EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

COVID-19 vaccines safety monitoring

Update on emerging data since EU authorisations

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An agency of the European Union

Outline

1. Safety monitoring of vaccines – why we need it, who does it and how?
2. What is the European database of suspected adverse reactions to medicines (EudraVigilance) telling us?
3. How are regulators looking at reports following vaccination?
4. Are there new or changing risks for COVID-19 vaccines?
5. Where can I find more information about each COVID-19 vaccine?
6. What studies are being undertaken by regulators in the context of the COVID-19 pandemic?
7. International collaboration on COVID-19 vaccine monitoring

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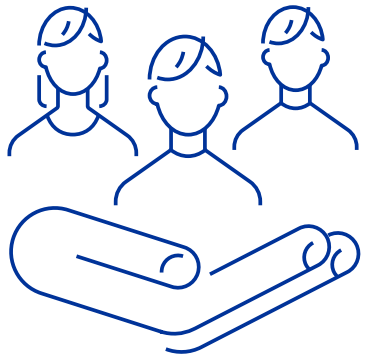
Safety monitoring of vaccines – why?

WHY DO WE NEED TO MONITOR SAFETY AFTER APPROVAL?

- All medicines, including vaccines, have **benefits and risks**
- **At the time of approval:** evidence comes mainly from controlled, randomised clinical trials
- **After approval:** medicines will be used in real conditions by a far larger population
- **Safety monitoring** after approval is important **to identify** any new or changing risk as quickly as possible, and **take action**
- Due to large number of people vaccinated in a short time we need to ensure safety monitoring **reacts quickly**
- **Additional resources** are being mobilised to closely monitor safety and assess new information



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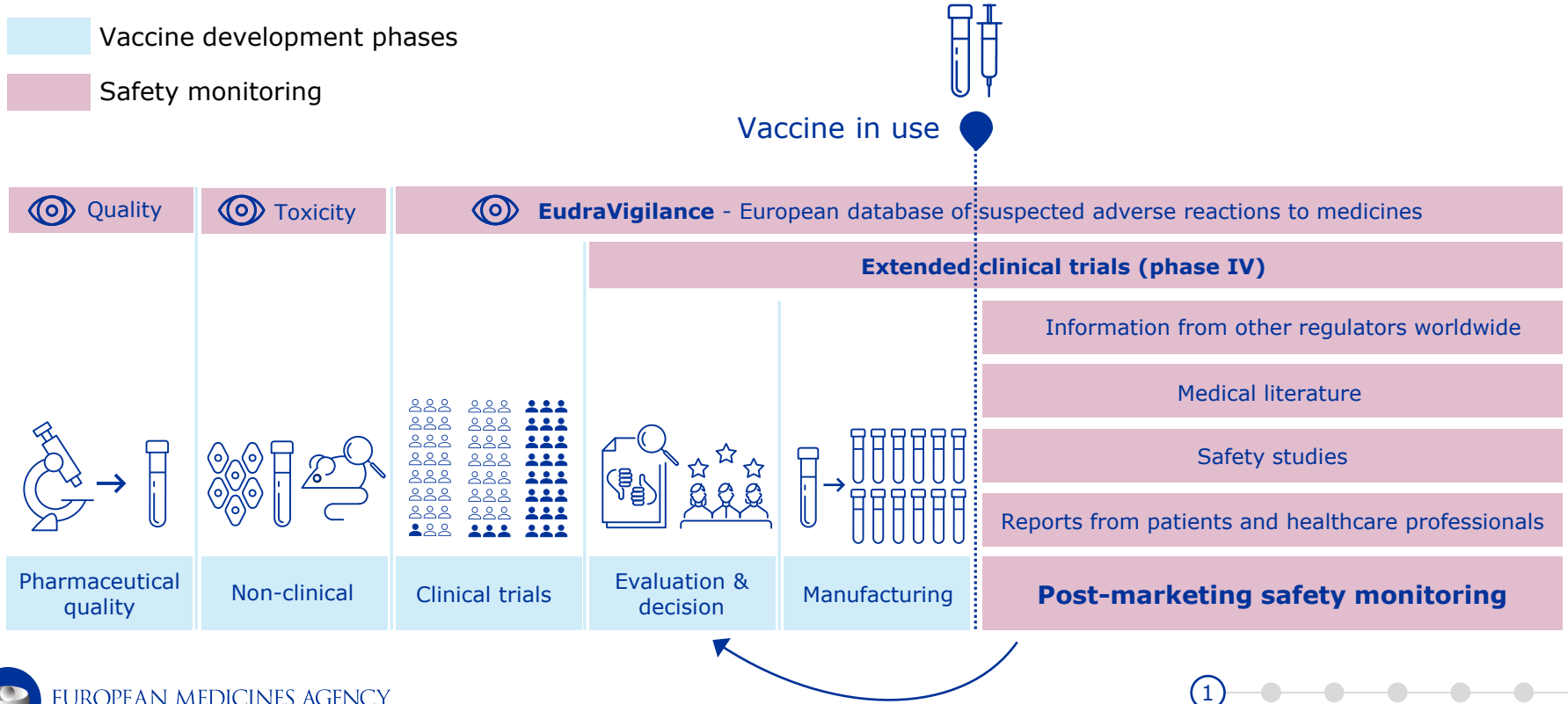
Safety monitoring of vaccines – when?

