Solidarity Trial Vaccines (STV)

The STV

Its aims, methods, procedures and outputs

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Introductions and welcome

Welcome

Objectives of the presentation

- To share information about the Solidarity Trial Vaccines (STV)
- To respond to questions

About the Solidarity Trial Vaccines (STV)

What is the Solidarity Trial Vaccines (STV)?

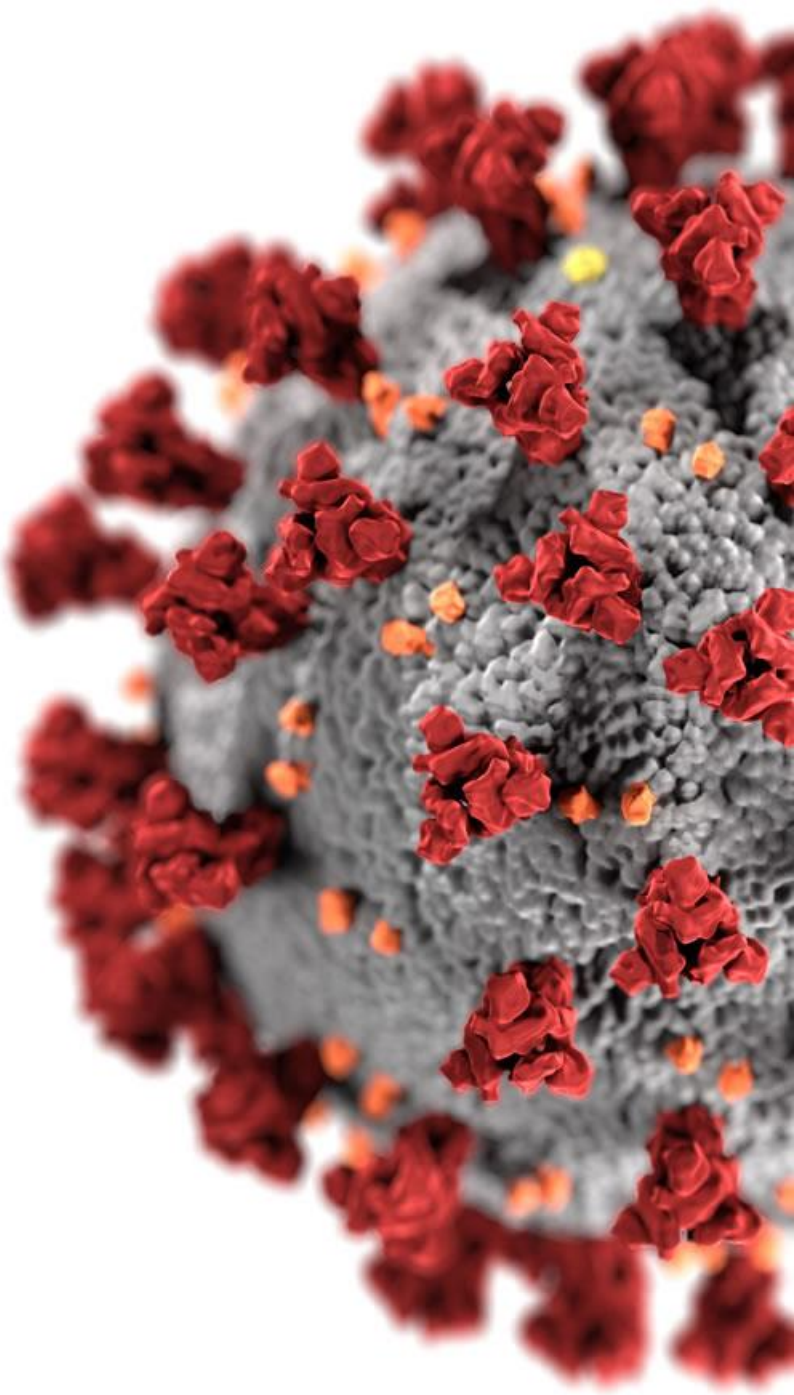
It is:

- an international, individually randomised controlled trial to rapidly evaluate promising new vaccines for COVID-19
- led by World Health Organization (WHO) and co-sponsored by WHO and Ministries of Health
- delivered on a global scale
- flexible to work across countries, settings and populations

Solidarity Trial Vaccines (STV)

Why do we need a global trial of promising COVID-19 vaccines?

- Existing nationally approved vaccines being used are a triumph for science
- But they are inadequate to meet the world's needs
- Urgent questions need answering:
  - how will vaccines respond to COVID-19 new variants?
  - how long will vaccines protect people for?



