



1) Meet the Experts

During today's session you will have the chance to meet experts in different areas of vaccination.

As a group, think of four questions you want to ask each expert. Will they be different questions or the same? Here are some ideas to help you come up with questions.

- Find out about the expert's opinion on compulsory vaccination.
- Find out about how the expert started their career or what they find interesting about their job.
- Ask the expert questions which will help you to understand how vaccination works.

You can always think of more questions to add as you go through the day but you need to have some to start with.



2) What is an Infectious Disease?

In your group write down as many infectious diseases as you can.

You have ten cards with names of disease on them and ten cards with pictures of patients with one of the diseases.

Match the diseases to the patients.

Use the information on the back of the cards to help you.

Fact Box

An **Infectious Disease** is an infection of the body due to an organism that causes damage. The infection can usually be passed on or transmitted.

3) What is a Vaccine?

In your group, read out the definition cards to help you understand what antigens, antibodies and vaccines are.

Create a vaccine

On your worksheet, create a disease made up of 7 shapes.

Then fill in the rest of the worksheet.

Think about these 2 questions.

- What could a successful antibody to this disease look like? Draw 3 shapes that would work as an antibody
- How would you design a vaccine for your disease? (Remember it needs to stimulate production of the appropriate antibodies.) Draw 3 shapes that would work as a vaccine

4) Vaccination Scenarios

There are two different scenarios. One patient has been vaccinated and the other has not.

Divide the cards into two piles, one for each scenario.

Put the cards in order to show how the different events take place e.g. what happens first, second, third and so on.



5) Vaccination Timeline

Working together put the *timeline cards* in the correct order to create a timeline showing when routine vaccinations take place in the United Kingdom.

Use the vaccine resources provided to help you.

Fact Box

Hib Vaccine - Protects against the bacteria *Haemophilus influenzae type B* (Hib) which can cause a number of infections such as blood poisoning (septicaemia), pneumonia & meningitis

Pneumococcal Vaccine - Protects against pneumococcal infection caused by the bacteria *Streptococcus pneumoniae* which can cause pneumonia, septicaemia & meningitis



6) The Smallpox Story - Life before vaccination

Your facilitator (or the organiser) will give you some background to the smallpox story.

You will act out one aspect of the smallpox story for the rest of the group.

LIFE BEFORE VACCINATION

Smallpox killed 10% of the population in the 18th Century, it killed 20% in cities where infection could spread easily. Smallpox was responsible for 1 in 3 deaths of children. The smallpox virus enters the body through the lungs, infects the internal organs then spread to the skin causing a rash. Symptoms of smallpox include fever, headache, backache, vomiting followed by a rash - the rash starts as small pink spots but soon turns to blisters which will eventually shrink and fall off leaving a scar. Smallpox was around for a very long time - scars on the mummified body of Pharaoh Rameses V who died in 1157BC may have been caused by smallpox. Smallpox was taken to America by settlers and killed many Native Americans. People affected by smallpox include Mozart, Elizabeth I, George Washington and Abraham Lincoln. Even those who weren't killed were left badly scarred.



6) The Smallpox Story - Edward Jenner

Your facilitator (or the organiser) will give you some background to the smallpox story.

You will act out one aspect of the smallpox story for the rest of the group.

EDWARD JENNER

Edward Jenner was a family doctor in the 18th century.

At that time Smallpox was a major killer. However, country-lore said that people who caught cowpox from their cows could not catch smallpox. Cowpox is a mild viral infection of cows. It causes a few weeping spots (pocks) on their udders. Milkmaids occasionally caught cowpox, this would make them slightly ill but did not have any serious consequences.

In 1796 a dairymaid, Sarah Nelmes, visited Jenner with a case of cowpox that she had caught from a Gloucester cow called Blossom. Jenner realised that this was his opportunity to test the protective properties of cowpox by giving it to someone who had not yet suffered smallpox.

Jenner chose to experiment with his gardener's son James Phipps, who was 8 years old. He scratched the boy's arm and rubbed in some material from one of the pocks on Sarah's hand. James became ill with the cowpox but was soon better.