SAFETY IS STUDIED FROM THE DEVELOPMENT STAGE TO USE IN REAL LIFE



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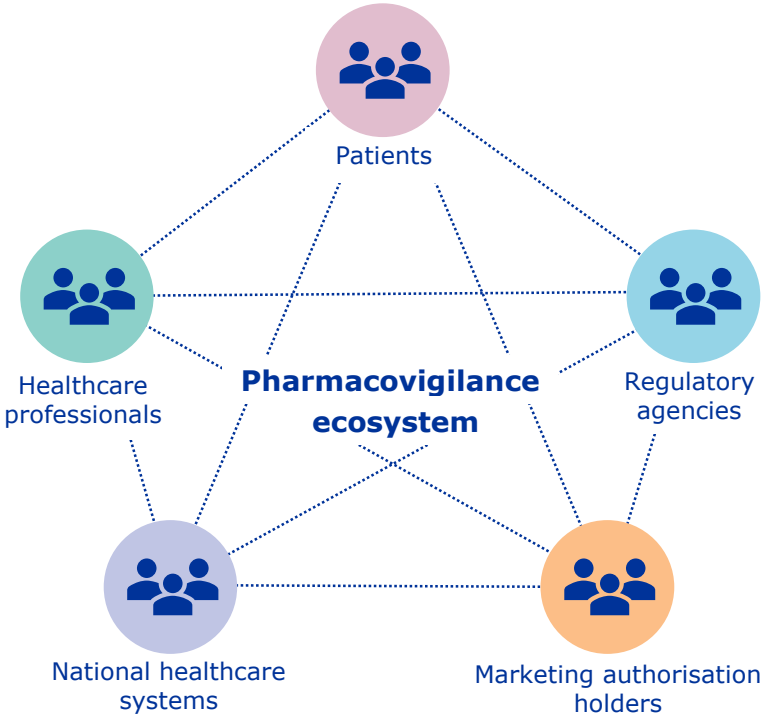
Safety monitoring of vaccines – who?

WHO DOES THE SAFETY MONITORING IN THE EU?



The EU has a comprehensive **safety monitoring** and **risk management** system known as the **EU pharmacovigilance system**

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Safety monitoring of vaccines – how?

HOW DOES SAFETY CONTINUE TO BE MONITORED AFTER APPROVAL?

Safety monitoring after approval is needed to detect any new or changing side effects. This includes:

- **Intensive analysis** of reports of suspected side effects from patients and healthcare professionals
- **Post-authorisation safety studies** conducted by the vaccines' manufacturers, as required by regulators
- **Additional studies** performed in Europe on the safety of vaccines when used in real life
- **International collaboration** on COVID-19 vaccine monitoring

Risk management plan (RMP)

- Specifically developed for each approved vaccine, following EU guidelines
- Contains important information about the vaccine's safety, how to collect further information and how to minimise any risks
- Continually updated as more information becomes available
- Legally binding on the vaccine manufacturer

