

Performance of RNTCP in India during 2006 and 2007- A Review

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Summary

This article attempts to analyse the performance of Revised National Tuberculosis Control Programme (RNTCP) in the country based on the quarterly reports released during the years 2006 and 2007. The RNTCP has fixed expectations on performance like, outcome of the treatment, sputum conversion at specified intervals, etc. During these years, annualised case detection rates varied between 63% and 78%. The ratio of New Smear Positive cases to New Smear Negative cases was in the range of 1.3 to 1.6. The three month conversion rate of new smear positive patients who were registered during the fourth quarter of 2005 to third quarter 2007 were 88 to 90 %. The cure rate of New Smear Positive cases registered during 2005 and 2006 ranged between 83% and 84%.

Keywords : RNTCP, New sputum smear positive cases, New sputum smear negative cases, Monitoring

Introduction

Tuberculosis (TB) remains a major public health problem. The RNTCP was evolved to efficiently control the menace of the TB disease in the country.

The goal of RNTCP is to cure at least 85% of new sputum smear-positive cases of pulmonary TB and to detect at least 70% of expected incidence¹. Clearly, both high cure rates as well as high case detection rates are essential to control TB.

The RNTCP has covered the entire country by the first quarter of 2006. The programme has now entered its second phase in which the programme aims to consolidate the gains made, to widen

services both in terms of activities and access, and to sustain the achievements for decades in future in order to achieve ultimate objective of TB control in the country. The second phase of programme has made special provisions to reach marginalized sections of the society, including creating demand for services through specific advocacy, communication and social mobilization activities.

Monitoring is one of the important tasks in RNTCP. It is the act of not only overseeing progress of the programme but also checks accuracy, completeness and validation of the data and adherence to the guidelines of the programme. It is a continuous process involving collection, compilation, analysis of the data on inputs, implementation processes and outcome besides giving suggestion for corrective measure, if any.

Objective

The main objective of this article is to analyse the performance of RNTCP during the years 2006 and 2007.

Materials

The quarterly publications of RNTCP performance Report, India published by Central TB Division, Ministry of Health and Family Welfare, uploaded in its website, is the source of information for this article². It disseminates, quarter-wise, the results of case detection for the cohort of patients registered, smear conversion of the patients and treatment outcome up to the district level.

Findings

During the first quarter of 2006, the geographical coverage under RNTCP was 100% of the country.

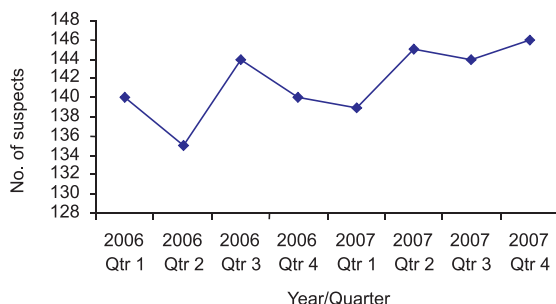
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That is, it covered 1.11 billion projected population of India. In this article the performance of RNTCP, quarter wise, has been analysed using the parameters viz., suspects per lakh population, percentage of smear positive cases, annualised new smear positive case detection rates, number of New Smear Positive (NSP) and New Smear Negative (NSN) cases and their ratios, 3-month conversion rates of the previous quarters and cure rates of the quarters of previous year.

Number of suspects per lakh population

The quarterly number of suspects examined per lakh population, also called as suspects rate, varied from 135 to 146 during 2006 and 2007. This rate was short (42 to 53) of the norm of 188 per lakh, fixed under RNTCP. The quarter wise suspects rate is depicted in figure 1. This rate was low in the second quarter of 2006 and high in the last quarter of 2007. However, it has crossed 140 mark in all the quarters except second quarter of 2006 and first quarter of 2007.

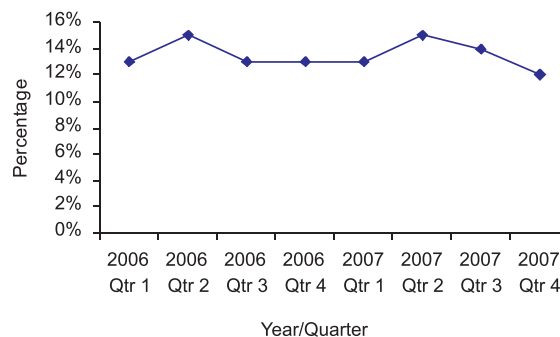
Fig 1: No. of suspects per lakh population



Smear positive cases

The number of smear positive cases among the suspects examined is one of the indicators of the programme. The percentage of the smear positive cases among suspects examined at the national level was ranging from 12% to 15%. It was maximum in second quarter of 2007 and minimum in the final quarter of 2007. The pictorial representation is shown in figure 2.

