

Immunization in practice - Case studies

Module 2: The Vaccines

Case study #1: The keen medical officer of Munga

In Munga Province, a keen medical officer named Thomas is managing a successful immunization programme.

One day, he visits a district hospital and is shocked to find 19 children with measles, some of them severely ill. He asks the hospital staff for information on the immunization histories of the children.

- Fifteen had not received measles vaccine.
- Four of these 15 had never been to a health centre or other health facility before being hospitalised.
- Eleven of the 15 had gone to a health centre for a measles immunization but had not received it because the health workers would not immunize children with colds or diarrhoea.
- Four children had received measles immunization in the same health centre at the correct ages.

Questions for review

1. Which of these cases of measles could have been prevented? How?

Cases could have been prevented by immunizing all the eligible children with colds or diarrhoea who had gone to health centres.

The four children who were immunized might have received impotent vaccine. Since they all attended the same health centre there could be a problem with the cold chain.

2. What should the medical officer do to reduce the number of measles cases in the province?

The medical officer should find out what policy on contraindications is being followed by the health workers. He should make sure that the policy is correct and that the health workers apply it.

He should also check the cold chain practices at the health centre attended by the four immunized children.

Case study #2: The window ledge

On Friday, Ramesh decides to defrost and clean his refrigerator because a lot of ice has collected around the freezer.

He puts ice packs in a vaccine carrier and then places the vaccines from the refrigerator in the middle of the carrier. There is not enough room in the carrier for everything, so he puts the diluent on the window ledge out of the way.

“The diluent will be safe here until I can put it back in the refrigerator,” he thinks. “Diluent doesn't lose its potency as vaccine does.”

On the following Monday, immunization day at the health centre, many children come in for a dose of measles vaccine. Ramesh takes the measles vaccine out of the refrigerator, but at first he cannot find the diluent. Eventually he sees it on the window ledge.

Questions for review

1. Should the diluent from the window ledge be used to reconstitute the measles vaccine?
The diluent can be used if necessary, but Ramesh must not reconstitute vaccine with diluent from the window ledge while the diluent is still warm. Warm diluent damages vaccine.
2. What should Ramesh do with the diluent before he uses it to reconstitute vaccine?
Ramesh may put the diluent back in the refrigerator and use it when it has become cold again. He should explain to the parents that the diluent cannot be used until it is cold and ask them either to wait or to come back for the next immunization session.

Case study #3: Two months pregnant

Mrs. Kama, two months pregnant with her first baby, is at the clinic and hears a health worker talking to a group of women. She is telling them about neonatal tetanus, a disease that causes death in newborn babies, and about the injection that women can get to protect themselves and their babies.

Nurse Celia is giving tetanus toxoid immunizations. Mrs. Kama asks her for one. “I am going to my mother's village soon and will stay several months,” she says. “There may not be time for two injections when I come back.”

“I'm sorry,” says Nurse Celia, “I can't give you tetanus toxoid now. It's too early in your pregnancy and it might harm the baby.”

“My friend told me that the health workers in Ibutown give these injections to every woman the first time she goes to the antenatal care clinic, even if she's only one month pregnant. They say it's not dangerous.”

“I'm sorry,” says Nurse Celia. “My supervisor has told me not to give tetanus toxoid before a woman is at least four months pregnant.”

Questions for review

1. Who is following the correct procedure, Nurse Celia or the health workers in Ibutown?
The health workers in Ibutown are correct. It is safe to immunize women with tetanus toxoid at any stage of pregnancy.
2. What should Nurse Celia do?
Nurse Celia should discuss the matter with her supervisor and ask for his or her advice. The supervisor could contact the Ministry of Health to find out what the national policy is.

Module 3: The Cold Chain

Case study #4: Omar's story

Omar is immunizing children when his supervisor arrives unexpectedly. Having prepared to give his next injection, Omar picks up some DTP vaccine from a cup of water. The supervisor feels the water and finds that it is hot.

She asks, “Why is this vaccine in hot water?”

“The vaccine was frozen solid this morning when I took it out of the refrigerator,” says Omar. “I had to put it in hot water to melt it so that I could get it into the syringe.”

Questions for review

1. What has Omar done that is wrong?

Omar should not immunize children with DTP that has been frozen. It has lost its potency and cannot make them immune. Melting frozen vaccine in hot water will not make it potent again.

2. What should be done with the DTP vaccine?

The frozen vials should be thrown away. Omar should check the other DTP vials in the refrigerator to see whether any of them are frozen. He should make sure that none of them are being stored on the top shelf. He should also check the temperature of his refrigerator. It is probably too cold, in which case he should adjust the thermostat.

3. What should Omar do about the children who received the DTP?

Omar should find the children he has given frozen DTP to and should give another dose of the vaccine.

Case study #5: Liza and the ice packs

Liza, a community nurse, conducts outreach immunization sessions on Tuesdays and Thursdays.

One Tuesday she returns late from her outreach trip. She leaves her vaccine carrier and other equipment at the health centre and hurries home.

On Wednesday afternoon she packs the supplies she will need for the next day's outreach. She checks the vaccine supply and puts the melted ice packs in the freezer.

On Thursday, Liza leaves for the outreach site early in the morning. It is already hot. When she arrives at the site, people are waiting for her. She opens the vaccine carrier and finds that the ice packs have melted completely. The thermometer in the carrier reads 16°C.

