FIELD PROJECT REPORTS

By

Omesh Kumar Bharti

(MAE-FETP Scholar 2007-2008)

Dr. Omesh Kumar Bharti, FETP Scholar VII th Cohort, being felicitated on behalf of the Government of Kerala, for his presentation on Intradermal Antirabies vaccination- Experiences of a hill state, Himachal, at National Workshop for developing Guidelines for Intradermal rabies vaccination in Kerala at Triruvananthapuram, Sep 20, 2008.

The National Institute of Epidemiology,
(Indian Council of Medical Research),
R- 127,TNHB, Ayapakkam, Chennai TN- 600077

January 2009

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Submitted in partial fulfillment of the requirements

for the degree of Master of Applied Epidemiology (M.A.E)

of

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The National Institute of Epidemiology,
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R- 127,TNHB, Ayapakkam, Chennai TN- 600077

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CERTIFICATION

This is to certify that all the field projects submitted in this bound volume are the original works carried out by Omesh Kumar Bharti during the two field postings of six months duration each under the guidance of the faculties of the National Institute of Epidemiology (ICMR), Chennai . This is in partial fulfillment of the requirements for the degree of Master of Applied Epidemiology and has not been submitted earlier, in part or whole, for any other publication or degree.

Director
National Institute of Epidemiology
(Indian Council of Medical Research)

Dated: 30/11/15

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(Omesh Kumar Bharti)

Table of Contents

Section 1: First field posting

1.1. SITUATION ANALYSIS OF HEALTH SYSTEM IN SHIMLA DISTRICT OF HIMACHAL PRADESH, INDIA 2008

I was posted as state blood transfusion officer at State blood bank, Shimla, before undergoing the FETP course. After my first contact programme I was given the assignment to do a situational analysis of the health system in the district of Shimla and it was for the first time that I met different data collection officers and realized in a comprehensive way the health problems of my own district.

OBJECTIVES

1. To describe the health delivery system, state of people's health and determinants of health of the District Shimla.
2. To document the medical care and laboratory facilities available within the district & state, so that in cases of outbreaks and disaster linkages for networking are in place, precious time is not wasted.
3. To identify the major public health priorities and key concerns in health delivery in the district and state.
4. To compare the present level of indicators of health related goals of the district with the state and the national level goals and millennium development goals.

5. To recommend measures to strengthen response towards achievement of millennium Development goals and National Health Goals.

THE HELTH SITUATION IN INDIA:-

India, a country where more than 5000 years B.C. Yajurveda, was written, one of the most ancient documented record of health and disease, is struggling to keep its people healthy. India where thousands of years ago the concept of Yoga, hygiene and healthy living originated, is not able to make health as a routine agenda of Indians and their daily life.

Back to the basics needs to be the motto if India really want to be a healthy country.

India has done a lot in health sector but mortality and morbidity is still high that raises questions on our public health delivery system and creates doubts about attaining the National Health Policy[1] goals and Millennium Development Goals (MDGs) well within the stipulated time frame.

With the introduction of NRHM by Government Of India to strengthen the whole health system of India by clubbing all health programmes under this mission. NRHM proposes to establish linkages between the health delivery system and the beneficiaries and it is hoped that this would bring the health services to the doorsteps of the needy.

India is on the verge of eradication of Leprosy and doubled life expectancy that shows positive face of the public health system but IMR, MMR, incomplete immunization,

Malnutrition, anemia in young adolescent girls and women, outbreaks & epidemics and the Non Communicable Disease epidemics running in the background and becoming the future threat and challenge to the health system, raising doubts about the quality and efficiency of public health care. For all this we need to keep a watch and strengthen the existing surveillance system that is being done under the IDSP.

HIMACHAL

AN INTRODUCTION:-

After Independence, 30 princely states of the country were united and Himachal Pradesh was formed on 15th April, 1948. With the recognition of Punjab on 1st November, 1966, certain areas belonging to it were also included in Himachal Pradesh. On 25th January, 1971, Himachal Pradesh was made a full-fledged State. The State is bordered by Jammu & Kashmir on North, Punjab on West and South-West, Haryana on South, Uttar Pradesh on South-East and China on the East.

The hilly areas of composite Punjab State which were merged in Himachal Pradesh on the Ist November, 1966 on the reorganization of composite Punjab on the linguistic basis. Himachal Pradesh appeared on the administrative map of the country on the 15th April, 1948. and on the 1st November, 1972 and Shimla District come up on the administrative map of the state.

Himachal Pradesh is a small mountainous state covering 55,673 sq. km in the Western Himalayas, with 95% of its topography being hilly and 91.3% of its nearly 6.2 million people scattered across over 20,000 rural villages. Most of the villages have small dwellings with population less than 500. Himachal has overall done considerably well in many of the human development indicators and has been considered a progressive state. State Vision 2008, is also a step in meeting the challenges and targets put forth in Millennium Development Goals.

One of India's most well developed state, Himachal Pradesh is well connected by Roads from state headquarter, although Rail network is limited to two narrow gauge and one broad gauge train tracks and so is with air connectivity. Shimla to Kalka and Pathankot to Jogindernagar are the two narrow gauge rail link of the British time and are operational. Nangal Dam to Una is the only Broad gauge link with in the state. Major Airports are Jubbarhatti (Shimla), Bhuntar (Kullu) and Gaggal (Kangra). It has a marvelous network of voice communication and good teledensity. It has a literacy rate of 77.13%.

Under the recently launched Integrated Disease Surveillance Project, the surveillance and lab network is being strengthened to detect early warning signals of impending outbreaks for effective timely response.

IDSP include diseases like malaria, Typhoid, Cholra, Diarrhoea, tuberculosis, measles, Polio, Plague, HIV, hepatitis-B, Hepatitis-C, Road accidents, Water quality, air quality, non-communicable diseases risk factors and vector born diseases.

Himachal Pradesh, the north Indian hilly state has almost all the health indicators well above the national average but being hilly state and widely difficult geographic terrain

and have clear cut disparities in public health facilities and health standards in different geographic parts of the state. The most common causes of mortality in the state are respiratory diseases, road accidents, diarrhea and other infectious diseases. The total DALYs lost per 1000 population in Himachal Pradesh were 379, which was slightly higher than India (344 per 1000 population)[2]

Table 1:Population, villages and area covered by various levels public health institutions in the Shimla District, state in India.

		Himachal Pradesh 2005	*India 2005*
RURAL POPULATION COVERED PER HEALTH INSTITUTION			
One Sub-Centre	(2243 in Shimla)*	2838	5401
One Primary Health Centre	(7206 in Shimla)	13367	32469
One Community Health Centre	(70,000 in Shimla)	88911	243427
AVERAGE AREA (SQ. KMS) COVERED BY:			
One Sub-centre	(16.3 in Shimla)	26.9	23.38
One Primary Health Centre	(54.94 in Shimla)	126.8	140.52
One Community Health Centre	(270 in Shimla)	843.5	1054.84
AVERAGE NUMBER OF INHABITED VILLAGES COVERED BY:			
One Sub-centre		8.46	4.46
One Primary Health Centre		39.85	26.81
One Community Health Centre		265.08	201.27

**Human development report, district Shimla,2006.*

Source: Directorate of Health Services, Himachal Pradesh.

Fig 1:MAP OF HIMACHAL:

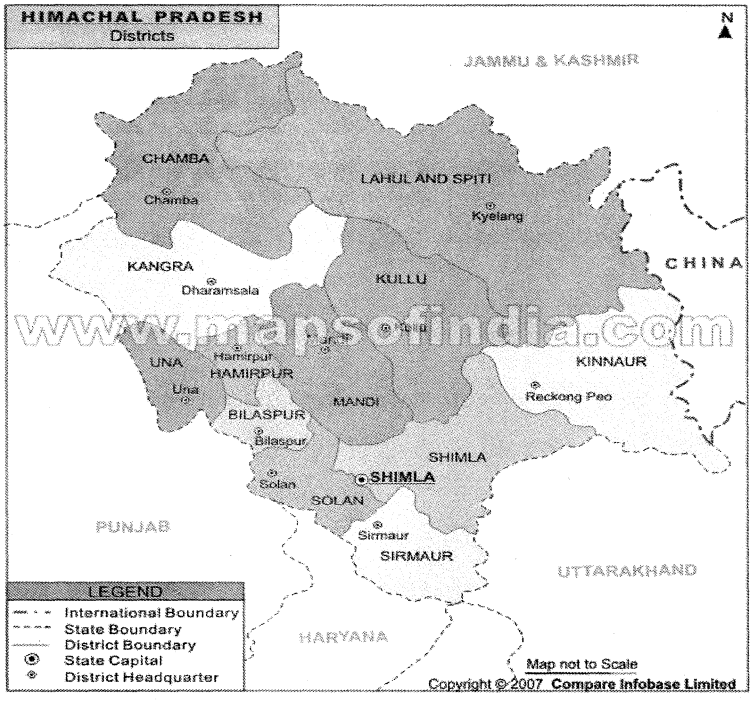
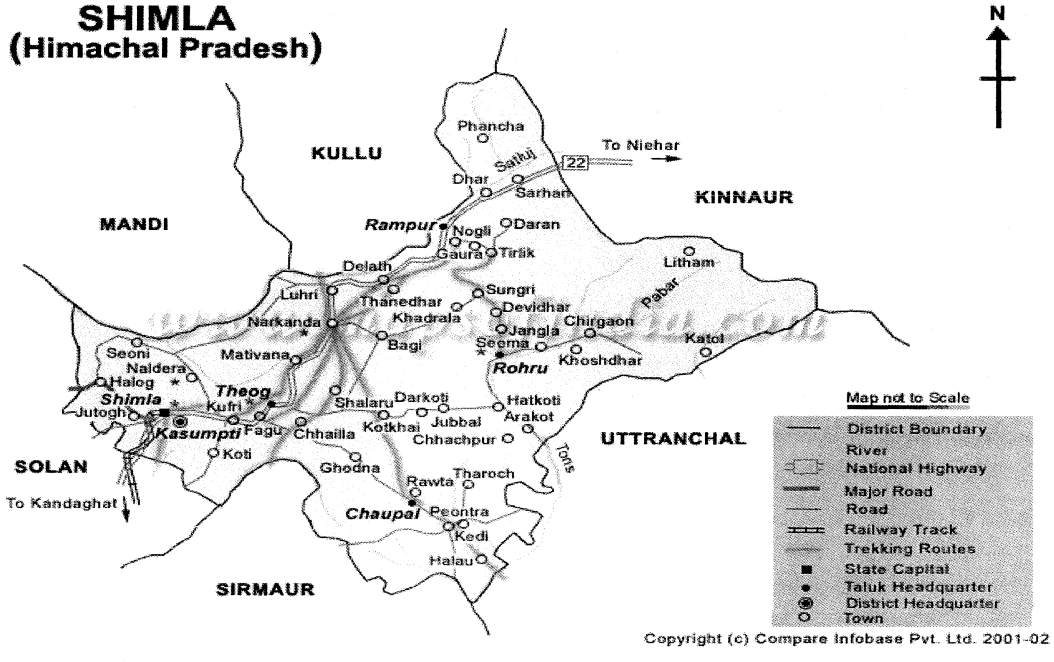


Figure: 2 District map of Shimla Himachal Pradesh



Source- Maps of India.

Methods

Data source

The data was collected from various government central and state departments, through published surveys by National Family Health Survey (NFHS-111)[3], Reproductive and Child Health - District Level Household Surveys (DLHS RCH II for the District Shimla)[4],Census, Himachal Pradesh Human Development Report 2002[5], Sample Registration System (SRS-2006)[6],India country report on MDG[7], [8] ,National Health Profile 2006 [8]Health Management Information System (HMIS),District level analysis of Census 2001[9] reports of health department; reports available on various government websites; Annual report of Disease patterns of hospital patients (International classification of Disease)[10] Census of India 2001[11]personal communication with district and state level health managers, Annual report of Disease, Personal communication with District Welfare Officer, Department of women and child welfare, , Irrigation and Public Health[11]; Department of Statistics, Rural Development, Total Sanitation Campaign, and Deputy Commissioner Shimla.

The data thus collected and compiled through various sources were tabulated; cross validated and analyzed to study the status of progress towards the Millennium Development Goals and comparing them with National health Goals[12] and State goals[13] . Library support was provided by National Institute of Epidemiology, State Health and

family Welfare Training Centers at Shimla; Medical college libraries of Indira Gandhi Medical college Shimla.

In case of conflict/ variation, NFHS/SRS, which is more recent, has been quoted/preferred as the true estimate. Similarly the recent Maternal Mortality Study of SRS, which gives lower figures, has been quoted as truer estimate. In case of immunization coverage, the routine HMIS reporting has very high figures; NFHS data being most recent estimate considered to be a better representation.

Population of Himachal is as follows:-

Table 2: Statistics Census 2001

Census 2001	Total Pop	Rural Pop	Urban Pop	Males	Females	Sex Ratio	0-6 Sex Ratio	Density of pop	DGR
H.P.	60,77,900	54,82,319	5,95,581	30,87,940	29,89,960	968	896	109/SQ. KM	17.54
SHIMLA	722502	555269	167233 (23.1%)	380996	341506	896	9O3	141	17.02

Table 3: Characteristics of the population of Shimla district, including M.C. SHIMLA, HIMACHAL PRADESH, India, 2001

Population group	Population size (in thousand)	Proportion of the total (%)
0-4 years of age	68.1	7.8
5 - 14 years of age	175.7	20.2
15 -29 years of age	258.7	29.8
30-44 years of age	189.2	21.8
45-59 years of age	107.9	12.3
60 + years of age	64.4	7.4
Male	455	52.7
Female	409	47.3
Above poverty level	575.52	66.61
Below poverty level	288.48	33.39
General caste	613.44	71.0
Schedule caste	234.14	27.1
Schedule tribe	6.04	0.7
Other backward caste	10.3	1.2
Literacy	682.56	79.68
Total population size	864	100

LABORATORY RESOURCES

All the health institutions have laboratories, which have been strengthened under Revised National TB Control Programme (RNTCP) & Integrated Disease Surveillance Project (IDSP). Routine examinations like fever blood slide for malaria are being done at Primary Health Center (PHC) level, sputum examination for AFB are being done in all block level institutions which are designated as microscopy centers. Biochemical examinations are being done in some Primary Health Centers, All Block Hospitals, and Sub divisional hospitals in addition to the Regional Hospital Shimla. There is a water quality laboratory at Central Testing Laboratory at D.D.U.Hospital, Shimla.

