

Special deliveries for

Childhood immunisation is a success in Tanzania thanks to nurses' efforts, writes Jacqui Thornton

Twice a month, nurses at the Sambasha Dispensary, a basic health clinic in northern Tanzania serving eight remote villages, greet a welcome visitor – the vaccine delivery man.

It's a quick visit. Julius Nelson has a number of other dispensaries to get to in his 4x4 vehicle on dirt tracks. But he shares a few words with the nurses as he hands over the blue plastic cold box that contains hundreds of vials of vaccine.

Typically, there is a line of local women dressed in the distinctive red Maasai colours, waiting with their infants who will receive the routine vaccinations.

Mr Nelson is greeted by Marystella Temba, the clinical officer, and Anna Albertho, the nurse in charge whose role is as much education and vaccine awareness as hands-on healthcare.

Ms Temba says she has seen a tremendous difference in disease prevention since she was a girl. 'There were a lot of problems in the past, but now I'm happy. We have overcome measles.

'The mums are aware it is important that they come with their babies – we tell them



when they are pregnant. The first time a vaccine is given to their babies they are a bit scared but after that it's fine.'

One problem is getting across the need for different vaccinations, some with multiple doses, in the first two years of life. Ms Albertho talks to the mothers about this, as they wait for their children to be weighed before their first injections. 'They do not understand the importance of completing the schedule – they think they are covered with one vaccination,' she says.

'Another difficulty is irregular vaccination schedules. On many occasions the neighbours or extended family are looking after the babies in rural areas, as the mum is working away in the city, or the rainy season arrives and they wait to come to the clinic after that.'

It is thanks to the efforts of nurses such as Ms Albertho that Tanzania has become a vaccination success story. Coverage rates of routine childhood vaccinations improved from 78% in 1990 to 92% in 2012, according to the World Health Organization. This is striking in a country where half of the 50 million population is aged under 16.

There are huge logistical issues to supplying vaccines at 2-8 degrees centigrade (normal fridge temperature) in an uninterrupted 'cold chain'

throughout a hot country that is four times the size of the UK.

The vaccines, initially stored at the Medical Stores Department (MSD) in Dar es Salaam, need to travel hundreds of miles to one of 25 regional cold stores, often in a local hospital, a journey that takes two to three days. But the MSD has only two refrigerated trucks. To supplement them, it deploys two standard trucks full of white polystyrene cold boxes packed with ice blocks.

From these sub-stores, couriers transport the vaccines to the local dispensaries, which usually have no



electricity, so the vaccines are stored in large chests refrigerated by bottled gas.

At the Monduli hospital, where Mr Nelson is based, the district nursing officer Zaituni Kivuyo oversees 80 nurses who cover a population of 160,000 at 31 dispensaries. She says: 'I mentor the nurses, audit them, give them the drugs they prescribe. Their main roles are to give vaccines, help with births, do dressings and make referrals.'

The Tanzanian government has run campaigns for new vaccinations supplementing the routine programme.

The measles campaign has been particularly effective. In 2000, 2,980 children under five

remote families



died from measles in Tanzania. This dropped to 259 by 2013. In the Monduli district, in 2011 there were 353 measles cases and seven deaths, but in 2014 just 43 cases and no deaths.

Regional immunisation and vaccine officer Aziz Sheshe says: 'The mums don't like to see their child cry when they have the jab but they know it's working because the measles wards are empty. They have seen the benefits with their own eyes.'

Forty-one nurse-led mobile clinics, where the nurse goes with a driver to set up vaccinations in schools and other community centres, have been introduced to reach remote areas. One nurse can cover 100 km in one mobile

Far left: district nursing officer Zaituni Kivuyo with a local mother. Clockwise from above left: nurses carry a cold box; Maasai mothers wait at a dispensary; Sambasha Dispensary immunisation ledger, and Anna Albertho educates parents

session, sometimes completing the journey on foot while carrying the vaccines on ice.

The government's success has been enabled through funds provided by GAVI, the global vaccine alliance. In this scheme, countries pay what they can afford until the health benefits in the population are such that their economies improve and they can start to contribute more to the cost of vaccines.

In a long day of deliveries, Mr Nelson reflects on his part in the story. 'I enjoy it – I'm helping out. It makes me feel good bringing the vaccines.' With that, he gets back in his 4x4 on to the next dispensary and waiting children **NS**

Records for a nomadic people

With no electricity available at the Tanzanian dispensaries, there are no computers or electronic records. Each dispensary has a ledger in which nurses record immunisation information, and mothers bring in their paper notes when they visit.

But health officials are concerned that they are missing patients. During a recent measles and rubella campaign in one district, it was estimated 680,000 children were eligible for vaccines; 700,000 turned up.

Numbers are hard to predict because the Maasai are a nomadic population. In addition, the nurses don't know how many children they need

to vaccinate because census figures for births are unreliable.

To deal with this, the Arusha region, which includes the Monduli district, is pioneering a pilot scheme to introduce barcodes on child health notes that can be read by a battery-powered scanner, a first foray into electronic records.

In a separate scheme, the use of barcodes is also being piloted on vaccination vials to track where they are in the supply chain.

District medical officer Zavery Benela says: 'We are eager to know about the barcodes if it allows the district to know in an instant what supplies we have and where.'