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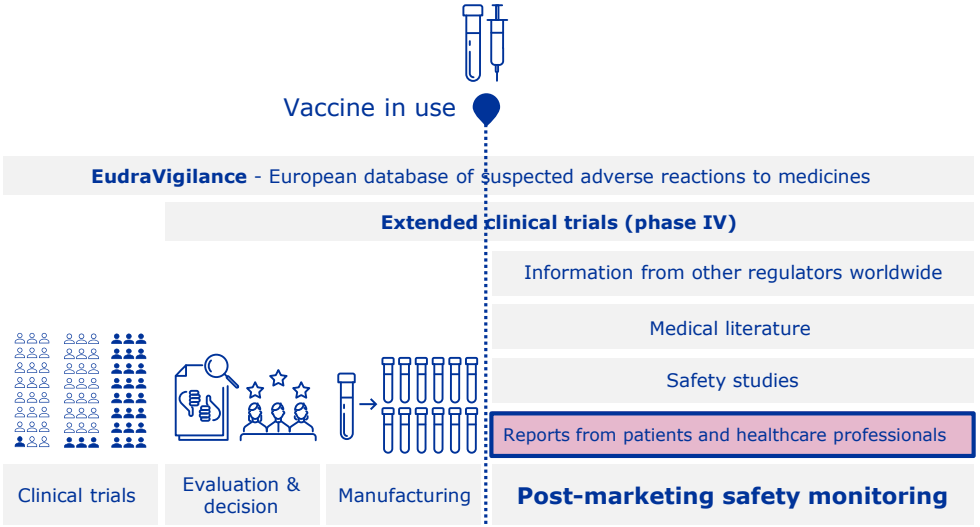
What is the European database of suspected adverse reactions to medicines (EudraVigilance) telling us?

http://www.adrreports.eu/



Reports from patients and healthcare professionals

Up to 22 March 2021, a total of ~220.000 worldwide cases of **suspected** side effects have been received by EudraVigilance after administration of Comirnaty (BioNTech/Pfizer), COVID-19 Vaccine Moderna and COVID-19 Vaccine AstraZeneca

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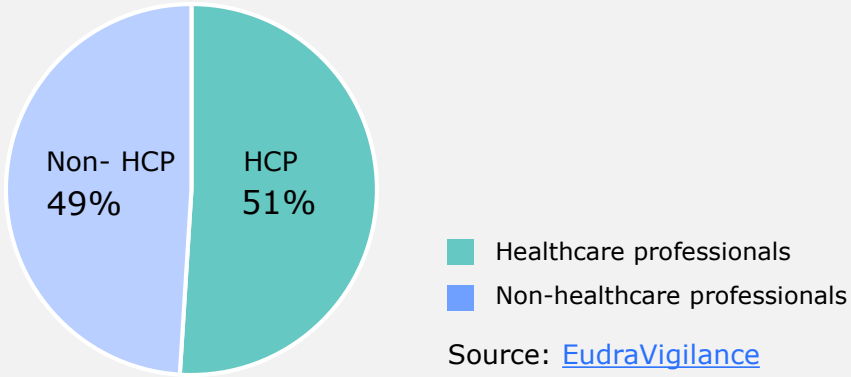
What is EudraVigilance telling us?

HOW TO REPORT A SIDE EFFECT?

- **Anyone** can report a suspected side effect to their national authority or the vaccine manufacturer
- Consult the appropriate authority from the list of national medicines regulatory authorities in the EEA for information on how to report a side effect
- All reports are sent to **EudraVigilance, the European database** of suspected side effects

Who has reported?

