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Revised National Tuberculosis Control Program gets Evaluated in Kullu District, Himachal Pradesh, India, 2007

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Abstract

Background: The present evaluation study has been conducted with the following objectives: (i) To assess the treatment outcomes of Revised National Tuberculosis Control Program (RNTCP) in five microscopic centers of Kangra district under five tuberculosis units and (ii) To identify gaps and underlying contributing factors. Based upon the findings of (i) and (ii) we suggest appropriate measures to narrow down the existing gaps. **Materials and Methods:** We identified and interviewed health personnel involved, reviewed the documents and records pertaining to evaluation plan / guidelines, training records and reports generated by the tuberculosis units. We assessed the inputs, processes and outputs of the program across tuberculosis units. We calculated the proportion of staff of various categories trained and internal quality control (case detection); availability of drugs, Directly Observed Treatment Short- course (DOTS) providers and supervision (case management) and Information, Education and Communication (IEC) and funds distribution. (Logic model). **Result:** Over 90% of staffs of various categories trained with 100% supervisory visits. The total proportions of sputum positivity are 19%; 16% cross checking of the positive slides despite internal quality in place. 73% of the population knows that they should seek treatment for the cough more than three weeks. 89% of the patients have completed their treatment and 89% of the new sputum positive have been cured. **Conclusion:** RNTCP has successfully achieved all its targets in all the five TUs of Kangra District as per national norms despite several gaps. We recommend (i) filling of vacancies of medics and paramedics with re-orientation trainings / refresher courses; (ii) conduction of supportive supervision by the seniors.

Keywords: Extra pulmonary tuberculosis; Kullu; RNTCP tuberculosis unit.

Introduction

Tuberculosis is a major cause of death worldwide[1]; Tuberculosis (TB) kills two million people every year globally.[2] There were an estimated 8.8 million new TB cases in 2005, 7.4 million in Asia and sub-Saharan Africa. A total of 1.6 million people died of TB, including 195 000 patients infected with HIV.[3] As per WHO estimates in 2004, 370,000 persons in India died of tuberculosis (mortality rate 30 per 100,000 persons), India is highest tuberculosis burden country globally accounting for 1/5 of the global incidence, global annual incidence is 8.9 million[4], with 1.8 million cases occurring annually. More than 80% of the burden of tuberculosis is due to premature death, as measured in terms of disability-adjusted life years (DALYs) lost.[5]

National Tuberculosis Control Programme was established in India in 1962 to provide

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tuberculosis control services to people. The programme was proven insufficient and ineffective at properly detecting and treating tuberculosis. Since 1993, India has been implementing the Revised National Tuberculosis Control Programme that uses the DOTS strategy for TB diagnosis and treatment.

Revised National Tuberculosis Control Programme was implemented in Himachal Pradesh in phased manner in the entire Districts between 1995 to January 2002. Hamirpur was the first district where the Revised National Tuberculosis Control Programme was implemented in the year 1995. In Himachal Pradesh the annual risk of tuberculosis infection is 1.9% against a national average of 1%.[5] Study on the evaluation of RNTCP was done in the district Shimla during the year 2002-03.[6]

The Revised National Tuberculosis Control Programme was on going in Kullu District since 24th March 2001 and covering population about 4.05 Lakh.[7] Study on the evaluation of the RNTCP was done in the district Shimla during the year 2002-03 and in Kullu since its implementation in 2001 no evaluation of the Programme has been under taken by any agency. Therefore we under took the evaluation of Revised National Tuberculosis Control Programme with the following objectives.

1. To assess the achievement of the objective of the RNTCP Programme in terms of annual new case detection rate and case management / cure rate
2. To identify the strengths and barriers to the achievement of the objective of RNTCP.
3. Based on the finding of 1 and 2 we will propose recommendation to sustain strength and overcome barriers / gaps.

Methods

(1). Engaging all stake holders

All the stakeholders were first identified and details of the evaluation project was shared such as, (1) Evaluation objective (2) Evaluation issues under assessment (3) Methodology to be adopted for the evaluation (4) Data collection methods (5) Data analysis (6) Dissemination of results and to obtain, suggestions and consensus stakeholder included, District tuberculosis officer, medical officer tuberculosis and senior treatment supervisor / Senior treatment laboratory supervisor.

(2). Description of the RNTCP Programme

Review of the documents

Documents on Tuberculosis by government of India

We reviewed the following documents on Tuberculosis India RNTCP status report prepared by the Government of India, Directorate General of Health Services, Ministry of Health & Family Welfare, New Delhi:

- Tuberculosis India RNTCP status report 2006
- Tuberculosis India RNTCP performance report 2006
- Operational Manual for District Tuberculosis officers.
- Operational Manual for Medical Officers tuberculosis.
- Operational Manual for STLS / STS.
- Reporting formats for DTC / TU (New case detection, sputum conversion, cure rate) PHI reports forms.

(C). Data collection technique and tools

Quantitative methods: Review of the tuberculosis register, laboratory registers and treatment cards.

