FOOTSTEPS

No.14 MARCH 1993

IMMUNIZATION

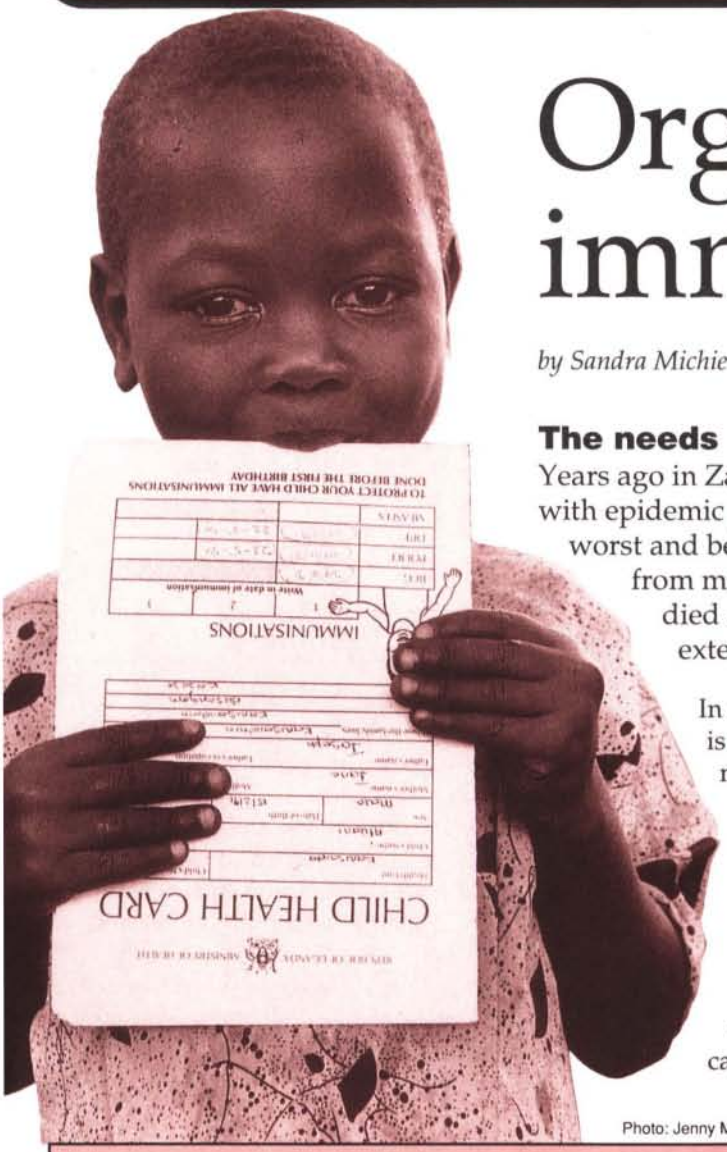

Photo: Jenny Matthews

Organising for immunization

by Sandra Michie

The needs

Years ago in Zambia our tiny mission hospital was regularly over-filled with epidemic patients. Whooping cough and measles were the two worst and best remembered epidemics. In 1967 at least one child died from measles in every surrounding village. Often three or more died and since villages were very small – often with just one extended family – you can imagine the grief and despair.

In a country where there is malnutrition, measles may often be fatal. Perhaps the worst thing about this for us as health workers, was that we were not always able to help medically. We could only give supportive care to the children who suffered. We had to stand back and watch many die. We also suffered with the parents the awful tragedies of damaged hearing or blindness in many children who did recover.

The difficulties

It was 1968 when we were first able to obtain supplies of the measles vaccine. Other vaccines had been available for some time, but were not understood or well accepted by our community in a very isolated and rural part of Zambia. It was a large area with a fairly small population scattered around vast plains that flooded in the rainy season. Families moved from season to season as they followed the annual cycle of food supply. For example: work in the fields far from home meant living there until that work finished; the flood season brought the fish harvest so they would move to the flood plains perhaps many miles away; and sometimes… they were at home!

In order to register the children in some way the names used had to be ones that would be consistent. This is

IN THIS ISSUE

FOOTSTEPS

Footsteps is a quarterly paper linking health and development workers worldwide. Tear Fund, publisher of *Footsteps*, hopes that it will provide the stimulus of new ideas and enthusiasm. It is a way of encouraging Christians of all nations as they work together towards creating wholeness in our communities.

Footsteps is free of charge to individuals working to promote health and development. It is available in English, French and Spanish. Donations are welcomed.

Readers are invited to contribute views, articles, letters and photos.

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TEAR FUND
CHRISTIAN CONCERN IN A WORLD OF NEED

not easy where a child can have a first name from either side of the family, one given by the midwife and also a western name – and each group would only use 'their' name for that child. Then the surname or father's name might be that of the 'father who gave them birth' or perhaps their uncle's name, or even the name of the relative with whom they were temporarily staying or...? The children could choose their own names when they went to school and also again when they reached their teenage years!

The plan of action

After much prayer and considerable thought we worked out a plan to visit every single home in the local and surrounding area within a distance of 30 miles, and to register every child under 14 years of age. This proved to be about 3,000 children and took myself and my colleagues many long hot days of hard walking to achieve.

We decided to use the mother's most common name for the child and the 'father who gave them birth' for the surname and file them alphabetically. The staff often found difficulty in this way of filing but it worked better than filing by number. The medical staff were amazingly good at finding wrongly filed cards.

All of this work took many months as it was done in addition to our already full workload, but in many ways this was the easiest part of the work. What lay ahead were years of hard work, teaching, consistency, relationship building, disappointments, study to keep up to date with new procedures and so on.

Teamwork is absolutely essential. All our staff, including cleaners and outdoor workers, shared our vision.

The steps we used

1 TEAMWORK

Teamwork is absolutely essential. The team consisted of the medically based people and the leaders of the communities concerned. One person may have a vision for a task, but unless they are able to inspire others to share that vision and contribute their ideas and abilities, such a project will fail. All our staff were encouraged to 'catch' children – for example noticing health problems such as malnutrition and encouraging the parents to bring them for care. This included all the cleaners and outdoor workers who were very good at recognising families where immunization was not a priority.

2 REGISTRATION

This has to be planned carefully in order to achieve the best result with the least waste of time and energy. Such a task is hard work anyway. We searched out all the children by door to door visiting. We also used to challenge community leaders to aim to become the area with the highest immunization levels. This rivalry brought out a fairly large number of children who had at first missed the registration.

On our registration campaign we aimed to...

- issue every child aged 0–4 years with a home-based 'Road to Health' card
- issue every child aged 5–14 years with a vaccine record card
- find that child's medical record from the clinic and change the name if necessary to match the home record
- teach the community leaders and parents about the importance of immunization.

From this information, separate registers were finally made for the

This health card is part of one produced by TALC and is available at a low cost.

CHILD HEALTH CHART

CLINIC 1 MUKELANGOMBE No 9

CLINIC 2 No

CHILD'S NAME	KAKOMA YOWANO				GIRL / (BOY)
DATE OF BIRTH	day 1	month 7	year 88	BIRTH WEIGHT	3 Kg 150g
MOTHER'S NAME	NYAKAYINDA YOPA				
CARETAKER IF NOT THE MOTHER					
FATHER'S NAME	PETULU YOWANO				
WHERE DOES THE CHILD LIVE?	MUHETO				

How many children has the mother had? SIX
Number alive FOUR Number dead TWO

IMMUNISATIONS		DATE GIVEN
BCG		12.12.88
POLIO	FIRST DOSE	12.12.88
	SECOND DOSE	1.2.89
	THIRD DOSE	11.3.89
	FOURTH DOSE	14.4.92
DPT Diphtheria Whooping Cough Tetanus	FIRST DOSE	12.12.88
	SECOND DOSE	1-2.89
	THIRD DOSE	11.3.89
MEASLES		10.6.89
MOTHER'S TETANUS TOXOID (or one booster)	FIRST DOSE	9.11.79
	SECOND DOSE	4.2.80
	THIRD DOSE	

ORAL REHYDRATION

DATES			
Taught	9/11/79	10.4.85	
Used			

local areas. For each area we planned visits with mobile clinics. These registers grouped together children of the same age and had columns for necessary details and immunizations.