Vision – Access to COVID-19 vaccines for all

- The trial could help lead to a larger portfolio of vaccines for COVID-19 protecting people across the world
- So no person or country is left behind

Key features of the STV

- **Global rolling "testing" platform:**
  - to quickly assess promising candidate vaccines that pass WHO's entry criteria
- **Fast:**
  - recruiting from areas with high COVID-19 rates
  - testing multiple vaccines at the same time
  - using mobile pop-up sites and fixed sites (hospitals etc.)
  - results available within 3-6 months

Key features of the STV

- **Rigorous:**
  - standardised, simple methodology
  - large global study sample
  - independently scrutinised by global specialists
  - use of comparison and “blinding”

- **Flexible / adaptive design:**
  - responds to rapidly changing vaccine availability in countries

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Adaptive design features in more detail

The trial can change/adapt as it progresses:

- Vaccines can be dropped if not working
- Others can be added if they meet WHO criteria
- Target audiences for vaccination and locations can be changed
- The comparison can be changed (placebo/vaccine already available nationally)

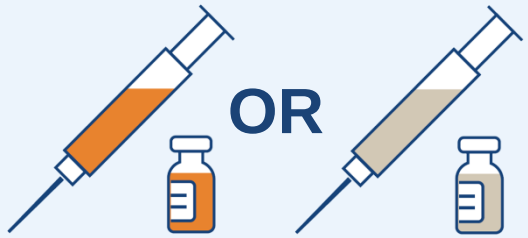
Comparison: placebo or nationally available vaccine

- Use of placebo or comparison is an integral part of trial design
- It is the key way to show the efficacy of trial vaccines
- Comparison group is shared across all arms (or groups) of the trial
- Decision on the comparison made by Global Trial Steering Committee

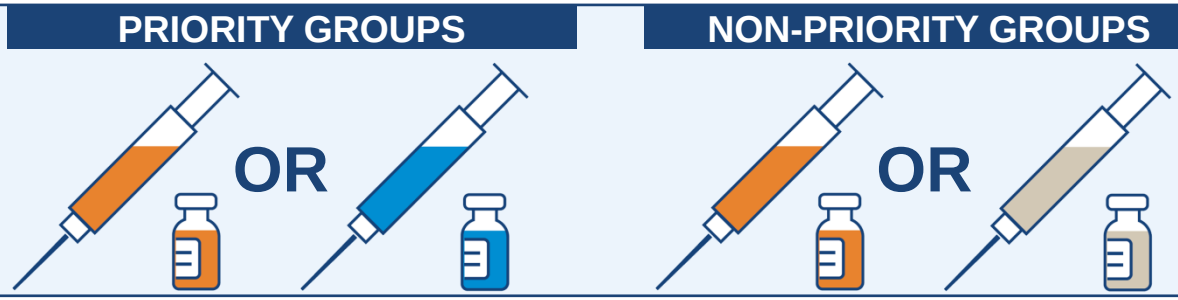
Solidarity Trial Vaccines (STV)

How the comparison group can adapt according to national vaccine availability

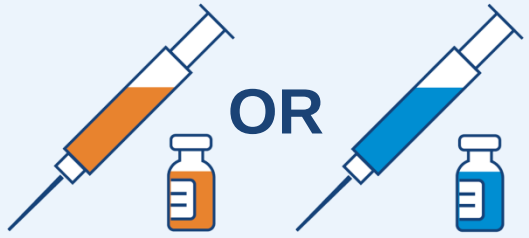
No nationally available vaccine



National vaccine becomes available for priority groups



National vaccine becomes available to all groups



TRIAL VACCINE

PLACEBO

NATIONALLY AVAILABLE VACCINE

How the comparison group can adapt according to national vaccine availability

If there is no nationally available vaccine

- All trial participants will receive a placebo (harmless substance) or a trial vaccine

As approved national vaccine becomes available for priority groups

- They will receive trial vaccine or the nationally available COVID-19 vaccine (and not the placebo)
- Trial participants not in priority groups will continue to receive trial vaccine or a placebo (“hybrid” design)

If national vaccine becomes available to all groups

- All trial participants receive either a trial vaccine or a national vaccine

Which vaccines are being included in the STV?

The trial includes candidate vaccines that will benefit from Phase 3 testing (i.e. in larger populations using a comparison)

An independent panel of scientists and vaccine experts assess vaccines on:

- their safety and potential efficacy in previous studies
- stability
- whether they can be stored and transported easily under normal conditions
- availability – whether they can be produced quickly for global distribution
- how easily they can be given to individuals (how the vaccines are given, the number of doses etc.)