Qualitative methods: Using logic model. Both qualitative and quantitative method has been adopted for evaluation of RNTCP.

(3). Evaluation of the programme

We selected all four Tuberculosis units, Kullu

Table 3: Logic model for evaluation of Revised National Tuberculosis Control programme, Kullu district Himachal Pradesh, India 2006 (Case detection)

Levels of logic model	Programme elements	Indicators	Data needed for the indicator
Input	Trained medical officers	Proportion of the medical officers who attended the DOTS training **(92%)**	Number of medical officers who attended the **(69)** DOTS training Total number of medical officers (**75**)
	Trained lab. Technician	Proportion of the laboratory technicians who attended the DOTS training **(90%)**	Number of lab. technicians who attended the DOTS training **(27)** Total Number of the lab. Technicians **(30)**
	Trained health care workers	Proportion of the health care workers who attended the DOTS training **(92.53%)**	Number of the health workers who attended the DOTS training **(186)** Total number of health workers **(201**)
	Laboratory reagents and equipments	Number of the microscopic centers equipped with reagents, slides and microscope **(100%)**	Number of the microscopic centers equipped with reagents, slides and microscope **(5)** Total number of the microscopic centre **(5)**
	IEC materials (posters, banners, pamphlets etc.)	Number of the health facilities having IEC materials **(100%)**	Number of health facilities having IEC materials **(10)** Total number of the health facilities **(10)**
	Internal quality control	Number of supervisory visits for internal quality control	Number of supervisory visits conducted **(3)** Number of supervisory visits planned
	Trainings	Number of the trainings (**100%)**	Number of the trainings conducted **(1)** Number of the trainings planned **(1)**
Process	Sputum collection and examination	Proportion of the suspected cases referred for sputum microscopy (**100%)**	Number of the suspected cases referred for sputum microscopy **(1274)** Total number of the suspected cases **(1274)**
	Display of the IEC materials	Proportion of the health facilities displaying IEC materials (**100%)**	Number of the health facilities displaying IEC materials **(10)** Total number of the health facilities (**10**)
	Cross checking of slides	Proportion of the slides cross checked **(15.82%)**	Number of slides cross checked **(564)** Total number of slides collected (**3564)**
	Cases identified for sputum positivity	Proportion of the cases detected sputum positive **(18.44%)**	Number of the cases detected sputum positive **(235)** Number of cases referred for sputum microscopy **(1274)**
Output	Awareness about the symptoms and treatment of the tuberculosis	Proportion of the population who knows they should seek attention for cough longer than three weeks and its treatment **(73.33%), (86%)**	Number of persons who know they should seek attention for cough longer than three weeks and its treatment **P- (22)- V- (43)** Population surveyed **(30)-(50)**
Out-come	Reduction in transmission		

district to evaluate the RNTCP using logic model in terms of input, process, output and outcome indicators. We evaluated the Programme in two arms (1) case detection (2) cure rate and case management. (3) Information education communication.

Results

Stakeholder

Description RNTCP programme

The district Kullu has the population 4.05 lakh, with the four tuberculosis units and ten microscopic centers.

Activities at different levels

Peripheral level

Directly observed treatment short course chemotherapy (DOTS) is the key word of RNTCP to ensure cure, in which a trained

Table 4: Logic model for evaluation of Revised National Tuberculosis Control Programme Kullu district Himachal Pradesh, India 2006 (case management)

Levels of logic model	Programme elements	Indicators	Data needed for the indicator
Input	Drugs	Drugs available as per requirement **(112%)**	Drugs available **(196-CAT-1)** Drugs required **(175)**
	DOTS providers	Number of the DOTS providers in position **(100%)**	Number of the DOTS providers in position **(265)** Number of the DOTS providers sanction **(265)**
	Senior treatment supervisors	Number of the senior treatment supervisors in position **(100%)**	Number of the senior treatment supervisors in position **(4)** Number of the senior treatment supervisors sanction **(4)**
	Treatment cards	Treatment cards available as per requirement **(100%)**	Treatment cards available **(2000)** Treatment cards required **(2000)**
Process	Supervised treatment	Proportion of the patients receiving the supervised treatment **(100%)**	Number of the patients receiving supervised treatment **(235)** Total number of the patients put on treatment **(235)**
	Supportive supervision	Number of the supervisory visits	Number of the supervisory visits conducted **(3)** Number of the supervisory visits planned
Output	The patients completing the treatment	Proportion of the patients completing the treatment **(88.08%)**	Number of patients completing the treatment **(207)** Total number of patients put on treatment **(235)**
Outcome	The patients cured	Proportion of new sputum positive patients cured **(88.48%)**	Number of the new sputum positive patients cured **(123)** Total number of the new sputum positive patients put on treatment **(139)**

peripheral health worker watches the patient till patient swallows all the medicines in his presence. All Microscopic centers and DOTS centers at peripheral level of respective tuberculosis unit are under supervision of Medical officer-tuberculosis control.