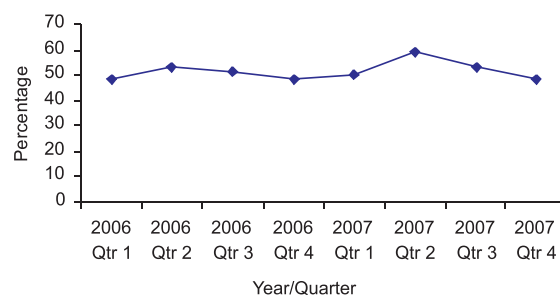
Fig 2: Percentage of smear positive cases among suspects



New smear positive case detection rates

The other indicator of case finding efficiency of the RNTCP is annualised new smear positive case detection rates. This is the rate at which the smear positive cases are being detected out of the total cases. The rates were ranging from 48 to 59 during different quarters of 2006 and 2007. It peaked at 59 during second quarter of 2007 and was low during first and fourth quarter of 2006 and fourth quarter of 2007. The performance is shown in figure 3.

Fig 3: Annualised new smear positive detection rates

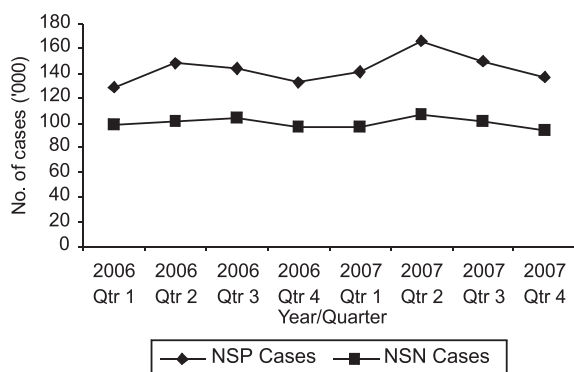


New Smear Positive (NSP) cases and New Smear Negative (NSN) cases

The number of new smear positive cases and new smear negative cases are other indicators of the programme. Figure 4 depicts the comparative situation of the number of NSP cases and NSN cases detected during 2006 and 2007. While the NSP cases were ranging from 1.29 lakh to 1.66 lakh cases per quarter, the NSN cases varied from

0.95 lakh to 1.07 lakh cases per quarter. The highest number of cases registered under both the categories was during second quarter of 2007. While NSP cases were least during the first quarter of 2006, NSN cases were least during the fourth quarter of 2007.

Fig 4: New smear positive and new smear negative cases during 2006 and 2007



The ratio of NSP cases to NSN cases are shown in Table 1. While going through these ratios for different quarters, it may be seen that the ratio was at 0.6 and 0.8 in one quarter each and 0.7 during the remaining six quarters. The expected ratio of NSP cases to NSN cases is 1:1. The maximum ratio i.e., 0.8 was attained during the second quarter of 2007.

Table 1: The ratio of NSP cases to NSN cases during 2006 and 2007

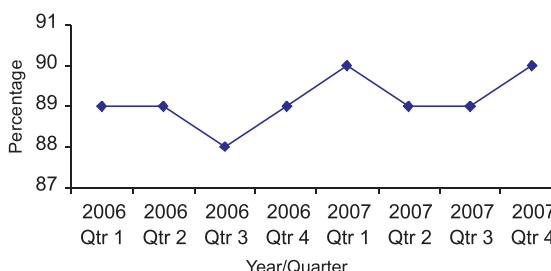
Year/Quarter	Ratio of NSP cases to NSN cases
2006 Qtr 1	0.8
2006 Qtr 2	0.7
2006 Qtr 3	0.7
2006 Qtr 4	0.7
2007 Qtr 1	0.7
2007 Qtr 2	0.6
2007 Qtr 3	0.7
2007 Qtr 4	0.7

Conversion Rates

This is the proportion of new smear positive cases registered in a particular quarter put on treatment,

converting to smear negative at the end of three months. The analysis has been taken up for the last quarter of 2005, all the quarters of 2006 and the first three quarters of 2007, as these results were published in the quarterly reports of 2006 and 2007. This rate ranges from 88 to 90. Out of the eight quarters during 2006 and 2007, the rate was 90 in two quarters, 89 in five quarters and 88 in one quarter. The performance is graphically shown in figure 5.