There are two vaccines to be tested at the start of the STV

They are of the following types:

- **Arcturus:** An mRNA vaccine
- **Codagenix**: A vaccine based on live attenuated viruses but with a difference
- **Innovio:** A DNA vaccine
- **Medigen:** A vaccine made of a combination of the spike protein and an adjuvant (an ingredient used in some vaccines that helps create a stronger immune response)

Solidarity Trial Vaccines (STV)

Arcturus : SARS-CoV-2 self-amplifying RNA vaccine (COMING LATER)

Scientists use a synthetic version of the viral genes (called messenger RNA)

This teaches human cells to make a protein belonging to the virus and triggers an immune response

“Self-replicating” design leads to a greater production of viral proteins

Number of doses, route, vial size

1 dose
5 ug intradermal
10-dose vial

Schedule

Day 0

Cold chain requirements

≤-50°C

Codagenix: SARS-Cov-2 live attenuated vaccine (NOW PHASE 2b)

Scientists create these viruses from scratch using the “body” of another harmless virus (such as a “cold” virus)

They rewrite its genetic code to reflect the harmful virus i.e. SARS-CoV-2

This triggers an immune response inside the human body

Number of doses, route, vial size

1 or 2 doses
0.5 ml intranasal
One and five doses vial

Schedule

Day 0, Day 28

Cold chain requirements

-20 °C

Inovio: DNA vaccine encoding the spike protein of SARS-COV-2. Spike glycoprotein in combination with CELLECTRA®

Scientists directly replicate the genetic code of SARS-CoV-2 virus – including the spike protein

This triggers an immune response inside our bodies

Number of doses, route, vial size

2 doses
1 mg using specific intradermal delivery device multi dose vial

Schedule

Day 0, Day 28

Cold chain requirements

2-8 °C

Medigen: CHO cell derived spike adjuvanted protein (Subunit) vaccine

Scientists create a vaccine that replicates the spike protein of the SARS-CoV-2 virus but this time with an additional chemical ingredient

This strengthens the power of the vaccine creating a better immune response

Number of doses, route, vial size

2 doses
0.5 ml intradermal
10-dose vial

Schedule

Day 0, Day 28

Cold chain requirements

2-8 °C

B: A vaccine based on live attenuated viruses but with a difference

Scientists create the viruses from scratch using the “body” of another harmless virus (such as a “cold” virus)

They rewrite its genetic code to reflect the harmful virus, i.e. SARS-CoV-2

Several changes to the molecules mean the vaccines are too weak to cause COVID-19 but trigger an immune response inside the human body

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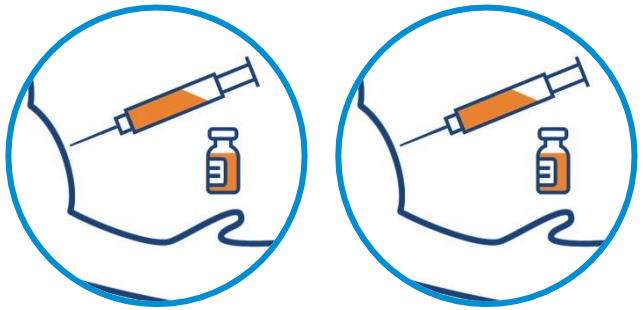
Administration

One or two doses via nasal drops

Inovio: A DNA vaccine

Scientists directly replicate the genetic code of SARS-CoV-2 virus – including the spike protein (the sharp bumps on the outer layer of the virus)

This triggers an immune response inside our bodies



Administration

Two doses injected in the arm

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Medigen: A vaccine made of a combination of the spike protein and an adjuvant

(an ingredient used in some vaccines that helps create a stronger immune response)

Like a DNA vaccine, scientists create a vaccine that replicates the spike protein of the SARS-CoV-2 virus but this time with an additional chemical ingredient

This strengthens the power of the vaccine creating a better immune response

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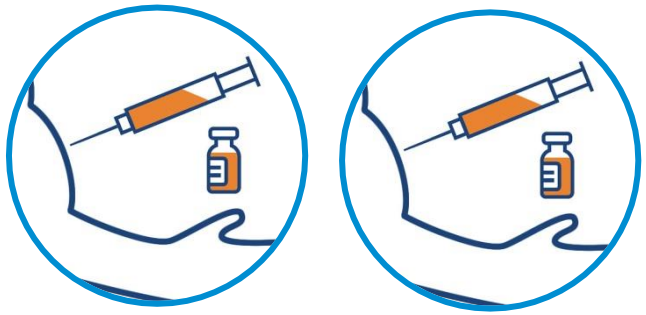

Administration

Two doses injected in the arm

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Delivery of the STV

How will the vaccines be measured? How will we know if they are successful or not?

- To assess whether a vaccine is effective – researchers will collect data on the following outcomes – these are called **endpoints**
- All sites will collect data on primary endpoints
- Some will collect data on secondary endpoints

How will the vaccines be measured? How will we know if they are successful or not?

Primary endpoint

- **The key outcome of the trial is whether the trial vaccines reduce the risk of people being diagnosed with COVID-19**
- To prove this – data is collected on the number of laboratory-confirmed cases of COVID-19 in each group:

  People that received a trial vaccine vs people that received a comparison

How will the vaccines be measured? How will we know if they are successful or not?