Home-based cards

Every mother had to have a card for every child. They were already used to the idea of every adult needing a registration card. We encouraged them to give the child's card the same priority. When produced, these cards gave us the child's name and details of any vaccines received elsewhere. We encouraged the mother to use their own records in other clinics as universal cards for that child's health.

3 IMMUNIZATION

This was on-going and continuous.

Mobile clinics were planned according to the population density, and we did not take on too much at the beginning. When one area was fairly well immunized, we would maintain this area and also begin work in another area. **All** children from all areas were registered from the beginning to enable us to catch them whenever they visited the health centre.

There was a **daily** check of all children in the out-patients department **before** any other member of the family was treated. So if a mother came for treatment for herself, the baby on her back was weighed or immunized as necessary as well as any other children with her, before the mother's needs were looked at. We aimed to weigh all children at least once a month. This was done whether or not the mother had brought in the child's card.

Regular mobile clinics were held in the centre of a village with the scales hung from a tree, and a table borrowed for the vaccines. **Be trustworthy** – if you say there will be a clinic on a certain day, make sure there is one! On the rare occasions when it was impossible for us to attend, we always sent a messenger with apologies and clear arrangements for the substitute clinic.

A weighing session at the mobile clinic. The scales hang from a convenient tree.

Even with only three or four visits a year, it is possible to immunize all children effectively if they attend each time. More frequent visits are wise at first. Notify people clearly and send reminders about a week before the next clinic.

Follow-up all those who do not attend. This is sheer hard work after a busy clinic! Often children aged two or three years will be left at home because they cannot walk so far. A reminder may bring them next time.

Competitiveness between areas can be encouraged – for example in attendance or the highest fully vaccinated rate.

Cold chain

It is absolutely essential to ensure that the vaccines are viable when given to the child. Vaccine failure not only puts the child's life at risk but it also removes confidence.

Good record keeping

The time spent in keeping careful records was **very** well spent. All immunizations were recorded on…

- the mother's card
- our record card
- the area register.

A major problem was the loss of home-based cards. Our system of

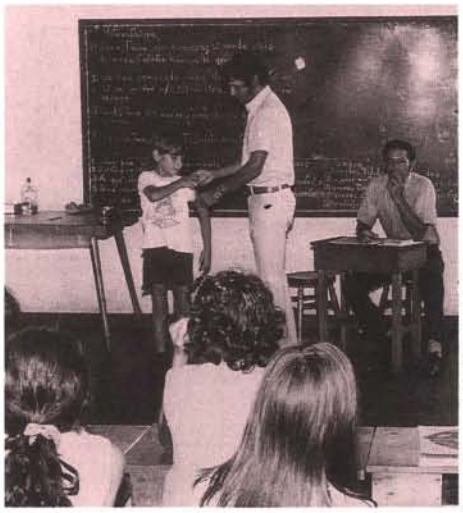


Photo: UNICEF/WHO by H Cerni

The teacher takes a break while a health assistant tells the children about the importance of immunization.

duplicating these records proved its worth through the years. The registers allowed us to easily take a copy of **all** records whenever we went into the villages and to check the details of any children who happened to be staying with 'Grandmother' or some other family member. Despite the problems with the home-based records, I still feel they are an essential part of the whole programme, keeping the mother responsible for her own child and enabling her to visit any other medical centre with the same card.

Education and communication

Good relationships and communication with the community are essential for such a programme to succeed. Take time to build good relationships with staff, community leaders, parents and grandparents.

Ensure that the whole community is reached with teaching about immunization. Older children too can be encouraged to help – for example by using the Child-to-Child teaching methods through the local schools. (See page 6 for more details.)

Keep up to date with WHO and national guidelines about vaccines. Make sure you know the latest information about the maximum effective intervals between doses of vaccines, the schedules for immunization and the levels of immunization needed to protect the community. Be willing to make changes with new information.

The results

By 1988 many of the younger mothers had never seen a measles or whooping cough epidemic so were careless about immunizations until epidemics throughout Zambia gave them a real fright. Children were dying all around the country but our 1,000 square mile protected 'patch' was wonderfully clear of infection. At that time we had reached and then maintained for over 10 years an 85 – 90% immunization rate for all children. A few children who were not vaccinated suffered, but most kept well – and the attendance at immunization clinics rose rapidly!

Were all the efforts worthwhile? One mother gave us the answer. A measles epidemic was raging throughout Zambia and she had walked in 30 miles to the clinic for her baby's first DPT injection. We asked if measles had reached her village area. She looked surprised and replied 'no'. When asked why not, her reply was, 'Because you have immunized our children of course!' 'Of course!' What a wonderful reply from a woman who ten years earlier had not seen any need to have her children immunized, and where others around her had deliberately kept their children away. Now the level of fully immunized children was high enough to stop the epidemic and she was willing to walk 30 miles to protect her new baby. How our hearts were filled with praise!

Sandra Michie worked for 25 years in rural Zambia with mission medical work, mainly involved with preventative health care.

Essentials for an effective immunization campaign

- Commitment of all staff from cleaners to doctors
- Good communication
- Co-operation of village leaders
- Daily checking of all children in clinic
- Regular and dependable mobile clinics
- Hard work

Good record keeping is a vital part of any successful campaign. This is one of the pages from the hospital's Area Register.

Year 1988 AREA 9 Mukelangombe

NAMES	VILLAGE	BORN	POLIO 1	POLIO 2	POLIO 3	POLIO 4	DPT – TETANUS 1	DPT – TETANUS 2	DPT – TETANUS 3	DPT – TETANUS 4	DPT – TETANUS 5	Measles	BCG	Protected child	LAST SEEN
Kakoma Yowano	Muheto	1-7-88	12/88	2/89	3/89	4/92	12/88	2/89	3/89	4/92		4/89	12/88	✓	88/89/90/91/92
Alan Kasoka	Kamboyi	1-3-88	6/88	7/88	9/88		6/88	7/88	9/88			1/89	6/88	✓	88/89
Kayombo Zwali	Mauili	16-9-88	10/89	12/89	10/90		10/89	12/89	10/90			10/89	10/89	✓	89/90
Peter Luneta	Muheto	12-9-88	3/89	10/89			3/89	10/89				10/89	10/89		89
Yowano Kapanji	Muheto	14-4-88	1/90	3/90	6/90		1/90	3/90	6/90			1/90	1/90	✓	90
Joy Kamboyi	Kamboyi	23-2-88	3/90				3/90					3/90	3/90		90

Understanding Immunization

by Dr Tom Crusz

YEARS AGO, smallpox was a dreaded disease which killed huge numbers of people all over the world. No treatment could be found. People who survived the disease did not catch smallpox again. They had become 'immune'. Cows also suffered from a form of smallpox called cowpox. An English Doctor, Edward Jenner noticed that people who caught cowpox did not catch smallpox.

In 1796 he took liquid from a cowpox blister on the hand of Sarah Nelmes who had cowpox and scratched this liquid into the skin of eight year old James Phipps with a thorn. The boy had no reaction and never caught smallpox. This now famous experiment was the first vaccination. The word for vaccine comes from the Latin word for cowpox – in Jenner's honour.