The Medical College Microbiology Lab at IGMC Shimla is the only reliable laboratory for culture and sensitivity studies. Pathology lab of medical college Shimla is the

resource for all Histo-pathological examinations. AFP stool culture for poliovirus is done at Central Research Institute (CRI) Kasauli, District. Shimla.

Table 4: Existing laboratory facilities at various levels of institutions

Level of Institution	*Facilities available*
Primary level (PHC level)	• Urine – RE & Hemoglobin estimation • Malaria & Sputum microscopy (At microscopy centers) • VDRL in STD units.
Secondary level (District Hospital Shimla)	• Urine/Stool: Routine exam. • Hematological investigations • Biochemical investigations Serology :- Widal test, HIV testing , HBSAg, HCV, STS/VDRL Malaria & Sputum microscopy (At microscopy centers)

TABLE 5: LABORATORY FACILITIES AND NETWORKING IN DISTRICT SHIMLA FOR DISEASES COVERED UNDER INTEGRATED DISEASE SURVEILLANCE PROGRAMME, HIMACHAL PRADESH

Disease	Lab	Confirmatory test	Load	*Advance labs and tests*
Typhoid	Indira Gandhi Medical College, Shimla.	Blood Culture of Salmonella	25	CRI, KASAULI
Leishmaniasis	Indira Gandhi Medical College, Shimla	IggM antibodies	25	National Institute Of Communicable Disease, Delhi
Measles	National Institute Of Communicable Disease, Delhi	IGgm antibodies	25	National Institute Of Virology, Pune: Culture
Dengue	National Institute Of Communicable Disease, Delhi: Serology	Isolation of dengue virus from serum, virus genom by PCR.	20	National Institute Of Virology, Pune: Culture
Japanese Encephalitis	National Institute Of Communicable	Serology	20	National Institute Of Virology, Pune: Culture

Disease	Lab	Confirmatory test	Load	*Advance labs and tests*
Hepatitis	Disease, Delhi: IGMC, Shimla	Hep-A & C, anti Hav & Hcv IGgM antibodies	100	National Institute Of Virology, Pune: Culture
Plague	Indira Gandhi Medical College, Shimla.	Culture for Y. pestis	20	PGI,Chandigarh
Japneese encephelatis	NICD-Delhi	IGgM antibodies	20	National Institute Of Virology, Pune: Culture
HIV	Voluntary Counseling &Testing Centre, Shimla	ELISA in VCTC	100	Indira Gandhi Medical College Shimla Lab
Rabies	Central Research Institute Kasauli	Histopathology for Negri bodies	10	National institute of mental health and neurosciences.
Polio	Central Research Institute Kasauli	Virus isolation of polio virus	20	NICD, Delhi

DISEASE PROFILE OF SHIMLA DISTRICT:

The major communicable disease health problems in the district are Chronic Obstructive pulmonary Disease (COPD), Diarrhoeal disease due to poor water quality and poor sanitation are common. Outbreaks of Viral diseases like Hepatitis, measles, mumps, and chickenpox occur frequently but often go under reported. Other notable health problems with high prevalence are anaemia, malnutrition, chronic diseases like hypertension, arthritis and blindness diabetes due to ageing population, changing lifestyle and stress.

With the launch of IDSP in April 2005 in the state and the district diseases now included for monitoring are malaria, typhoid, cholera, diarrhoea, T.B., measles, polio, plague, HIV, Hepaitis-B, Hepatitis-C, road traffic accidents, water and air quality monitoring and NCD risk factors.

The diseases to be included in the IDSP in Himachal are kala-azar, scrub typhus, dengue, chickungunia and acute influenza.

Table 6: A comprehensive disease data of the district Shimla was collected in 2004 by the district health officer and the details of the diseases was as follows:

DISEASE	CASES	PREVALENCE
1. ACUTE RESPIRATORY DISEASES	126048 CASES	1458/10,000
2. ACUTE DIARRHEAL DISEASE	53358 CASES.	617/10,000
3. ENTERIC FEVER	3284 CASES.	38/10,000
4. TUBERCULOSIS	1324 CASES.	15/10,000
5.PNEUMONIA	1275 CASES.	14.7/10,000
6. MEASLES	456 CASES.	5.2/10,000
7. ROAD ACCIDENTS	455 CASES.	5.2/10,000
8. VIRAL HEPATITIS	336 CASES.	3.8/10,000
9.MALARIA	27 CASES.	0.3/10,000
10. Prevelance of complete blindness	-	857/ lakh popn.(DLHS2002)
11. Prevelance of partial blindnesss	-	2798/lakh popn.
12. Prevelance of Tuberculosis	-	581/lakh popn.
13. Prevelance of malaria	-	435/lakh popn
14. Number of blood donations/year in H.P.	-	12000 Units
15. Number of voluntary donations in the state	-	7200 Units
16. Number of blood banks in state	-	19
17. Number of thalasemia patients in state	-	62

Road accident profile of the district*:-

More people are killed on the roads than murdered in Himachal. A total of 2847 accidents took place in Himachal in the year 2007 and 930 people lost their lives and 5027 persons were admitted in hospitals with serious injuries. A total of 536 black spots have been identified in Himachal with 53 of them In Shimla and action is needed to correct them.

The accident fatality rate is higher in Shimla than in the state, Blind spots in Shimla are:

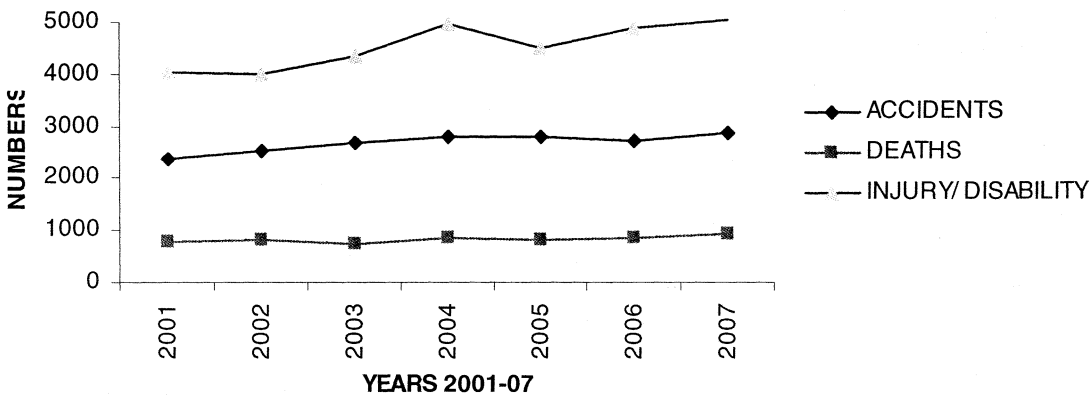
1. Theog- 9.
2. Rampur 8
3. Sunni- 8.
4. Shimla- 7.
5. Kumarsain- 6.
6. Rohru- 6.
7. Kotkhai- 6
8. Chaupal- 3.

Table 7: ACCIDENTS IN HIMACHAL: ON AN AVERAGE 820 PERSON DIE EACH YEAR ON THE ROADS .

YEAR	ACCIDENTS	DEATHS	INJURY/DISABILITY
2001	2371	756	4029
2002	2524	802	4009
2003	2680	733	4358
2004	2808	836	4975
2005	2797	812	4507
2006	2727	867	4897
2007	2874	930	5027
TOTAL	18781	5736	31802

*The police/Traffic HQ at Shimla-2007

Fig: II Trend of Road Accidents in Himachal 2003-2008



[1] DDU HOSPITAL,Shimla

Fig 4: RTA Shimla

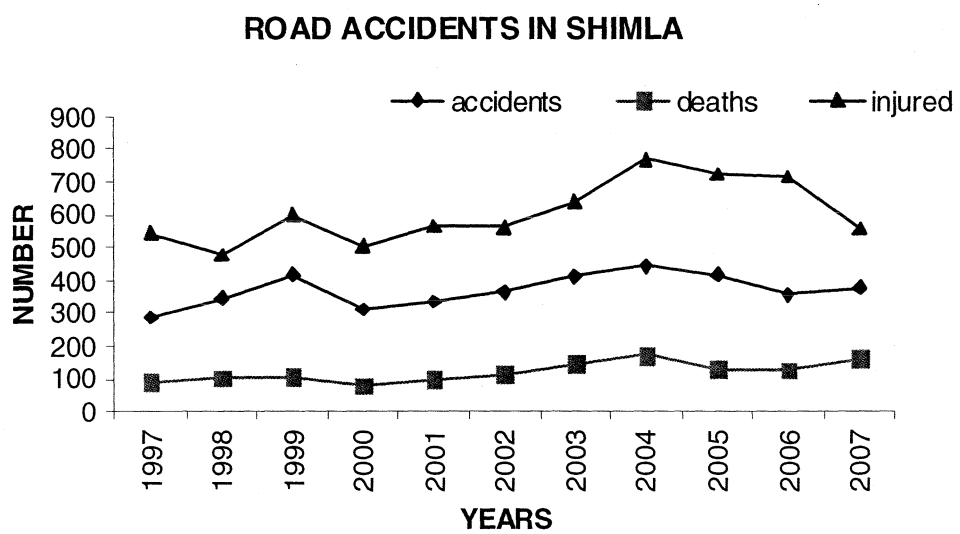
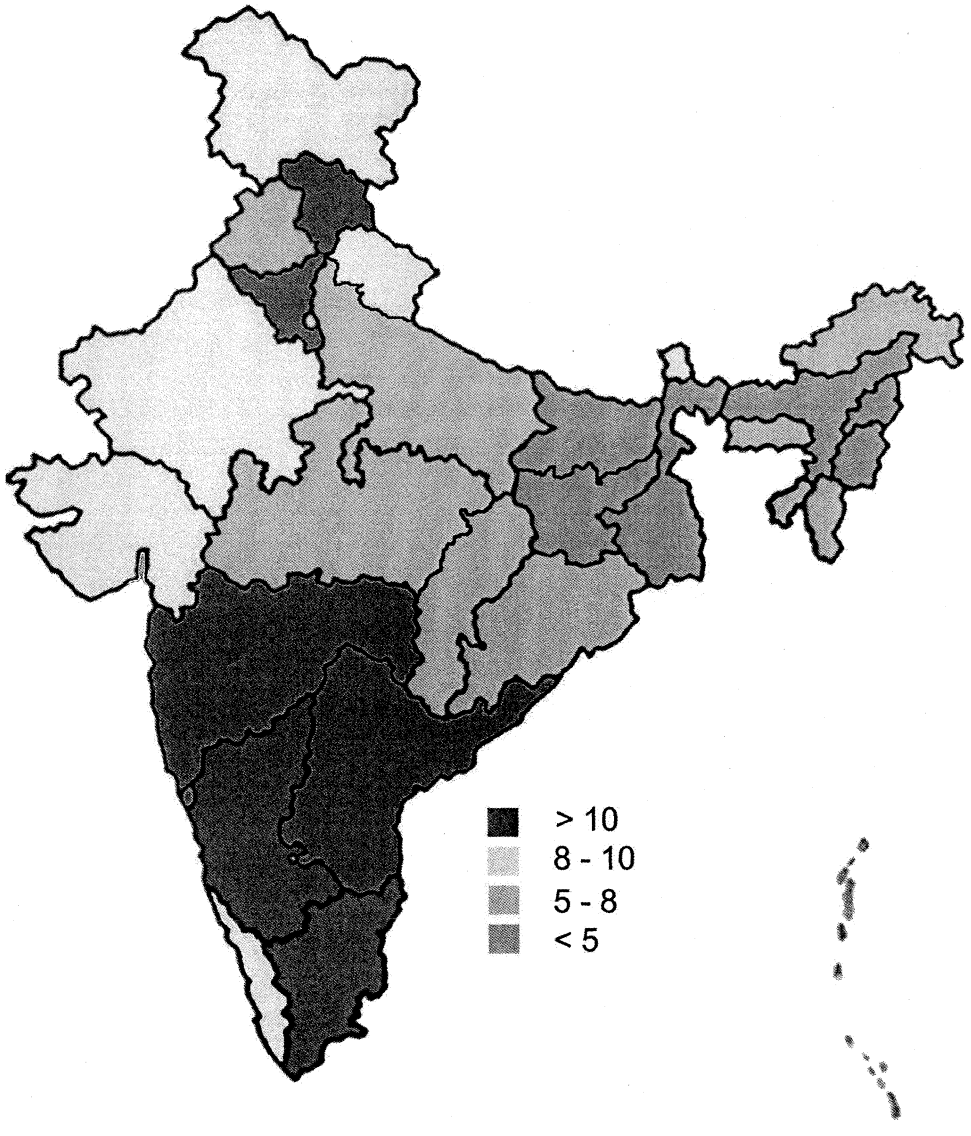


Fig 5: H.P.accident rate one of the heighest in country (Red) in India-Source: Movacon-GOI 2007



Changing weather conditions and diseases:

Another emerging problem of the district is steady rise of average temperature and this is a danger sign as for as tropical diseases are concerned[14]. As per the WHO report ambient temp has increased by 0.4^{oc} in the Indian sub continent therefore an increase in average

temperature of Shimla by 1^{oc} is a warning sign. About 10 years back there used to be no mosquitoes or flies in Shimla but they are visible now indicating the impeding danger of new diseases .Take for example he upper respiratory tract diseases witnessed an increase from 88548 OPD cases to 197162 OPD cases of pharyngitis, laryngitis and asthma. The simple reason for increase in allergy is that with the increase in temperature the pollens from the debdar trees find a suitable dry atmosphere to move in yellow waves from one place to another and cause allergy in widespread areas. These pollens are yellow in colour and are highly potent allergens. The earlier damp atmosphere was not suitable for pollen spread as the dampness would prevent the flow of the pollens and would not allow them to cause widespread allergy and diasease. The slow increase in temperature and decreased snowfall is adding to the dry atmosphere and thus diseases hitherto unheard of in the hills of Shimla.