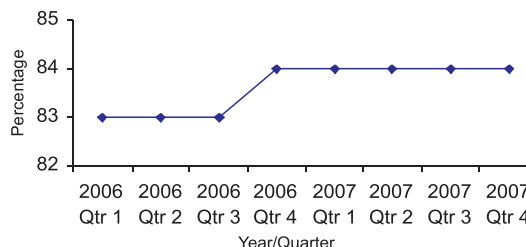
Fig 5: Three months conversion rates



Cure Rate

The cure rate is the proportion of smear positive patients (NSP cases registered in a particular quarter) who had 2 follow-up sputum examination negative, one of which is at the end of the treatment. The analysis has been taken up for years 2005 and 2006 as the cure rates are available only after a year of registration. This rate ranges from 83 to 84 for the years 2005 and 2006, which is shown in figure 6. The rate was constant at 83 in the first three quarters of 2005 and 84 in the last quarter of 2005 and all the four quarters of 2006. This is little short of the expectation of the rate i.e., 85 %.

Fig 6: Cure rates of the NSP cases



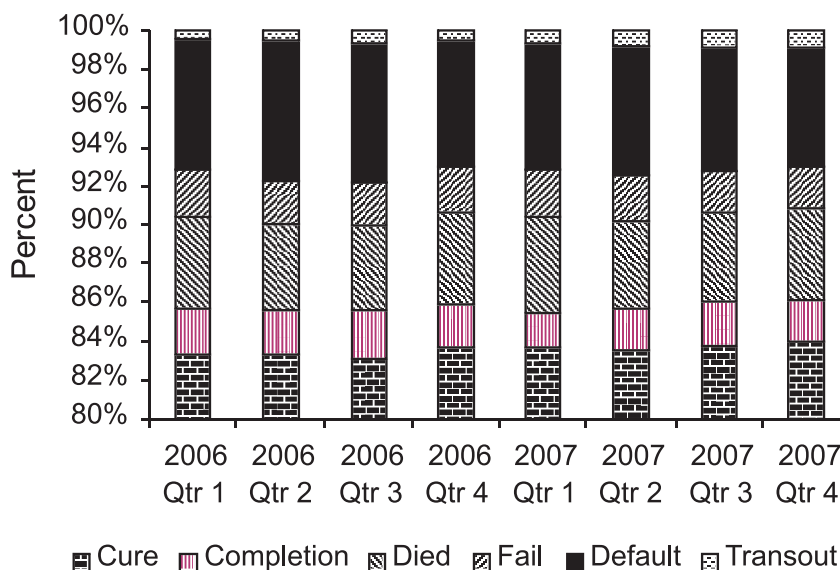
Outcome of the registered NSP Cases

It is observed from the figure 7 that the cure rate has almost been adequately achieved (85%).

However the other outcomes may also be analysed. The other outcomes are treatment completion, died, failure, default and transferred-out. The outcome of the registered patients in terms of percentage is shown in figure 7. The

percentage of treatment completion, death, failure and default were about 2%, 5%, 2% and 7% respectively. It is appreciated that the transferred-out is less than one percent.

Fig 7: Outcome of NSP Cases during 2005 and 2006



Conclusion

The progress of coverage of RNTCP was very good as it has achieved 100% coverage geographically thereby covering the entire population of the country as on march 2006. It was observed that the number of suspects per lakh population, percentage of smear positive cases, annualised new smear positive case detection rates, number of NSP and NSN cases and their ratios, 3-month conversion rates of the previous quarters and cure rates of the quarters of previous year were either meeting the requirements or little short of it.

References

1. Central TB Division, Directorate General of Health Services, New Delhi: Managing the RNTCP in your area, training course modules 5-9.
2. Central TB Division, Directorate General of Health Services, New Delhi: RNTCP Performance Report, India Third Quarter 2006
3. Website: tbcindia.org accessed on 01.04.2008