When we catch a disease, our body makes special proteins called antibodies during the illness. These antibodies help us to fight the disease so that we usually recover. If we have plenty of antibodies in our body, then we are unlikely to suffer from that disease again. People who recover from measles, whooping cough or chicken pox do not catch the disease again because they have plenty of antibodies – they are 'immune'. However, with serious diseases, it may not be possible for the body to make enough antibodies quickly enough to fight off the disease. Then that person or child may die. When we are given a vaccine, a tiny amount of inactive or dead germs from that disease is put into our bodies. The vaccine will not give us the disease or make us ill, but it will stimulate our body to make antibodies against that germ. These antibodies will remain in our blood stream and protect us from the disease in the future.

With some live vaccines such as measles or BCG, a single dose is enough to give protection for life. With others such as polio and DPT (which are made from dead material) several doses are needed to give maximum protection for the rest of our lives.

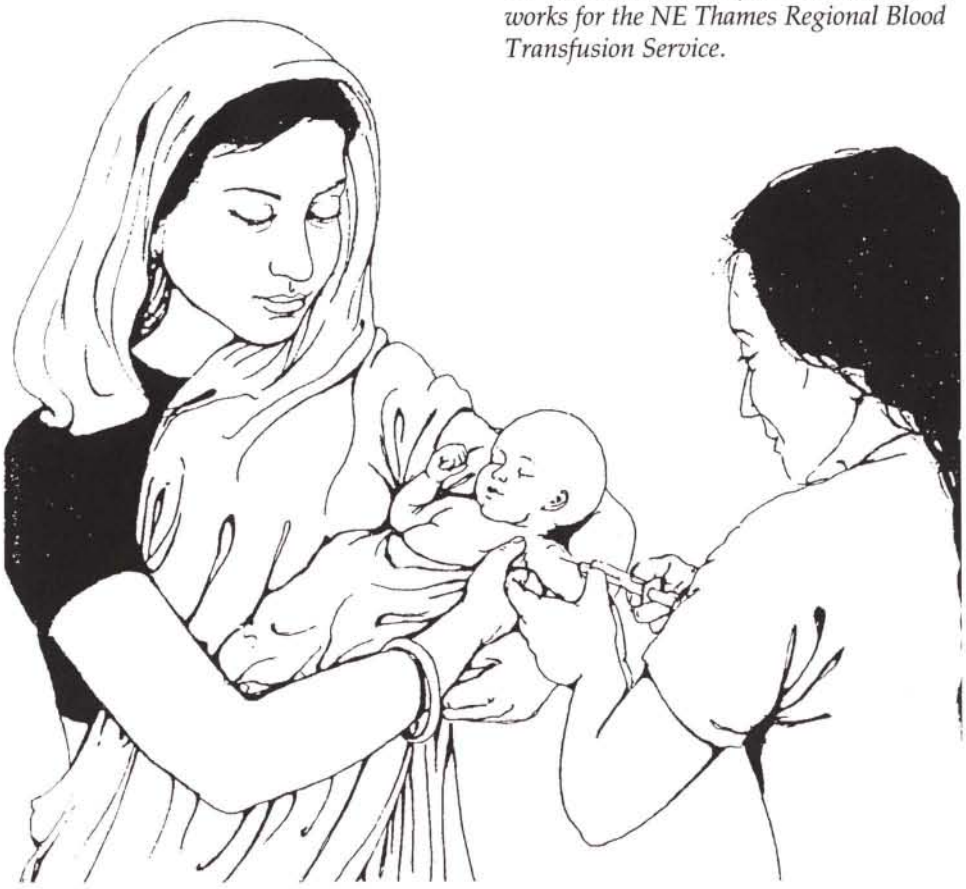
After receiving the vaccine, it takes a few weeks for our bodies to build up plenty of antibodies. It is very important to follow the recommended programme for vaccinations. These programmes usually allow four weeks between vaccinations. Polio and DPT vaccines can be given safely to a baby on the same day and the baby's body will produce antibodies for all these vaccines.

Now you understand the effect of vaccines, you will see why it is pointless to give measles vaccine once a child has got the disease.

It is essential that vaccines are kept at the correct temperatures. Damaged vaccines are useless. Children will not be protected from the disease if they are given useless vaccine. If there is any doubt at all – throw it away. It is better to wait a few weeks for more supplies than risk children's lives – and damage people's confidence in immunization.

Smallpox was eradicated more than ten years ago because of a successful world-wide mass vaccination programme. It is our duty to ensure that all children in our communities receive their vaccinations at the correct time. In this way, we can play our part in helping to eradicate more of these dangerous diseases.

Dr Tom Crusz comes from Sri Lanka and works for the NE Thames Regional Blood Transfusion Service.



LETTERS

Purple chicks!

Referring to the tips in Issue 10, please note that when chicks are dyed with gentian violet (to protect them from predators) they could be rejected by the mother hen if it is done during the day. The correct practice is to dye them during the night so that the mother hen stays with them throughout the night. Once this is done she easily identifies them and accepts them. If this process is carried out during the day, your heart will bleed watching the mother hen tearing her chicks into pieces.

Mrs Chika Ndiokwelu
UNTH Enugu, Nigeria

Further uses of neem

I was very interested in the article on the use of the neem tree in *Footsteps*. I would like to share with you some more ideas which are used in Nepal.

For the treatment of headache, a traditional method of treatment is as follows:

- Collect some green leaves from the plant.
- Put them in a pot and boil until the water turns green.
- Cool and then drink a small amount of this water (about 100 ml).
- Use the water to bathe the head.

Neem leaves are very bitter in taste. The Nepalese proverb says, 'We do not eat medicine for the sweet taste!'

Padam Bhandari
Palpa Community Health Project
PO Box 5, Tansen, Nepal

Schools as health care partners

Congratulations on the recent issue on partnership in primary health care. In the development of primary health care, much has been said about community involvement. However, as most people will know, communities are very diverse and too often broken into factions.

However there is a community in almost every village, which although slightly artificial, is greatly respected. This is the primary school. We in Child-to-Child believe that villages can 'catch' health from schools! I would recommend any individual involved in setting up primary health care programmes, to look at the potential for involving the primary school.

As a source of ideas, I would highly recommend the book *Child-To-Child: A Resource Book* (reviewed on page 13).

Professor David Morley
Institute of Child Health
30 Guildford St, London, WC1N 1EH

FROM THE EDITOR

THERE IS A HUGE DIFFERENCE between telling someone to do something because it is good for them and explaining clearly why something is good for them so they can make up their own minds. Most people are aware of the importance of immunization. In this issue we try and explain the reasons behind immunization as well as giving some practical help with carrying out an immunization programme.

Knowing the need for good records is easy – but trying to put this into action in the sort of situation found in rural Zambia with a semi-nomadic population using a variety of names is quite another thing. We hope that the advice given by our contributors will be helpful for your own work. Don't forget too that you can adapt this information even if you are not directly concerned with immunization. Sandra Michie's advice on building up records could be easily adapted for use with farmers' groups, for example. Cold boxes are useful for animal vaccines too or for keeping food cool. There is news of a new vaccine for Newcastle disease in chickens which may have exciting possibilities.

If you have not yet sent in your survey form included with the last issue, this is the last reminder. Thank you for the many who have replied. We plan to share the results of this survey in an issue later this year. Future issues look at soil erosion, literacy and disaster preparedness. Please write if you have any useful contributions on these subjects.

Various useful information is being sent in all the time and a number of helpful tips are included in this issue from readers. I am particularly keen to hear from readers in South America so that your views are more represented.