Status as of 22.03.2021 – worldwide data



Source: EudraVigilance

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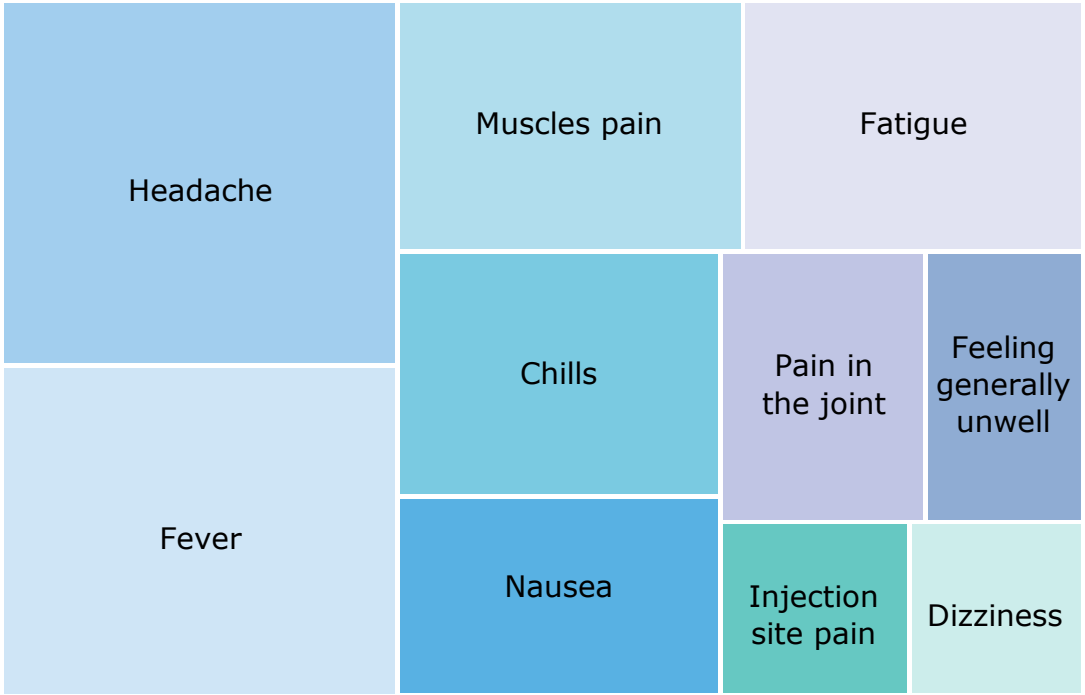
What is EudraVigilance telling us?

WHAT ARE THE MOST REPORTED SIDE EFFECTS WITH COVID-19 VACCINES SINCE THEIR APPROVAL?



The most common suspected side effects reported **are already known** and listed in the summary of product characteristics (SmPC) and the package leaflet.

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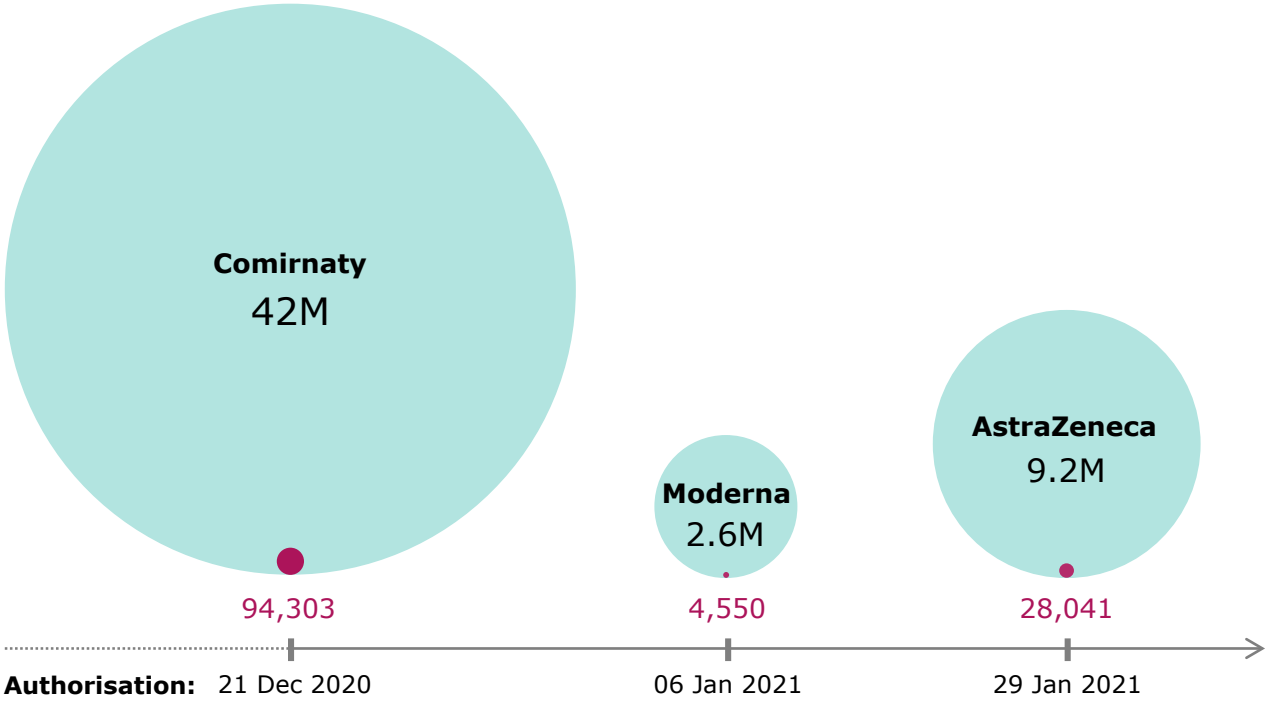
What is EudraVigilance telling us?

