COVID-19

CONSOLIDATED REGIONAL AND GLOBAL INFORMATION ON ADVERSE EVENTS FOLLOWING IMMUNIZATION (AEFI) AGAINST COVID-19 AND OTHER UPDATES

WASHINGTON, DC
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ARGENTINA

- As of 17 February 2021, 627,846 doses of the Sputnik V COVID-19 vaccine had been administered.
- 20,428 adverse events following immunization (AEFI) (3.25% of applied doses) were reported; 112 people (0.55%) were hospitalized for symptomatic treatment and subsequently recovered.
- The most commonly reported events are fever with headache and/or muscle pain; headache and/or muscle pain and/or joint pain; and local pain/local reaction/local tingling or prickling sensation.

Link: https://www.argentina.gob.ar/coronavirus/vacuna/equipos-salud/informes-seguridad

CANADA

- As of 26 February 2021, 1,778,405 doses of the Pfizer-BioNTech and Moderna vaccines had been administered.
- 1,591 individual reports with one or more adverse events were received (0.089% of doses administered). Of these, 194 were considered serious events (0.011%), with anaphylaxis being the most frequently reported event.
- 4,341 AEFI were reported (1,591 reports with one or more events), mostly non-serious events such as injection site reactions, tingling or prickling sensations, itching, hives, headache, numbness, and nausea. Anaphylaxis accounted for only 1.1% of reported events (46 cases, for a rate of 25.9 cases per million doses administered).
- In the priority vaccination groups, most adverse events were reported in women and people between the ages of 18 and 49.
- In total, there were nine adverse events in which death was reported after vaccination. After medical review, it was determined that seven of these deaths were not linked to administration of the COVID-19 vaccine. The other two deaths are still under investigation.

Link: https://health-infobase.canada.ca/covid-19/vaccine-safety/

COSTA RICA

- The Directorate of Epidemiological Surveillance of the Costa Rican Social Security Fund reported that a total of 149,812 people had been vaccinated against COVID-19 as of 26 February 2021; 69% (n = 103,695) received the first dose and the remaining 31% (n = 46,117) received the second dose.

- Between 24 December 2020 and 28 February 2021, 1,653 reported AEFI were reported to Pfizer-BioNTech COVID-19 vaccine. The National Pharmacovigilance Center (known in Spanish as CNFV) has analyzed a total of 1,608 events.
- During the week of 19-28 February, 365 AEFI were analyzed; 71% occurred in women and 41% in people from 30 to 39 years of age.
- Most analyzed AEFI (99.7%) were classified as non-serious, the most common being injection site pain, headache, general discomfort, fever, tiredness or fatigue, and nausea.
- Among the 365 analyzed events there was a person with Guillain-Barré syndrome who is still in recovery. Given the patient's pre-existing conditions, a direct causal relationship with vaccination cannot be determined.

Source: Report of AEFI associated with the Pfizer-BioNtech COVID-19 vaccine from 19 to 28 February 2021. Directorate of Regulation of Health Products. National Pharmacovigilance Center. Ministry of Health of Costa Rica.

MEXICO

- As of 7 March 2021, 2,793,106 doses of the Pfizer-BioNTech, AstraZeneca, Sinovac, and Sputnik V vaccines had been administered.
- 11,012 AEFI (0.4% of doses administered) were reported; 10,944 were non-serious and 68 serious (53 women and 15 men). Of the latter, 19 remain hospitalized.

Link: http://bit.ly/30NXHWz

Updated reports from the European Medicines Agency (EMA) on the safety of the Pfizer-BioNTech (Comirnaty) and Moderna vaccines

On 25 February, the Pharmacovigilance Risk Assessment Committee (PRAC) presented a safety update on vaccines authorized by the European Medicines Agency (EMA), including the following:

- Diarrhea and vomiting were identified as new adverse events associated with the Comirnaty vaccine. The frequency and extent of these events will be analyzed in the future. Product information will be updated according to these identified events.
- In most fatal cases following use of the Corminaty vaccine, death was caused by pre-existing conditions. As such, data on this event do not represent a safety concern for the vaccine.
- Following review, cases of anaphylaxis after use of the Moderna vaccine did not lead to changes in recommended use.