Many people have written asking about funding for various reasons. *Footsteps* is not a funding agency. We depend on donations to continue producing *Footsteps*. We offer help and encouragement through the new ideas and resources mentioned in *Footsteps* but do not have the resources to do anything more!

Isabel Carter

Partnership in Health

We were very interested in the *Footsteps* edition about Partnership in Health and would like to share some of our experiences. We started a Primary Health Care project in June 1991 here in Mae Ma Lo, a small Karen village in the hills of North Thailand. Our programme was for about two years looking particularly at community health care, hygiene, nutrition, and economy. The village council was asked to choose two men and two women to form a Health Care Committee to manage and support the programme. They are responsible for choosing and educating three village people – two women and one man – to work as Community Health Workers. They manage a community fund – each of the 41 village families pays 10 baht a month (50 cents) for medicines and a small salary for the CHWs. They look after the health and community centre, are responsible for building latrines for each family and educate the village people about health.

As mentioned in *Footsteps 12*, the biggest block to participation is **not** the unwillingness of the community but the possessive attitude of the health worker who often is the 'Farang' (outsider) who likes to thrust so called 'modern' ideas on the village people.

We try to avoid such an attitude by continually asking people about their ways of doing things, of solving problems and preparing for the future. Small committees, small duties and small responsibilities divided among many people let them feel respectful members of the community.

Primary Health Care is a basic trust in each other's possibilities, it never ends and should be seen as a continuing story – a positive way of life.

Harry van Velsen
Mae Chaem PO
Chiang Mai 50270
Thailand

THE KNOTTY PROBLEM OF THE HAUNTED WELLS

In *Footsteps No.12* we reported that people living near Mengo Hospital in Uganda preferred to drink dirty river water instead of the clean water offered to them because of their fear of spirits.

Here are some of the ideas you sent us.

I READ WITH GREAT INTEREST the Knotty Problem in Issue No 12. Many people, both rural and urban, put a lot of belief in the spirit world and live their lives in fear. It is important to teach people about the spiritual battle we have around us. In the case of the wells, let one well be taken as an example. Assuming those concerned are Christians, prayerfully convince people, especially the elders and leaders of the community of the need to use the wells for clean water. Protect the well, and battle it out spiritually in prayer – pleading the blood of Jesus.

When people enjoy the benefits of good, abundant and clean water, their health will improve, the hospital will have fewer patients and this will lead to the automatic protection of the other well as well as being a positive Christian witness.

Patrick W Okki
Kampala, Uganda

HAVING WORKED IN UGANDA with CMS, I know Mengo Hospital and problems which are based on superstition only too well.

I would like to suggest that rather than thinking of this as a problem – think of it as an opportunity! If the local people believe that the wells are haunted, so be it, but if the creature is a spirit of the well, it is his well and he is there to protect it and he will do it no harm. If animals and people are dirtying the water he will be very angry.

With prayer and pastors playing a big part, go ahead in faith with the wells – providing facilities for animals and washing clothes as well as taps for clean water. Most Ugandans are aware of the power of prayer, both Muslim and Christian, so religious leaders should have no problems explaining about how disease is spread through dirty water and about what the Bible says about looking after our own bodies and caring for animals (using the Old Testament, since Christians and Muslims come from the same historic background).

People are naturally lazy and I believe that many superstitions are developed to frighten people into doing things they might otherwise be too lazy to bother about. Wells are often badly looked after – what better way of keeping wells clean than by telling stories of spirits who will be angry if people mess up the well. If Christians show no fear and provide Christian teaching I am sure that the fears of local people will be overcome.

Margaret Pattinson
Essex, UK

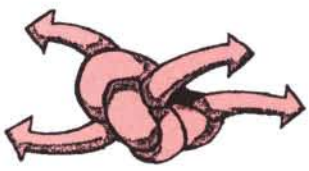
I ENJOY READING *FOOTSTEPS* with its lovely spirit coming through to me from its pages. I have just read the Knotty Problem in Issue 12. Christians should have little fear of such evil spirits which keep people in bondage to drinking dirty water and ill health as a result. Some Christians with faith should go there and invoke the power of Christ praying that any evil spirit should depart from the place. Those who have believed in such evil may now believe that Christ can turn such a place into a sign of God's love and power. Clean water bubbling up from the ground is to me such a wonderful image of God's grace, of the cleansing power of baptism, of the water flowing from the temple etc.

Then the place and its approaches should be cleaned and cleared and some Christian sign placed there to remind those who may still be fearful that this is now a holy place.

Five metres is a large span to cover. If the water is flowing away from the well area, then it would only be necessary to wall off or protect the place where the water is coming out. Direct the water through a pipe or over a low wall so buckets can be filled easily. I have done a lot of work with water supplies and if I had more information I might have some better suggestions.

I love water, wells and springs. They are God's gift to us and evil pagan beliefs should not prevent people, especially Christians using it. Prayer and perseverance can liberate the people and the water.

Father Vinnie O'Brian
St Justin's,
Otukpo,
Nigeria



Immunization: The practical details

MANY SERIOUS DISEASES can be prevented by immunizing a child before it is a year old. Here is a diagram to help you remember what immunizations children need to prevent them suffering from measles, polio, tuberculosis, diphtheria, tetanus and whooping cough. The diagrams show you how many doses are needed and where they are given. The injection sites may vary a little in different countries.

It is important to give the immunization in the correct part of the body. If a mother forgets her record card for the child, ask where the child has received injections before and how many have been given.

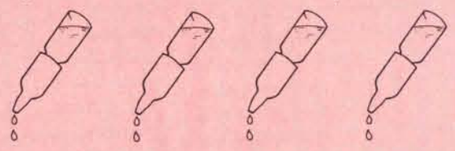
Children should be immunized before they are in danger of catching the disease. If a child does not come for vaccination at the correct age, immunization can be started at any time following the correct intervals.

When a child is born, it will have antibodies for a short time from the mother which will give protection against some diseases. These antibodies will stop some vaccines from working. Vaccines must be given when these antibodies have gone.

There are many rules on immunization which must be followed if an immunization programme is going to be effective. These can be obtained from the Expanded Programme on Immunization in your country.

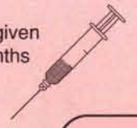
Polio

Four doses of 2 drops given at birth and at 6 weeks, 10 weeks and 14 weeks by mouth. (Schedules will vary a little between different countries.)



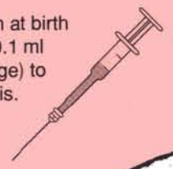
Measles

One injection given at about 9 months or soon after.



BCG

One injection given at birth or any time after (0.1 ml after one year of age) to prevent tuberculosis.



DPT

Three injections given at 6 weeks, 10 weeks and 14 weeks to protect against diphtheria, whooping cough and tetanus. (Schedules will vary a little between different countries.)

R Mill

Except where marked otherwise, the diagrams on this page are taken from the book *Immunization in Practice* produced by WHO. Used with kind permission of Oxford University Press.

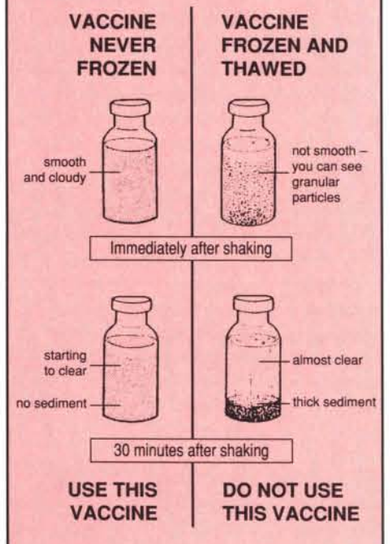
What if the baby is ill before or after the injection?