Primary endpoint

- The criteria for a successful vaccine in the trial = it delivers at least a 50% reduction in the risk of a person getting COVID-19

Example: in the trial this would be shown by:

100 people having a confirmed diagnosis of COVID-19 in the comparison group

Only 50 people having a confirmed diagnosis of COVID-19 in the trial vaccine group

How will the vaccines be measured? How will we know if they are successful or not?

Secondary endpoints

- Levels of immune response from trial participants generated by the trial vaccines
- Analysis of the body's mechanisms of protection
- Blood samples will be given by a sample of participants to provide the data needed

How will the vaccines be measured? How will we know if they are successful or not?

Sample size/when is data analysed?

- The sample size needed in the trial will vary nationally
- It needs to deliver the trial's primary outcome: **150 cases of confirmed COVID-19 occurring across all groups in the trial**
- At this point, data can be analysed and results reported
- "Blinded" follow-up can continue

Where will the trial take place?

- In countries and sites that have a high COVID-19 rate
- The incidence of confirmed COVID-19 disease in the placebo “arm” needs to exceed 1% during the first three months of follow-up
- New study sites may be added to ensure high levels of COVID-19 disease in trial
- Sites may be fixed or mobile, moving to additional areas allowing the trial to rapidly adapt to where the pandemic is

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Who can take part in the STV?

16+

Aged 16 or over

Have not received COVID-19 vaccine or had COVID-19 before

Plan to live in area for 6 months

Can give informed consent

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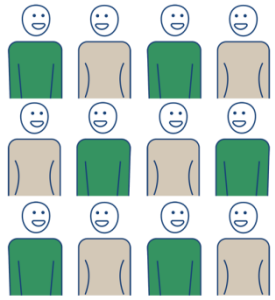
Who can take part in the STV?



Assessed to be eligible

Can comply with all procedures

Solidarity Trial Vaccines (STV)

Who cannot take part in the STV?

Have received COVID-19 vaccine/had COVID-19 before

Have received COVID-19 medications

Involved in other research

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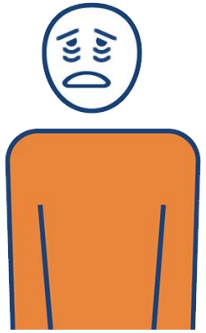
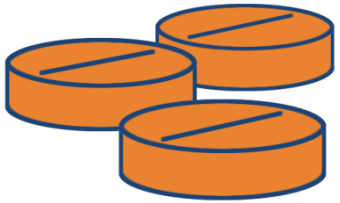
Who cannot take part in the STV?



History of severe adverse vaccine reaction



Receiving treatment with immunosuppressive therapy

Have a condition associated with prolonged bleeding

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Pregnancy and involvement in the trial

- This will vary by country depending on what has been agreed nationally
- Women who are pregnant or breastfeeding will be informed there is no data on safety of trial vaccines among these groups
- They can then decide if they want to participate in the trial

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Enrolment in the STV through to receiving the first dose of vaccine

Volunteers receive information

Adults over 18 years provide their own consent

Consent from parents/guardians if participant is under 18 years

Identification using iris scanner

Participant given trial vaccine or comparison

Wait 30 minutes

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What 'follow-up' happens after the vaccines/ interventions are given?

Overview of the protocol visits and procedures

	Main and secondary endpoints					Exploratory endpoints only	
Visit number	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Visit description	Vaccination dose 1	Follow-up visit days post-dose 1	Vaccination dose 2	Follow-up visit 7 days post-dose 2	Safety phone calls	Follow-up visit 180 days post-last dose	Follow-up visit 365 days post-last dose
Visit window (days)	Day 1	Day +7 (6-8) Post-dose 1	As per vaccine schedule	Day +7 (6-8) Post-dose 2	Day +7 (6-8) Post-previous contact – call	Day +180 (170-190 days) Post-last dose	Day +365 (350-380 days) Post-last dose