Questions for review

1. What should Liza do now?

Liza must cancel the immunization session and dispose of all the vaccines in the vaccine carrier. She should explain the situation to the people who are waiting and arrange for a

return visit as soon as possible. She could use the time to provide other health services to the people or to talk with them about disease prevention and good health habits.

2. What should she do in the future to prevent this problem?

Next time, Liza should put the melted ice packs in the freezer as soon as she returns from outreach. She should have done this on Tuesday night. The ice packs have not been in the freezer long enough to freeze completely by the time she takes them out on Thursday morning. It may take as long as 48 hours to freeze an ice pack.

Case study #6: A vehicle breaks down

Pak Nana is a health worker on the Broma District outreach team. One morning the team's vehicle breaks down on its way to an immunization session. Pak Nana opens the bonnet and begins to look for the problem while his fellow worker lies down under a tree and falls asleep.

An hour later, supervisor Pak Jacob drives up and stops to see if he can help. He thinks he may be able to take the vaccine and the other health worker to the immunization session.

Pak Jacob finds the vaccine carrier in the sun on the back seat of the vehicle. The lid is partly off. Inside the carrier are vaccines, a bottle of Fanta, and three small pieces of ice in a plastic bag full of water. He finds syringes in a cardboard box, and bowls, cups, and cotton wool in a paper bag.

At this point Pak Nana finishes repairing the vehicle. "We can go now," he says. "We can have the immunization session after all."

"I'm afraid we can't," says Pak Jacob. "We must send a message to cancel the session and go back to the health centre."

Questions for review

1. Why does Pak Jacob cancel the immunization session?

Pak Jacob cancels the immunization session because the vaccines are warm and probably useless and because the syringes are contaminated.

2. What should Pak Nana do differently next time?

If he has reusable equipment, Pak Nana should clean and sterilise the injection equipment and keep it in the steam steriliser until ready for use. If the vehicle breaks down the vaccine carrier should be taken from the vehicle and put in the shade. Its lid should be closed tightly and should not be removed. The Fanta should not be put in the carrier.

Case study #7: The unlabelled vaccines

When Nurse Santina opens the refrigerator to take out some DTP vaccine she sees a lot of water in the main compartment. Everything is wet. She checks the temperature: it is 2° C.

Nurse Santina finds that there are no labels on any of the vials in the place she always keeps DTP vaccine. The water has washed them off.

She says to herself: “All our DTP was new last week. These people have come a long way for their DTP immunizations and I don't want to discourage them. The refrigerator is cold enough”.

She opens a vial and gives injections to four babies. Thirty minutes later the four mothers, very upset, rush into the health centre. Their children are unconscious. Nurse Santana asks a neighbor with a truck to give them a ride to the district hospital, where they are admitted.

Later, a senior nursing officer comes to discuss what has happened. She says: “It appears you gave injections of insulin instead of vaccine.”

Question for review

1. What is Nurse Santana's mistake?

Nurse Santana's mistake is to inject something into a person from a vial without a label.

2. What should she do to avoid making this mistake again?

She should never give any medicines or vaccines from a vial or bottle that has no label. Even though Nurse Santana feels certain about what the vial contains, she should not use it in the absence of a label.

If your refrigerator is wet, keep vaccines in a plastic bag until it is repaired. This will usually prevent the labels from becoming wet and falling off.

Module 4: Ensuring Safe Injections

Case study #8: The accident

Nurse Marta always goes to outreach sessions on the same day of the month so that people know when to expect her. She always arrives on time and the people are always ready for her.

On the first Monday of the month she is on her way to Masu Village as usual. A large truck brushes her arm as it passes on the narrow muddy road and she falls off her bicycle. The vaccine carrier lid breaks open and all the vaccines and ice packs fall out. The sterile syringes and needles also spill on to the ground. Luckily, Nurse Marta is unhurt and her bicycle is undamaged.

Shaken, she picks everything up and returns to the health centre, where she sterilises all the equipment. Because the day is hot she disposes of all the vaccines. She then sends a message with the bus driver, indicating that she cannot come on this occasion but that, as usual, she will come on the first Monday of the next month.

Questions for review

1. Is Nurse Marta correct in what she does? Explain your answer.

Nurse Marta cannot use the syringes and needles that fall on the ground. If she has no way of sterilising them, she must return to the health centre in order to do this. She should check the vaccine vial monitors, and if they show the vaccines have been exposed to heat during her ride back to the health centre, she is right to destroy them. She also correctly sends a message to the people so that they know she cannot come on this day.

2. What else could she do to make sure that the people are ready for her next outreach visit?

Nurse Marta could send another message to make sure that the people in Masu know of her accident, or she could visit the village a few days before her next session. Another possibility might have been for her to ride on to the village to tell people what had happened before returning to the health centre.

Module 5: Planning Immunization Sessions

Case study #9: The new outreach site

Maria, the energetic new director of the Modu Health Centre, has agreed with the district supervisor to raise immunization coverage by 20 percent in her first six months in the job. One of the things she plans to do is to increase the number of outreach sites. She makes a big calendar to put on the wall of the health centre, showing the days and locations of the outreach sessions.

One week before the first outreach session in Tuding, Maria visits the place for the first time. She sees the community leaders and tells them about the immunization programme. She says that a team will come the following Tuesday at 8:00 to give immunizations and she asks the community leaders to notify people and arrange a site.

When the team arrives the next Tuesday there are no tables, chairs, or water, and no mothers and children.

The team members are disappointed and the community leaders wonder what has gone wrong.