Unless the baby is obviously very ill, it is generally better to give the injection, rather than risk the baby not completing the full course of immunization. Vaccines, especially DPT, often make babies a little miserable the next day. Talk about this with the mothers so that they are not worried if their child is miserable or has a slight fever. This shows that the vaccine is working. If a baby has diarrhoea when the polio vaccine is given, it is a good idea to try and make sure that an extra dose is given at least four weeks later.

Are the vaccines effective?

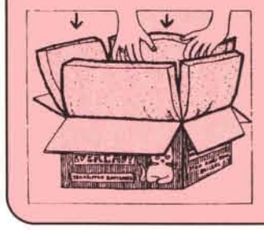
Vaccines are very delicate. They can easily be damaged if they are not kept at the right temperature the whole time. Never ever use a vaccine which may not be effective. Not only will you put babies' lives at risk – you may destroy people's confidence in immunization. It is better to throw away the vaccine and tell people to return for another clinic.

Here is a simple test for DPT or TT vaccine...



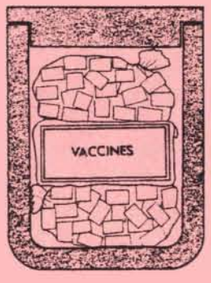
Keep vaccines cold

Vaccines must be kept in a fridge at the correct temperature the whole time, until they are taken out to use in clinics. For mobile clinics a cold box is essential. If your clinic is unable to buy a proper cold box, here is a way to make a simple one. This will keep vaccines cold for just a few hours – no longer.



Use a strong cardboard or wooden box with a lid. Line the bottom and the sides with insulation, making sure every part is covered, including the corners. You can use foam rubber, Styrofoam (what radios are packed in), dry grass rolled up or many layers of old paper. Paint the outside of the box white to reflect the sun and keep the box cooler.

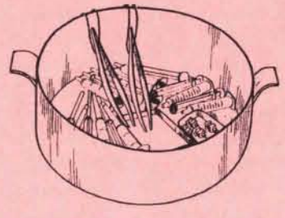
Cover the inside with plastic. Use more insulation to make a cover and cover this with plastic as well. Now vaccines can be packed in the cold box with 'cold packs'. These can be bought and should be frozen and then packed tightly together in the cold box around the vaccines. If you are unable to buy these you can use plastic or metal containers, ideally rectangular in shape and all the same size, filled nearly full of water and then frozen. Place ice cubes in plastic bags all around the vaccine. Always keep your cold box in a cool, shady place.



Diagrams from *Helping Health Workers Learn.*

One syringe, one needle for each injection

Never re-use the same needle for another child until it has been sterilised. It might save you time and effort, but instead of protecting that baby with vaccine, you may be passing on AIDS, hepatitis or another disease. Always make sure that needles are clean and sterile for each baby. Either dispose of the needles if you have good supplies, or rinse and then boil the needles for 20 minutes before re-using.

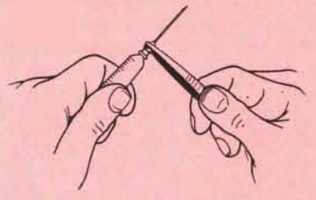


Keep careful records

These are essential for a successful immunization programme. You need to keep good records of the supplies of vaccine and the age of the vaccine. You must have a good system of record cards for both mother and clinic. It is also useful to keep records of the number of immunizations given at each clinic (tally cards).

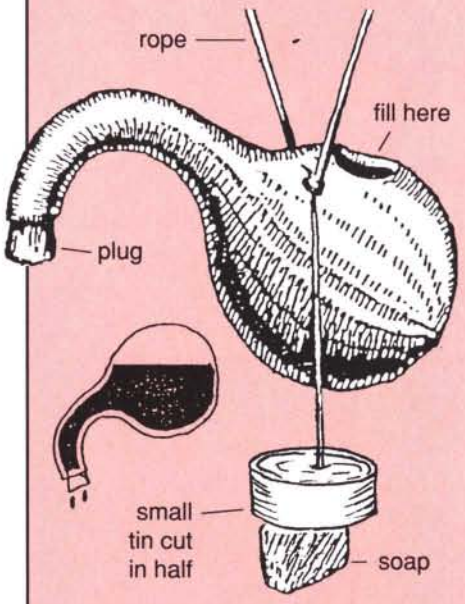
Keep needles sterile

Never handle needles with your fingers – always use sterile forceps. Again, make sure that the needle is not touched when filling with vaccine. Needles touched by fingers may cause abscesses. Mothers will lose confidence in the immunization programme if this happens.



THE MUKOMBE

A useful idea sent in by Andrew Maclean, WaterAid, Rukungiri, Uganda



HANDWASHING after using a latrine is vital, but exactly how to do this when water is scarce is a major problem. Getting children to wash their hands is even harder. Placing a bowl by the latrine means that water will soon be contaminated and may spread disease. Besides, containers are too few and too valuable to leave by the latrine. Some people have developed the 'tiptop' using plastic containers. Here in Uganda we have found a way of making these from gourds. This has become very popular. The gourds are plentiful and cheap, they do not develop algae as plastic containers do and they use very little water. Each person has a clean supply of water. Collect the waste water for the garden. Here are the plans for making a 'Mukombe' as we call them here in Rukungiri. Our Diocesan primary health care team is promoting these.

Choose gourds which have long curving necks. Cut a wooden plug to fit in the neck of the gourd, leaving a small hole for the water to run out. Cut a hole to fill with water.

As the gourd or calabash is tipped, just enough water goes into the neck to allow hand washing. Make sure that the gourd hangs at the same angle shown in the diagram. Avoid the gourd hanging at the angle shown in the small diagram, otherwise all the water will run out. A small half tin hanging above the soap protects it from rain.

Tetanus

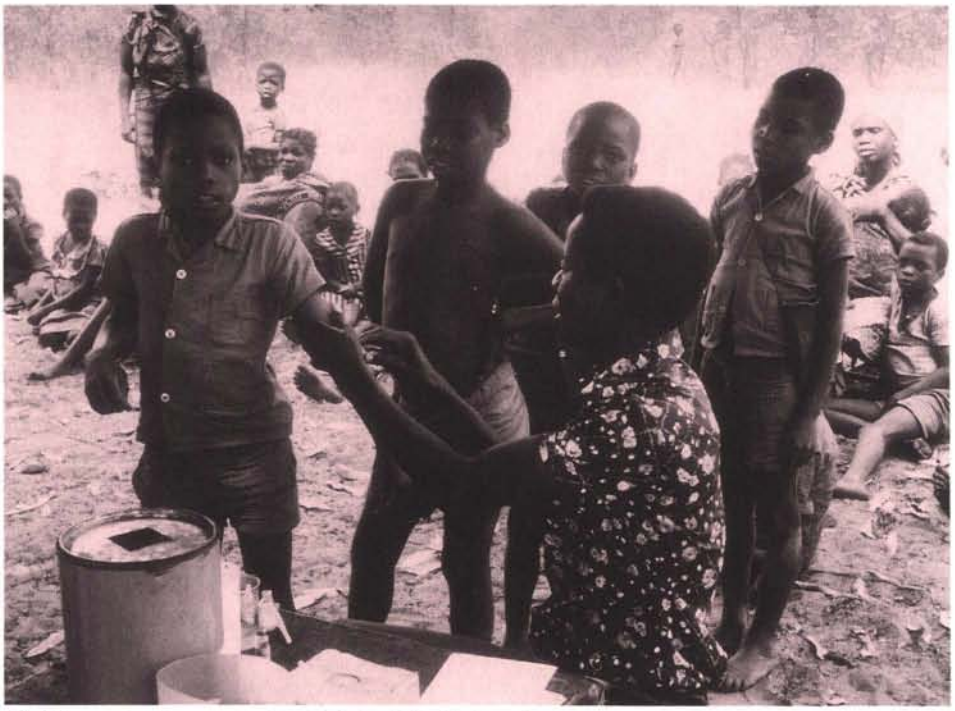
TETANUS is a very serious disease which makes a person's muscles contract and become very stiff. It is very difficult to treat and over half of the adults who catch tetanus will die.

