

A COHORT ANALYSIS OF PERFORMANCE OF REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME IN KERALA

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BACKGROUND

Tuberculosis (TB) is one of the most common causes of death among adults in India despite being nearly 100% curable. The National TB Programme (NTP) which was launched in 1962, could not achieve the desired epidemiological impact, since its performance in terms of case finding and treatment success were below expectation⁽¹⁾. There was an over reliance on X-ray for diagnosis and often treatment was incomplete. On the recommendation of an expert committee, a revised strategy to control TB was pilot tested from 1993 on a population of 2.35 million covering both urban and rural areas of the country. Encouraged by the good results of the pilot phase, the Government of India launched the Revised National TB Control Programme (RNTCP) with Directly Observed Treatment Shortcourse (DOTS) as the strategy of implementation in 1998. The programme was implemented in a phased manner and the entire country was expected to be covered by end of 2005. The RNTCP has shown commendable results in terms of cure rate and the case detection was also on the rise. However the performance needs to be analysed and monitored to either sustain the good performance or to improve under performance.

The state of Kerala was the highest literacy rate (90.92%) and sex ratio (1058) in the country. RNTCP was piloted in the district Pathnamthitta of the state in 1994⁽²⁾. Encouraged by the good results of the pilot project, the implementation of RNTCP was started in 5 districts of the State in

October 1998 and the full coverage was achieved in December 2000. Geographically Kerala is in Malabar Coast. In the North and Northeast it is bounded by Karnataka and in the East and south by Tamil Nadu. It has an area of 38,863 sq Km. and a population of 31.8 million according to 2001 census.

A cohort analysis of New Smear Positive (NSP) TB cases detected in Kerala during 2001-03 is attempted in the present article, as it is one of the few states in which RNTCP was first pilot tested and was fully covered under RNTCP by 2000⁽²⁾. The performance is evaluated on the key parameters/ indicators such as ratio of number of smear negative to positive cases, case detection rate, and smear conversion rate and treatment success rate. The performance of RNTCP in Kerala has also been compared with the all India performance to have a differential perception.

METHODOLOGY

A standardized set of performance indicators / parameters have been identified to monitor RNTCP. These indicators help the programme managers at various levels in assessing the performance of the programme for corrective action⁽³⁾. The quarterly performance reports published by the Central TB Division from 2000 to 2004⁽⁴⁻¹⁷⁾ have been used for the analysis. The quarterly reports on case finding, sputum conversion, treatment outcome, programme management and logistics are used as important tools to assess the performance of the programme.

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The NSPs detected were followed for their smear conversion at the end of intensive phase and treatment outcome after completion of treatment. The key programme performance indicators considered for the present analysis are : 1. Ratio of the number of Smear negative to Smear positive cases, 2. Case Detection rate 3. Smear conversion rate and 4. Success rate. A comparison of the performance of the programme in the State has been made with that of All India during the same period.

RESULTS

For the State of Kerala, the ratio of the number of new smear negative to new smear positive cases varies in the range 0.5 to 0.7 where as for All India the ratio was in the range of 0.7 to 0.9 (Fig.1). The NSP detection rate is around 60% for majority of the quarters during 2000-03. The state's case detection rate was consistently higher than the All India performance and was showing an increasing trend (Fig. 2). Further the sputum conversion rate has been excellent and is around 90% for all the quarters and the same is on par with national average (Fig. 3). The State of Kerala has also registered an excellent success rate of 90% for most of the cohorts of NSPs detected during 2000-03. The success rates achieved were marginally higher than the All India (Fig. 4).

DISCUSSION

The RNTCP has set certain expected levels of performance against which the calculated performance indicators are compared. The ratio of Smear negative to Smear positive should be ideally 1:1⁽³⁾. From field conditions and other practical considerations, variation in the range of 0.4 to 1.2 was found satisfactory. From Fig.1 it can be observed that for the State of Kerala the said ratio lies well within the range of 0.4 to 1.2, though it is somewhat different All India performance.

Case notification rate indicates the extent to which patients with new pulmonary smear positive TB are being treated by the public health system. The estimated number of New Smear positive cases based on the latest estimates of Annual Risk of Infection (ARI) for Kerala is 50 per lakh population and while for all India it is 85 per lakh (the said targets are for the years 2000-03). From the Fig. 2 of Annexure it can be seen that Kerala has achieved the desired target of detection of 60% of NSP's in the community for most of the quarters during the period of analysis and is doing well when compared to All India performance. The case detection rate has been consistently increasing (both Kerala and All India). However with the revised targets for a total case defection rate of 203 per lakh and NSP detection of 75 per lakh population (based on estimated ARTI of 1.5), the state has to put in more efforts to improve its performance in terms of case detection.