Fig 6: Average minimum and maximum temperature in temperate wet zone (Mashobra, Shimla, HP) Source: Climate Change - Senstivities And Mitigation Potential Of Landuse Systems by *Prof. Kartar S. Verma* *Department of Silviculture and Agroforestry Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan (H.P.) 173 230*

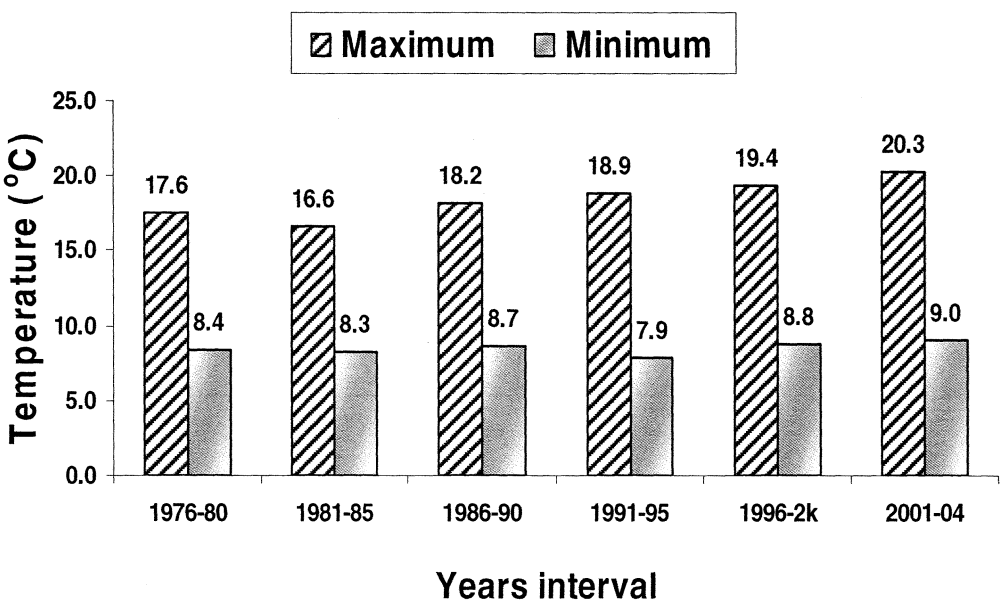
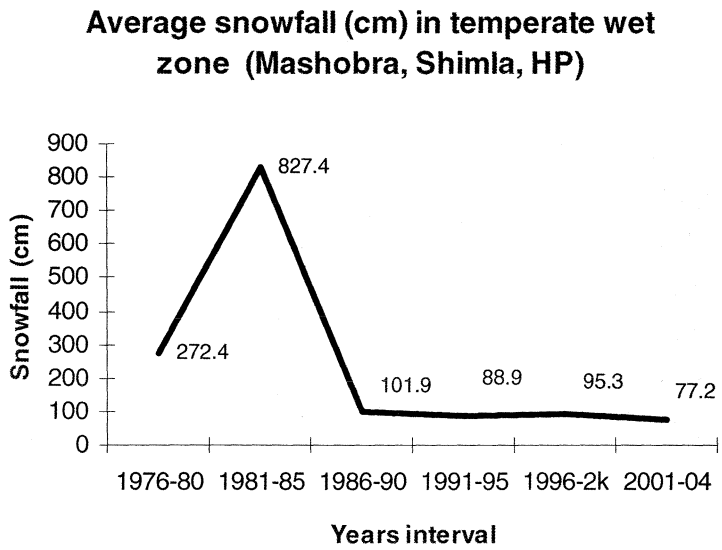


Fig7: Similarly with rise in temperature there is decrease in average rainfall



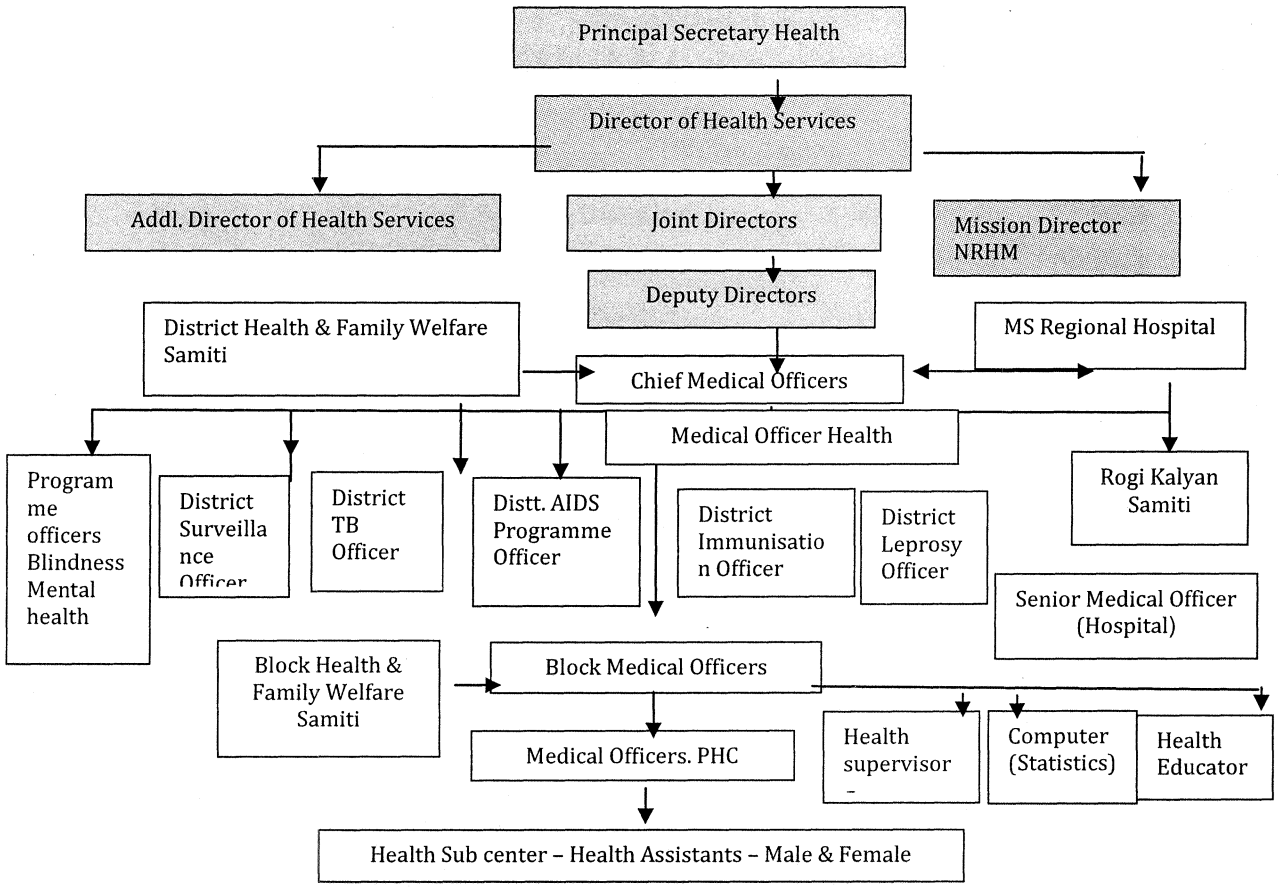
Gap between minimum and maximum temperature in dry temperate zone is increasing. It was 19.3 ^{O}C during 1991-95 which has increased to 20.4 ^{O}C, an increase of 1.1^{O} C .

Table 8 KEY HEALTH PRIORITIES IN DISTRICT SHIMLA,HP,INDIA,2008

	Key elements	Ongoing prevention and control programmes
Malnutrition	• 50% prevalence in children under 5 in the district	• Supplementary nutrition under ICDS • Midday school meal programme
Anemia in women	• 40% prevalence in women of age 15-49	• IFA tablets give under RCH programme to antenatal women • Adolescent anemia screening by the ICDS and nutritional supplementation
Diarrheal diseases	• Prevalence 6% • Sanitary toilets in only 28% rural households	• In High Transmission Season • Daily/ Weekly Reporting • Adequate Supply Of Medicines And Ors/ IV Fluids At All Levels • Inter-sectoral Co Ordination For Water Quality • Health Education
Respiratory diseases	• 25% prevalence • Prevalence of smoking (and passive smoking) • Indoor biomass fuel consumption leading to air pollution. • Tuberculosis.	• Under 5 children covered under RCH: Cotrimoxazole is available at sub-centre level • Tuberculosis control programme is in place in the district.
Voluntary blood donation	• 60% at present need to be 100%	• Various programmes are underway to motivate people to • donate blood voluntary.
ACCIDENTS	• Every year 820 person die in road accidents in Himachal 120 of them die in Shimla.	• All the black spots identified need to be corrected. • 3-Es i.e. engineering, enforcement and education need to be stressed.
HIV/AIDS	• With 12.5% of total cases of HIV in the state, Shimla is at third spot.	• More awareness is needed and rout of spread need to be contained. • Factors of increasing cases of HIV need to be studied as total number in 2006 was 2170 and in 2007 is 2511.

Fig 8 ADMINISTRATIVE STRUCTURE

Flow chart illustrating the administrative structure of the health system Himachal Pradesh, India) 2007



The health workers are delivering the various public health services like immunization, disease surveillance, behavior change communication, antenatal care, supply of contraceptives and basic first aid. They also conduct periodic surveys for malaria census, eligible couple survey, and family health awareness campaign. The monthly reports are submitted on a prescribed format and analyzed and compiled and block level on HMIS software for further transmission documentation, and analysis.

Community participation in health has been institutionalized through village health committee (PARIKAS). The linkage with the elected representatives of local self-government, the panchayat, is through village health committee which is a mechanism for inter sectoral co-ordination, grass root planning, and use of the untied funds provided under NRHM at sub centers. At hospitals the mechanism for community management is through Rogi Kalyan Samitis (RKS). Linkages with Integrated child Development Project are enabling better outreach and utilization of services. Another system of accountability is the public representatives. These consist of village Pradhans, Members of Legislative assemblies, Ministers, members of Parliament. They voice peoples' concerns for better facilities mainly with respect to medical care. They also indirectly influence transfer postings of all staff. Media is another major stakeholder of citizens' rights.

Table 9: Comparison of Selected Health Indicators: Himachal Pradesh & India

Health Indicators of District Shimla compared to National Goals and Status

	National	DISTRICT Shimla	STATE	INDIA
ICrude Birth Rate	21	18.8 Census 2001 15.9 (DLHS 2002-4)	18.8 (SRS 2006) 18.3 (NFHS 3)	23.5 (SRS 2006) 23.1 (NFHS 3)
Crude Death Rate	-	3.84	6.8 (SRS 2006)	7.5 (SRS 2006)
Infant Mortality Rate	45	17.8 ICDS-H.P.*	50* (SRS 2006); *36 (NFHS –III 2005-6)17.1(ICDS)*	57 (SRS 2006)** *57 (NFHS –III 2005-2005-*
Maternal Mortality Rate	200	NA	287 (SRS 1997-2003)	301 (SRS 1997-2003

***5th joint review RCH-II Himachal.**

Table: 10 Comparison of state and district health indicators

Indicator	STATE GOAL-2008	Himachal Pradesh-2008	District Shimla -2008 DLHS-2002
CDR	7	6.8 (SRS-2006)	3.84 DLHS-2002
birth rate	17	18.8(SRS-2006) 18.3(NFHS-2006)	12.79 DLHS 2002
Infant Mortality Rate	45	36 (NFHS-3) 50(SRS-2006) 21.7(ICDS-H.P.)	18.44 DLHS 2002

MILLENIUM DEVELOPMENT GOALS:-

A COMPARISON;The state of Himachal as a whole are on track towards most of the MDGs and so is with SHIMLA district that is , achieving objectives of Millennium Development Goals.

Table 11 Indicators of progress for the health related millennium development goals, District Shimla, India, 2005-06

Goal	Indicator	Value of the indicator		
		In Shimla	In Himachal	In India
Goal 1	Prevalence of underweight children < 5	30%*	36	46
	Proportion of population below minimum	-	7.2	28.3
	Percentage of children 6-59 month of age	8	28.9	21
	Proportion of infants under six months who are exclusively breastfed (NFHS 3)	40	27.1	46.3
Goal 4	**Under-five mortality rate (NFHS 3)**		41.5	74.3
	Infant mortality rate (NFHS 3)	14	36,17.1	57
	Measles immunization among children under one (DLHS2 / NFHS 3)	95	86.3, 89.7	58, 58.8
Goal 5	Maternal mortality ratio (RHMIE- SRS)	170	287	301
	Proportion of births attended by skilled	75	50.3, 51.4	48.3,
	Contraceptive prevalence rate (DLHS 2/	60.3, -	65.4. 71	--, 48.5
	Percentage of women receiving antenatal care (DLHS 2/ NFHS 3)		68, 90	50, 50.7

Goal		Indicator	Value of the indicator		
			In Shimla	In Himachal	In India
Goal (HIV)	6	HIV prevalence among 15-24 years old		0.13%	0.36%
		Condom use rate of the contraceptive	12	11.5	5.2
		Number of children orphaned by		NA	2
		Percentage of people using a condom during most recent higher risk sexual encounter (NACO 2000)	50	55.5	49.3
		Percentage of STI clients who are diagnosed and treated according to guidelines	NA	NA	NA
		Percentage of HIV-positive women receiving anti-retroviral treatment during pregnancy to prevent mother to child transmission of HIV	NA	NA	NA
Goal (Malaria) [2]	6	Malaria death rate	O death 27 cases	0 Death 176 cases	990 deaths of 1781336 cases
		The proportion of households having at least one insecticide treated bed nets	Nil	Nil	

Goal		Indicator	Value of the indicator		
			In Shimla	In Himachal	In India
Goal (TB)	6	Prevalence and death rate associated with tuberculosis (Tb India 2007, Rntcp Status Report Year Of Refrence 2005)	257/2 2007	235/4.5 2007	312/ 4.47
		Proportion of tuberculosis cases detected and	93(88)	87	86
		Percentage of estimated new smear-positive tuberculosis cases registered under the DOTS approach	81	81	66
Goal 7		Proportion of population with sustainable access to an improved water source, [3] urban and rural	87.5(R) 97.3(U)	86	86
		Proportion of urban population with access to improved sanitation [4]	20%	7.1%(U) 18.9%(R)	33%
Goal 8		Proportion of population with access to affordable essential drugs on a sustainable basis [5]	NA	NA	35

DISCUSSION ON MILLENNIUM DEVELOPMENT GOALS:-

Himachal is moving towards a growth rate of 8.5% and has high per capita income of Rs.36,6579 (2006-07). Persons below poverty line are 7.2% as per World Bank statistics, but rural development department measures poor as 27% of families.

