CASE REPORT

Why tuberculosis control programmes fail? Role of microlevel and macrolevel factors: an analysis from India.

Sudip Bhattacharya,¹ Amarjeet Singh.²

¹Department of Community Medicine, School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India.

²Department of Community Medicine, School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India.

Correspondence to
Dr Sudip Bhattacharya,
drsudip81@gmail.com

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SUMMARY

India accounts for one-fourth of the global tuberculosis (TB) burden. The National TB Program was started in 1962. Over a period of time, some lacunae such as poor case detection rate and incomplete treatment were observed. Later, the government formulated the Revised National Tuberculosis Control Program (RNTCP), which achieved a case detection rate of 70% and a cure rate of 85%. Still, the problem of relapse and defaulter cases persists. In 2014, 6% defaulter cases were reported from India. RNTCP has also focused on microlevel aspects, that is, newer diagnostics such as GenXpert, line probe assay and medicines such as bedaquiline for drug-resistant TB. Action on the macrolevel aspects, for example, social determinants, is ignored. This is natural because these are out of the purview of the health sector. This case study reflects how a resident doctor in a rural clinic of North India tried to resolve the macrolevel and microlevel issues pertaining to defaulter TB cases.

BACKGROUND

India accounts for one-fourth of the global TB burden, that is, 2.2 million out of 9.6 million new cases annually. In India, more than 40% of the population is infected (prevalence) with *Mycobacterium tuberculosis*, the vast majority of whom have latent TB rather than TB disease. It is estimated that there are 2.5 million prevalent cases of all forms of TB disease.¹ The NTP was started in 1962 in India. Over a period of time, some lacunae such as poor case detection rate and incomplete treatment were observed in the programme. To overcome these, the government decided to give a new thrust to the NTP by formulating the RNTCP, which achieved and sustained the target case detection rate of 70% and a cure rate of 85%. Still, the problem of relapse and defaulter cases persists.¹ In 2014, 6% defaulter cases were reported from India.²

RNTCP has also focused on microlevel aspects with huge monetary investment in newer diagnostics such as *GenXpert*, *cartridge-based nucleic acid amplification* test and *line probe assay*, and newer medicines such as *bedaquiline* for drug-resistant TB.³ Action on the macro social determinants ignored. This is natural because these are out of the purview of the health sector.^{4,5}

This case study reflects how a resident doctor (trainee) in a rural clinic of North India tried to

resolve the management related to macrolevel and microlevel issues pertaining to defaulter TB cases.

CASE PRESENTATION

Case study setting

School of Public Health (SPH), Postgraduate Institute of Medical Education and Research, Chandigarh, offers a 3-year MD Community Medicine course to junior resident (JR) doctors.⁶ During the training period, they are posted in rural and urban health posts of SPH. The first author visited the health posts and examined patients as JR, thrice a week.

The defaulter cases:

One day in 2015, after finishing all the clinical work, the author was going through the records of the health post. Two defaulters were located among eight patients with TB registered there. The health staff told that they were unwilling to continue the treatment. Further probing did not yield any details. A community health worker escorted us to their homes.

The family visits to the index cases:

First case:

His house was locked. Neighbours told that the patient died 6 months ago. His family members had migrated to another village. Still he was 'alive' in our records.

Second case:

The second case lived in a joint family. The index case was residing with his wife, two married sons, their spouses and two grandchildren.

He believed that TB was a disease like cough and cold. He had no idea that it might be associated with complications or that it could spread to others. For the problems related to medications, he had consulted a doctor in the nearest Primary Health Centre. He was not satisfied by the treatment given and the problem continued. He discontinued treatment midway due to side effects and consulted a faith healer. He also told that a health worker visited his home occasionally. She advised him to cover his mouth while coughing. He did not practise it openly due to fear of social discrimination.

Third case:

Another TB case was detected in the same house. When one of the kid was not responding to medicines for chronic fever, we referred him to Civil

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Hospital, Panchkula. He was diagnosed as a TB case by a paediatrician who put him under isoniazid therapy.

Meeting with Accredited Social Health Activist (ASHA) worker:

Under the government health system, ASHA workers get itemised payments for specific healthcare-related odd tasks done by them. They are not regular (salaried) employees.⁷ We contacted the ASHA worker to know the reason for lack of regular field visits. She owned a roadside 'Dhaba' (local restaurant). She was not happy with the health department. She did not get any guidance from the medical officer (MO) for any problem faced by her. She blamed that in spite of her hard work she never got timely payments. She told that she was overburdened. She lamented that in every scheme launched by the health department, ultimately it had to be executed by ASHA only. She tried to justify herself by saying "It is not a fixed job and I get minimal honorarium on case to case basis. Why would I bother for each and every government scheme?"

Visit to the PHC:

The next week, we had a monthly meeting in the PHC with the MO. He admitted that he was not confident enough to handle the drug reaction in TB cases. He was a fresh medical graduate with little practical exposure. He had joined this PHC as MO few months back only. He was yet to receive on-the-job training on TB management. When we asked about this particular patient, he replied, "I referred him to higher facility. But the patient did not go."

Visit to the faith healer:

He refused to meet us. Still with the help of the community worker, we came to know about certain things. He was quite famous in that village. He claimed that he had supernatural powers. He claimed to have cure for TB, diarrhoea, pneumonia, diabetes, infertility and even AIDS. He charged Rs500 for treatment of each patient of diarrhoea and Rs5000 for TB.