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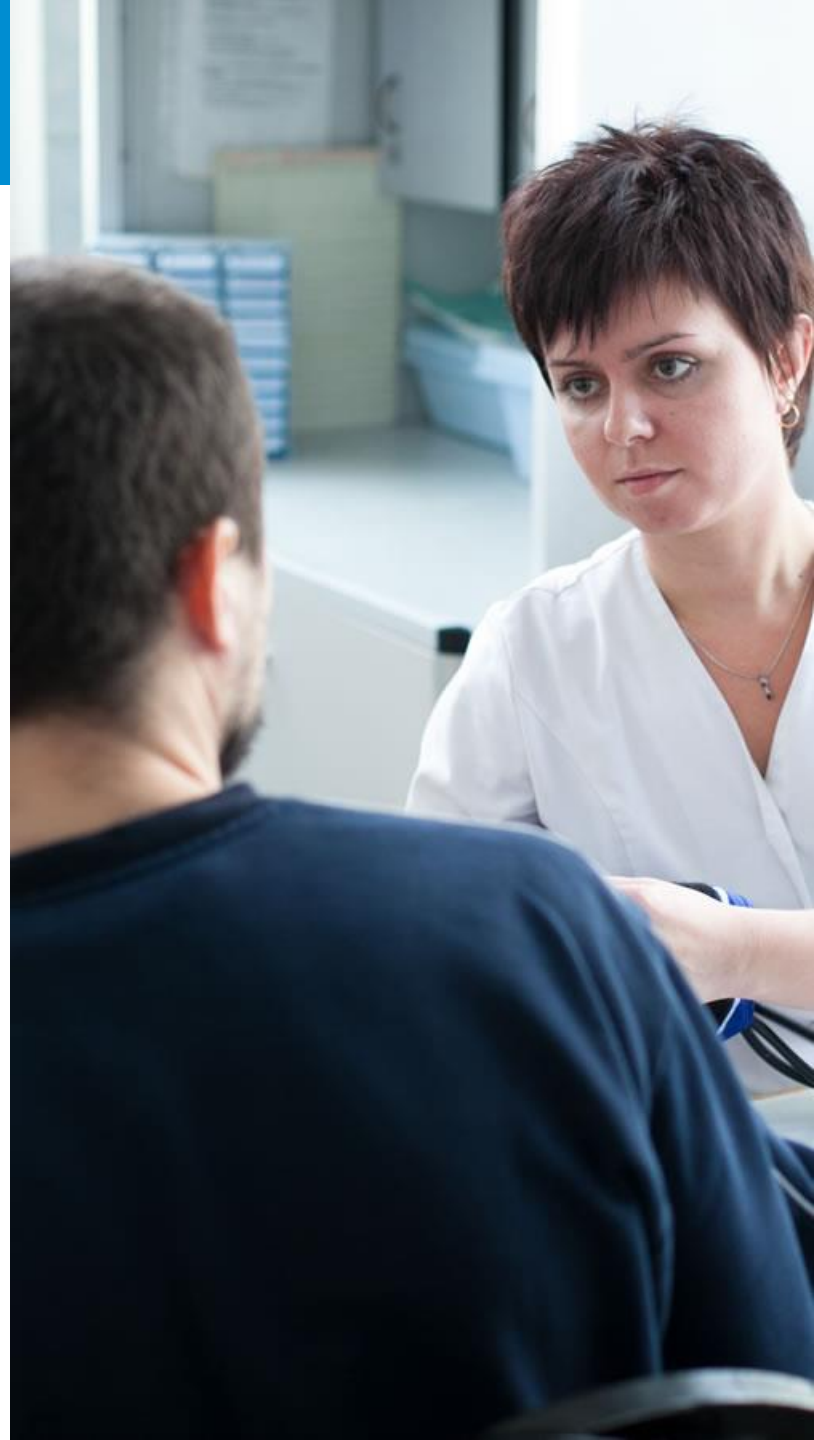
What ‘follow-up’ happens after the vaccines/interventions are given?

Key points

- After receiving the vaccine or comparison, the participant will have a series of 4-6 visits with the trial team
- The trial team will ask a series of questions – about their general health
- The participant will have the telephone number of the trial team and can contact them if they have concerns or are feeling unwell
- The participant will be given clear information about what will happen if they become unwell



What ‘follow-up’ happens after the vaccines/ interventions are given?

Key points

The procedure for a participant becoming unwell with COVID-19:

- contact the study team
- receive local standard of care at home or in a health care facility, i.e. the care that a person would normally receive if they had COVID-19

What are the benefits and risks of taking part in the STV?

Benefits

The benefits for participants taking part in the STV are:

- People will be participating in a major global trial
- Potentially helping save future lives in their communities as well as countries across the world
- People will potentially have access to vaccines that have been found to be safe and effective in earlier trials

WHO has negotiated with manufacturers of STV candidate vaccines so that, if effective, they will make every effort to make the vaccines available at reasonable and affordable prices

What are the benefits and risks of taking part in the STV?