The achievement on child survival is mixed-on one hand there is decline in infant mortality, on the other hand the decline in immunization coverage is cause for concern (83%-74% in HP over the period between NFHS II & NFHS III).

The Maternal mortality has seen a decline to 287 in the state and 301 in India according to the recent study by Registrar General, India, New Delhi & Centre For Global Health Research University Of Toronto, Canada, with corresponding increase in institutional deliveries. Janani Suraksha Yojna is expected to lead to further decline in this parameter.

The Revised National Tuberculosis Control Programme has managed to decrease the burden of disease in TB. Attaining and sustaining high Cure Rates of 87% and universal coverage of a billion people is an achievement to acknowledge at par with global standards, AIDS epidemic is a global emergency. India has 2.5 million persons living with HIV AIDS. HIV is on the rise- the efforts can be termed as a limited success- the epidemic shows signs of stabilization in some states. Himachal has prevalence of 0.13 in general population compared to 0.36 in the country. VCTC is opened in the district hospital recently and no case is tested positive till date, however at IGMC 79 cases were tested positive with 18.2 % upto march 31,2007.

Vector borne diseases are re-emerging due to environmental degradation and increase in vector breeding, drug resistance, genetic changes in pathogens leading to increased

virulence. Malaria is not a major public health problem in the state due to low mosquito breeding in most parts, but fever blood slide surveillance under National Vector Borne Disease Control Programme is done to detect cases (where infection occurs by travel and migration mainly from nearby plains).

Though piped water is being supplied in 80% villages in the country & almost all villages in the state, the quality leaves much to be desired. Sanitation is dismally low (7.1% urban and 18.9% rural) despite improvements.

Estimated Percentage of population with access to affordable essential drugs on a sustainable basis in India is 35% according to World Bank Disease Control priorities project .

DATA LIMITATION:- The launch of IDSP in the district has not improved the quality and the quantity of the surveillance data as only 23% of the surveillance units are reporting in the district that excludes the data from the medical college and private practitioners. The earlier system whereas the data used to be collected by the district health officer was in place till 2004 but later the IDSP was launched and because it was launched without proper training and infrastructure, it could not generate sufficient reliable data. The data on water and sanitation was not available at the district surveillance officer. Similarly the data on road accidents and diseases like scrub typhus was not available with the DSO.

Strengths of the health system:-

Primary, secondary and tertiary care system is well developed and responsive, the private sector is not well developed and government sectors takes over 90% load of the patients. The distances of the health facilities are less than average of Himachal. Diagnostic facilities are available and communicable diseases like malaria, leprosy, IDD, vaccine preventable diseases are under control and this has been feasible with the participation of the public in the health system.

Birth rate and death rate is less than the national rates and infant mortality has also declined significantly. Life expectancy has also shown an increasing trend and vaccination coverage is more than 80%.

Constrains of the health system:-

There is shortage of specialists and the specialized services are not even available at the CHC level and sometimes at the district level. This is the cause of many FRUs not having the specialized care services. Migrant labour working in hydro-electric projects are bringing communicable diseases not heard in Himachal earlier, like Leishmeniasis.

There is inadequate residential facilities in the rural areas , so the rural population fails to avail round the clock health facilities. This may also be the cause for less institutional deliveries as well.

The Shimla district have an epidemic focus of Plague which extends to three blocks, Jubbal, Kotkhai, Tikkar and Chirgaoun. First outbreak was in 1983 and last outbreak was in Feb.2002 when three persons lost their lives and many have to run out of fear.

The decline in sex ratio especially in 0-6 population is a real cause of worry. While the overall sex ratio is 968 but the sex ratio of 0-6 population is just 896.Similarly

institutional deliveries in the state are only 45.3 and need to be improved. Also the initiation of breast feeding during first hour is just 13% and needs to be improved with special messages, health education and IEC to promote breast feeding practices.

The vacancy position is also not up to the mark as 310 posts of multipurpose health worker are laying vacant out of 2213 posts and more than 300 subcentres are vacant with nobody to run them.

Another area of concern is the low budget of health in Himachal. in 2005-2006 the total budget on health was 360 crore which is only 1.79% of Gross Domestic Product and it was raised to only 365 crore of 22,382 crore of GDP(2006-2007) and is less than the previous year that is 1.63%. The situation is same even this year 2007-2008 as the budget is only 427 crore, a rise of 62 crore only, that comes to be Rs.62 per person.

Challenges:-

Providing health coverage to distantly located rural and remote villages in the istrict remains the biggest challenge in the health care delivery system. Though there are 565 primary health institutions, including ISM institutions, not all 363 Gram panchayts have one institution in there area,34 Panchayts are not having any institution in there area, so uneven distribution of the health institutions is also an area of concern. Of 90 institutions outside Shimla town only 24 provide delivery services.

Conclusions:-

Though the IDSP was started in Shimla district of Himachal Pradesh on April 2005 but the programme is still in infancy and various channels of reporting are being integrated to get a consolidated picture of the disease burden. The major hurdle in reporting is the fact that only 29% of the reporting units are reporting regularly and the involvement of one of

the major centre of reporting that is Indira Gandhi medical college, Shimla is not there and also the participation of the private sector is negligible.

The emerging disease like leishmaniasis and scrub typhus need to be contained along with the major epidemics like that of Hepatitis-a epidemic at the beginning of this year 2007.

Finally, there should be a significant focus on extending the basic infrastructural resources to households i.e. electricity, clean water and sanitary facilities along with the facilities of education and livelihood generation to improve he health of the hill people.

RECOMMENDATIONS:

A very important aspect of the findings was the fact that Himachal have highest rate of road traffic accidents in the North India, therefore a mechanism be put in place to minimize the delay in responding to these accidents like Emergency Response system. The system should be well equipped to give first aid at the site and bring the injured patients to the nearest hospital within the golden hour period. Also the blind spots need to be corrected to save lives and a dialogue with public works and road department needs to be initiated.

Changing weather conditions in the state also need attention to avoid emerging diseases like Malaria and Leishmeniasis in the district.

Other recommendations include, urgent attention to children below 5 years of age who are underweight including promoting breast feeding. Regarding diseases the most prominent is respiratory disorders (mostly allergic) and diarrheal disease and typhoid that need our particular attention. The pockets of leishmania, plague , scrub typhus, rabies ,

measles, mumps and malaria need constant vigil. The water born diseases need quality water supply and accessibility.

So it is recommended that the budget on health should be increased to improve the infrastructure and fill the vacancies.

Action Taken:

The salient features of this report were shared with the policy makers and the health authorities, based on which the government decided to go ahead with the implementation of the recommendations. The FETP Scholar was assigned the responsibility to conceptualize and put up a proposal for Emergency Management and Response System (EMRS) in Himachal Pradesh. The proposal was prepared and have been accepted and is being implemented by the government of Himachal Pradesh as a policy matter. Scholar has now been designated as state programme officer for Emergency Management and Response System and Telemedicine in the state of Himachal Pradesh.

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Hepatitis-B sero-positivity among blood donors attending blood bank Shimla, Himachal Pradesh, India, 2007.

1. Introduction

Hepatitis B virus (HBV) infection is the most common cause of chronic liver disease in the Asia-Pacific region. Nearly 40 million people out of the global HBV infection pool of 350 million are from India. India, with a carrier rate of 4%, contributes nearly 10% of the HBV carriers in the world. In India with 25 million live births each year, nearly 1 million HBV infections are added to the HBV pool yearly, in the absence of effective interventions[1].

However, based on studies in blood donors and the general population, we still believe that the prevalence rate for HBsAg lies between 2% and 4%. A meta analysis of different studies in India calculated that the true HBsAg Seropositivity rate may lie between 1% and 2%[2] . A study by Ganju et.al reported the prevalence rate of HBsAg as 3.5% in general population and 5% in healthcare workers in Himachal[3].

As 70% of the Indian population lives in rural areas and one large study that systematically sampled a rural population reported the HBsAg prevalence rate to be 2.97%[1]. The HBsAg prevalence is more in South India than in North India [4, 5].

The introduction of mandatory screening of blood donors for HBsAg in India during 1990s has resulted in a marked decrease in post transfusion HBV infection[6]. However despite donor screening for HBsAg, about 25% of post transfusion hepatitis is still due to HBV[7], [8]. A study from New Delhi show that 6% of HBsAg negative blood units from various blood banks in Delhi were found to be HBsAg positive on re-testing using a sensitive micro-ELISA (Enzyme linked Immuno Assay) technique[9]. Therefore to have a safe donor populations of repeat donors assumes significance, more so when in Himachal, 6.2/1000 donors were found to be positive for Hepatitis-b in the year 2006 and the number increased to 8.8/1000 donors in the year 2007, an increase in Seropositivity of 0.26% over the one year period. This again reinforces the need to retain regular voluntary donors in Himachal.

Hepatitis-B infection screening is an important component of blood safety programme. No study has been done to assess the trends in Hepatitis-B seropositivity among voluntary as well as replacement blood donors in state blood bank, Shimla. Therefore the present study was undertaken to describe the trends in seropositivity for Hepatitis-B among voluntary v/s replacement donors over the years (1997-2007).

2. Objectives of the study:

The objectives of the study are to:

- To describe the trends in Hepatitis-B Seropositivity among healthy blood donors of Shimla according to Time, place and person characteristics.
- Identify data quality issues.

3. Methods:

3.1: Study area:

The study was carried out of at State Blood bank, Shimla, Himachal Pradesh. Shimla is a capital hill town has a population of 0.16 million. Every year 1500 units of blood is collected from donations and screened for five transfusion transmittable diseases to ensure blood safety.

3.2: Study Population:

Consisted of the blood donors attending blood bank Shimla in the 11 years reference period (1997-2007).

3.4: Study design:

An analysis of blood donor population attending State Blood Bank, Shimla using secondary data for the eleven year period, 1997-2007 was done.

3.5: Data source:

We retrieved all the records of the blood donor screening since the inception of the blood bank for the eleven years period (1997-2007). Cross checked the registers and forms and tabulated information on the following variables such as

Age, sex, type of donor (voluntary donor/ replacement donor/ first time/ repeat donor) and blood screening reports for HBsAg tests of the donors.

3.6: Data Collection Technique:

The secondary data were abstracted from the registers, monthly reports and the blood bank records using abstraction form.

3.7: Data analysis: We analysed the data with computers and epi info vertion 3.3.2 to identify the statistical significance of the results.

4 : Data quality issues:

We looked for the completeness and correctness of the records and any missing entries. We also look for different blood donation forms used and the columns in these forms for their relevance and how they can effect medical screening of the donors for Seropositivity.

5. Case Definition of donor seropositivity for Hepatitis-B:

Any donor whose blood sample tests positive for HBsAg surface antigen with any of the government approved sensitive kits (Annexure-II), is said to be positive for Hepatitis-B. These kits are approved by the Drug controller general of India

(DCGI), and are being procured by the AIDS Control Society for all the blood banks in the state and reported to be 99% sensitive and 98% specific as per their manufacturers (Annexure 11).

6. Results: The detailed results are described as follows:

6.1: Profile of the donors:

There were a total of 10,212 donors under study, 31% (3165), of these donors were below 25 years of age, 65%. (6639), were between 25- 44 years of age and 4%, (408), were 45-60 years of age. 87.5%, (8945) donors were males. There were 51%,(5236) voluntary donors and 49% (4983) replacement donors in the study population.

Mostly the donor population consisted of the college students in Shimla and residents around Shimla town.

6.2: Trends in Seropositivity over the years:

a. Time characteristics:

We found an increasing trend of blood donations from 546 donations in the year 1997 to 1141 donations in the year 2007 (Fig 1). There was a trend of decreasing Seropositivity rate over the years except in the year 2006 when there is a peak (Fig 2).

B. Person characteristics:

B: 1. Donor type:

Trend over the years show that as the voluntary donation increased from 44% in 1997 to 57% in the year 2007 there was a declining trend in Seropositivity from

14.49/1000 in 1997 to 9.4/1000 in 2007, however this decrease was not significantly associated with voluntary donation, (Fig3). Trends in Seropositivity in voluntary and replacement donors show wide fluctuations over the years but show overall decrease in Seropositivity trend. (Fig 5). Seropositivity in voluntary donor significantly decreased from 16.5/1000 in 1997 to 3/1000 in 2007 (χ^2 = 4.77, Df= 1, P = 0.02), while in replacement donors there was slight decrease from 19.7/1000 in 1997 to 12.1/1000 in 2007.

B:2: Seropositivity by sex:

Seropositivity by sex show a sharp decline in case of females especially in initial five years, while in case of males it remained almost static(Fig 4). In females the decline was there from 83.4/1000 in 1997 to 5.1/1000 in 2007 (χ^2 = 9.73, Df= 1, P = 0.001), while in males it showed a decline of 15.3/1000 in 1997 to 7.4/1000 in 2007.

6.3:Data quality issues:

The data regarding the blood donor is entered in a register and his entire test status is kept as detailed record. Some of the essential entries were missing from the records, like Hb of the donors or electronic test results of previous donations. There is no deferral register to know the number of donors deferred on account of being medically unfit.

Due to absence of computerized records there is always a possibility of a donor who has tested positive for one of the TTIs, donating blood again in the same or another blood bank where he has never donated earlier, thereby jacking up the

Seropositivity of voluntary donors and compromising the blood safety. Also no follow up is done for those donors who test positive for any of the TTIs.

The history of vaccination is not taken properly due to faulty guidelines in this regard and therefore there is chance of a donor who has been immunized for Hepatitis-B being false positive on the screening.

7. Limitations:

1. We could not analyse age and place-wise data and trends as the complete data was missing on the records. Therefore maps could not be plotted.