Questions for review

1. What do you think has happened and how could Maria have prevented it?

Maria has not spent the time needed to find out whether people in the community understand about immunizations. She should have worked with community leaders to plan an information campaign.

She should make sure that the date she picks is convenient. If it is not she should negotiate another one.

She should be explicit about the requirements for an immunization session. She should discuss what arrangements the community can make.

2. What can the team do while in Tuding?

The team can visit people in the community and talk with them about health issues and immunizations. The team should immunize anyone who desires an immunization.

Case study #10: Crossing the road

Abu-Bakar holds immunization sessions once a week in his health centre. His supervisor, Nash, visits him on an immunization day and observes that there are no children or mothers.

“The people here don't like to have their children immunized,” says Abu-Bakar. “They come only when someone is sick.”

“I wonder why,” says Nash. “Let’s try to find out by asking the woman who is standing across the road.”

Mrs. Banda is surprised when the health workers cross over to see her. She tells them that her older children have had whooping cough and measles but have survived. None of her children have been immunized.

Abu-Bakar and Nash sit down with Mrs. Banda on the front porch and start talking about immunizations.

Questions for review

1. Why do you think no one comes to be immunized?

One of the reasons may be that people in the town do not know about immunizations and how they can prevent some diseases. Abu-Bakar seems to miss opportunities to immunize when people come to him for treatment of illnesses. People in the community do not seem to know Abu-Bakar.

2. What can Abu-Bakar do to get people to come to the immunization sessions?

Abu-Bakar should find out what people in the community know and what health services they need. He should spend part of his time visiting people's homes, work places, and other locations where people gather. He should talk with them about immunization, the services he can provide, and the schedule and location of outreach visits.

Case study #11: Kassim's way

Kassim has recently been appointed district supervisor. During his first few months in the job he visits every health centre. One, located in a remote area, has a large population but few children or women come for services. Kassim wants to know why.

First, he talks with community leaders. They tell him that the health centre is too far away for most people to walk to and that there is no transport.

Then he goes to the health centre and talks with Claudia, the community nurse. He asks her about her work and her family and how she is getting along. She is glad to have the opportunity to sit down and talk to someone about her problems.

While Kassim is at the health centre he also sits with women and asks them about their work, families, and health, and whether they have difficulty in getting to the health centre.

Claudia is amazed at how relaxed and friendly the women are with Kassim, and she thinks about how she treats them. She usually feels too tired to bother with the niceties and just rushes them through and sends them away.

She decides to try working in Kassim's way. She offers each woman a chair, asks them how they and their children are, and inquires whether the health centre is meeting their needs.

The next time Kassim visits he finds many children and women at the health centre. The atmosphere is warm and friendly, and Claudia spends at least a few minutes talking with every person. No one has any complaints about the centre being too far away.

Question for review

1. Was the health centre really too far away or was there another problem?

The real reason people were not going to the health centre was probably that it was not meeting their needs. People felt rushed and were not given time to talk to Claudia about their problems. As a result they left the centre feeling dissatisfied and did not return.

Kassim demonstrates good behaviour not only with clients but also with Claudia. Claudia sees the effect of courtesy and demonstrations of interest. When she adopts Kassim's approach she becomes more interested in her work and less tired.

Case study #12: Arranging space

You are a health worker visiting a friend who works at another health centre. On the day you arrive, everyone in the health centre is involved in an immunization session.

Two large tables have been placed near the door, which is the major source of light in the room. A health worker sits at each table. One registers women and children. The other checks immunization cards and speaks to each parent as he or she leaves, explaining what to do if an immunized child becomes fussy or feverish and when to return for the next immunization.

At the other end of the room, where it is rather dark, two health workers are screening and immunizing children. The vaccines and immunization equipment are on a narrow shelf on the wall. The parents are queuing quietly in the middle of the room, waiting their turn.

Question for review

1. Your friend asks for your advice after the session. What do you say?

The health workers doing the clerical work have the only tables. Give one to the health workers doing immunizations.

Put a chair at the immunization station so that a parent can sit down and hold a child in the right position for immunization.

Provide more light for the immunization station, for example by moving the station closer to the door, putting a lamp in the dark part of the room, or having a window constructed.

Find a place where parents can sit while waiting, outside the room if it is too crowded inside. If appropriate, give parents a specific time when they should attend.

Assign one of the health workers doing clerical work to another task. One person can handle registration.

Case study #13: The missing kerosene

Ida is a community nurse at the Ngoro Health Centre. She is going to hold an outreach immunization session for a group of villages a long way away from Ngoro. This is a new outreach site and the people there are still learning about the benefits of immunization. She wants to arrive on time and to do everything correctly.

The previous afternoon she checked that there were enough ice packs in the freezer and she decided how much vaccine to take. She cleaned all the injection equipment so that it would be ready for sterilisation before her departure.

Early in the morning, Ida comes to the health centre and begins to sterilise the equipment. Before steam starts coming out of the valve, the stove goes out. There is no more kerosene.

Ida rushes to the shop to buy some but the owner has closed for the day to go to a funeral. The other shops are closed and the families she knows have run out of kerosene because it is the end of the month.

After an hour of searching she finds some. It takes another hour to complete the sterilisation process, so she leaves for the outreach session more than two hours late.

Questions for review

1. Could Ida have solved the problem another way?

Ida could have taken the steam steriliser to the outreach site, borrowed a stove, and sterilised the equipment there. Had she done this without taking fuel with her, however, she would have risked not finding any kerosene at the site.