Risks

- Some participants may experience some side-effects from having a trial vaccine
- These are generally mild and include pain/tenderness and fatigue for a short time
- Some people get headaches, muscle pain and/or swelling at the site of injection

Previous studies – the vaccines being tested are safe and prompt immune system to protect against COVID-19

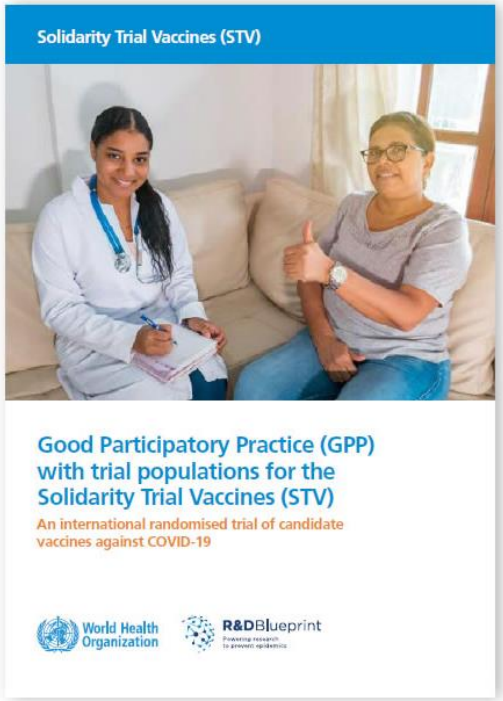
There is no risk of getting COVID-19 disease from the vaccines being tested

Further, information resources and contact details

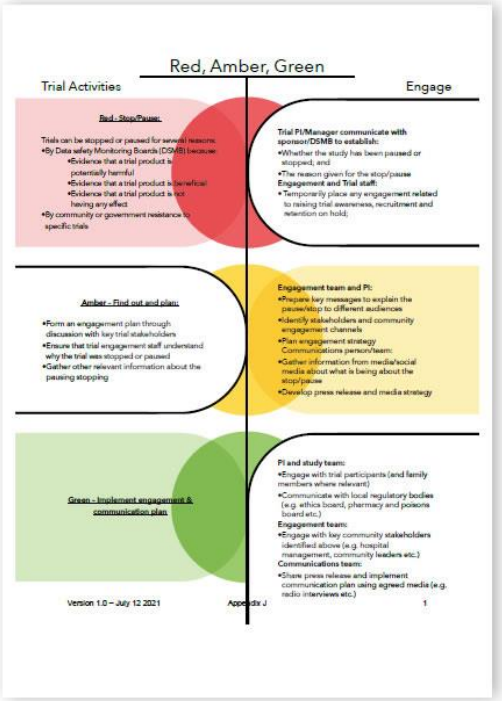
Solidarity Trial Vaccines (STV)

STV resources

STV crisis communication planning guide



Good Participatory Practice (GPP) with trial populations for the STV



STV Good Participatory Practice (GPP) tools and appendices

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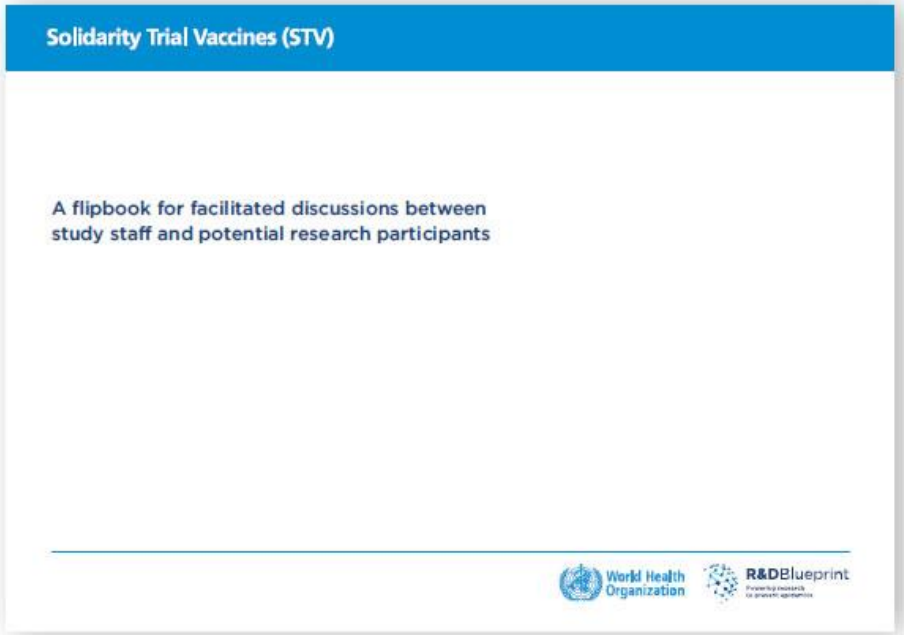
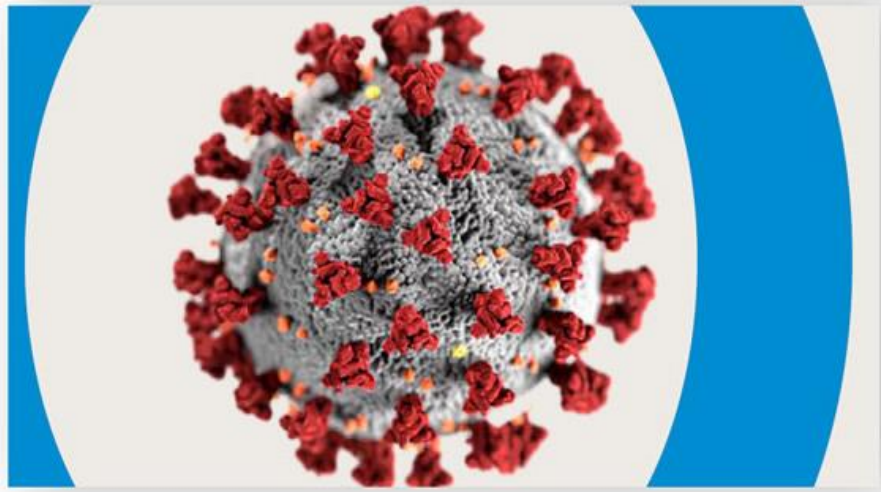
STV resources