To test whether James was now protected against cowpox, Jenner scratched him with material from the scabs of someone with smallpox. James did not develop smallpox.



6) The Smallpox Story - Global Vaccination

Your facilitator (or the organiser) will give you some background to the smallpox story.

You will act out one aspect of the smallpox story for the rest of the group.

GLOBAL VACCINATION

After Edward Jenner discovered vaccination, it rapidly spread throughout the world. This led to a great decrease in the effect of smallpox in industrialised countries but there was still a large problem in Africa, Asia and Latin America.

When the World Health Organisation was founded in 1948 it was keen to try to control smallpox, but it wasn't until 1958 that a global eradication programme was started. The money provided was limited and so after 9 years little progress had been made in many countries.

In 1966 the World Health Assembly decided to start an Intensified Smallpox Eradication Programme with a \$2.4million per year budget with the goal of eradicating smallpox in 10 years. They managed this in just over 10 years. In May 1980 the World Health Organisation announced that smallpox had been eradicated globally



6) The Smallpox Story - Herd Immunity

Your facilitator (or the organiser) will give you some background to the smallpox story.

You will act out one aspect of the smallpox story for the rest of the group.

HERD IMMUNITY

When enough people are immunised, it is very hard for a germ to find anyone who isn't vaccinated - this is called Herd Immunity. Because of this, even people who have not been vaccinated (and those whose vaccinations have become weakened or whose vaccines aren't fully effective) often can be shielded because vaccinated people around them are not getting sick. "Herd immunity" is a way of protecting the community against disease, it is more effective as the percentage of people vaccinated increases. It is thought that approximately 95% of the people in the community must be vaccinated to achieve herd immunity. Some people want to be vaccinated for themselves, some want to be vaccinated for the good of the community, some people do not want to be vaccinated. In trying to achieve herd immunity some believe we are asking people to potentially sacrifice their own health in order to 'protect' someone else. However people who are not immunised increase the chance that they and others will get the disease.

When enough people are protected it is possible for some diseases to disappear forever. This was the case with smallpox.



7) Who Pays?

During this task, you will be representing UK government departments. As a group you will advise the Prime Minister on the issues relating to the funding of vaccination.

Your prime minister (facilitator) will give you your task cards. Read the problem you have been given and decide what you think is the best way to solve it.

At the end of the task you will need to discuss your decisions with the rest of the group. Make sure you take notes of your thoughts and decisions so you can share them with the group.

7a) Department for Environment, Food & Rural Affairs

The Problem

There is an outbreak of avian influenza (bird flu) in chickens in the African country of Niger. This country is very poor and cannot afford to vaccinate its animals against bird flu.

There is a risk that bird flu could spread rapidly amongst Niger's domestic birds. This means wild birds are more likely to catch the flu and they could spread it to other countries including the UK.

You need to decide:

Should the UK government pay for all or some of the flocks of domestic birds to be vaccinated in Niger?

Other things to consider:

The people in Niger have close contact with chickens. Chickens for food are often kept and slaughtered in people's gardens. This increases the chance of the bird flu virus infecting people.

At the moment you can only catch avian influenza from very close contact with infected birds. However if the flu virus is able to change itself it could become dangerous to humans too. The closer the contact between infected birds and humans, the more likely it is that the flu will become dangerous to humans.

If not all birds are vaccinated properly there is a risk that some of them will become infected but not detected. This may have worse consequences than not vaccinating the birds at all.



7b) Foreign & Commonwealth Office

The Problem:

When people travel abroad they may be exposed to diseases that are not common in the UK. Should these people be vaccinated to protect themselves and the wider community - both abroad and when they return to the UK?

You need to decide:

Should it be compulsory for travellers to have relevant vaccinations when travelling abroad? Who should pay for travellers' vaccines?

Other things to consider:

There are different groups of travellers:

- Business travellers
- Tourists
- People going to visit relatives abroad
- Volunteer workers
- People who study abroad

Who should pay for these people's vaccinations?





7c) Department of Health (1)

The Problem:

We are due a flu pandemic. Flu vaccine supplies are limited. Which groups of people should be first to get the vaccine and who should pay?