Tetanus is responsible for over half of the cases of death in new-born babies and for 25% of infant death in some developing countries. The WHO estimates that about 750,000 new-born babies die each year of tetanus, though most of these deaths are not reported.

Tetanus in new-born babies is caused by an infection when the cord is cut with a dirty instrument or babies are delivered in unhygienic conditions. A few days after birth the baby becomes unable to suck properly. Within a few days most babies die. Issue No.8 of *Footsteps* looked at ways of avoiding this disease through good hygiene at birth. In this issue it is important to mention the vital importance of immunising pregnant mothers before they give birth.

It is now known that the three childhood doses of tetanus (included in the DPT injection) together with two booster injections – ideally at 5 years and at 15 years – should give complete protection from tetanus for the whole of life.

A mother who has received all five doses will be protected. However, unless the mother has written evidence of all five doses, it is best to assume that none have been given. Two doses of vaccine given at least one month apart at any time during pregnancy will protect both the mother and baby from tetanus. These two doses should then be followed by a further three doses at least one month apart. It is important to note that is not dangerous to give extra doses of tetanus vaccine if the mother is not sure of whether she has previously received vaccine. If in doubt, give the vaccine. Encourage mothers to keep their daughters' health cards so that these are available when they become mothers themselves.



Children who have completed their full childhood programme of immunization should receive a booster injection of tetanus once they begin school at about 5 years of age and then another dose 10 years later to protect them for life from tetanus.

Case Study

NALI'S EFFICIENT VACCINATORS

THE PUBLIC HEALTH NURSE in Nali District noticed that one of the immunization teams gave more 'First Dose' DPT vaccine than any other team. But few parents brought their children back for second or third doses – less than any other team. She visited the area, watched the team at work and talked to local people, including the headman.

This is what she found out...

The team worked very hard and efficiently. They lined up all the children and immunized them very quickly, so that they could finish by 11 o'clock. Then, they could complete their records and clear up before midday. They were careful not to waste time talking to mothers. The headman said that the injections were making a lot of children ill. Some had fevers, and some cried a lot after the injection.

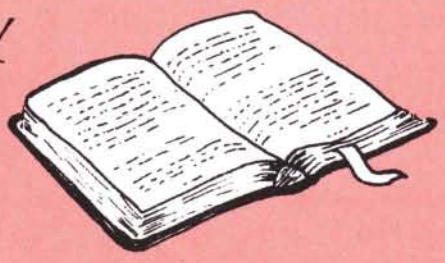
Points to discuss...

- What do you think that the problem was?
- What should the team in Nali do differently to overcome the problem?

See page 16 if you need help with answers.

Taken from the book, Immunization in Practice *which contains many other helpful case studies (see page 12).*

BIBLE STUDY



The Blood of Christ

BLOOD may be thought of in many ways – it may be seen as a sign of weakness, injury and death. But we also talk of our 'life blood'. Blood keeps our body healthy and alive. Blood may bring life to others by transfusions. Immunizations give our blood the ability to fight off diseases.

It is a word that is used a lot in the Bible. In the Old Testament we read often of the cleansing power of blood used in sacrifices. **Read Leviticus 17:11** to understand why people put their faith in sacrifices. What would happen to those who did not make regular sacrifices in Old Testament times? (If you have time you may like to read Chapters 1–7 of Leviticus to understand the importance of sacrifice).

The Old Testament system of sacrifice was, however, easily abused. Sacrifices were often made with no real repentance. **Read Isaiah 1:11–17** to understand God's thinking.

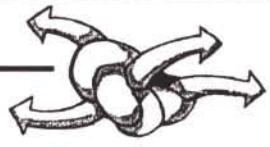
But in the New Testament we read of how the blood of Christ was the ultimate sacrifice for our sins. **Read Romans 3: 21–26.** Discuss the meaning of verse 25 in your own lives.

Read 1 Peter 1:18–19. Why is Jesus described as the Lamb?

The blood of Jesus – the Lamb of God – is in one sense a sign of great weakness. God entered our world in human form. Here the idea of immunization may be helpful. Just as a tiny amount of vaccine has the ability to help our whole body to fight off disease, so the blood of Jesus in one sense has 'immunized us'. His blood has the power to protect us from our sins which would otherwise separate us from God.

When we drink communion wine, it may be helpful to remember that this is **his** blood which has been prepared for you – this is **his** life which was lived for you and can now be shared by you. He was tired, frustrated, tempted, abandoned – tomorrow **you** may feel tired, frustrated, tempted or abandoned. When you do, you may use his strength and share his spirit. He has overcome the world for you.

KNOTTY PROBLEMS



EXTENSION AGENTS in the Okavango region of Namibia have been teaching farmers' groups about the need for new methods and new varieties of crops and vegetables. As the cost of fertilisers and commercial seeds continued to increase, and with the failure of the rains in recent years, incomes have dropped dramatically.

A Christian Community Development Group has recently begun work in the area. Their biggest problem is finding that farmers now have no confidence in their own knowledge and traditional methods. For decades they have been told that the old methods are of little value. They saw dramatic increases at first with the new seeds and fertilisers. Now they lack confidence to seek their own answers to problems or to think of new ways of adapting traditional knowledge to meet this new situation. They expect the Group to provide all the answers.

Can readers suggest ways of encouraging farmers to see the potential and value in their traditional methods. The extension agents still see this as pointless.

How to look after a refrigerator

by Jonathan Elford

An expanded and updated version of this popular manual has recently been published by AHRTAG. The 58 page book is written for health workers in hot climates who are responsible for storing vaccines. Vaccines play a vital role in protecting children from serious illness, yet a large proportion of vaccines become useless during transport or storage because of refrigeration failure.

This book provides clear, practical instructions on how refrigerators work and how to maintain them. It contains sections on kerosene, gas, electric and solar-powered refrigerators. It includes advice on how to store vaccines and what to do if the refrigerator becomes warm as well as information on cold boxes and vaccine carriers. The book is well illustrated and wire bound for easy handling.

The book costs £7.00 including surface postage and is available from TALC.

(Also available from TALC is *How to choose and make a cold box* – reviewed in Issue 8. This is a detailed manual on the design and construction of simple cold boxes for storing vaccines. It contains information on all the points to consider before either buying or making a cold box. The price is now £7.00 including postage.)