STV FlipBook: an illustrated ‘story book’ guide to facilitate discussions with potential trial participants

STV public education leaflet



STV video: a short animation which explains the trial simply to all audiences

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Further information/download STV resources

For regularly updated information about the trial and to download any of the STV resources please go to: xxxxxxxx (web link)

Further resources on communications

For wider information on communications from WHO go to: www.who.int/communicating-for-health/en/ and download the ‘WHO Framework for effective communications’

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Appendix A: About vaccines and vaccine trials

General information

What is a vaccine and how does it work?

Vaccines:

- are a simple, safe, effective way of protecting people from diseases
- use body's natural defences to build resistance to specific infections
- train immune system to create antibodies when it is exposed to a disease
- contain only "killed" or weakened forms of viruses or bacteria (or a selected part of the virus/bacteria)
- do not cause the disease itself
- are generally given as an injection, but some are given orally or nasally

What is a vaccine and how does it work?

- Most vaccines have been in use for decades, with millions of people receiving them safely every year
- Every vaccine must go through extensive and rigorous testing
- To ensure it is safe before it is authorised and used

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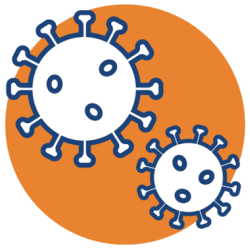
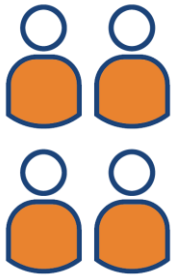
How are vaccines developed?

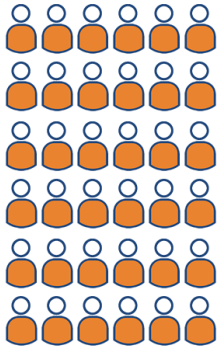


Basic Science Vaccine Design

Testing in Animals



Phase I Trial 20-80 people



Phase II Trial Several hundreds of people

Phase III Trial Several thousands of people

Licensure of Vaccines

Phase IV Monitoring in the population

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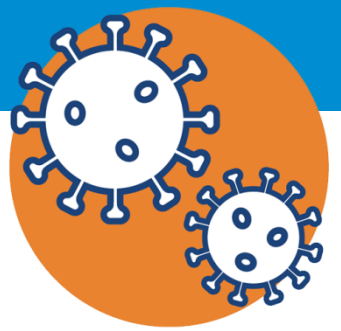
Image credits in this section: Alun Davies, Kemri-Wellcome Centre

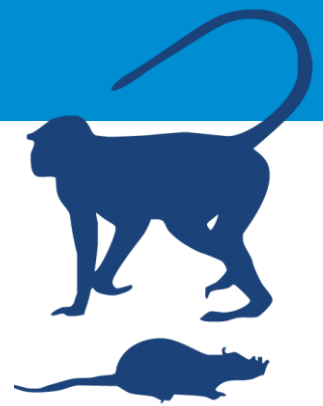


How are vaccines developed?

Laboratory work

- Extensive work in laboratory needed
- Can take many years
- This is called research and development (R&D)

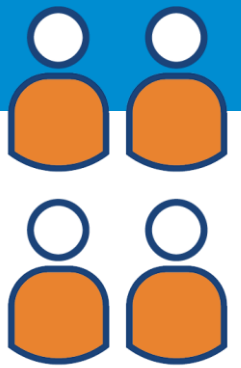
How are vaccines developed?



Pre-clinical phase

- Each vaccine carefully evaluated to determine which antigen(s) should provoke an immune response
- This preclinical phase is delivered without testing on humans
- An “experimental” vaccine is tested with animals to evaluate its safety/potential to prevent disease
- If it triggers an immune response in animals then it is tested in human clinical trials in three phases

How are vaccines developed?