REPORTS OF SUSPECTED SIDE EFFECTS IN THE CONTEXT OF USAGE

Status as of 22.03.2021 – European Economic Area (EEA)



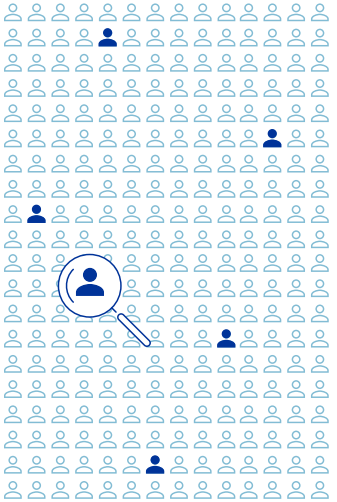
Numbers of **suspected** side effects need to be put into context of **how many** people have been vaccinated and **how long** the vaccine has been on the market.

- Vaccines administered www.ecdc.europa.eu/
- Suspected side effects www.adrreports.eu/

How are regulators looking at reports?

HOW DO WE KNOW IF THE SUSPECTED SIDE EFFECT IS DUE TO THE VACCINE?

- EU regulatory authorities carefully review all reports to determine if there is any possible link to the vaccine
- Since millions of people will be getting the vaccine in a short time, many of them will develop illnesses for other reasons in close proximity to vaccination
- If these occur just after vaccination, they may be reported as suspected adverse reactions to the vaccine, when the **association** was just **due to chance**
- If analysis concludes that a **new** side effect is caused by a vaccine, it is included in the package leaflet



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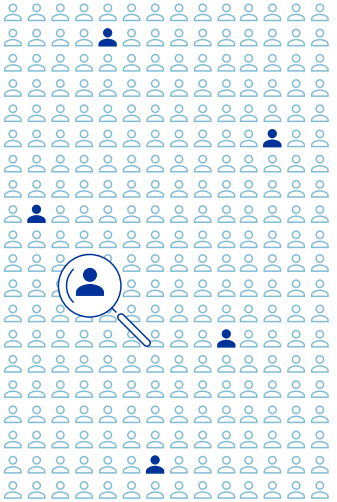
How are regulators looking at reports?

HOW IS THE ANALYSIS OF THE SUSPECTED SIDE EFFECTS DONE?

Established analysis techniques are in place to assess whether a side effect is likely to be caused by the vaccine

- **Intensive clinical review** of cases reported by consumers and healthcare professional to ascertain a possible link with the vaccine
- **Statistical methods** are used to identify outliers and patterns of suspected side effects
- **Observed to expected analysis** is used to ascertain whether the suspected side effect (in close proximity to vaccination) was just due to chance