- The existence or progression of multiple pre-existing conditions appears to be a plausible explanation for fatal events following administration of the Moderna vaccine. Therefore, data on the event do not represent a safety concern for the vaccine.

Links:

https://www.ema.europa.eu/en/documents/covid-19-vaccine-safety-update/covid-19-vaccine-safety-update-comirnaty-march-2021_en.pdf

https://www.ema.europa.eu/en/documents/covid-19-vaccine-safety-update/covid-19-vaccine-safety-update-covid-19-vaccine-moderna-march-2021_en.pdf

NEW STUDIES AND DEVELOPMENTS

AstraZeneca in Canada

On 26 February 2021, the Canadian regulatory authority (Health Canada) approved the following COVID-19 vaccines: AstraZeneca and COVISHIELD.

The AstraZeneca COVID-19 vaccine (produced by AstraZeneca) and COVISHIELD vaccine (produced by the Serum Institute of India, SIIPL) are the same ChAdOx1-S recombinant adenoviral vaccine developed by the University of Oxford and AstraZeneca.

Information submitted by SIIPL and AstraZeneca showed that the production processes, process controls, and critical quality attributes of the COVISHIELD and AstraZeneca vaccines are similar enough that no clinical studies were necessary for COVISHIELD and that its safety and efficacy could be inferred from clinical and non-clinical studies conducted by AstraZeneca.

Link: https://covid-vaccine.canada.ca/

COVID-19 vaccine safety: reports of late local reactions

Swissmedic, the Swiss Regulatory Authority, is receiving reports of late local reactions occurring in the COVID-19 vaccine injection site. Most reports to date are associated with the Moderna vaccine, authorized for use in Switzerland since 12 January 2021. Reports were received of redness and swelling primarily occurring about a week after vaccination. These events have also been observed in other countries (referred to as "COVID arm"). According to the latest findings, it is a temporary, non-serious reaction related to activation of the body's immune system. It disappears after a few days.

Link: https://www.swissmedic.ch/swissmedic/en/home/news/coronavirus-covid-19/sicherheit-covid-19-impfstoffe-verzoegert-lokalreaktionen.html

Vaccination of people previously infected with the SARS-CoV-2 virus

An important question that arises when vaccinating against COVID-19 is whether people who have previously been infected with the SARS-CoV-2 virus should receive one or two doses of the authorized mRNA vaccines. A recent publication still in the peer-review process ("pre-print") shows that the antibody response to the first dose of vaccine in people with pre-existing immunity is equal to or greater than the titers found in people without prior exposure who have received the second dose. In addition, reactogenicity was significantly higher in individuals who have been previously infected with the SARS-CoV-2 virus. This is similar to what was observed in clinical studies with adverse effects reported after the second dose. Giving these individuals only one dose of vaccine would therefore not adversely affect their antibody titers, saving them unnecessary pain and freeing up many urgently needed doses of vaccines.

Source: Florian Krammer, Komal Srivastava, the PARIS team, Viviana Simon. Robust spike antibody responses and increased reactogenicity in seropositive individuals after a single dose of SARS-CoV-2 mRNA vaccine. Medrxiv. February 2021.

SARS-CoV-2 genomic sequencing to improve surveillance

In the paper "Genomic sequencing of SARS-CoV-2: a guide to implementation for maximum impact on public health", published in January 2021, the World Health Organization (WHO) indicates that genomic sequencing of SARS-CoV-2 must be a global priority to be better prepared for future threats related to the virus.

The need for SARS-CoV-2 sequencing raises the question of how many samples must be sequenced to detect the emergence of new variants. The article "SARS-CoV-2 Under Surveillance", recently published in Genetic Engineering & Biotechnology News, indicates that if approximately 5% of current positive samples in the United States were sequenced, equivalent to approximately 10,000 samples/day, an emerging variant with a circulation rate of 0.1% to 1% (such as variant B.1.1.7) could be detected.