2. We did not have record of regular voluntary donors over the years to see the trends in repeat donors.

8. DISCUSSION:

The increasing trend of donations both voluntary and replacement show the increase in demand of blood over the years. There was a decreasing trend of HbsAg positivity among donors but was not found to be significantly associated. This is supported by similar findings in other Indian studies[10].

The seropositiviry rate was high in males than in females, which is consistent with other studies [11]. [12] ,[13]. Female donors appear to have a trend of decreasing Seropositivity over the years while the trend in male donors is almost static, this may have some relation to voluntary donation as usually females are subjected to replacement donation only in case of dire shortage of blood in the blood banks. Higher seropositivity in male donors than in females further substantiates the tendency of the male to be a high risk group and more detailed history need to be taken from males so as to achieve the objective of safe blood.

The replacement donors have always been considered as high risk and we found that prevalence was consistently high in replacement donors than in voluntary donors over the years .The trends of Seropositivity of donors attending state blood bank Shimla over the 11 years period show that as the voluntary donation increases the seropositivity among donors show a declining trend which is consistent with studies in other settings[14] . Studies done by Gurol et al that show seroprevalence of hepatitis B and C decreased markedly between 1989 and

2004 in Turkey and could be related to the significant increase in the number of volunteer blood donors that increased from 135,779 to 197,815[15].

Moreover the replacement donors also conceal the information regarding their high risk behavior therefore turn out to be more positive than voluntary ones[16], [17]. The fluctuating trend in Seropositivity among voluntary donors as well as replacement donors show that donor population has not stabilized and a new pool of donors is added every year. Some professional donors may donate blood as replacement donors and therefore more positivity in the group of replacement donors.

Despite the fact that thorough history of all risk factors is taken from the donor before donating blood on a prescribed form (Annexure-I) to rule out high risk behavior, the analysis of the secondary data show that the overall seropositivity for hepatitis-B is still high but compared to other studies, the seropositivity rate of blood donors attending state blood bank Shimla is well below the level of other states of the country. A meta analysis of 54 papers reporting 61 populations calculates the prevalence of 2.4% in non-tribal populations of the country. The same study calculates the prevalence of Hepatitis-B in voluntary blood donors of Chennai as 69.8/1000, of Pune as 63.8/1000, of Mumbai as 21.2/1000 and of Srinagar as 11.2/1000. The overall prevalence of Hepatitis-B Seropositivity in both voluntary and replacement donors was found to be 19.1/1000 in Delhi, 21/1000 in Jaipur, 9.9/1000 in Chandigarh, 28.4/1000 in Vellore 28.4/1000[18].

Our results show a lower Seropositivity in blood donors than estimated in community based studies and high risk group studies in same population[3]. Hepatitis-B seropositivity in blood donors needs to be interpreted with caution as it is a surrogate marker, but not an accurate marker for the actual incidence of Hepatitis-B in the population[19].

Because the Seropositivity is low in voluntary donors therefore we need strategies to increase voluntary blood donation and retain regular donors to overcome the shortage of blood for transfusion and decrease the risk of transfusion related infection.. The pressure to take replacement donations when there is shortage of blood further increases the tendency to overlook the high risk donors and we can see a sudden jump in seropositivity especially of replacement donors in the year 2006 when there was acute shortage of blood and out of a total of sixteen donors tested positive for Hepatitis-B, eleven were replacement donors.

9. CONCLUSIONS:

The objective of 100% non-remunerated voluntary Blood Donation needs to be strived for to ensure blood safety in transfusion services as there is every chance of Transfusion Transmittable Infections (TTIs) especially during window period, in which the testing kits do not work. For this, a programme needs to be in place in India to increase voluntary blood donation and retain the regular donors.

There are declining trends in Seropositivity in blood donors of Shimla and overall prevalence of the Seropositivity is lower than in general population of Shimla (3.5%) and therefore points towards effective medical screening of donors in the blood bank.

Another finding of secondary data analysis is that the replacement donors have high risk of seropositivity to Hepatitis-B than the voluntary regular donors. So we need to encourage more voluntary donors and retain regular donors for the safety of patients.

10. Recommendations:-

Donor deferral registers and a web based networking of HBV positive donors database will help in keeping tract of positive donors so that they do not donate blood anywhere else. We need to have an effective system to inform the donors of their test results, even if they are negative and through counselors if they are positive to check the spread of the infection. We need to have an educational programme to make masses aware of the hepatitis-B and its modes of transmission.

We may need to modify the donor recruitment form to temporarily defer patients who had received vaccination 3 weeks prier to donation rather than 3 days prier as prescribed in the donor form,(Annexure 1, question 7) because recent trend of increase in Seropositivity may be due to increasing populations opting for Hepatitis-B vaccination. Further studies are needed in the context of India to know the exact deferral period for those donors who have received vaccination for Hepatitis-B.

Action taken:

The issue was discussed with the government of Himachal and the principal secretary ordered to keep a counselor in each of the 13 blood banks of the state to motivate the donors about the voluntary donation and guide those who are found to be positive.

As we conclude that more of the voluntary donors are free from the HBV and Seropositivity decreases with increase in voluntary donation, so the need is to increase voluntary donation by retaining the voluntary donors and recruiting fresh donors so that we do not have to depend on replacement donations.

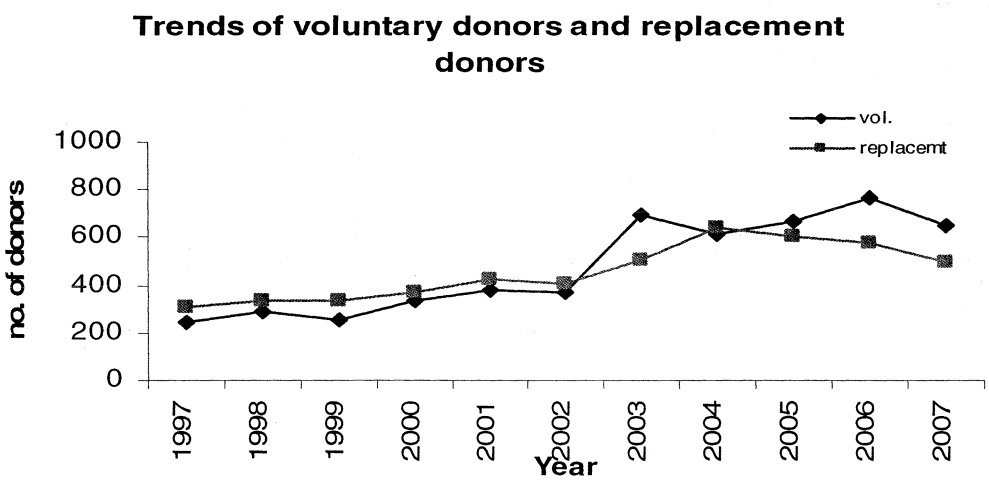
Therefore a study has been undertaken to identify the factors associated with high dropout among voluntary donors to retain them and thence to maximize the voluntary donation in Shimla and ensure blood safety.

Annexures: Tables and Figures:

Table 1: Year wise Hepatitis-B Seropositivity among blood donors, Shimla town 1997-2007.

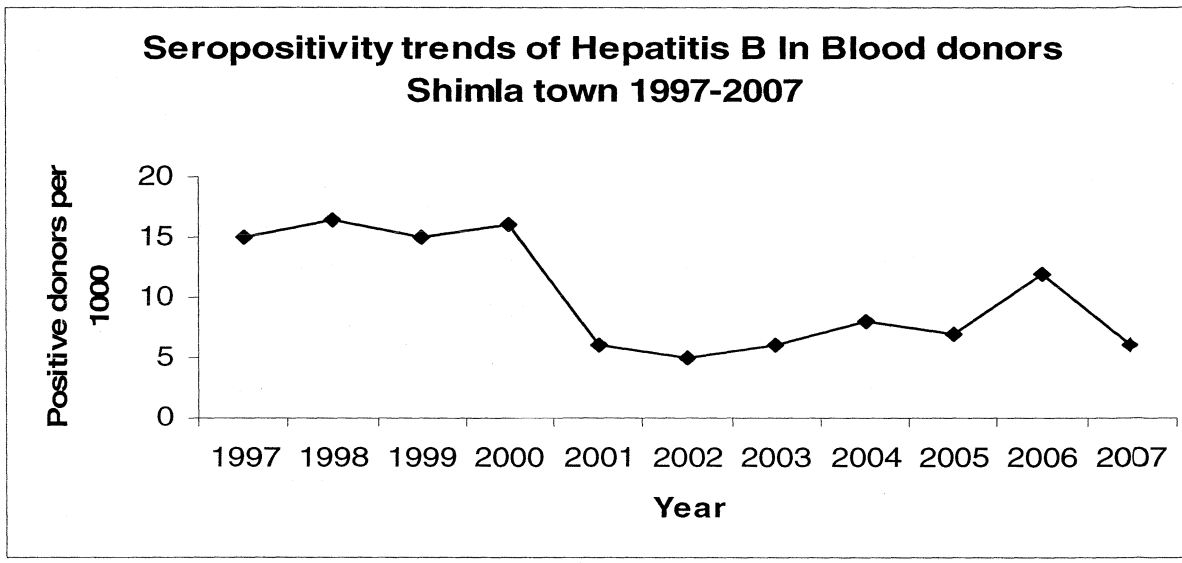
YEAR	TOTAL POSITIVE	TOTAL DONORS	POSITIVE/1000
1997	8	552	14.49
1998	10	608	16.45
1999	9	586	15.36
2000	11	700	15.71
2001	5	802	6.24
2002	4	771	5.19
2003	7	1193	5.86
2004	10	1250	8.00
2005	8	1272	6.29
2006	16	1341	11.93
2007	8	1137	7.03
TOTAL	96	10,212	9.4

Fig 1: Trends of voluntary and replacement donors 1997-2007, State Blood Bank, Shimla, Himachal Pradesh, India.



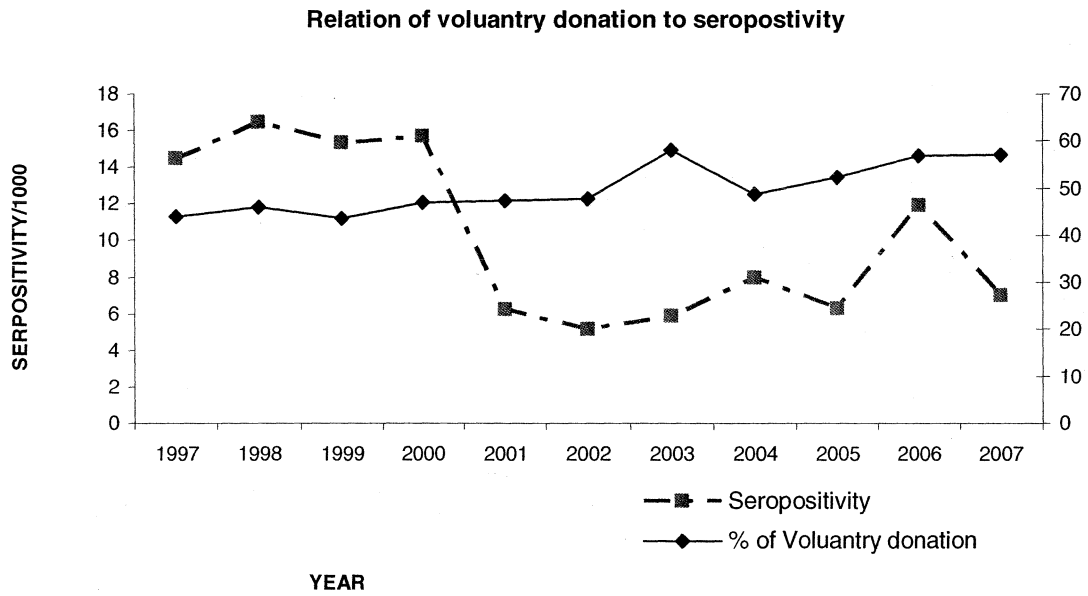
Trends of Blood donation show that both voluntary as well as replacement donation increased over the years, indicating more demand over the years.

Fig 2: Trends of Seropositivity among blood donors 1997-2007, State Blood Bank, Shimla, Himachal Pradesh, India.



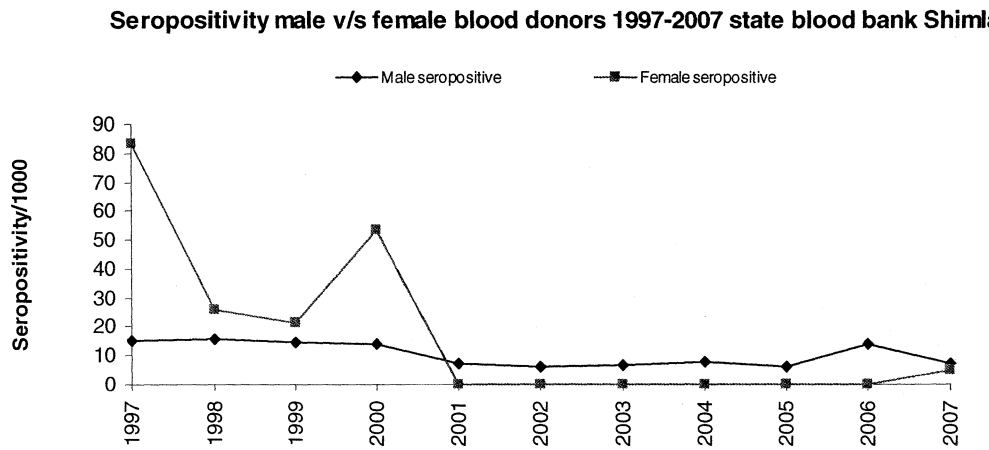
Trends show an decrease in Seropositivity over the years except a peak in 2006 due to increase in replacement dontions.