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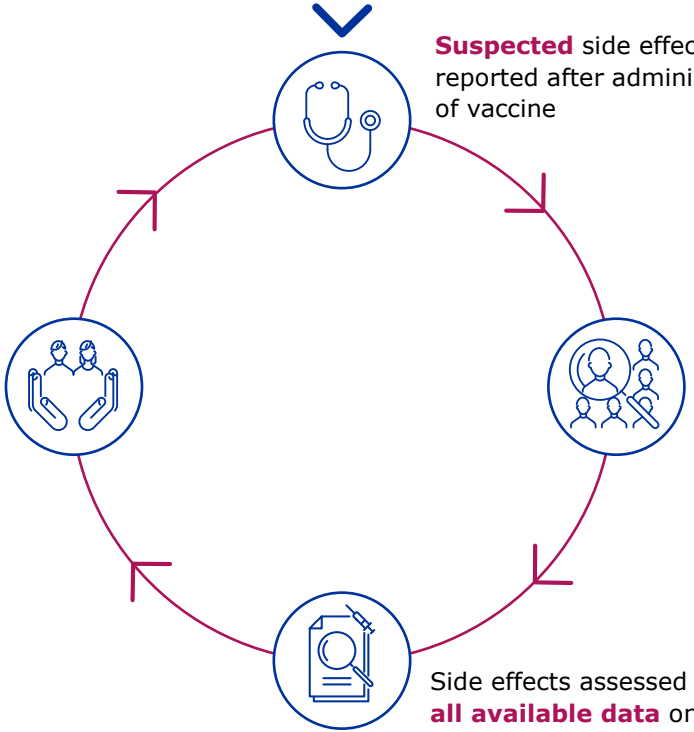
How are regulators looking at reports?

CONTINUOUS MONITORING OF THE BENEFITS AND RISKS OF THE VACCINE



Suspected side effects reported after administration of vaccine

A **scientific assessment** looks at the suspected side effect in the context of the person's individual case to determine if it may be caused by the vaccine or occur for other reasons

Side effects assessed in the context of **all available data** on the vaccine, including clinical trials, other studies and the scientific literature

Conclusions are drawn on the **benefits and risks** of the vaccine:

Benefits continue to outweigh risks - new/ changing risks could lead to:

- Restrictions of use
- Contraindications
- Warnings or screenings/tests healthcare professionals should do before vaccination

Risks outweigh benefits – vaccine is removed from the market

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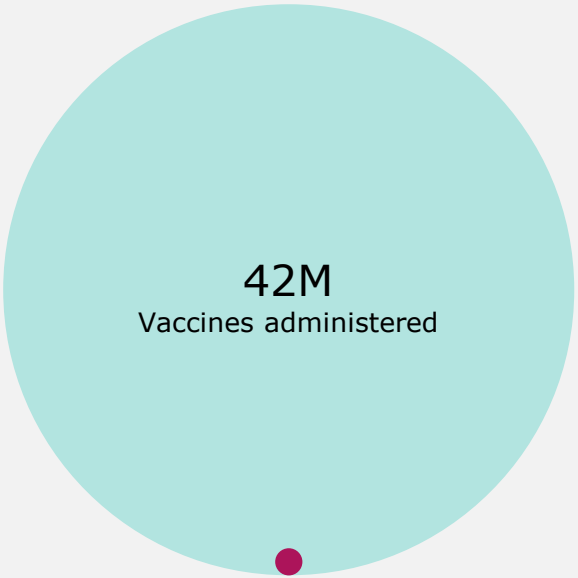
Are there new or changing risks?

COMIRNATY (BioNTech/Pfizer)

Status as of 22.03.2021 – European Economic Area (EEA)



Source: EudraVigilance, ECDC

Identified risks

- Severe allergic reactions (anaphylaxis)
- Acute peripheral facial paralysis (or palsy)
- Fever, headache, muscle pain, injection site swelling
- Vomiting and diarrhoea to be added to the product information

Under PRAC assessment

- Immune thrombocytopenia
- Thrombotic events
- Localised swelling in persons with history of dermal filler injections

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Are there new or changing risks?
COVID-19 VACCINE MODERNA

Status as of 22.03.2021 – European Economic Area (EEA)

2.6M
Vaccines administered

4,550
Suspected side effects

Source: EudraVigilance, ECDC

Identified risks

- Severe allergic reactions (anaphylaxis)
- Acute peripheral facial paralysis (or palsy)
- Fever, headache, muscle/joint pain, injection site swelling
- Nausea, vomiting
- Facial swelling in patients with history of dermatological fillers