2. What can she do to prevent this from happening again?

In the future there should be enough kerosene in the health centre to sterilise enough equipment for at least two sessions. If the health centre is in a remote area there should be a larger quantity of spare kerosene.

The day before an early start, Ida should check all supplies, including kerosene and fuel for her vehicle if she has one.

Ida could sterilise her equipment the day before an early start, so that if short of kerosene, she would have more time to find some.

Module 6: Holding an Immunization Session

Case study #14: The date stamp

Health workers Cato and Nina run outreach immunization sessions once a week in a crowded city neighbourhood. Cato registers women and children, weighs the children, and decides which vaccine or vaccines they should have. He then stamps the date in the corresponding space or spaces on each child's immunization card.

Nina examines the card and gives the vaccine or vaccines indicated by the date stamp.

One day three children with measles come to the health centre for treatment. Cato examines their immunization cards and finds that they all have a date stamp for measles immunization. He asks the parents whether their children were immunized with measles vaccine on the dates indicated. One mother says she left without her child getting the injection because she was late for an appointment. One father says that he did not know his child needed two immunizations on the day in question: she received DTP3 only. The third parent cannot remember what happened.

Questions for review

1. What do you think happened?

The children did not receive measles vaccine, even though their cards said they did. Cato stamps immunization cards before Nina gives doses of vaccine. When parents leave the health centre there is no way of checking whether doses of vaccine have been given.

2. How could the problem be prevented?

*Cato and Nina should rearrange their system so that the person giving doses of vaccine has the date stamp and uses it only **after** he or she gives a dose of vaccine.*

Case study #15: The sick child

Hilda's grandmother brings her to the neighbourhood health centre when she is 6 weeks old for OPV1, DTP1, and HepB1 vaccines. Three days later, Hilda becomes very ill and goes into shock. After a brief period of hospitalisation she recovers fully.

When Hilda is 11 weeks old, her grandmother brings her to the health centre to be treated for a cold.

Question for review

1. What would you do if you were a health worker in this centre?

Treat the child for the cold. Recommend to the grandmother that Hilda be immunized with OPV2 and Hep B2. Do not give DTP2 because the occurrence of shock three days after the earlier doses of vaccine may have been a reaction to DTP.

Case study #16: Three sick babies

It is immunization day at Kanja Health Centre. Usually 25 to 30 parents attend with their children, but this time only eight parents have come. Three mothers are worried because their babies are sick.

When Tema screens the clients he finds that the sick babies have red and tender swellings on their thighs and moderate fever. All three came to the health centre a week previously for their first doses of DTP and OPV. It had been a busy day, Tema remembered; one of the health workers had a day off and things kept going wrong. They had to rush to finish immunizing all the children before nightfall.

Questions for review

1. What is the probable cause of the swelling?

A red and tender swelling is an abscess. Abscesses at injection sites are usually caused by unsterile needles or incorrect injection techniques. The needles used to give DTP the previous week may have been:

- *used for more than one injection;*
- *improperly sterilised;*
- *touched by a health worker; or*

- *placed on a table top or other unclean surface.*

Parents of other children may have heard about the abscesses that occurred following the DTP injections and may have been afraid to bring their children for immunizations.

2. What should Tema do?

Tema should treat the abscesses with cool compresses and give an antibiotic. If the swellings do not go away in a few days, incision and drainage may be necessary.

He should make sure that injection equipment is sterile, that each needle and syringe is used for only one injection, and that DTP injections are given at the proper depth.

Case study #17: Wrong-way Kudzu

Kudzu arrives at the outreach site late and many people are waiting. He has been on a crowded bus for two hours and wants a cigarette to calm his nerves. So he smokes while preparing for the immunization session.

The community has given him a table to use during the session. He places it in the sun because the people are sitting in the only shady place, under a mango tree.

Before he starts giving immunizations, Kudzu takes from his vaccine carrier two vials of each kind of vaccine, two ampoules of diluent for BCG vaccine, and two ampoules of diluent for measles vaccine. He reconstitutes both vials of BCG and measles vaccines and shakes them well. He then puts the vaccines on the foam pad on top of the vaccine carrier.

In his rush to get ready, Kudzu drops his only forceps on the ground. He knows the forceps are contaminated, so he washes his hands thoroughly and uses his fingers instead. He holds syringes and needles by their adaptors when assembling them, thinking that this is satisfactory as long as he does not touch the other parts.

Finally, he loads a syringe with 2 ml of measles vaccine and begins immunizing.

Kudzu is giving the fourth injection with the same syringe and needle when a health educator who happens to be passing by tells him to stop the session.

Questions for review

1. Is the health educator right to stop the session?

Yes, it is the health educator's duty to stop the session because Kudzu could harm the children and women he is injecting with vaccine. Stopping the session may be embarrassing for Kudzu and may raise concern among the mothers and children, but the health worker's first responsibility is to prevent harm. Imagine the much greater embarrassment and concern if people acquired abscesses or bloodborne diseases after Kudzu's immunization session.

2. What mistakes does Kudzu make?

Kudzu makes the following mistakes:

He arrives late.

He smokes while working.

He puts the immunization table in a sunny place.

He takes two vials of each vaccine out of the vaccine carrier.
He reconstitutes two vials of BCG and measles vaccines at the same time.
He shakes the vials to mix vaccine and diluent.
He picks things up with his fingers (he ought to have spare forceps).
He touches the adaptor of the syringe.
He puts a loaded syringe on an unsterile surface.
He uses the same syringe and needle for more than one injection.