Sources:

Genomic sequencing of SARS-CoV-2: a guide to implementation for maximum impact on public health. World Health Organization. Available from: https://www.who.int/publications/i/item/9789240018440

Genetic Engineering & Biotechnology News. SARS-CoV-2 Under Surveillance. Vol. 41 No. 3 March 2021.

COVID-19 vaccines authorized in the Region of the Americas, in the country of origin, and by other authorities

COVID-19 vaccines authorized in the Region, in the country of origin, and by other authorities* (as of 4 March 2021)				
Vaccine name	Vaccine type	Vaccine developer	Country of origin	Authorization
Comirnaty (BNT162b2)	mRNA	Pfizer-BioNTech, Fusan Pharma	Multinational	Region: Argentina, Aruba, Brazil, Canada, Caribbean, Chile, Colombia, Costa Rica, Ecuador, Mexico, Panama, Saint Vincent and the Grenadines, Suriname, USA, Others: UK, EU, WHO
Moderna (mRNA-1273)	mRNA	Moderna, BARDA, NIAID	USA	Region: Canada, Saint Vincent and the Grenadines, USA Others: UK, EU
AstraZeneca (AZD1222, Covishield)	Adenoviral vector	Oxford University, BARDA	UK	Region: Argentina, Barbados, Brazil, Canada, Chile, Dominican Republic, Ecuador, El Salvador, Guyana, Mexico, Saint Vincent and the Grenadines Others: UK, EU, WHO
Sputnik V	Adenoviral vector (Ad26+Ad5)	Gamaleya Research Institute	Russia	Region: Argentina, Bolivia, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Paraguay, Saint Vincent and the Grenadines, Venezuela Others: Russia
CoronaVac	Inactivated	Sinovac	China	Region: Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Uruguay Others: China
BBIBP-CorV	Inactivated	Beijing Inst. Biological Products, China National Pharmaceutical Group, Sinopharm	China	Region: Argentina, Peru, Venezuela Others: China
Convidicea (Ad5-nCoV)	Adenoviral vector (Ad5)	CanSino Biologics	China	Region: Mexico Others: China
Ad26.COV2.S (JNJ-78436735)	Adenoviral vector (Ad26)	Janssen Vaccines (Johnson & Johnson)	Netherlands, USA	Region: Saint Vincent and the Grenadines, USA Others: EU
Covaxin	Inactivated	Bharat Biotech	India	Others: India

*According to data from the Regulatory Affairs Professionals Society (RAPS), updated 4 March 2021.

CLARIFICATIONS/CONCLUSIONS OF EVENTS PRESENTED IN PREVIOUS COMMUNICATIONS

Currently, there are no additional updates to those of the last update on conclusive AEFI analyses.

PROGRAMMATIC ERRORS, LOGISTICS, AND RELATED ISSUES

Pregnancy and COVID-19 vaccines

The Centers for Disease Control and Prevention (CDC), the American College of Obstetricians and Gynecologists (ACOG), and the Society for Maternal-Fetal Medicine (SMFM) agreed that new mRNA COVID-19 vaccines should be offered to pregnant and lactating women who are eligible to be vaccinated, provided that the decision is made in consultation with their doctor. It is important to provide pregnant woman and physicians with all relevant and available information to ensure that an informed decision is made. Accordingly, some frequently asked questions and their answers are listed below.

What do we know about how coronavirus disease 2019 (COVID-19) affects pregnant women?

COVID-19 is a potentially dangerous illness for everyone. Although currently the risk of severe illness or death is very low for pregnant women, it is still higher than for women of the same age who are not pregnant. Pregnant women are at higher risk of hospitalization in intensive care and require a higher level of care, including the use of ventilators. This being the case, there is an increased risk of death. Research suggests that COVID-19 infection may increase the risk of premature birth, especially in women with severe illness. There is no evidence of birth defects associated with COVID-19. Transmission of the virus from mother to fetus during pregnancy is possible but appears to be rare.