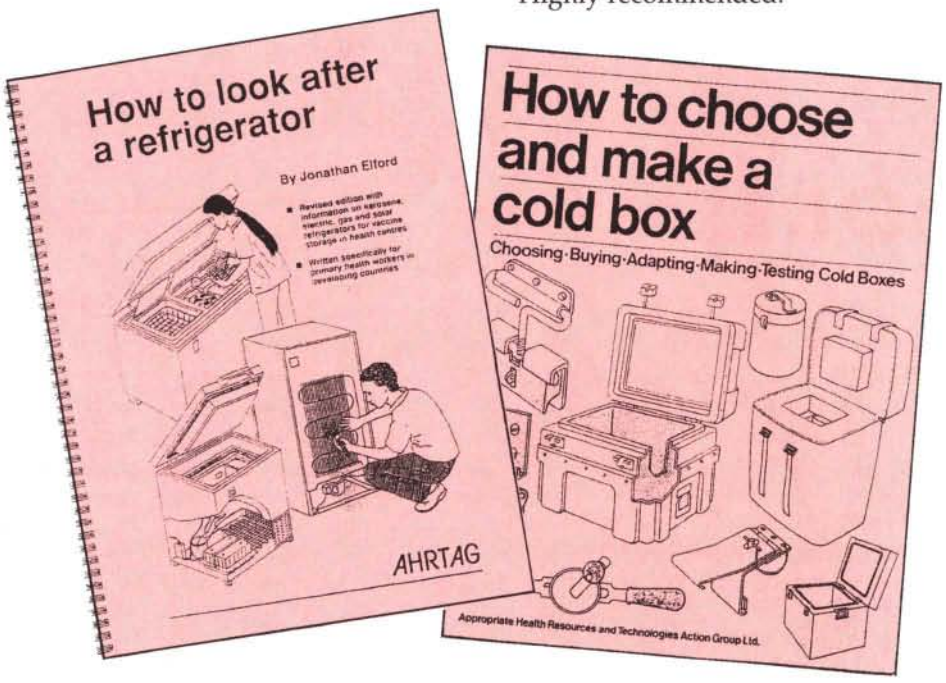
The Child-To-Child Resource Book

Child-to-Child is an approach to health education and primary health care. The movement has proved that children can improve their own health and that of others through caring for younger brothers and sisters and other young children in the community. The information developed (previously available only in activity sheets) has now been made into a resource book which contains most of the information needed to use the Child-To-Child approach effectively.

The book begins with an introduction to Child-to-Child and the ways in which the approach has been used around the world. This is followed by the full collection of activity sheets presenting health ideas in exciting and interesting ways for use with children. There is a section for teachers or health workers. A simple guide to evaluating Child-to-Child activities (or any others) follows, showing how children can and should be involved in evaluating their activities. The final section gives help and ideas on organising workshops where Child-to-Child approaches and activities are to be discussed and developed.

The book has 240 pages with plenty of drawings. It costs £6.50 (including postage) and is available from TALC.

Highly recommended.



Immunization in Practice – A guide for health workers who give vaccines

A practical training manual, 361 pages long, produced by WHO for health workers who give vaccines and for their trainers. It is written in simple English, well laid out and with plenty of helpful illustrations.

It begins with a Trainer's Guide giving ideas of teaching methods. The book is divided into eight modules. Each module contains teaching material with questions, practical exercises and case studies.

This is an excellent resource for any health centre involved in immunization programmes.

Price £5.20 including postage and packing. Available from TALC.

Teaching slide sets from TALC

Target Diseases

The six diseases that immunization will prevent. A set of 24 teaching slides (which need mounting – mounts provided) with English script costs £4.70 including airmail postage for developing countries (£1 more for developed countries).

The Cold Chain

Keeping vaccines cool depends on training workers to care for refrigerators and vaccine carriers. A set of 48 teaching slides with English script costs £9.40 including airmail postage for developing countries (£2 more for developed countries).

Many of the items listed are available from TALC (Teaching Aids at Low Cost). Write for a full list of the resources they provide.

TALC
PO Box 49
St Albans
Herts
AL1 4AX
United Kingdom

Resources for Immunization

The Expanded Programme on Immunization (EPI) provide a number of useful posters for teaching about immunization. These include:

- Recognise the disease
- Preventing neonatal tetanus
- Has your DPT or TT vaccine been frozen?
- Look after your vaccines
- Look after your cold chain equipment
- One syringe, one needle for each injection
- Rinse, clean then sterilise
- Vaccine cold chain monitor.

All of these are available in French and English, and some are available in Spanish and Arabic. They also have a number of stickers, slide sets and films.

A newsletter – *Technet News* – is produced about three times a year in English and French and is available free of charge. This contains detailed and technical information for anyone running an immunization programme.

For more information about any of these write to…
EPI
World Health Organisation
1211 Geneva 27
Switzerland

Clinical Tuberculosis

by John Crofton, Norman Horne, Fred Miller

210 pages
ISBN 0-333-56689-0 (paperback)

This is a useful and practical guide for doctors, medical assistants and health professionals. It looks at the problems of diagnosis and treatment of tuberculosis (TB), especially for those working in areas where there are few facilities. It contains six chapters…

- General background information
- Tuberculosis in children
- Pulmonary tuberculosis in adults
- Non-pulmonary tuberculosis in adults
- Tuberculosis, HIV and AIDS
- Treatment of tuberculosis.

There is a reference section giving details of drugs, surgery and tests. The language is kept reasonably simple and an extensive glossary is given.

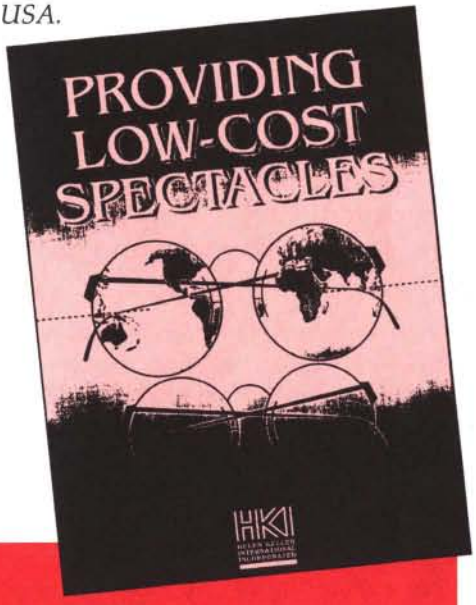
A very useful resource book for anyone dealing with cases of tuberculosis. The cost is £5.50 including packing and airmail postage. Order from TALC.

Providing Low-Cost Spectacles – A Practical Guide

by J Kassalow and D Rutzen

This simple guide is produced by Helen Keller International. It gives practical information on how to set up programmes to produce low-cost spectacles for helping the sight of the estimated fifth of the world population whose sight would be improved by glasses. Clear photos show the various techniques involved. There are also plenty of useful contacts for information, supplies and sources of used spectacles.

Write, giving details of your work and asking for a copy, to…
Helen Keller International
15 West 16th Street
New York NY10011
USA.



NEWS

Yellow fever

Recent reports indicate that an epidemic of yellow fever is taking place in Africa. Most of those affected are children and the fatality rates are high. There are presently 33 countries in Africa at risk from yellow fever outbreaks. These countries should include yellow fever vaccine in their routine childhood immunization programme. Yellow fever vaccine can be given from 6 months of age – but not before. It is most easily given at the same time as measles vaccine. It gives protection for ten years.

Yellow fever vaccine is normally only available in emergency situations when epidemics have developed.

Medical experts would like to see yellow fever vaccine given routinely in childhood to save many thousands of lives. This is now being done in 14 out of the 33 African countries at risk. UNICEF has agreed to purchase yellow fever vaccine in the same way as EPI vaccines. Check on the situation in your own country and find out if yellow fever vaccine is available.

Hepatitis B is another dangerous disease common in many countries. It is hoped that by 1995 this vaccine will also be included in the routine EPI immunization schedule for children in all countries where it is common, and in all other countries by 1997.

NEWCASTLE DISEASE

VACCINES FOR VILLAGE CHICKENS

by Professor P B Spradbrow

MOST RURAL FAMILIES in developing countries keep chickens, even those families that are too poor to own other animals. These chickens must scavenge for most of their food, although sometimes they receive household scraps as well. The chickens are not penned up and often they lack even basic housing. Village chickens are available for sale or barter and they provide meat or eggs. All too frequently a serious disease called Newcastle disease reaches the village flocks and kills all the chickens, depriving the owners of an important source of income and often their only supply of animal protein. If Newcastle disease could be controlled in village chickens, the village flocks would be much more productive and village people would devote more effort to raising chickens.