Module 7: Reporting, monitoring, & evaluating

Case study #18: Reporting disease

Henry works at a busy health centre in a large village. As he is preparing for a regularly scheduled immunization session one morning, a mother who lives in a small village several kilometers away arrives with her 10 month old baby. She is very worried because the baby has had a high fever for several days. Henry notices the baby has a runny nose and red, watery eyes. As he looks more closely, he sees the baby is developing a rash with slightly raised bumps on her head and neck.

Henry asks the mother if her child has received vaccine for measles. She tells him no, she has not yet had time to bring the baby for immunization.

Henry quickly confers with another health worker in the health centre. “We must cancel our session today and reschedule it,” he says. “And we must contact the district office.”

Questions for review

1. What does Henry suspect is wrong with the baby? Why must he cancel the immunization session?

Because the baby has a high fever, a runny nose and red eyes, and a rash on her head and neck, Henry suspects she may have measles. When the mother tells him the baby has not yet received measles vaccine, Henry becomes more convinced that measles is a possibility.

Because measles is highly infectious and spreads quickly among children who have not been immunized, Henry cancels the immunization session so that other children will not be exposed to the virus that causes measles.

2. Why must Henry and his co-workers contact the district office?

Measles is a notifiable disease. That means health workers must report cases to their district office or regional health office so that measures can be taken to control the disease. Health workers should also report the age of the child they suspect has measles, and whether the child has received measles vaccine.

3. Is there anything Henry should be careful to watch for in the next several weeks?

Because measles spreads quickly, especially among groups of people who have not been immunized and who live close together, Henry and his colleagues should watch carefully for

other cases of measles. They should be sure to quickly report any increase in the number of cases to the district office so that steps can be taken to control the disease.

Case study #19: A frightened village

Rose has come to the village of Kimwa to conduct an immunization session, just as she has done every month for the past three years. As she is setting down her vaccine carrier, she notices that the square in which she holds her sessions is very quiet. Rose thinks it is unusual that no one has come to greet her and help her set up for the session.

Suddenly, Mary, a mother who often helps Rose during immunization sessions, rushes up. She tells Rose that soon after the last immunization session, an infant who had received his first dose of DTP vaccine fell ill and was taken to the hospital, where he was kept for three days. Mary tells Rose that some people in the village think the vaccine caused the illness, and that even though not everyone believes this, many are afraid to bring their children for immunizations.

Rose looks around the square and notices that no one has come yet for immunizations.

Questions for review

1. Did the vaccine cause the baby's illness?

While it is possible that the baby had a reaction to DTP, only one person for every 100,000 doses of the vaccine given has a severe reaction to the vaccine. So, it is more likely that the child's illness was caused by something other than the vaccine and he would have gotten sick anyway.

2. What can Rose do while she is in Kimwa?

Rose can visit the baby's parents to ask about his health, and to find out what was wrong with him. She can ask if doctors at the hospital diagnosed the baby's sickness, and whether the diagnosis had anything to do with immunization. She can ask the parents if they believe the vaccine caused the problem. If they do not, she may ask them if they are willing to help her tell their neighbours that the vaccine was not to blame. She can thank them for helping her understand what led to their baby's sickness, and for making the immunization programme more safe and effective through their help.

Rose can also visit leaders in the village to ask for their help in stopping any rumors about vaccines and in restoring the peoples' trust.

3. Must Rose report the incident to her district office, even if the vaccine is not to blame?

Yes. Even if the problem was not caused by immunization, Rose should report any case requiring hospitalisation that people think might be related to immunization to the district office or regional health office.

Case study - Cold chain

Each group will receive a set of cards showing vaccine vials with VVMs and two scenarios giving daily temperature monitoring of the refrigerator, freeze indicator and vaccine cold chain monitor card.

Review the cards given.

For each example, imagine that you are a vaccinator taking vaccine (and diluent) from a refrigerator in the morning with these temperature indicators.

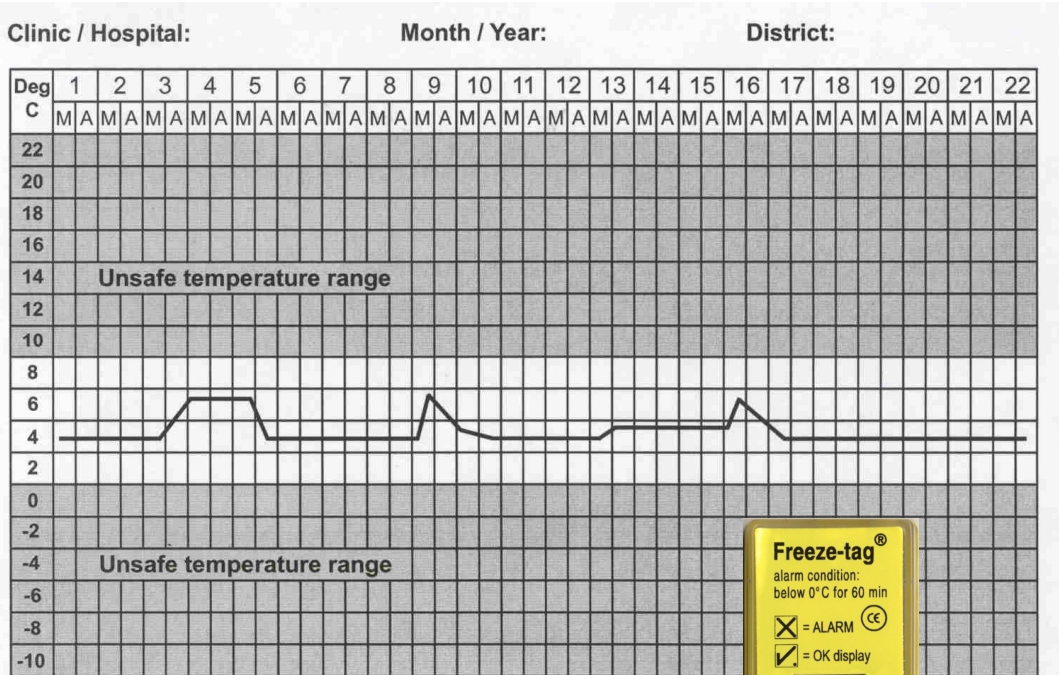
Sort the cards into three groups:

1. cards with vials you would **use**,
2. cards with vials you would **discard**, and
3. cards with vials that should undergo the “**shake test**”.

Explain why you would discard the vials.

Repeat the same exercise for the second scenario.

Scenario - 1



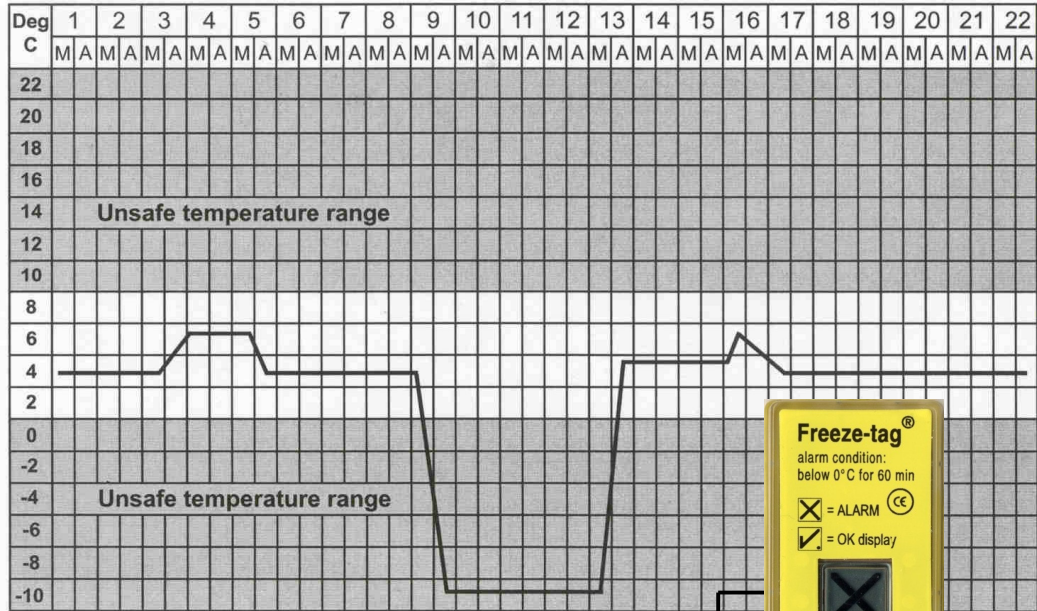
Freeze-tag™
(Not activated, status OK)

Scenario - 2

Clinic / Hospital:

Month / Year:

District:



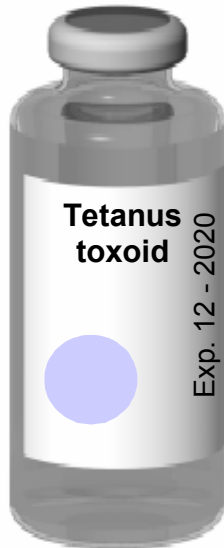
Temperature log



Freeze-tag™
(Activated, status ALARM)

VVM card handouts (cut as marked)

Opened



3

Opened



4

Opened



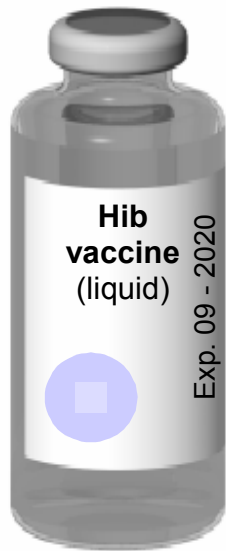
1

Reconstituted



2

Unopened



23



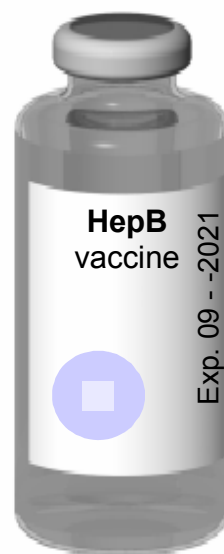
24

Unopened



21

Unopened



22



Answers:



Scenario 1 is OK, scenario 2 presents exposure to freezing temperatures (by temperature trace and freeze-tag).

Vial card number	Scenario 1	Explanation	Scenario 2	Explanation
1	Use		Shake test	
2	Do not use	Reconstituted vials should not be used in subsequent sessions	Do not use	Reconstituted vials should not be used in subsequent sessions
3	Do not use	VVM is at discard point	Do not use	VVM is at discard point
4	Use		Use	
21	Use		Use	
22	Use		Shake test	Exposed to freezing temperatures
23	Use		Shake test	Exposed to freezing temperatures
24	Do not use	No label	Do not use	No label


Group work: Which vial to pick?