Fig 3: trends in %age Voluntary donation V/S seropositivity among blood donors Shimla, Himachal 1997-2007:



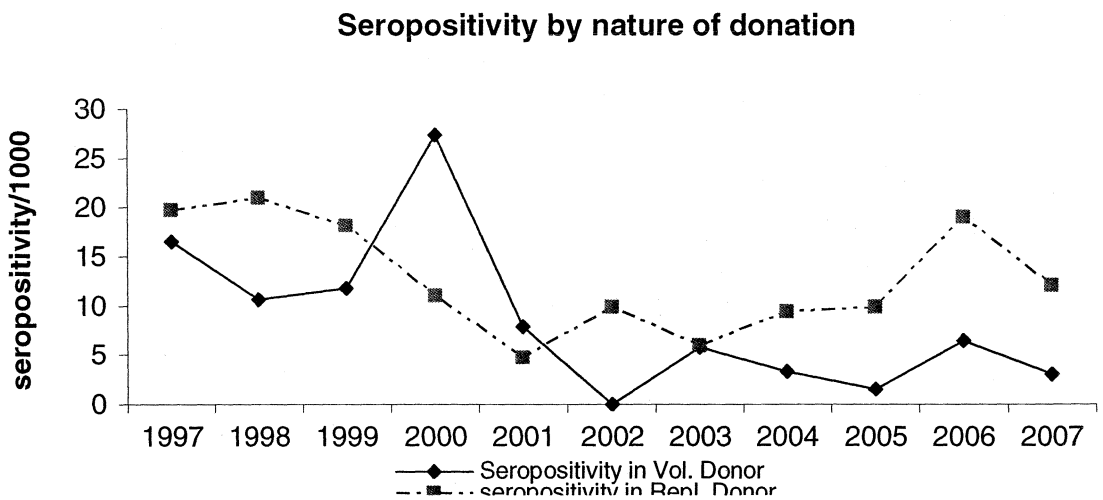
As the percentage of voluntary donation increase there appears to be a decrease in Seropositivity except a peak in 2006 due to pressure to take more replacement donations due to high demand of blood as the data clearly show that 11 of total 16 positive were replacement donors during 2006 .

Fig 4: Seropositivity male v/s female donors 1997-2007 State blood bank Shimla in relation to voluntary donation.



The Seropositivity show a decreasing trend over the years, especially in females.

Fig 5:, Trends of Seropositivity amongst voluntary and replacement blood donors, Shimla, Himachal 1997-2007:



The fluctuation in the trends observed are due to the changing donor base, especially of first timers as 73% of them are new every year. But trendline show a decreasing trend in Seropositivity in both voluntary and replacement donors.

Annexure I:

Voluntary Blood Donation Programme, **Blood Donor Questionnaire & Consent Form** National AIDS Control Organisation
Name and address of the Blood Bank, License No. : Blood Unit No.
CONFIDENTIAL

Name and address of the Blood Bank

License No. :	Blood Unit No. :

CONFIDENTIAL

[√] Tick wherever applicable

Pl. answers the following questions correctly. This will help to protect you and the patient who receives your blood.

Name :		Male	Female
Date of Birth:	Age	Father's/Husband's Name :	
Occupation		Organization:	
Address for communication:			
Telephone:	Mobile No. :		
Would you like us to call you on your mobile:		☐ Yes	☐ No
Fax No. (if any) :		Email (if any):	
Have you donated previously:	☐ Yes	☐ No	
If yes, on how many occasions:		When last:	
Your blood group:		Time of last meal:	
Did you have any discomfort during/after donation?		☐ Yes	☐ No

1. Do you feel well today?: Yes No

2. Did you have something to eat in the last 4 hours?: Yes No

3. Did you sleep well last night?: Yes No

4. Have you any reason to believe that you may be infected: Yes No
by either Hepatitis, Malaria, HIV/AIDS, and/or venereal disease?:

5. In the last 6 months have you had any history of the following:
   - ☐ Unexplained weight loss
   - ☐ Repeated Diarrhoea
   - ☐ Swollen glands
   - ☐ Continuous low-grade fever

6. In the last 6 months have you had any:-
   - ☐ Tattooing
   - ☐ Ear Piercing
   - ☐ Dental Extraction

7. Do you suffer from or have suffered from any of the following diseases?
   - ☐ Heart Disease ☐ Lung disease ☐ Kidney Disease
   - ☐ Cancer/Malignant Disease ☐ Epilepsy
   - ☐ Diabetes ☐ Tuberculosis
   - ☐ Abnormal bleeding tendency ☐ Hepatitis B/C
   - ☐ Allergic Disease ☐ Jaundice
   - ☐ Sexually Trans. Diseases ☐ Malaria
   - ☐ Typhoid (last 1 yr.) ☐ Fainting spells

Are you taking or have taken any of these in the past 72 hours?
   - ☐ Antibiotics ☐ Aspirin ☐ Alcohol
   - ☐ Steroids ☐ Vaccinations
   - ☐ Dog Bite/Rabies vaccine (1 yr.)

8. Is there any history of surgery or blood transfusion in the past 6 months?
   - ☐ Major Surgery ☐ Minor Surgery ☐ Blood Transfusion

9. For women donors,

Are you pregnant	☐ Yes	☐ No
Have you had an abortion in the last 3 months	☐ Yes	☐ No
Do you have a child less than one year old?	☐ Yes	☐ No
Is the child still breast-feeding?	☐ Yes	☐ No
Are you having your periods today?	☐ Yes	☐ No

Voluntary Blood Donation Programme

Annexure - III

10. Would you like to be informed about any abnormal test result at the address furnished by you?

☐ Yes ☐ No

11. Have you read and understood all the information presented and answered all the questions truthfully, as any incorrect statement or concealment may affect your health or may harm the recipient.

☐ Yes ☐ No

I understand that

(a) blood donation is a totally voluntary act and no inducement or remuneration has been offered

(b) donation of blood/components is a medical procedure and that by donating voluntarily, I accept the risk associated with this procedure.

(c) my blood will be tested for Hepatitis B, Hepatitis C, Malarial parasite, HIV/AIDs and venereal diseases in addition to any other screening tests required to ensure blood safety

I prohibit any information provided by me or about my donation to be disclosed to any individual or government agency without my prior permission.

Date : _____ Time : _____ Donor's signature: _____

General Physical Examination:

Weight _____ Pulse _____ Hb _____

BP _____ Temperature _____

☐ Accept ☐ Defer ☐ Reason _____

Signature of Medical Officer : _____

Blood safety begins with a Healthy Donor

Annexure 11: The processes followed to screen the donor before taking blood in the blood bank:

Before the blood is taken, thorough screening of the patient is done by medical examination and detailed history is taken so as to defer donors with high risk behavior and with low hemoglobin levels. Thereafter a self administered questionnaire (Annexure 1), is filled by the donor to assess his own well being and also it gives another opportunity for the blood bank to assess the donor and defer him if not found healthy. The third protective mechanism in place is highly sensitive rapid kits used for the screening of the blood samples from the healthy blood donors and no blood is issued without mandatory screening of the blood for five Transfusion Transmitted Infections (TTI), i.e. Hepatitis-B, Hepatitis-C, HIV, Malaria and Syphilis.

Annexure III:

Details of the kits used for detecting hepatitis-b in blood donors ib shimla;- All kits used in blood bank are of high sensitivity and less specificity to detect every case that is positive, so the false positivity is high and the positive predictive value is low but that is must to not to miss any case that may be positive. The kits are stored at 2-6^{0} C

Kits used since 1997 are as follows:-

1997- Immunocomb Card for HbsAg ; an ISRAIL KIT very satisfactory results supplied by NACO .
1998-Rapid kit- 30 minutes time for testing, results very satisfactory.
1999-Rapid card- 10 minute test.
2000- ACE Card-99% sensitivity.
2001-Scan rapid card-99% sensitivity.
2002-ACON Card
2003-HEPA-B Card
2004-2006--ACON Rapid test.
2007-HbsAg Biline test strip- Sensitivity 1ng/ml and Specificity 99.8%.

The latest kits received during 2007 are *Instacheck* and are reported to be 98.89% sensitive detecting 1ng/ml and 98.87% specific with a predictive value of a positive test= 97.80%, as compared to one step EIA test (Elisa Immuno assay) ; and are reported to be 100% sensitive detecting 1ng/ml and 99.43% specific with a predictive value of a positive test= 98.57%, as compared to one step RIA test (Radio Immuno assay) *(Reference: Company Package insert).*

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Description & Evaluation of the Integrated Disease Surveillance Project with reference to Tuberculosis in District Shimla, Himachal Pradesh, India, 2008.

Background and justification.

Surveillance is the backbone of public health programmes and provides information to undertake effective action in controlling and preventing diseases of public health importance[1]. However, like in most developing countries, health information system in most parts of India lacks capacity to provide timely information on health events requiring prompt action. The course of an epidemic is dependent on how early the outbreak is identified and how effectively the scarce resources are utilized to reduce the number of cases and death.

In 1996 the government of India constituted a National apical advisory committee (NAAC) under chairmanship of union health secretary. On the recommendations of NAAC a pilot project called National Surveillance Programme for Communicable Diseases was launched in 1997-98. The main objectives of the programme were capacity building at district and state levels. Based on the evaluation report of this project., the deficiencies identified in the health surveillance system were (i) lack of surveillance infrastructure (ii) Poor laboratory services (iii) Inappropriate sharing of surveillance information (iv) limited capacity to undertake analysis and response at the district level and (v) non inclusion of risk factor monitoring for non-communicable diseases (NCD) in surveillance programme and (vi) lack of integration of private sector. Integrated disease surveillance programme aims to overcome this

gap and improve the information available to the health care providers on a set of high-priority diseases and risk factors[2].

Integrated disease surveillance programme is a decentralized programme at the district level. It was launched in Himachal Pradesh on 25-3-2005 for five years (2004-09) and aims to:

1. Improve upon the information available to the health care providers on a set of high-priority diseases and risk factors.
2. Recognize early warning signals of impending outbreaks.
3. Help initiate an effective response in a timely manner.
4. Provide essential data to monitor progress of ongoing disease control programmes and integrate them into one programme .
5. Help allocate health resources more efficiently.
6. IDSP stresses upon cooperation with other government departments, non-governmental agencies and the community.

In a recent assessment Himachal was placed as the lowest in the country as for as IDSP performance is concerned[3]. However IDSP is a district level programme and evaluation needs to focus on the reasons at district and sub-district level. As no evaluation study has been done for district Shimla, an evaluation study of IDSP with emphasis on integration with the RNTCP and sensitivity was undertaken in Shimla district.

Objectives:

[1] Describe the IDSP in Distt. Shimla, HP.

[2] Assess the achievement of the objectives of IDSP.

This evaluation research study seeks to answer the following questions:

2A. What is the level of integration of IDSP with the vertical programmes for TB, primary health care, Medical college, Private sector & other stakeholders.

2B. What is the sensitivity of the IDSP for case detection with respect to Tuberculosis

2C. What are the factors associated with the (lack of) integration and (low) sensitivity?

[3] Suggest measures to strengthen the achievements, overcome barriers and close gaps based on findings of above.

3 METHODS:

Engaging all stake holders:

We shared the protocol with district level officers and block medical officers and representatives of health workers and medical officer association, and clearly explained the objectives and potential benefits of the study, assured them full confidentiality of individual responses.

Methods are described separately for each objective

1. *Description of the Surveillance system*

Using abstraction forms (Annexure I), we reviewed documents on IDSP prepared by the Government of India, Directorate General of Health Services, Ministry of Health

& Family Welfare staff position from office of the Chief Medical Officer, and training records at District surveillance unit. The documents reviewed included: National Project Implementation Plan (PIP), 2004; Operational Manual for District Surveillance Units; Operational Manual for Medical Officers; Operational Manual for Health Workers; Manual of laboratory techniques for District Public Health Laboratories. Reporting formats – Form 'S' for syndromic surveillance, Form 'P' for presumptive surveillance, Form 'L' for laboratory surveillance and Form 'W' for water quality surveillance. Himachal State Project Implementation Plan and training records of all categories of personnel involved in surveillance.

We also conducted informal discussion with stakeholders. The stakeholders included the Chief Medical Officer, District Surveillance Officer, Block Medical Officers, Medical Officers, Multi Purpose Workers (MPW), Medical College Heads of Department: Community Medicine and Private practitioners qualifying criteria under IDSP.

II. Assessing appropriateness of keeping TB under surveillance:

Public health Priority**:**

Using WHO recommended criteria (see Annex) for keeping any disease under surveillance, we assessed the appropriateness of keeping TB under IDSP for Shimla District of Himachal Pradesh. The Data sources for the above assessment included TB India, RNTCP Status report2008[4], Central TB Division, Directorate General of Health Services for burden of TB in India and Himachal Pradesh and annual and monthly reports of statistical wing, CMO Shimla, Office of the District TB officer, Shimla[5] for burden of disease in district.

III. Surveillance objectives:

The main objective of tuberculosis surveillance is to reduce tuberculosis morbidity and mortality. This consists of indicators such as case detection and cure rates.

The above surveillance objectives for the tuberculosis were assessed from the point of view of their being 'SMART'. a) Specific b) Measurable, c) Action oriented, d) Realistic e) Timely

2. Evaluation of IDSP

To assess the achievement of the objectives of Integrated Disease Surveillance Project, this evaluation research study seeks to answer the question: ***What is the level of integration of IDSP with the vertical programmes for TB, at the level of primary health care, Medical College, Private sector and other stakeholders***?

2A. To assess integration, we prepared Logic model of IDSP with reference to Private practitioners/ Medical Colleges based on CDC guidelines[6] , [7], [8](Annex VI-VII).

We assessed the following areas for integration developed by the NIE which identified 8 key areas.

We examined the integration in terms of inputs and process for TB surveillance under IDSP at levels of different stakeholders and sectors using a logic model.

Integration with RNTCP

[1] **Rural sector**: Sub centers & PHC

[2] **Urban sector**: Municipal/ corporation health posts and civil hospitals/ district hospitals

[3] **Private sector**: Private Parishioners, Nursing homes and Private labs

[4] **Medical college participation**

[5] **Social mobilization,** Community

[6] **Inter-sectoral coordination:** District surveillance committee at District level and community informers at lower levels.

[7] **Information Technology:**

2B. What is the sensitivity of the IDSP for case detection with respect to Tuberculosis and what are factors for the same?

We determined the sensitivity by comparing the number of suspected cases under IDSP with chest symptomatics screened by RNTCP during first quarter of 2008 (Jan – March) and assessed comparability of the two databases. We used a logical framework and CDC updated guidelines for assessing public health surveillance systems and WHO Protocol for Evaluation of Epidemiological Surveillance Systems; for the various components and attributes of the surveillance system to understand and assess components and attributes contributing to this. Logic model of IDSP with references to sub-centre level, PHC/CHC level, District level, Lab (Annex I-IV). Details of the sample size and sampling for each level are given in Annexure.