What do we know about the safety of new mRNA COVID-19 vaccines in pregnant women?

Studies conducted on mRNA vaccines specifically did not include pregnant or nursing women; in fact, participants who became pregnant during the study were excluded. As a result, there is no specific data about the impact on this population. However, during clinical studies some pregnancies went unnoticed, including in vaccinated groups, so further information is expected at a later date. Vaccine studies conducted with animals did not show any impact on fertility or problems caused during pregnancy. For humans, several other vaccines are known to be safe and recommended during pregnancy.

Consider the following:

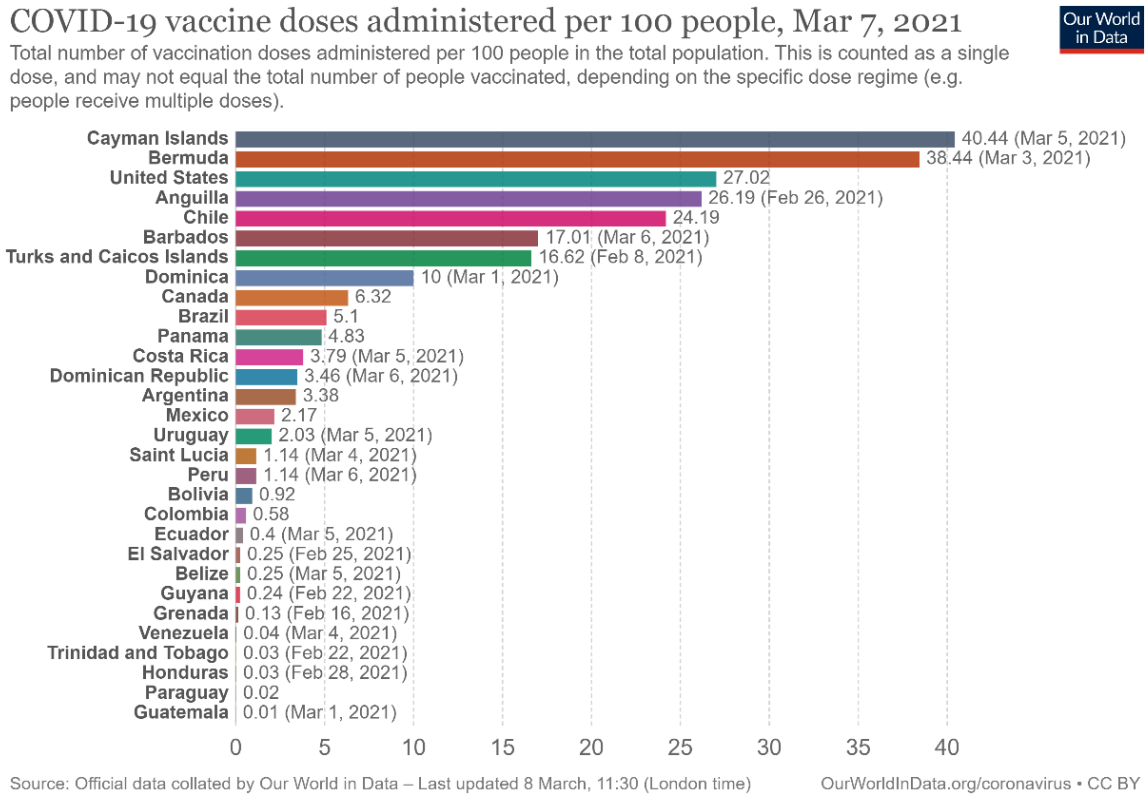
- mRNA vaccines do not contain viral particles.
- In a few hours or days, the vaccine mRNA is degraded and eliminated by the body itself, and it is highly unlikely that the particles will reach and cross the placenta.
- Antibodies generated against the vaccine can cross the placenta and help the health of the fetus and the infant at birth.

mRNA vaccines have been shown to be very safe, with non-serious associated adverse events. One possible event is short-term fever with temperatures that can be treated with antipyretics.

