccines

Medical condition to be studied

Guillain-Barre syndrome

Population studied

Short description of the study population

The study population will include Centers for Medicare & Medicaid Services (CMS) Medicare Fee-for-Service (FFS) beneficiaries aged 65 years of age or older and individuals aged 60-64 years IQVIA PharMetrics Plus database who receive one dose of Abrysvo vaccine administration during the surveillance period and meet all other eligibility criteria.

The self-controlled risk interval (SCRI) analysis will be conducted in the Medicare populations identified in both the 2023/2024 and 2024/2025 RSV seasons; the RCA analysis will be launched in the 2024/2025 RSV season, with cumulative data from the 2023/2024 RSV season.

Age groups

- Adults (46 to < 65 years)
- Elderly (≥ 65 years)

Estimated number of subjects

2.000.000

Study design details

Setting

The source population is U.S. Medicare beneficiaries available in the CMS Medicare FFS administrative database and individuals aged 60-64 enrolled in the IQVIA PharMetrics Plus database.
This database includes Medicare Parts A, B, and D data, covering inpatient and outpatient encounters and drug/vaccine prescriptions.

Individuals aged 60 years of age or older who receive Abrysvo vaccine (ie, exposure) who meet the eligibility criteria described in protocol Sections 9.2.1.1 and 9.2.1.2 will be included in the study.
The Abrysvo vaccine record will be identified using CPT (Current Procedural Terminology), HCPCS (Healthcare Common Procedure Coding System), and NDC (National Drug Code) codes.
The details of the exposure and other inclusion and exclusion criteria are defined in protocol Section 9.3.

Outcomes

The outcome of interest is GBS diagnosis, which will be identified from inpatient (IP) and outpatient (OP) claims using ICD-10-CM code G 61.0.

An incident GBS case will be defined as the first occurrence of a primary discharge diagnosis of GBS in the IP setting post-vaccination. The date of the case's onset will be defined as the date of hospitalization unless there is a claim with a GBS diagnosis in another medical setting (e.g., OP) in the prior 7 days. In that case, the earlier claim, irrespective of healthcare setting, will represent the date of onset. This claims-based algorithm in Medicare data has a PPV of 71.2% – 78.6% when validated against medical records using the Brighton criteria and has been used to reliably identify GBS cases among Medicare beneficiaries.

The risk window of 42 days post-vaccination is generally recommended by the Brighton Collaboration GBS case definition. Within the Abrysvo clinical and surveillance studies, over 90% of GBS events have been found to occur within 21 days of vaccination.
In this study, for the RCA, the primary risk interval is defined as 1 - 21 days post-vaccination to prioritize timely analysis; a secondary risk interval of 1 - 42 days post-vaccination will be analyzed as part of a sensitivity analysis. For the SCRI, the primary post-vaccination risk interval is defined as 1 – 21 days post-vaccination and the secondary post-vaccination risk interval is defined as 1 – 42 days post-vaccination.
The control interval for the SCRI analysis is defined as 43 – 84 days post-vaccination.
For the SCRI analysis, GBS diagnosis will be identified during the risk or the control intervals (1-84 days) to compare the risk of GBS occurrence within the two intervals.

Data analysis plan

Covariates will be assessed among the study population aimed for SCRI analysis and RCA analysis (protocol Section 9.1.3).
Patient demographic and clinical characteristics including age on index, gender,

race, geographic region, concurrent immunizations, prior infections, and selected comorbidities will be reported.
Demographic variables will be assessed on the index date or during the baseline period, as described in protocol Section 9.3.3. If multiple records exist, the record closest to the index date will be used.

Continuous variables will be summarized using mean ± SD, median, and interquartile range. Categorical variables will be summarized using counts and proportions. 95% CIs will be provided where applicable.

Detailed methodology for summary and statistical analyses of data collected in this study will be documented in a statistical analysis plan (SAP), which will be dated, filed, and maintained by the sponsor.
The SAP may modify the plans outlined in the protocol; any major modifications of outcome definitions or their analyses would be reflected in a protocol amendment.

Documents

Study report

C3671054 Final Study Report.pdf (5.85 MB)

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

Centers for Medicare & Medicaid Services (CMS) Medicare Fee-For-Service (FFS) database

IQVIA PharMetrics Plus database

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

Unknown