Print the following labels in four sets and stick onto dummy vials.

Hepatitis B vaccine
10 doses
Mfd. By: ULGOTRAKTIMU A Division of
GTN/VM Ltd.
23 rte de Lac, 1208 Geneva, Switzerland

Lot: UK220856
Exp: AUG 2010


A



Hepatitis B vaccine
10 doses
Mfd. By: ULGOTRAKTIMU A Division of
GTN/VM Ltd.
23 rte de Lac, 1208 Geneva, Switzerland

Lot: UK220856
Exp: AUG 2010


B



Hepatitis B vaccine
10 doses
Mfd. By: ULGOTRAKTIMU A Division of
GTN/VM Ltd.
23 rte de Lac, 1208 Geneva, Switzerland

Lot: UK220856
Exp: AUG 2010


C



Hepatitis B vaccine
10 doses
Mfd. By: ULGOTRAKTIMU A Division of
GTN/VM Ltd.
23 rte de Lac, 1208 Geneva, Switzerland

Lot: UK220856
Exp: AUG 2010

D



Divide participants into four groups and explain that each group will receive four vials of HepB vaccine with VVMs at different stages.

Participants should imagine that they are vaccinators working in Akyurt Health Centre.

Participants should study the following questions:

1. For a fixed immunization session, which vial would you open? Why?
2. For an outreach in the same village you are located which vial would you take with you? Why?
3. For an outreach that requires 2 days travel, which vial would you take with you? Why?

Answers: Which vial to pick?

VVM square colors from light to dark is in the following order:

A --- D --- C --- B

Immunization	VVM code	Explanation
Fixed site	B	B is the darkest VVM, should be used first
Close proximity	B	Close proximity does not present any heat damage threat, therefore the darkest should be used first
2 days' outreach	A	Although HepB is very heat stable, for far-reach outreach sessions it is risky to pick darkest VVM. Lighter VVM should be picked.

Complete the sentence

Each group will receive a complete sentence cut in pieces. You are required to put the pieces of the puzzle together, complete the sentence and place it on the wall.

Include diluents

in stock control

and ensure

adequate

supplies.

**Use only the
diluent that is
indicated for
each type of
vaccine and**

manufacturer.

**Check that
vaccines have
been supplied
with the right
diluent.**

Reconstituted

vaccine should

be kept cold to

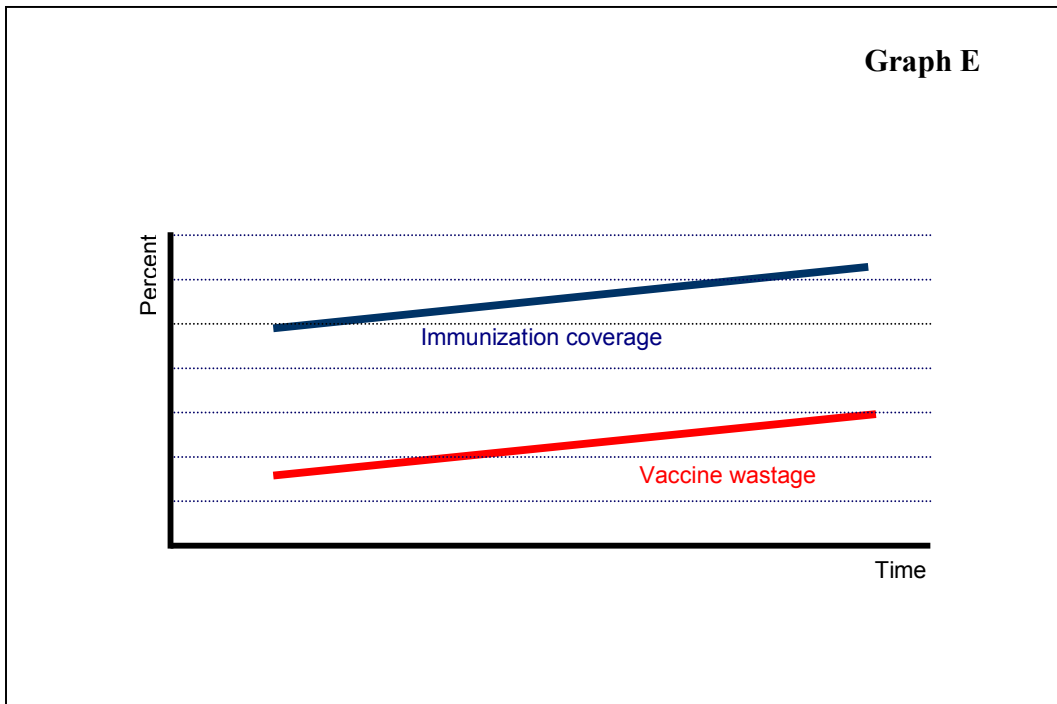
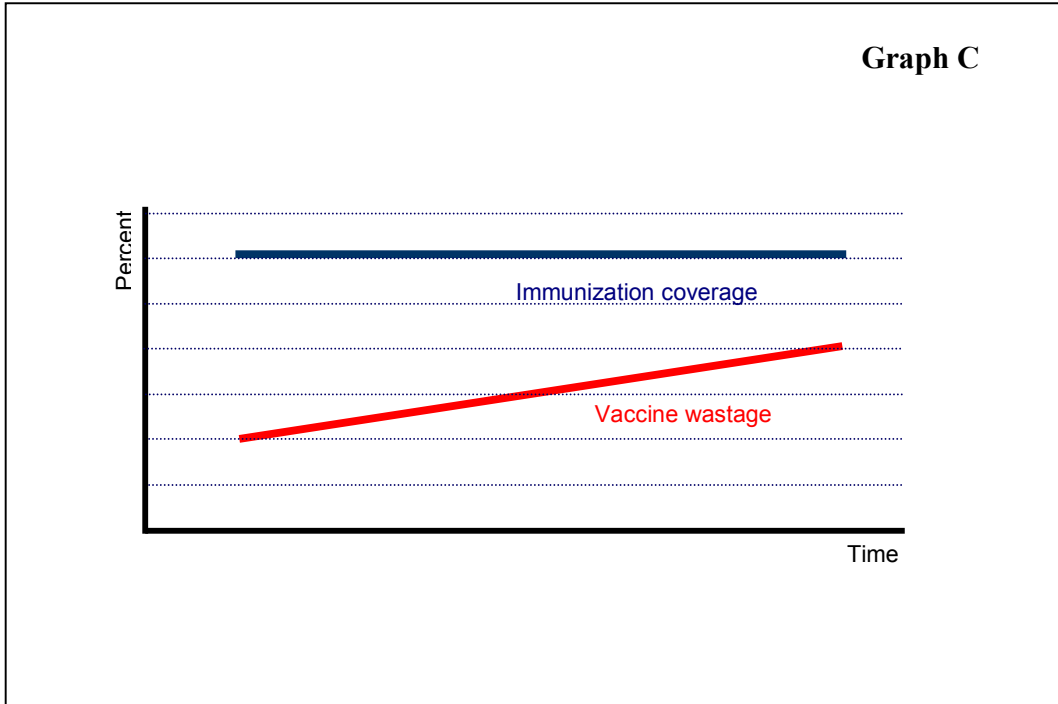
preserve its