GLOBAL HEALTH PROBLEM LIST

In this study two broad problems were observed-

1. **Patient-related problems:**
 - A. Under the government TB control programme, treatment default continues to occur. Adherence of patients with TB to treatment regimen is often compromised due to side effects of the medicines.
 - B. Family members of the registered patient with TB remained unscreened. This allowed the infected contacts to remain hidden. They become potential source of perpetuation of infection in the community.
2. **Health system-related problems:**
 - A. Health workers are the backbone of any TB control programme, especially for follow-up. In our case, it was found that they were demotivated due to lack of remuneration.
 - B. Record keeping (hence supervision) was very poor. This reflects a casual and unscientific approach of the health professional at the local level.
 - C. MO's role is vital in dealing with the side effects of anti-TB medicines. Their training to deal with these problems was lacking.

GLOBAL HEALTH PROBLEM ANALYSIS

The first author tried to manage the above-mentioned problems in the index cases by finding local microlevel solutions.

The impact of the interventions undertaken by him are outlined below.

Impact-

1. **Regular contact with patients:** Number of field visits of health workers increased after he asked them to ensure this.
2. **Improve the reporting system:** Data collection and record keeping have improved after he told the health workers to update the records.
3. **Address the problem of defaulter cases individually; find local solutions, and if need be bypass the bureaucratic approach:** We arranged extra food from alternative sources for the patient when he promised us to continue the medication. After completion of full treatment, the case was declared as cured.
4. **Home visits are necessary for effective need-based counselling:** All the family members of the patient were screened. One of the child was diagnosed to have TB. He was put on therapy. This case was missed by the RNTCP.
5. **Effective use of 'top down' troubleshooting efforts removing the bottlenecks from the top:** ASHAs started getting timely honorarium after we discussed with the accounts officers about expediting the timely payments to them.
6. **Continuing training is important to enable Medical Officers to solve the problem of TB cases:** The MO was deputed for on-the-job training on 'Programmatic Case Management of TB' after we discussed the issue with the civil surgeon.
7. **Regulatory approach:** The faith healer left the village when we informed the local police about him.

Discussion

On paper, every health programme of the government looks good. Theoretically, the RNTCP strategies should accomplish the declared targets pertaining to TB detection and cure rate.¹ However, in practice, as demonstrated in the three cases reported by us, it did not happen.

The first case reflects poor record keeping (lack of updating), that is, casual approach of the peripheral health workers as well as poor supervision of his work.

The second case highlights how microlevel and macrolevel factors lead to treatment default.⁴

In the present case, the experience of patient with TB about treatment was not good; he got sicker after taking medicines. He went to the doctor for relief. Unfortunately, he could not manage it. So the only option left for him was to discontinue treatment and seek help from faith healers.

This also indicates that the healthcare system is insensitive to the day-to-day problems faced by individual patients. It also exemplifies lack of continuity and lapses in the RNTCP (poor training support of MO). It also highlighted the need for 'human touch' while dealing with individual cases. All these adversely affect compliance, leading to treatment default.

The third case again indicates lack of application of the principles of the level of prevention approach, that is, specific protection. The system failed to screen the exposed family members of the index case for TB.

To analyse this issue, we can apply the paradigm of epidemiological triad. As per this perspective, the disease is a result of the interaction of agent (TB bacteria), host (poor nutrition, unhealthy behaviour) and environment (overcrowding, poor sunlight, poor ventilation). So, for control of any disease, all three need to be tackled simultaneously. The same is applicable to TB.^{5,8}

For example, if we treat an undernourished patient with TB who is living in a poor physical environment by medicines alone, there is every possibility of treatment failure or drug resistance. Medicine addresses only the microlevel aspects, that is, the disease agent. The macrolevel aspects, that is, host and environment factors, are ignored.⁸ Host factors include patients' economic status, behaviour, attitude, comfort level, etc. Environmental factors include social and cultural aspects, for example, norms, stigma, taboos, organisational behaviour, motivation level, accountability, work culture, bureaucracy, etc.

TB is said to be more of a social disease. It is basically a disease of poverty. In western countries, TB was eliminated not through newer diagnostics or medicines but through social development, that is, by addressing macrolevel factors.^{9–11}

It is unfortunate that even after 50 years of NTP, the villagers still trust faith healers for treatment of TB. The government programme has failed to reach the masses. Even in the 21st century, we are not able to provide them 24×7 hours of basic medical care. This gap is apparently filled by the faith healers. They are more approachable and are available 24×7.

The lack of motivation among health workers (poor record keeping, less field visits), lack of initiative (procuring extra food for patients), lack of training of fresh doctors to manage drug reactions and cultural factors (stigmas and fear of social isolation) complicated this case. Dissatisfaction was seen among all levels of healthcare workers (ASHA to MO). Peripheral health workers are the backbone of any health programme of any country. If they are demotivated, then the programme suffers.

These are all macrolevel administrative, social and cultural factors. Sadly, these are very rarely discussed in any government programme or scientific fora. Yet these are easy to tackle at the local level.

Many patients with TB discontinue treatment due to macrolevel factors. Many of them become drug-resistant. This increases treatment cost as well as burden on our healthcare system by compromising compliance. We have to understand that patients with TB are not just data. Our focus should not be only indicators of RNTCP. Sadly, this is done everywhere. Patients with TB are human beings. They also have emotions. They have individual problems related to TB or its treatment. Individual solutions need to be worked out for them.

CONCLUSION

Along with addressing the microlevel factors (newer advances, eg, diagnostics and therapeutics), there is also a need to address macrolevel issues related to TB or its treatment. Besides, it goes

Learning points

- ▶ Many patients with tuberculosis (TB) discontinue treatment due to microlevel factors and become drug-resistant, for example, side effects of medicines. This increases treatment cost as well as burden on our healthcare system.
- ▶ Screening of the vulnerable population is also patchy.
- ▶ These microlevel factors originate from macrolevel administrative issues. These also need to be addressed for effective TB control, for example training and supervision of health workers and medical officials.
- ▶ Social development has a definite role in TB control.

without saying that social development has a definite role in TB control.

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