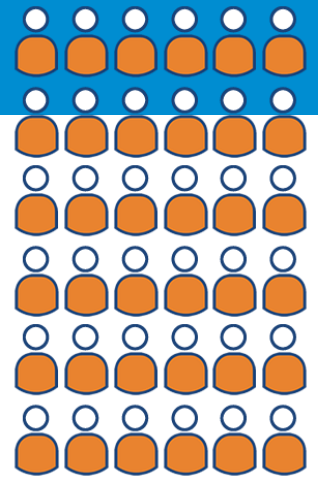


Phase 1

- Vaccine given to a small number of volunteers to assess its safety
- Confirms it generates an immune response
- Generally tested in young, healthy adult volunteers

How are vaccines developed?

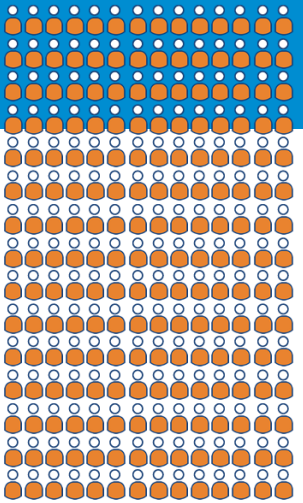
Phase 2



- Vaccine given to several hundred volunteers
- Further evaluates its safety/immune response in larger numbers of people
- Trial participants have same characteristics (e.g. age, sex) as people the vaccine is intended for
- Usually multiple trials to evaluate vaccine in various age groups and evaluate different vaccine formulations and dosages etc.
- Comparison group that receives a placebo or comparison is usually included

How are vaccines developed?

Phase 3



- Vaccine given to thousands of volunteers
- Compared with a similar group of people who receive a comparison
- Determines whether or not the vaccine is effective against the disease
- Usually conducted across multiple countries/locations
- To ensure findings on vaccine's safety and effectiveness apply to different populations

What is a vaccines clinical trial?

A vaccines clinical trial:

- is a research study performed in people
- assesses whether vaccines are safe and whether they work
- compares outcomes in people who are vaccinated and people who are not to see if the vaccines protect people
- is carefully designed and planned with agreed protocol documents

What is a vaccines clinical trial?

The protocol states:

- who can be included in the trial
- where the trial will be conducted
- what steps must be followed
- in what order

In order to collect and analyse all the information needed

Alternative slide section headers

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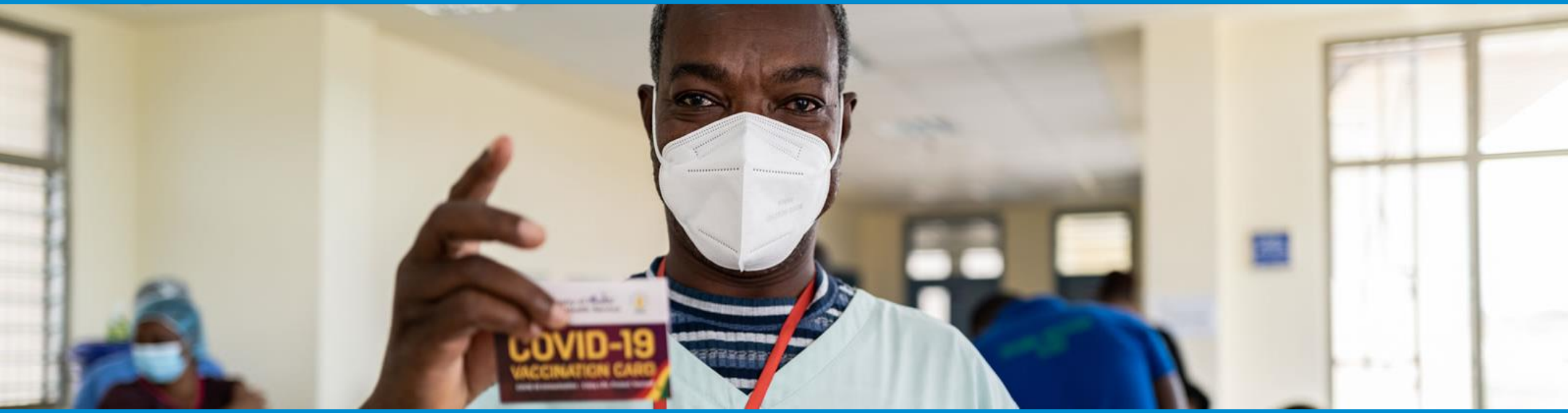

Introductions and welcome

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About the Solidarity Trial Vaccines (STV)

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Delivery of the STV

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Further, information resources and contact details

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Appendix A: About vaccines and vaccine trials

General information

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