Data analysis:

We coded and entered the data in MS Excel software. We calculated the various indicators as proportions using epi Info. The reporting attributes, understanding of roles and problems, suggestions were tabulated and complied.

Results:

4.1. Engaging stakeholders:

We shared the protocol with district level officers and block medical officers and representatives of health workers and medical officer association, and clearly explained the objectives and potential benefits of the study, assured them full confidentiality of individual responses.

As a result, the CMO and the DSO consented and requested all block medical officers to extend their cooperation for the study and issued directions in the monthly meeting where we circulated the forms.

4.2. Description of the surveillance system:

The IDSP proposes a comprehensive strategy for improving disease surveillance and response through an integrated approach. This approach provides for a rational use of resources for disease control and prevention. In the integrated disease surveillance system: The district level is the focus for integrating surveillance functions.

Objectives of the Integrated Disease Surveillance Programme

The overall general objective of the IDSP is to provide a rational basis for decision making and implementing public health interventions that are efficacious in responding to priority diseases.

Keeping this in mind the main objectives of the IDSP are:

- To establish a decentralized district-based system of surveillance for communicable and non-communicable diseases so that timely and effective public health actions can be initiated in response to health challenges in the urban and rural areas. The database generated will help to assess the health problem, monitoring trends, and evaluating programmes for prevention and control.

- To integrate existing surveillance activities, avoid duplication and facilitate sharing of information across all disease control programmes and other stake holders, so that valid data are available for decision making at district, state and national levels. All surveillance activities are coordinated and streamlined. Rather than using scarce resources to maintain vertical activities, resources are combined to collect information from a single focal point at each level. Several activities are combined into one integral activity to take advantage of similar surveillance functions, skills, resources and target populations.

The IDSP integrates both public and private sector by involving the private practitioners, private hospitals, private labs, NGOs, etc and also emphasise on community participation. Integration of both rural and urban health systems. Integration with the medical colleges (both private and public) would also qualitatively improve the disease surveillance especially through better coverage.

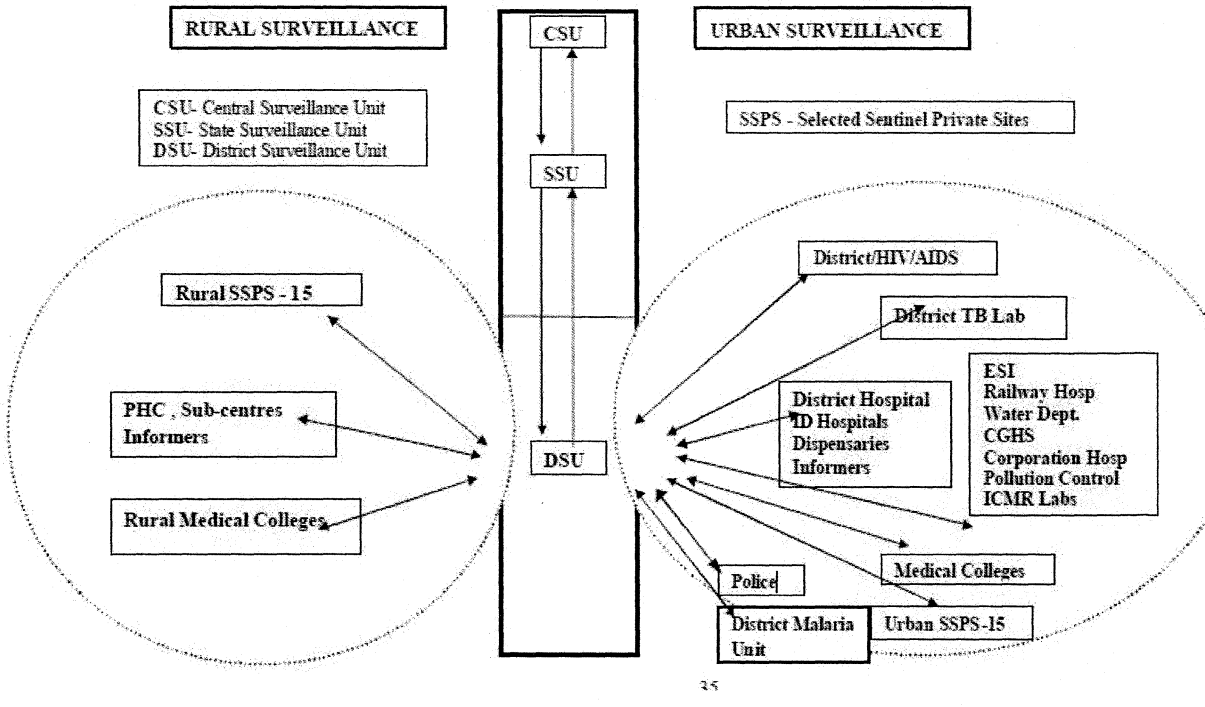
The 9 core diseases kept under surveillance are Malaria, Acute Diarrhoeal Disease (Cholera), Typhoid, Tuberculosis, Measles, Polio, Road Traffic accidents, Plague, Yellow fever and Unusual syndromes. In addition 5 state specific diseases for Himachal Pradesh are kept under surveillance are thyroid disease, leishmaniasis, acid peptic disease, rheumatic heart disease and cancer.

Uniform case definitions have been adopted ddepending on the level of expertise and specificity, disease surveillance in IDSP is of following three categories: **Syndromic** – Diagnosis made on the basis of clinical pattern by paramedical personnel and members of the community. **Presumptive** – Diagnosis made on typical history and clinical examination by Medical Officers. **Confirmed** – Clinical diagnosis confirmed by an appropriate laboratory test. IDSP uses the case definition of RTNTCP of cough

more than 3 weeks for suspected cases and presumptive and 2 sputum positive for AFB for confirmed cases.

Weekly reports are sent from reporting units to DSU and transmitted to DSU, which consolidates and sends to SSU through electronic transfer. IT network has been setup at District surveillance units established.

STRUCTURAL FRAMEWORK OF INTEGRATED DISEASE SURVEILLANCE PROJECT



35

4.3 Appropriateness of keeping TB under Surveillance as Public health Priority:

Using WHO recommended criteria (see table below) for keeping any disease under surveillance, we assessed the appropriateness of keeping TB under IDSP for Shimla District of Himachal under surveillance:

Public health importance	**DISTRICT Shimla**	**Himachal Pradesh**
Morbidity/ prevalence	257/100000 population	210/ 100,000 popn (2007)
Mortality	2/100000 population	8.2 /100,000 popn (2006)
Disability	Not measured	
Outbreak potential	NIL	

Public health importance	DISTRICT Shimla	Himachal Pradesh
International importance	MDG goal to reduce TB prevalence by 50% of 1990 by 2015	
National control programme	RNTCP DOTS programme ongoing since 1997	
Interventions available	Chemotherapy, BCG vaccine	

So it is appropriate to keep the disease under surveillance as the disease burden is high.

4.4 Surveillance objectives being SMART

The above surveillance objectives for the tuberculosis were assessed from the point of view of their being 'SMART'. We found the objectives to be SMART.

a) Specific: Standardized indicators were available for measuring TB surveillance

b) Measurable: Case Detection rate to be achieved has been specified to be at least 70% under the RNTCP

c) Action oriented: Case detection was linked to free treatment under the RNTCP

d) Realistic: Case detection targets ware based on ARTI and achievable, and

e) Timely: Early detection leads to prompt treatment

A. Evaluation:

Profile of participants & response :

208/275 MPW (78%), 36/168 MO (22%) and 9/38 LT (24%) participated in the study and completed the questionnaires. We were able to have informal discussion with heads of department Preventive and social medicine in the medical college, 2 Private Practioners and district surveillance officer.

The first research question was integration of TB with IDSP :

We examined the integration at level of rural health system (Sub-centre and PHC), urban, private practitioners and medical college.

Rural sector:

1. Subcentre level.

a. Multipurpose workers- a profile: For a population of 7,64,961 there are 343 health institutions and out of them only 275 (80%) are reporting units as per DSO.

Reporting of Cases : A total of 138 (66%) said that they come to know of a case of cough more than 3 weeks during their visit to the village and 59% of them said that people try to hide the disease even from them

99% of them said they lookout for more cases house to house in case they find a suspected patient. Only 45% said that they send the list of cases and not the number. 32% of them said they send report weekly and 41% said monthly reports are sent.

68% of the MPW have treated at least one case of Tb this year being a DOTS provider. In the year 2007, the number of cases having cough > 3 weeks were 489 but the surveillance appears to have improved during this year when the number of cases reported is quite high that is 249 cases reported in first quarter of 2008 and out of that 131 have apparently been put on DOTS.

2. PHC level:

Profile:

only 36/ 168 (22%) of the medical officers responded to the questionnaire, 31 of them males and 34/38 of them were M.B.B.S.

Case Reporting :

Only 8 send the list of cases. 9 of them have difficulty in filling the reports and 19 of the doctors send reports to BMO and 14 of them find it difficult to send the report. Only 6 said they send reports on P forms. 17 of them said the data is analysed weekly. 8 of them said that it will be difficult for them to report a new disease like MDR TB.

9 of them said they have identified private practitioners in their area and only 2 said they have enlisted them for reporting.

b. Lab Technicians:

52 out of total 90 posts of lab technicians (58%) are vacant in the district, even 7 DMCs are without lab technicians.

Case reporting:

It was difficult to get feedback from them because of their busy schedule and we could take feedback from 9 of them only. 8 of them said that there is no column to report patients if sputum is highly positive(unusual syndrome)

Only 58% of the reports are received in time and there are no comments or suggestions by the health workers, indicating less participation on their part.

3.In the urban sector we looked for Municipal/ corporation health posts:

The district has only 10% urban population, municipal council hospital does not have a lab and just refer the cases to the district hospital, district hospitals and civil hospitals cater to the urban as well as rural population. The urban area is also allotted to health workers of adjoining sub-centers, 5 urban of them are under the medical college DMC.

4.**Private sector** includes 65 hospital/nursing homes and none of them have been involved. The problem seems to be at the input level as adequate funds and trainings were not available for sensitization meeting. The process of integration seems to be lacking as no efforts were done by the authorities to mobilize them and forge partnerships. There are private labs in the district but they have not been contacted for partnership in surveillance.

5.Medical college exists in the district, which caters to a population of six districts of the state. In the Q1 of 2008, 299 of cases were positive of the total 2532 suspected cases (12%), which were reported to RNTCP but not to IDSP.

Social mobilization: Community Groups were not sensitized, possibly due to lack of trainings and active participation.

Inter sectoral coordination: District surveillance committee at District level constituted by the chief Medical Officer in 2006, but no meetings were conducted.

Information Technology: DSU has been given computer and reports are entered on computer and emailed to SSU/ National level every week. There is no coordination or data flow from the DSO to DTO and vice versa.

B. The second research question was to determine the sensitivity.

We determined the sensitivity by comparing the number of suspected cases under IDSP with chest symptomatics reported by RNTCP at the district level for the period Jan –March 2008. For the first quarter of 2008, IDSP reported 249 cases of cough more than 3 weeks out of that only 131 were sputum positive, while those reported by RNTCP for similar period was 2333 chest symptomatics screened and 263 cases were confirmed, and the difference was significant. ($\chi^2 = 297$; Df=1 ,p = 0.00).

This translates into sensitivity of 10% of suspect cases and 50% of confirmed cases

C. Factors identified for the low integration and less sensitivity of IDSP with respect to RNTCP:

Based on our findings, integration seems to not have occurred. Since integration has not taken place, data is not representative of the population. Using a logical framework we examined the various components of IDSP and its attributes at various

levels of the system. Integration and sensitivity are related to each as the lack of one affects the results of the other.

From the logical framework several factors were identifid that could be responsible for lack of integration as well as poor sensitivity and each of them is discussed below:

1.Rural level factors :

a) Subcentre level:

The factors for low integration and less sensitivity at the subcentre level are, high vacancy, less trainings, difficult process of reporting, large and difficult terrain, different authorities to report to and population to be covered. They also cited paucity of forms as major reason for not reporting. 25% of the MPWs said hat they find it difficult to fill the report and 54.3% said that they find it further difficult to send it. Main reason for not been able to send report cited is forms not available (95%) and then 10% said as there is no case so no report is sent 9% said that there is no postage or travel fund so report is not sent.

A. High Vacancy: As per the latest report prepared by the DTO tha vacancy position is as under:

MPW: out of 211 male health workers 92 are vacant. And out of 214 female health workers 50 are vacant in the district Shimla.

Doctors: out of 195 doctors 37 posts are vacant in the district.

Lab technicians: Out of 87 posts of lab technicians 48 are vacant.

B. Less personnel trained: There have been no trainings in the recent past and the attrition rate is high.

MPW: 195, (84%) of the MPWs reported that they have not been trained in IDSP and only 5% were trained in RNTCP. 96% of them have correct definition of a suspected case of TB and 96% of them are referring such cases to higher institution.

Doctors: Only 8/34 of the doctors we interviewed are trained in IDSP and 15 in RNTCP. No training has been imparted in the last two years to the doctors, and many new doctors have joined in the meantime.

Lab technicians: 52 out of total 90 posts of lab technicians (58%) are vacant in the district but the remaining lab techs are trained.

C. Difficult terrain:

MPW: 35% said they have difficult hamlets mean of difficult hamlets is 2.7+/-8.1 and 11% having at least 2 hamlets that are difficult to visit. 10% said that they have special population groups that are difficult to monitor e.g. migrants or Gujjar groups.

D. Population to be covered:

MPW: The mean population covered by a subcentre is 1639 +/- 817 persons.

Doctors: Mean population covered by a PHC is 13744+/- 24800.

Lab technicians: Mean population served by a single lab is 69203+/- 162458 up to a maximum population of 5 Lakh/lab. 7 of them did not have any training in IDSP. On an average one lab serves 817 patients monthly.

b) PHC level: Many post of doctors are vacant especially that of lab technicians. There is paucity of reporting forms and 7/9 of the reporting units do not have the reporting forms.

c) CHC level: Most of the posts at CHC level are filled but reporting from this level is poor due to less coordination with other programmes.

2.Urban level.