Source: Ilona T. Goldfarb. Wondering about COVID-19 vaccines if you're pregnant or breastfeeding? Harvard Health Blog. 02/25/2021.

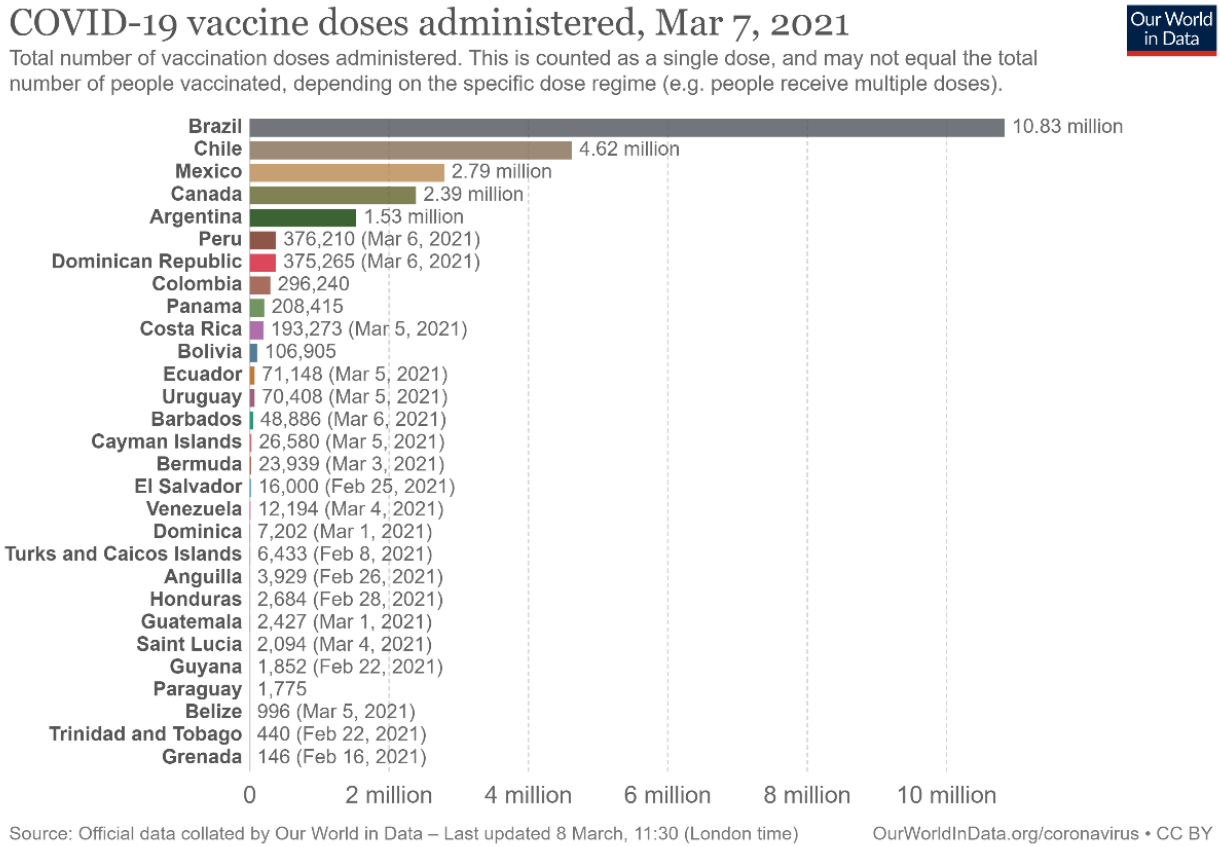
Use of COVID-19 vaccines in the Region of the Americas

The following chart shows consolidated data (by country) on doses administered per 100 people in the total population and total doses administered as of 7 March 2021. For clarification purposes, the count represents single doses and may not match the actual number of people vaccinated, depending on the specific dosing regimen (i.e. people receiving more than one dose).