New Smear positive cases and relapses should have at least 90% conversion from sputum positive to negative at the end of intensive phase of treatment. A high conversion rate is usually followed by high cure rate, except in special situations where there is high HIV incidence also. The cure/success rate achieved for new pulmonary Smear-positive cases treated under DOTS is the best and most important indicator of effectiveness of chemotherapy in treating TB cases and hence success of the programme. The State of Kerala has achieved excellent conversion rate of around 90% for most of the quarters consequently, the cure rate achieved by the state has also been consistently more than 85% during 2000-03. The success rates achieved by Kerala were marginally higher than the All India figures.

The silver lining is that the state has been sustaining the high cure rate of more than 85%. It is therefore possible to achieve the revised targets of case defection with strategic advances in public health care. Since cure rates are high,

health facilities will start attracting more patients, as a cured patient is a satisfied customer and would serve as a pamphlet for the programme.

The good results achieved in involving private sector through intensified Public Private Mix (PPM) (DOT) activities in the Kannur district of the State could be emulated in the other districts to improve the case detection rate. The State could also intensify the IEC activities, including building and strengthening partnerships with all major health providers to improve its case detection rate. The high quality of care and strict adherence to the RNTCP guidelines should be continued and maintained to sustain the smear conversion and success rates already achieved by the state under the programme.