Under PRAC assessment

- Immune thrombocytopenia
- Thrombotic events

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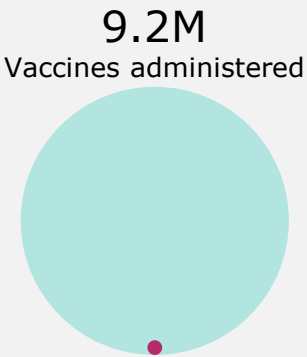
Are there new or changing risks?
COVID-19 VACCINE ASTRAZENECA

Status as of 22.03.2021 – European Economic Area (EEA)



Source: EudraVigilance, ECDC

Identified risks

- Severe allergic reaction (anaphylaxis) to be added to the product information
- Headache, fever, muscle/joint pain, injection site swelling
- Nausea, vomiting , diarrhea

Under PRAC assessment

- Immune thrombocytopenia
- Thrombotic events

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Are there new or changing risks?
COVID-19 VACCINE ASTRAZENECA

EMA's safety committee, PRAC, concluded a **preliminary review** of cases of blood clots

- Confirmed that the vaccine is not associated with an increase in the overall risk of blood clots and that **benefits** in combating the still widespread threat of COVID-19 continue to **outweigh the risk of side effects**
- Recommended including some information and advice for healthcare professionals and the public in the vaccine's product information (**amended product information** available on the EMA website)

PRAC is **continuing its assessment** of the reported cases

- Convening an *ad hoc* **expert group** on 29 March to provide additional input - will include several specialists and two representatives from the public
- The outcome of the expert meeting, together with further analysis of the reported cases, will feed into PRAC's ongoing evaluation
- Updated recommendation expected during **PRAC's April plenary meeting**, 6-9 April

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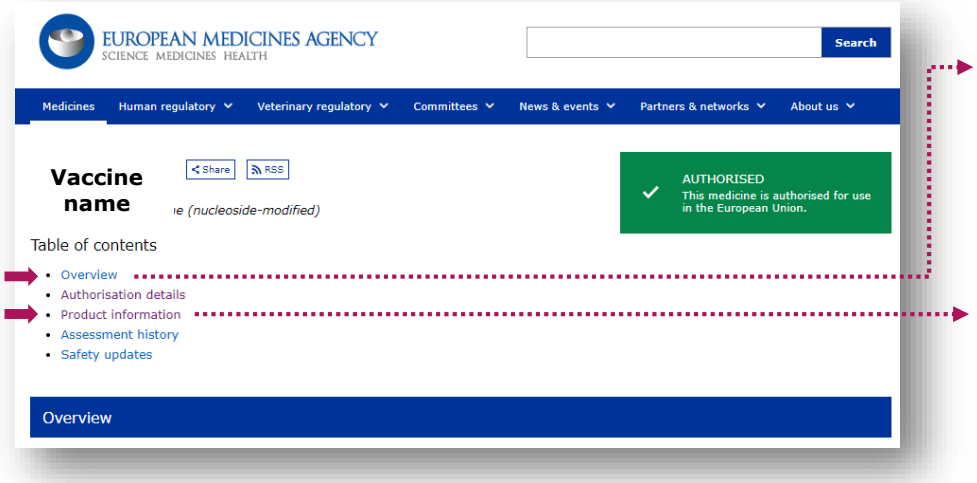
Where can I find more information about each COVID-19 vaccine?

[Comirnaty (BioNTech/Pifzer)]

[COVID-19 Vaccine Moderna]

[COVID-19 Vaccine AstraZeneca]

[COVID-19 Vaccine Janssen]



- Medicine overview addressing questions and answers in lay language; available in all EU languages
- Risk management plan (RMP)

- Recommendations and precautions to be followed by
  - healthcare professionals (summary of product characteristics) and
  - patients (package leaflet)

  for the safe and effective use of each approved vaccine; available in all EU languages