Source: Our World in Data.org. 08 March 2021

Link: https://ourworldindata.org/covid-vaccinations



Source: Our World in Data.org. 08 March 2021

Link: https://ourworldindata.org/covid-vaccinations

The United States, with 90.35 million doses administered as of 7 March 2021, was excluded.

Summary: characteristics and conditions of use of vaccines used in the Region

Due to significant differences between vaccines, particularly storage and use conditions, it is important for health workers to have information available to help them appropriately use each of the vaccines authorized in the Region and avoid programmatic errors. The following table summarizes the characteristics and conditions of use of each vaccine.

Summary of the primary characteristics of COVID-19 vaccines

Name	Tozinameran – COMIRNATY® COVID-19 mRNA vaccine	Moderna COVID-19 Vaccine	AstraZeneca/SKBio COVID-19 Vaccine - COVISHIELD™ (ChAdOx1-S [recombinant])	Adsorbed vaccine COVID-19 (inactivated) CORONAVAC	Adsorbed COVID-19 vaccine Sinopharm	SPUTNIK V vaccine Gam-COVID-Vac vaccine	Janssen COVID-19 vaccine
Manufacturer	Pfizer-BioNTech Rovi Pharma Industrial Services, S.A.	Moderna TX, Inc.	AstraZeneca/SK Bioscience Co. Ltd, Republic of Korea/ Serum Institute of India Pvt. Ltd.	SINOVAC LIFE SCIENCES CO., LTD. China	Sinopharm, China	Gamaleya Research Institute, Russia	Janssen Biotech, Inc., USA
Vaccine type	Lipid nanoparticles containing mRNA	Lipid nanoparticles containing mRNA	Chimpanzee recombinant adenoviral vector (replication deficient)	Adsorbed inactivated virus (CZ02 strain) grown in Vero cells	Adsorbed inactivated virus grown in Vero cells	Human recombinant adenoviral vector (replication deficient) (rAd26-S) and human adenovirus (rAd5-S)	Human recombinant adenoviral vector (type 26)
Pharmaceutical form	Concentrate for dispersion for injection	Dispersion for injection	Solution for injection	Suspension for injection	Suspension for injection	Solution for injection	Solution for injection
Presentation	6-dose vial after dilution, using low dead-space syringes (35 microliter maximum)	10-dose vial	2-dose, 8-dose, and 10-dose vials Other presentations by manufacturer	Single dose and 10-dose vials	Single dose vial/syringe.	Component 1: 5-dose vial (blue cap); and Component 2: 5-dose vial (red cap)	5-dose vial
Diluent	Dilute with 1.8 mL/vial of sodium chloride solution for injection at 0.9%	Not required	Not required	Not required	Not required	Not required	Not required
Age/dose/route of administration and immunization series	16 years of age and above 2 doses of 0.3 mL intramuscular injection in deltoid region, three weeks apart	18 years of age and above 2 doses of 0.5 mL intramuscular injection in deltoid region, 28 to 30 days apart	18 years of age and above 2 doses of 0.5 mL intramuscular injection in deltoid region, 4 to 12 weeks apart	18 years of age and above 2 doses of 0.5 mL intramuscular injection in deltoid region, 14 to 28 days apart	18 to 60 years of age 2 doses of 0.5 mL intramuscular injection in deltoid region, 21 days apart	18 years of age and above 2 doses of 0.5 mL intramuscular injection in deltoid region First dose: component 1; Second dose: component 2; 21 to 28 days apart.	18 years of age and above 1 dose of 0.5 mL intramuscular injection in deltoid region