Vaccines against Newcastle disease are available and they are widely used in commercial poultry. These conventional vaccines are seldom used in village chickens and there are several reasons for this. First, the vaccines are readily destroyed by exposure to heat and they must be kept under refrigeration from the time of manufacture until they are used to vaccinate the chickens. In rural areas in many countries it is not possible to supply refrigerated transport or storage and the vaccines will be inactive by the time they are used. This is a problem also with many human vaccines and with animal vaccines other than Newcastle disease vaccine. The other problem is the need to catch chickens to apply conventional vaccine by drops into eyes or nasal cavities. Village chickens, especially those that roost in trees at night, are very difficult to catch!

The Australian Centre for International Agricultural Research (ACIAR) has been carrying out a research project on the development of Newcastle disease vaccines for use in chickens in Asia with help from the University of Queensland, Australia and the Universiti Pertanian Malaysia. Field trials were held in rural Malaysia and in other Asian countries.

Distributing food vaccine to chickens in a Malaysian village.

The first step was to produce a heat-tolerant vaccine that had reduced requirements for cold storage. Variants of the Australian V4 strain of Newcastle disease virus were exposed to high temperatures for increased periods. V4 was already a vaccine strain that protected chickens but that produced no disease. Now it could survive at tropical temperatures for some days. To avoid any requirement for catching chickens, the vaccine was put on food that was thrown to the chickens. Chickens that ate this food became vaccinated. They also secreted the virus, to vaccinate other chickens in the flock that had missed out on the food vaccine.

Various foods can be used. In Malaysia wheat is favoured, while many countries use some form of rice – even unhusked 'paddy' rice. When more countries apply the vaccine, it will need to be tested on food that is locally available. The simplest

methods of vaccination involve taking the vaccine to villages, where it is mixed with food immediately before the food is offered to chickens. It is necessary to allow enough food to satisfy most of the chickens in a flock – usually 7 to 10 grams per chicken. If less food is used, only the larger, dominant chickens will receive vaccine. In most countries, local preparation of the food vaccine will be necessary. Transport of large quantities of food vaccine to villages would be too expensive.

Experiments at the University of Queensland are now using the vaccine incorporated in small pellets, so that a single pellet will contain sufficient for one chicken. This would allow preparation of vaccine in a central area and transport of the pellets to villages where they would need to be 'diluted' in other food. Transport costs would be low but vaccine preparation could be concentrated in centres with suitable facilities.

Different countries have made various degrees of progress with the vaccine. Malaysia has elected to use the heat-resistant food vaccine in village chickens on a country-wide basis. Other countries in Asia are extending their initial pilot trials. Some countries that have adequate housing for village chickens may decide to use heat-tolerant vaccine and to catch their chickens for vaccination. Trials of oral vaccine are being planned in some African countries.

Some countries are producing their own heat-resistant vaccines, while Arthur Webster Pty Ltd, Sydney, produces commercial heat-resistant V4 vaccine. Scientific details of the ACIAR project have been published recently.

Professor Peter Spradbrow supervises the Veterinary Virus Laboratory in the University of Queensland, PO Box 125, Kenmore 4069, Australia. He has a particular interest in the development of vaccines to prevent diseases in domestic animals.

Editor: Ask your extension agents to make enquiries about whether this helpful new vaccine is available in your own country and encourage them to persevere until supplies are available.

The Transport of Tree Seedlings

by Michael Madany

WHEN I BEGAN DOING AGROFORESTRY WORK with communities in Somalia in 1985, I wondered how to solve the problem of transporting tree seedlings. Tree seedlings grown in polyethylene tubes need great care while they are being carried to make sure they are not damaged before planting.

Farmers needed seedlings in the rainy season when transport, even if available, was impossible because of the condition of the roads. Besides, I did not want people to depend on trucks to deliver trees. So I hired a local carpenter to make some wooden boxes which we used for a number of years before they finally rotted and broke apart. The size of these boxes was another disadvantage – they could carry about 30 pots and were too heavy for any normal person to carry any distance.

In 1988 I considered another solution. I bought a number of empty 20 litre tins from the local market which were originally used for vegetable oil. They were not expensive. They were painted to stop rust and rope handles were put on two of the sides. These tins – called *biib* in the local language – had many advantages...

- They seemed to be much stronger and cheaper than wooden boxes.
- Their size meant that only about 10 trees could be carried. This load was not too heavy so people could easily carry them distances of 3–5 km. The size of the tins protected the pots from damage.
- If truck transport was available the tins provided a useful way of organising and carrying seedlings.
- The night before planting the tins were loaded with seedlings. Water was poured on to a level of about 20 cm. The excess water was poured off the next morning before the trees were carried from the nursery. This ensured that the trees were planted with sufficient water.
- The tins were also useful in the nursery and demonstration gardens when we were not involved in tree planting. They were used for transporting water and soil.

I am sure that similar tins are available in markets elsewhere in the world and would encourage other groups to be aware of their usefulness.

Michael Madany works with World Concern, Box 61333, Nairobi, Kenya. *This article is used with kind permission of Baobab.*

Immunization in Disaster Situations

by Dr Edwin J Pugh

IN DISASTER AND REFUGEE situations, infectious diseases are a potential major health hazard. This is due to a variety of factors including overcrowding, an unsanitary environment and poor nutrition. A mixture of people living in crowded, dirty conditions with low resistance to disease because of malnutrition, is a situation where infectious diseases may be severe and spread rapidly unless effective control measures can be established.

Diseases in disaster situations can usually be divided into two categories. First there are those that are more likely to occur when a camp or refugee community is newly established – such as malaria, cholera, typhus, typhoid and diarrhoea. Secondly there are those which occur after a camp has been established for some months. These would include dengue, hepatitis, influenza, measles, meningitis, sleeping sickness, whooping cough and yellow fever. In nearly all refugee situations, measles epidemics are, at some time, a major cause of death.

The role of immunization

Priority must be given to preventing the cause of many diseases by providing a good supply of food and water and establishing a safe sanitation system. Immunization programmes have the potential to prevent many diseases.

Making it work

Immunizations can only be effective if a high uptake rate, using a viable vaccine, is obtained in the susceptible refugees. To obtain good coverage the immunization programme needs careful planning, taking into account the organisation of the refugees along with their cultural perceptions. In addition any vaccine cold chain must be adequate. Vaccines must be kept properly refrigerated at all times. If this is not possible, then immunization programmes should not be carried out at all.

Planning the programme

Any immunization programme should involve the host government in its planning. In addition, the help of other agencies, including WHO and UNICEF, could be encouraged. The refugee community can be a great resource with refugee staff being trained to give vaccines and keep records. In planning the programme, the refugee community itself should be actively involved.

A safe sanitation system and clean water supplies must be priorities in disaster situations.

Pick the right method

In order to reach high immunization uptake rates, there are three methods which might be used…

- Refugees could be immunized on arrival within the camp or community.
- Mass campaigns could be run within the refugee population.
- At-risk individuals could be identified during visits to health centres and as part of established mother and child health services.

The choice of method will depend on the organisation and maturity of the refugee camp. Several methods could also run together.

Dr Edwin Pugh is the Director of Public Health for Darlington Health Authority with direct experience of refugee and disaster situations on the Thailand/ Cambodia border and in southern Iran.

Answers to case study on page 11…

A Some of the children in Nali had side effects from the first dose of DPT. The team did not take time to warn the mothers that some children might be fussy or have a fever, and they did not explain what to do. The mothers were upset and were afraid to go back for any more immunizations.

B The vaccinators should spend more time talking to mothers, and explaining about vaccines. If mothers understand that a side effect may occur, but that it is not serious, they may not be so upset. The vaccinators can complete their records and clean up later in the day.

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