Intermediate level

A team comprising a designated medical officer-tuberculosis control (MO-TC), a senior tuberculosis laboratory supervisor (STLS) and a senior treatment supervisor (STS) is based at a tuberculosis unit (TU) under the administrative supervision of the district tuberculosis officer (DTO). The authorities at tuberculosis unit are responsible for accurate maintenance of the tuberculosis register and timely submission of quarterly reports to district tuberculosis center.

District level

The district tuberculosis center (DTC) is the nodal point for tuberculosis control activities in the district. The district tuberculosis officer at the DTC has the overall responsibility of the

Table 5: From the logic framework to study design for a programme evaluation: IEC

Levels of the logic model	Indicators	Data needed for the indicator
Input	Proportion of tuberculosis funds allocated for IEC activities **(100%)**	Fund allocated for IEC **(40,000)** Total funds **(40,000)**
	Proportion of the health facilities having materials for IEC **(100%)**	Number of the health facilities having materials for IEC **(24)** Total number of health facilities **(24)**
Process	Proportion of the health facilities utilizing the funds for IEC **(100%)**	Number of the health facilities utilizing the funds for IEC **(24)** Total number of health facilities **(24)**
	Proportion of the health facilities displaying IEC materials **(100%)**	Number of the health facilities displaying IEC materials **(24)** Total number of the health facilities **(24)**
Output	Proportion of the people having correct knowledge about tuberculosis **(86%)**	Number of people having correct knowledge **(43)** Population surveyed **(50)**
Outcome		

programme at the district level and is assisted by a deputy medical officer, statistical assistant and other paramedical staff.

State level

A state tuberculosis officer (STO) is responsible for planning, training, supervising and monitoring of the programme in the state. He follows the instructions of the central TB division.

Evaluation of the RNTCP

We took all tuberculosis units for evaluation, the result were shown in the table 3,4 and 5.

Limitation

Because of the hilly terrain could not interview more people.

Discussion

All the tuberculosis units of the district were setup during 2002 except Manali, which start functioning from 2005.

Case detection

Input indicator: All the health service providers (Medical officers, laboratory technicians, multipurpose workers) are adequate, however, some of the technicians posted at district / or sub divisional hospitals carryout other routine tests besides RNTCP work due to shortage of laboratory technicians. All the Tuberculosis Unit centers were adequately equipped. IEC materials were prominently displayed in all Tuberculosis Units. However, supervision by district tuberculosis officer and medical officer tuberculosis posted at TUs was lacking as they were engaged in

activities like attending OPDs and also carryout patient care in the indoor besides RNTCP activities. Consistency of activities including training was hampered because of frequent transfer and posting of officers.

Process indicator

All suspected cases were referred for sputum examination. As per RNTCP guidelines five sputum positives and five sputum negative slides are to be crosschecked. Proportion of slides sent for cross checking was adequate. No discrepancy was reported from referral laboratory. One training course for a period 3 days of senior treatment supervisor was organized in the district. IEC material display in the district was adequate

Output indicator

Sputum positivity was low and people had adequate knowledge about where to report in case of suffering from cough for more than 3 weeks and also knew the treatment available at health care facility. The case detection rate of district Kullu was more than target even though all the medical officer and laboratory technician were not trained.

Case management

Input indicator

Buffer stock of anti tuberculosis drug was available in the district, and tuberculosis units. The treatment cards were sufficiently available. Number of Directly Observed Treatment providers and supervisors were in place.

Process indicator

All patient received supervised treatment. Supervisory visits of district tuberculosis officer were not adequate or planned.

Output indicator

Though proportion of patients receiving the treatment was adequate still there is scope to improve it by regular and frequent supervisory visits.

Outcome indicator

Proportion of patients cured was adequate and fulfilled the target fixed for this purpose.

Information, education and communication

Input indicator

Fund allotment was proper and adequate. The programme activity is good in the district Kullu.

Process indicator

Allocated fund utilization for the health facility was proper.

Output indicator

IEC activity was adequate and it was evident from people to whom we evaluated.

RNTCP has achieved its target of cure rate in all the four TUs of Kullu District as compared to other districts of Himachal Pradesh like (Kinnaur, Chamba, and Sirmour) where the cure rate was low. Similarly case detection rate was higher than Hamirpur (72%), Shimla (81%).

Conclusion

As per the secondary data analysis we evaluated RNTCP programme in Kullu district and found it to be successful.

Strength

The health infrastructure is well developed and IEC activity has increased awareness of people about tuberculosis. The laboratory set up was good.

Barrier

Two TU units of the district are situated in remote, inaccessible hilly terrain and are out bound for three months because of heavy snowfall. This hinders communication from district headquarter Kullu making it difficult to provide adequate and proper care to the population.

Recommendation

- Supervision by the district and Tuberculosis medical officers needs to be strengthened. This can be achieved by regular and consistent posting of officers. State Government should initiate steps for creating public health cadre to facilitate such process.

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