

Image of Dr. Marianne Gale (see below)

Diagnosing children with TB: A terrible neglect

Despite the growing global health problem that tuberculosis (TB) is causing, it continues to be a disease that is greatly neglected. Young children, who are at very high risk of dying from TB, have been among the main victims of this long-standing neglect.

The World Health Organization (WHO) estimates that one million children each year develop TB, the vast majority of whom live in resource-poor settings. The true number is likely to be even higher since children with TB can be very difficult to diagnose. Dr. Marianne Gale is a Medical Advisor with MSF for HIV and TB who has treated children with TB in Thailand and Niger. She explains some of the key concerns about diagnosing TB in children.

Why is it so hard to diagnose children with TB ?

There are several reasons. First, they have symptoms that can also be present in other illnesses like HIV, malnutrition, malaria or other viral or bacterial infections. These symptoms typically include weight loss, poor appetite, cough and fever that can last for many weeks. Consequently, TB can be very difficult to recognise based on symptoms alone.

Secondly, the standard diagnostic test for TB used in adults is not at all adapted for children. This test requires a sample of sputum (phlegm coughed up from the lungs) which is very difficult to obtain in children because they cannot cough like adults. Procedures can be done to obtain samples from a child's lung or stomach but these can be traumatic for the child and they require well-trained staff, a good health facility and a good laboratory, all of which can be rare in resource-poor settings.

The difficulties are compounded if the child is also HIV positive ?

Yes. As their immune system is weakened, children with HIV are at particular risk of contracting TB and dying from it. The difficulties of diagnosis and treatment are further complicated in this group of children due to the complexity of multiple disease processes. The good news is that most children, if diagnosed early, respond very well to TB treatment and recover fully.

Why are there not better ways available to diagnose TB in children ?

One of the main reasons children with the disease have been neglected over the years is the fact that they are less infectious than adults. Children produce fewer TB germs in their lungs and therefore do not spread the disease when they cough as adults do. This means that they have been less of a priority in TB control programs which are aimed at targeting the most infectious members of a community.

Researchers also often exclude children from TB studies because of their greater complexities compared with adults. At MSF we are currently working with a group of international experts on strategies to overcome this barrier, so that the medical needs of children will be considered as a priority in TB research.

What kind of test needs to be developed ?

What is needed is a non-sputum based diagnostic test that gives a fast result so that children, who are at high risk of dying from TB, can be promptly treated. Right now, there are some promising developments but without adequate funding or commitment, we are not going to see the urgent progress that we need to save lives.

What can be done to improve the situation ?

The lack of new diagnostics and new drugs means that innovative approaches are needed to deliver the best medical care possible to the greatest number of affected children. There are many children who do not have even the chance of survival he had, because they are not even diagnosed, let alone treated. It is an ongoing challenge for us to develop these new approaches and share our experience and knowledge widely with other actors.

While working on strategies at patient-level we also continue to push at an international level for greater investment and commitment in tackling TB and reversing the long-standing neglect. We are especially committed to addressing the devastating effect TB has on children, as part of an effort to give as many children as we can, no matter where they live, the best possible chance to survive and thrive.

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Stimulating the development of a TB test through a prize fund.

The most commonly used diagnostic tool for TB – the microscopy test of patients’ sputum – has remained substantially the same since it was developed well over a century ago. In real life settings, microscopy misses about as many patients as it detects, and is particularly poor at detecting TB in patients co-infected with HIV/AIDS or in children.

We need tests that give results fast and accurately. To speed up the creation of a new TB test, MSF is suggesting a prize fund competition. Prize funds can stimulate innovation by offering large cash prize rewards for successful development instead of relying, as in the current model, on high sales prices protected by patent monopolies. Prize funds also allow governments to prioritise research and development in that they pay out only for successful results and direct research toward areas of greatest medical need.

The test needs to work at the Point-of-Care level where the majority of patients are seen, it must be accurate and affordable, and must be able to diagnose TB in people who are HIV positive and also in children.

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Caption: Dr. Marianne Gale examines a patient suffering from TB in Thailand, 2007.

Credit: Francesca Di Bonito