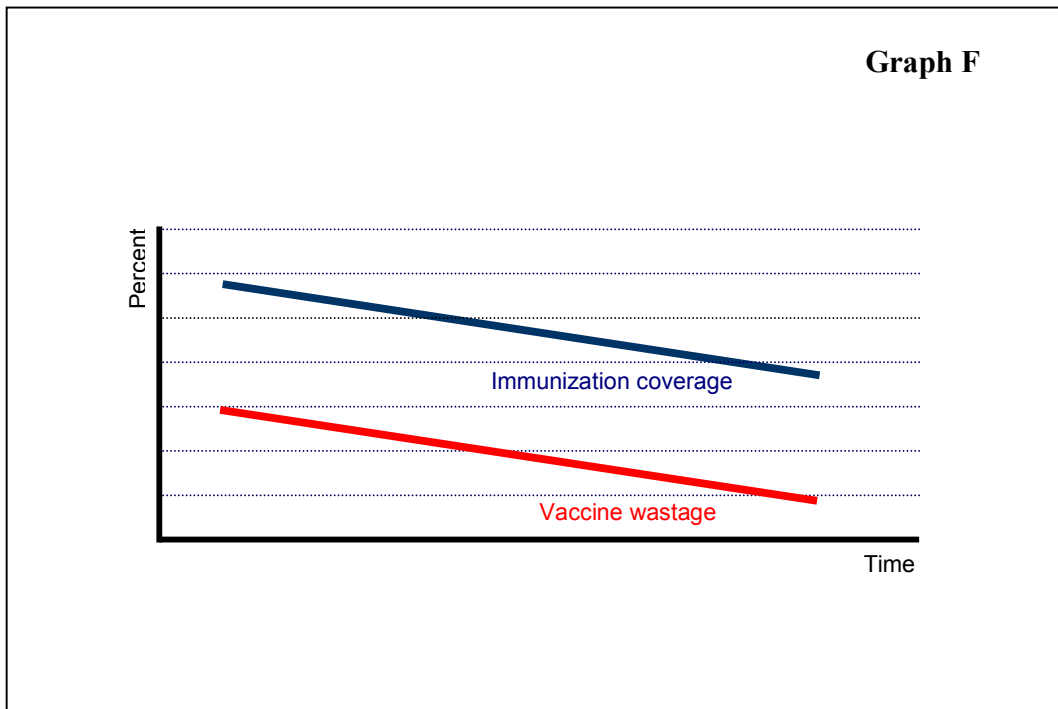
potency.

Divide participants into four groups.

Print the following graphs and distribute to groups as indicated.

Graph C and E Group 1 and 3
Graph D and F Group 2 and 4





Print out 4 sets of the following explanations on separate papers (1/2 A4). Give one full set to each group.

Expiry or cold chain failure during storage and transport.

The programme most likely had excess amount of vaccines.

Expiry or cold chain failure during storage and transport.

Vaccine damage in unopened vials resulting in losses where the system cannot replace these vaccines.

Increased outreach activities.

Decreased number of immunization sessions.

Increase in missed opportunities.

Ask each groups to analyze the relationship between immunization coverage and vaccine wastage trends. They should identify possible reasons behind such a situation. From the explanations they have, they should pick the ones that fit to the graph. Groups may add additional explanations if they believe the explanations they are given are not enough.

Groups will present their results to the big group.