Storage temperature	From -80°C* to -60°C (-112°F to -76°F) until expiration; or +2°C to +8°C (36°F to 46°F) for 5 days. Below 30°C for a maximum of 2 hours. Keep protected from light. *change approved by FDA/USA	From -25°C to -15°C (-13°F to 5°F) until expiration date; or +2°C to +8°C (36°F to 46°F) for 30 days; or +8°C to +25°C (46°F to 77°F) for up to 12 hours. Keep protected from light.	From +2°C to +8°C (36°F to 46°F) until expiration date. Keep protected from light.	From +2°C to +8°C (36°F to 46°F) until expiration date. Keep protected from light.	From +2°C to +8°C (36°F to 46°F) until expiration date. Keep protected from light.	Below -18°C (0°F) until expiration date. Keep protected from light.	+2°C to +8°C (36°F to 46°F) until expiration date; or +9°C to +25°C (47°F to 77°F) for up to 12 hours. Keep protected from light.
Preparation for use	Thaw at +2°C to +8°C, or at a temperature of up to +30°C for 30 minutes for immediate use. Invert the vial 10 times (do not shake) and dilute with 1.8 mL of sodium chloride solution for injection at 0.9%, using a 21-gauge needle or thinner. Gently invert the vial 10 times. Store between +2°C and +30°C and use within 6 hours of dilution.	Thaw between +2°C and +8°C (36°F to 46°F) for 2 hours and 30 minutes or for 1 hour at +15°C to +25°C (59°F to 77°F). Invert the vial to mix before each extraction. Do not shake.	Invert the vial to mix before each extraction. Do not shake.	Shake well before extracting each dose.	Shake well before administering or extracting the dose.	Thaw at room temperature for 2 to 20 minutes, depending on the temperature in the room. Use within 2 hours of thawing. If unused, discard the thawed vaccine. Do not shake.	If frozen upon arrival, thaw at +2°C to +8°C (36°F to 46°F) or at a maximum temperature of +25°C (77°F) for 1 hour. Invert the vial to mix before each extraction. Do not shake.
Warnings	Keep the vaccine protected from light. Dilution should be performed in the same vial as the vaccine. Do not shake. Do not freeze the thawed vaccine. The diluted vaccine should look like a whitish dispersion without visible particles. Discard the diluted vaccine if there are visible particles or if it changes color.	Keep the vaccine protected from light. Do not store on dry ice or below -40°C (-40°F). Do not shake. Do not freeze the thawed vaccine. The vaccine should be whitish and may contain white or translucent particles related to the product.	The vaccine is a colorless to slightly brown solution, transparent to slightly opaque. Do not shake. Do not freeze. Keep the vaccine protected from light.	Do not freeze the vaccine. Shake well before use. Keep the vaccine protected from light.	Do not freeze the vaccine. Shake well before use. Keep the vaccine protected from light.	Any thawed vaccine should not be kept. Once thawed, the vaccine is a colorless or yellowish homogeneous solution, slightly opalescent. Do not shake. Keep the vaccine protected from light.	The vaccine should be colorless to slightly yellow; transparent to very opalescent Do not use if there is discoloration or particulate matter. Do not shake. Keep the vaccine protected from light.
Preservative	Contains no preservatives	Contains no preservatives	Contains no preservatives	Contains no preservatives	Contains no preservatives	Contains no preservatives	Contains no preservatives
Adjuvant	Contains no adjuvants	Contains no adjuvants	Contains no adjuvants	Aluminum hydroxide	Aluminum hydroxide	Contains no adjuvants	Contains no adjuvants
Open/in use vial	Use within 6 hours of dilution. Store at +2°C to +30°C.	After the vial is opened, use within 6 hours of dilution. Store at +2°C to +25°C.	Use within 6 hours of opening. Store at a temperature below +30°C.	Multidose vial. Use within 8 hours of opening. Store at +2°C to +8°C.	Use immediately after the vial is opened.	Use within 2 hours of thawing.	Use within 6 hours of opening the vial. Store at +2°C to 8°C (36°F to 46°F); or at a maximum temperature of +25°C (77°F) for 2 hours.

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