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**Annexure
Fig. 1**

Ratio of Smear -ve to Smear +ve

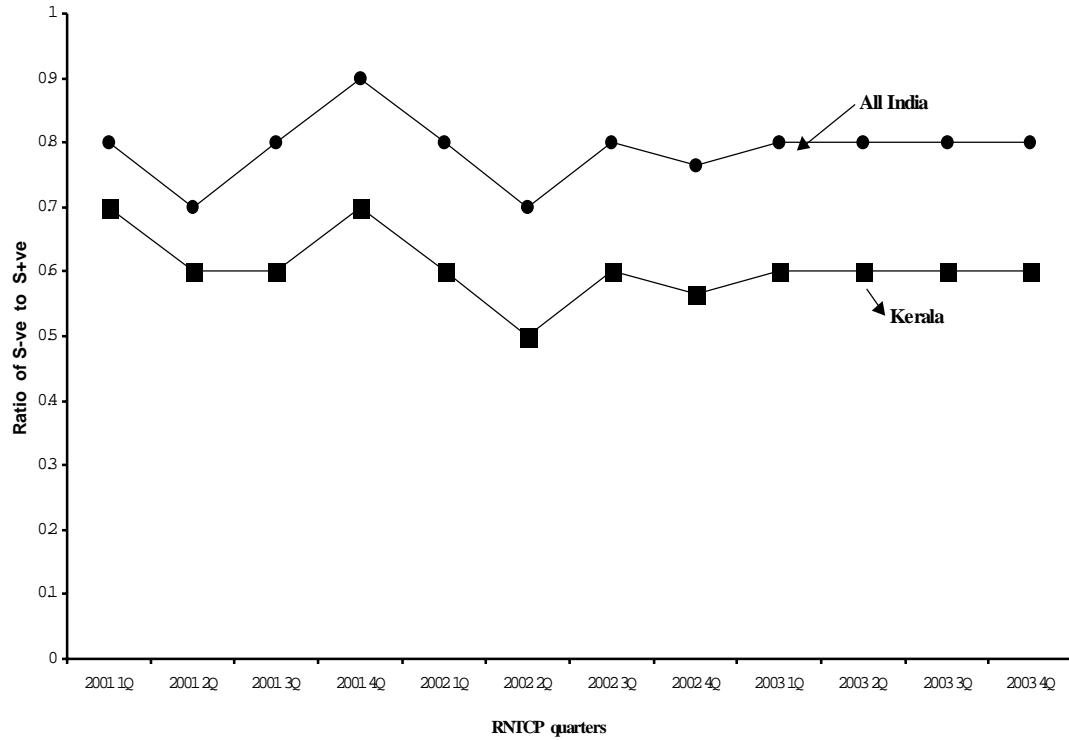


Fig. 2

Annulaised NSP Detection rate

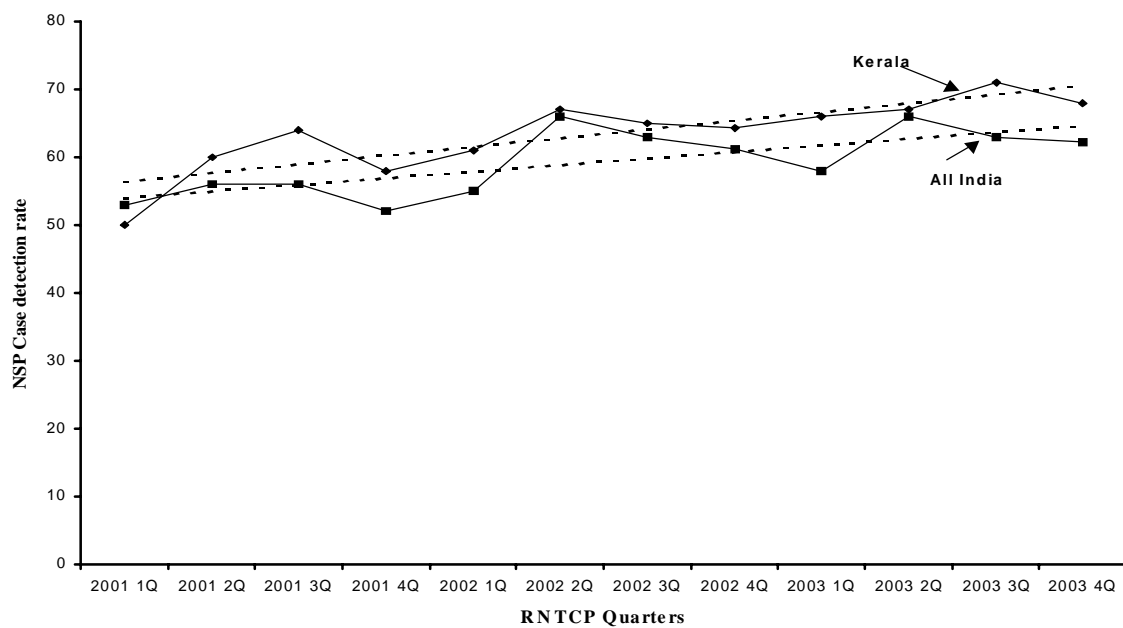


Fig. 3

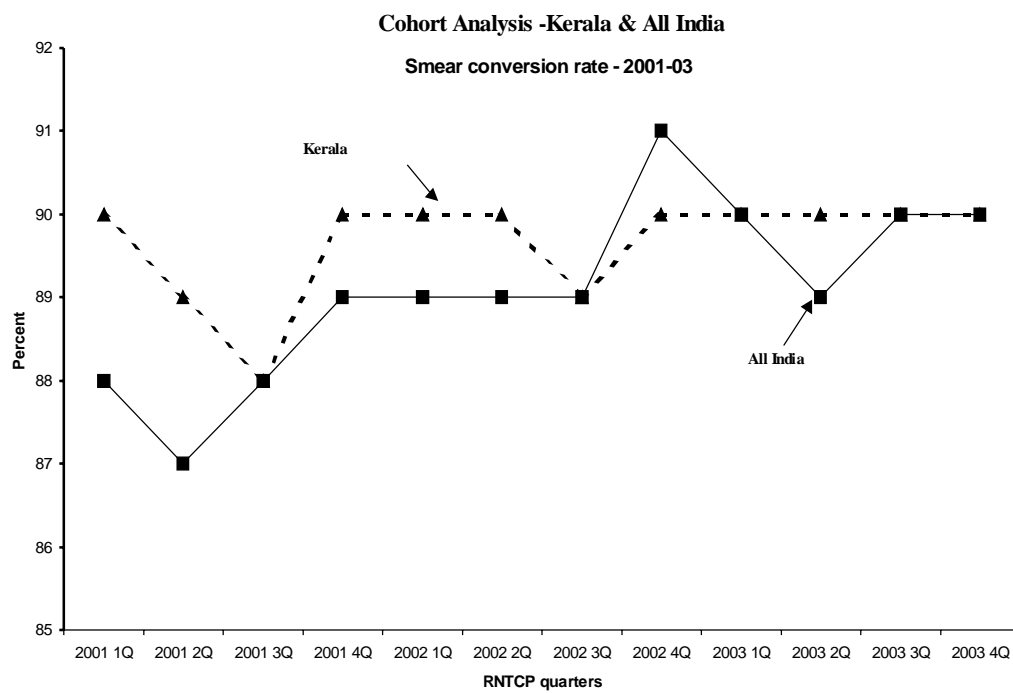


Fig. 4