People who may need/want to be vaccinated:

- People over 65 - these people are vulnerable to flu and often become seriously ill if infected
- People with certain diseases such as heart disease or asthma are more likely to suffer from serious illness if they catch flu
- Doctors, nurses, and people who would make & administer vaccines if there was an emergency
- Teachers and other people who work in schools
- 20 to 40 year olds
- Babies (under 2 years)

You need to decide:

Which groups of people should get vaccinated first and who should pay for the vaccinations?

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Other things to consider:

There have been pandemics in the past. In 1957 & 1968 the very young and very old were most at risk of dying. In the 1918 pandemic it was people between 20 & 40 who were most at risk of dying.

Should you try and save the most lives, save the worst off, save the most likely to fully recover or save those who play an important role in society?

Who should get priority in getting free vaccines?

Fact Box

Pandemic flu is a type of influenza that spreads rapidly to affect most countries and regions throughout the world.

Pandemics of flu are due to new strains of the disease which few people have immunity to. This allows the disease to spread widely and have very serious effects.





7d) Department of Health (2)

The Problem

Vaccines cost money but are cheaper than treating someone with the disease.

You need to decide:

If people have refused to have a vaccine should they be entitled to free medical care if they then get that disease?

Other things to consider:

There are different reasons why people might not get a vaccine. These include medical reasons such as allergies and religious or moral reasons.

Should people be entitled to free vaccinations against diseases that are preventable (for example those caught by having unprotected sex)?

Write down your decisions and share them with your group.



7e) Department of Health (3)

The Problem:

Vaccinations cost the government a lot of money. Should people who could afford to pay get free vaccinations? If people paid for their own vaccines, the government would have more money to invest in improving the healthcare system.

You need to decide:

Should childhood vaccinations be free? Up to what age? Should people who can afford it pay for their children's vaccines?

Other things to consider:

For some diseases such as measles, it is important to get herd immunity. For this a certain percentage of the population need to be vaccinated to protect the whole community. This is 95% for measles.

Write down your decisions and share them with your group.

8) MMR

Look at the newspaper and web extracts. What was the media trying to convey?

Do you think the stories are:

- Pro MMR or Anti MMR
- Balanced points of view
- Scientific research
- Scare-mongering

In your group, discuss the role of the media in the public understanding of vaccination programmes.

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MMR Case Study

Read the BBC articles about MMR.

Discuss the following issues:

- Compulsory vaccination - should the case have gone to court?
- Who has the right to decide if you get vaccinated?
- Herd Immunity - Do we have a responsibility to society?
- What would be the practical issues involved in introducing compulsory vaccination?

Which quote or headline most reflects how YOU feel about MMR?



9) Compulsory Vaccination

Vaccination Quotes

Read the quotes

Sort the quotes into 2 categories

- "For Compulsory Vaccination"
- "Against Compulsory Vaccination"

Then try to put them in order from the most FOR to the most AGAINST

What sort of person do you think might have made these comments?

What is your own opinion on compulsory vaccination?

Do you think a compulsory vaccination policy could be justified in order to achieve herd immunity?





10) Policy Making & Presentation

Think about all the information you have gathered from the previous activities.

You need to create a policy that answers the question "Should vaccinations ever be compulsory?"

Every member of the group must agree with the policy.

You might want to start by writing a set of guidelines for who should get vaccines and when. This can then be summarised to create your policy statement.

PTO



10) Policy Making & Presentation

Create a group presentation about your group's policy statement.

- It must last less than five minutes.
- All members of your group should have a role in the presentation or have taken part in its preparation.
- It should include work from at least three of your other tasks.

Here are some ideas:

- a formal presentation
- a news or radio broadcast with "live footage"
- a drama showing how a group of people feel about the issues
- or use any of your own ideas.



Optional Task - What is an Immune Response?

Split yourselves into two teams (A & B). When you are ready - ask your facilitator for the next piece of information.

Follow the instructions given to you.

After the task, discuss what instructions your team was given and what you did.

Fact Box

When a foreign microorganism attacks your body it triggers an **immune response**. Your body produces special cells and antibodies to fight the virus. If it produces enough, then it will overcome the infection.