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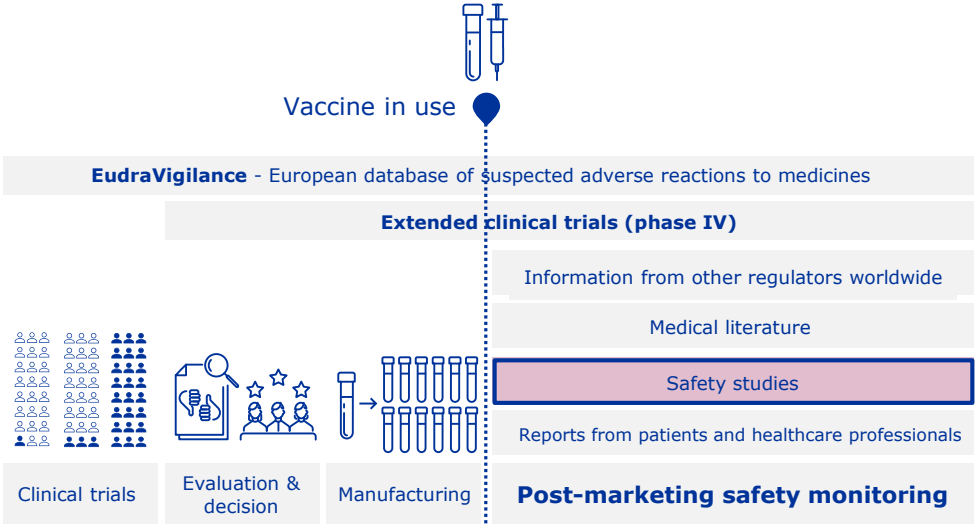
What studies are being undertaken by regulators in the context of the COVID-19 pandemic?



Early safety monitoring in people prioritised for vaccination

- Using a web-based application in 8 countries
- To be completed by end of 2021

Further safety studies as vaccination campaigns expand to additional population groups

- Studies in healthcare databases for rapid assessment of any potential safety concerns
- Dedicated studies in case of safety signal

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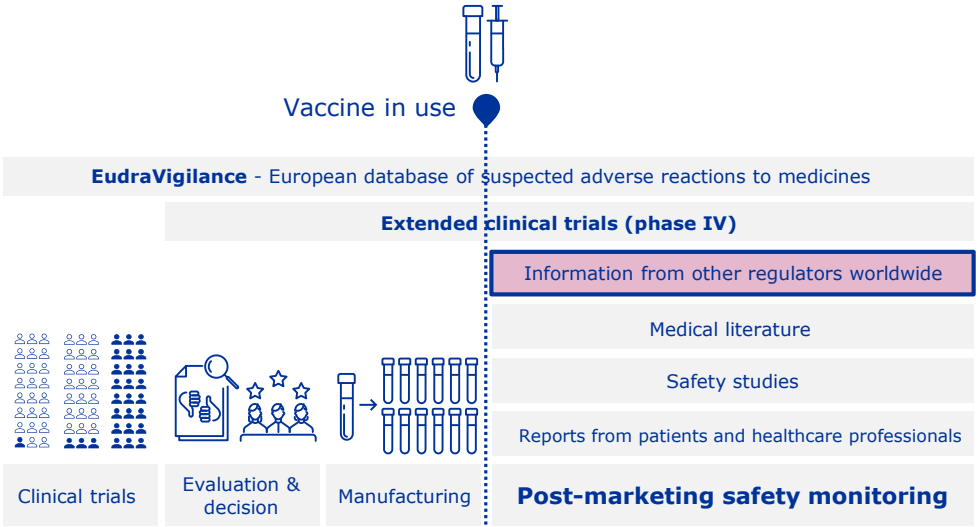
International collaboration on COVID-19 vaccine monitoring

International Coalition of Medicines Regulatory Authorities (ICMRA)



International Pharmacovigilance Network

Sharing experience and communications on vaccines

- Pharmacovigilance activities
- Emerging issues

Pregnancy research

Building international cohorts

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Conclusions

- **Vaccination is important** to prevent people getting sick with COVID-19 disease: **vaccination will save lives**
- Fewer people expected to go to hospital, **reducing the burden on healthcare** systems and freeing up resources to treat other illnesses
- A strong EU pharmacovigilance system is in place; **safety is the priority**
- **Unprecedented** steps are being taken to monitor safety in practice, to be transparent and to take action immediately
- COVID-19 vaccine safety will be **stronger with your participation**
- **Please report suspected side effects**

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