In urban areas the district hospitals are not reporting to their own IDSP cell, is a major problematic area. The failure to register the diagnosis is the main reason for that as no person is there to write the diagnosis and regiater the patients after they get the advise of the doctor.

Urban factors are also input based.

3.Private practitioners level.

Negligible participation of the private doctors and hospitals is a major stumbling block for the IDSP success. No funds are there for their trainings and no mechanism of getting reports from them exists.

Lack of proper input factors lead to low participation.

4.**Medical college level.**

Medical college also does not report as required, due to lack of a MOU with the IDSP cell. Another area of concern is high number of referred patients to and from the medical college who are not followed up in the absence of a well designed follow up mechanism. Also interdepartmental integration or mechanism of case identification and follow up is not in place.

Poor process factors are responsible.

5.Community participation or social mobilisation.

The factors for lack of community participation are low involvement of the communities and opinion builders and lack of a dialogue with them. The high rate of default of TB cases can effectively be tackled by the community if they are involved in the process.

Again lack of input factors is the cause.

6.Inter-sectoral coordination: District surveillance committee at District level need to meet and discuss ways to contain the problem. The programme need to be well knit with that of other parallel programmes to ensure regular and timely flow of information. Lack of input factors is responsible for poor coordination mechanism

7.Information Technology:

The information technology can be a major facilitator of the data flow and action taken. In a ongoing model of 104 in Andhra Pradesh, the MPW sends their weekly IDSP reports through the short messaging service, SMS, to the centralized processing centre and the reports are compiled and action to be taken decided at the earliest. Lack of input factors had lead to failure of devicing such a mechanism.

The major reason for low performance of IDSP with respect to RNTCP is the lack of input factors as described above.

The main factors identified for the low integration or lack of sensitivity of IDSP to report cases are:

Parallel programmes,High vacancy and overburdened health worker,Lack of trainings,lack of forms,Long distances and difficult terrain, Stigma related, lack of involvement of community participation, private practitioners and medical college and low use of information technology.

Al these factors have been discussed comprehensively in the discussion below.

Discussion:

Mainly input factors are responsible for the lack of coordination between IDSP and RNTCP. No funds have been received for the last six months to run the programme and liabilities are running high. Both the IDSP and the RNTCP has separate district level officers, separate funds and separate mechanisms of reporting at the district level. There is no formal mechanism of integration of both the systems at the district level.

There is very high vacancy in the sub-centres as the mean population served by each health centre is scattered in a large and difficult area. MPW being a DOTS provider also, it is difficult to visit the patients for dots and reporting the symptoms. Therefore vacancy of MPW is related to the cure rate of TB that is as the vacancy is more cure rate is less, as shown in Table 2. As only 33% of the health workers are able to visit their villages in a week, it is impractical to expect them to report every week from the field more so when majority of the cases of cough more than 3 weeks are diagnosed by the visit of the health worker to the village themselves. Moreover they have to send the report personally, makes their job more difficult. Majority of the workers said that the patients try to hide the disease from them show the taboo TB is still present in the villages.

Majority of the subcentre staff are not trained in IDSP. More than a fourth of the workers find it difficult to fill the report and half of the workers find it difficult to send either due to non availability of S forms or lack of fund for the postage.

A multipurpose worker visits a village after a mean interval of 13.8 days +/- 12, and only 13% visit each village once a week. This duration of visit is further reduced to 12.8 days +/- 8.2 in rough weather conditions like monsoon or snowfall in winters.

Mean no. of villages served by a sub centre are 16.79+/- 11.1 and 15% of them have less than 7 villages in their sub centre and 88% of them have less than 7 villages in their sub centre. The mean population covered by the health worker is 1639 which is high as for as tough terrain of rural Shimla is concerned. A study done on part-time community health workers by Sara Bhattacharji et al[9] way back in 1986 had shown that that health workers with the highest performance scores have, on the whole, less education, more experience, less population to cover, and more intense supervision. The Planning Commission also in their draft titled 'Report on Workforce Management Options & Infrastructure Rationalisation of PHC' highlighted population size in the context of work-load of health worker. B.M. Prasad and V.R. Muraleedharan[10] reported that "Experience of workload of CHW across countries varies. There are countries such as Sri Lanka where a CHW covers as low as 10 households offering a set of MCH related services ((UNICEF, 2004). On the other hand, there are countries such as India, where a CHW covers about 1000 households (approximately 5000 populations, usually spread over 5 to 10 villages)". In our case the population is more and scattered over a tough terrain and worker has to cover more distances.

We observed that as the vacancy increases there is low cure rates associated with the RNTCP a finding similar to other studies like, Haines A et al.(2007)[11]discusses the potential contribution of community health workers to child survival rates.

30% of the institutions are vacant and there is no provision of any short messaging service (SMS) allowance to the health workers to report cases at the earliest and no postage allowance to report by fax.

Only half of the populations is under surveillance and the reporting pattern is not uniform. Half of the reports are received along with monthly report after a month, mostly due to bad whether or difficult hilly terrain.

Similar is the case with lab technicians as more than a half of the posts are vacant and majority are not trained. The system of just referring the suspected patients to the nearby DMC by the doctors makes it difficult to have cases at the PHC level confirmed for TB. Half of the peripheral lab centres donot have reagents to diagnose TB and they are not supplied by the RNTCP. Many of them donot have any lab forms. Half of the IDSP reports are sent weekly and some of them monthly, creating uneven mechanism of reporting and difficult to get a larger picture. There is no MOU signed with the medical college and interview with the private practitioners indicate that they are just forcibly involved and have not benefited from the programme and want trainings and remuneration like in RNTCP

Comparison with other districts: Like in Shimla, the number of chest symptomatic cases reported in Chamba[12], Bilaspur[13] and Solan[14] by the IDSP is lower than those confirmed to be positive by DTO. Majority of the MOs and other health professionals are trained in all the districts and majority of them are aware of the case definition. Two third of them said that there is stigma related to TB in Kangra[15], a finding similar to that in Shimla. Two third of the health workers send the report personally and a third of them find it difficult to send. Two third of them keep the name of the Tb patient in confidential records. Half of them think it difficult to report a new disease. Like in Shimla only a fourth of them could visit their area once in a week and 30% of total respondents had difficult area and 24% of them have migratory population to

cater to. There is no private practitioner involved in IDSP in other districts and no MOU signed with the medical college in Kangra like in Shimla.

Conclusions :

The IDSP with RNTCP are poorly integrated in the district resulting in low sensitivity of reporting. Key factors responsible for low sensitivity are very high vacancy in the district for MPWs and Lab technicians,no tie up with private labs for diagnosis, funds and form availability,lack of supervision and monitoring.

Recommendations:

Appropriate resource allocation and enhancing the capacities of all health functionaries at all levels is important to get the desired results. Signing of MOU with medical college is very important. Integration of IDSP with RNTCP at the district headquarters and two way data flow. Mechanism to sense emerging diseases and integrate them into the system without any fear of reprimand.

Need to have less area for monitoring and some mobile allowance for MPWs to SMS data to the HQs as is the case with 104 service of Andhra Pradesh where Electronic reports from all levels are received and daily analysis is done .

ANNEXURE I

MATRIX FOR EVALUATING THE VARIOUS COMPONSNETS & ATTRIBUTES OF IDSP- MPW LEVEL.

S.No.	OBJECTIVE	INDICATOR	INFORMATION	RESULTS %	
				DSO N=275	**obved N=208**
1	DESCRIPTION OF SURVEILLANCE SYTEM	PROPRTION AWARE OF CORRECT CASE DEFINTION, DISEASE UNDER SURVEILLANCE, **(275/343)**	OBJECTIVES,	80%, **(275/343)**	6% **(13/208)**
			DATA FLOW SYSTEM, PROFORMA,	80%	6% **(13/208)**
			DISEASES UNDER SURVEILLANCE, CASE DEFINITIONS	80%	6% **(13/208)**
2	ASCERTAINING PUBLIC HEALTH PRIROTY OF TB	TREND	COMPARISON OF CASES WITH PAST YEARS	Increasing	**↑- 10% ↓- 65% ↔ - 10% Don't know – 15%**
3					
3.1	POPULATION UNDER SURVEILLANCE	PROPORTION OF POPULATION COVERED	TOTAL POPN **(7,64,961)**	100%	60%
			POPULATION COVERED **(7,64,961)**		
3.2	CASE DEFINITION	KNOWLEDGE OF CASE DEFINTION FOR TB case	AWARE OF CASE DEFINITITONS of TB Case	80%	95%
3.3	DATA STRUCTURE		TYPE OF DATA COLECTED AT VARIOUS LEVELS	syndromic	Syndromic
3.4	INDICATORS	KNOWLEDGE OF INDICATORS	LIST OF INDICATORS	80%	80%
3.5	DATA FLOW	RECCOMENDED, VS ACTUAL FRECUENCY OF DATA FLOW, DATA ANALYSIS	FRECUENCY OF REPORTING, TO WHOM REPORTING, DATA ANLYSIS LEVEL	100%	75%
3.6	FEEDBACK	FRECUENCY OF FEEDBACK RECEIVED, FRECUENCY OF FEEDBACK GIVEN	WRITTEN FEEDBACK AVAILABLE	100%	58%
3.7	COORDINATION	COMPARABILITY OF DATASETS	NUMBER OF SUSPECT CASES, CONFIRMED CASES AT DSO **(371)** AND DTO OFFICE **(NA)**, **MPW (766)**	100%	**48.5%**
3.8	RESPONSE MECHANISM	ACTION TAKEN ON FEEDBACK	FEEDBACK GIVEN TO DTO	100%	55%

4	ATTRIBUTES			RESULTS %	
				DSO	MPW
4.1	SIMPLICITY	PROPORTION OF FORMS SUBMITTED, COMPLETEDLY FILLED	FORM RECEIVED, FORMS WITH ERRORS	**100%**	**25%**
4.2	ACCEPTABILITY	PROPORTION OF UNITS REPORTING	NO OF RU, NO OF REPORTS RECEIVED	80%	60%
4.3	FLEXIBILITY	POSSIBILITY OF NEW DISEASE BEIGN REPORTED ON THE SAME FORM	SAPCE ON FORM FOR NEW DISEASE, PERCEPTION OF LEVEL OF DIFFCIULTY IN REPORTING ADDITIONAL DISEASE OR CHANGED CASE DEFINTION	YES	NO- 45% said difficult to report
4.4	SENSITIVITY	PROPORTION OF TB PATIENTS GOING TO PVT SECTOR, PARTICIPATION RATE OF PVT SECTOR	NUMBER OF CASES GOING TO PVT DOCTORS, NO OF PVT DOCTRS ENROLLED AS RU AND REPORTING	1500 Pts.	NA
4.5	POSITVE PREDICTIVE VALUE	PROPRTION OF CASES LAB CONFIRMED	PRESUMPTIVE CASES 6000 CASES WITH SPUTUM EXAMINED 72000	8%	20%
4.6	TIMELINESS	PROPRTION OF REPORTS SUMMITTED IN TIME	NUMBER OF REPORTS RECEIVED IN TIME, TOTAL REPORTS RECEIVED	80%	57%
4.7	USEFULNESS	ACTION TAKEN ON DATABASE	NO OF DETHS DISABILITY AVEERTED	NA	NA
4.8	SUPERVISION	FRECUENCY OF VISITS/ FEEDBACK FROM SENIOR OFFICERS	LAST TIME VISIT BY BMO	50%	5%
			LAST TIME VISIT BY SUP	50%	24.5%
		ACTION ON NON REPRTING	OFFCIER VISITED/ TELEPHONCALLY CONTACTED OR REPRIMANDED IN MEETING ON NON SUBMISSION OF REPORT	weekly	Monthly

ANNEXURE II

MATRIX FOR EVALUATING THE VARIOUS COMPONSNETS & ATTRIBUTES OF IDSP- MO LEVEL.

S.No.	OBJECTIVE	*INDICATOR*	INFORMATION	RESULTS	
				DSO	OBVED
1	DESCRIPTION OF SURVEILLANCE SYTEM	PROPRTION AWARE OF CORRECT CASE DEFINTION, DISEASE UNDER SURVEILLANCE,	OBJECTIVES,	**80%**	**28%**
			DATA FLOW SYSTEM, PROFORMA,	80%	60%
			DISEASES UNDER SURVEILLANCE, CASE DEFINITIONS	80%	60%
2	ASCERTAINING PUBLIC HEALTH PRIROTY OF TB	TREND	COMPARISON OF CASES OF TB WITH PAST YEARS (**402/766**)	incresing	**53%**
3	**COMPONENTS OF SURVEILLANCE SYSTEM**				
3.1	POPULATION UNDER SURVEILLANCE	PROPORTION OF POPULATION COVERED	TOTAL POPN	100%	60%
			POPULATION COVERED		
3.2	CASE DEFINITION	KNOWLEDGE OF CASE DEFINTION	AWARE OF CASE DEFINITITONS	80%	80%
3.3	DATA STRUCTURE		TYPE OF DATA COLECTED AT VARIOUS LEVELS	Probable	Probable
3.4	INDICATORS	KNOWLEDGE OF INDICATORS	LIST OF INDICATORS	80%	80%
3.5	DATA FLOW	RECCOMENDED, VS ACTUAL FRECUENCY OF DATA FLOW, DATA ANALYSIS	FRECUENCY OF REPORTING, TO WHOM REPORTING, DATA ANLYSIS LEVEL	Wekly/mothly	Wekly/mothly
3.6	FEEDBACK	FRECUENCY OF FEEDBACK RECEIVED, FRECUENCY OF FEEDBACK GIVEN	WRITTEN FEEDBACK AVAILABLE	Yes	Yes
3.7	COORDINATION	COMPARABILITY OF DATASETS	NUMBER OF SUSPECT CASES, CONFIRMED CASES AT DSO AND DTO OFFICE	NA	NA
3.8	RESPONSE MECHANISM	ACTION TAKEN ON FEEDBACK		50%	50%

4	ATTRIBUTES			RESULTS	
				DSO	OBSVD
4.1	SIMPLICITY	PROPORTION OF FORMS SUBMITTED, COMPLETEDLY FILLED	FORM RECEIVED, FORMS WITH ERRORS	100%	25%
4.2	ACCEPTABILITY	PROPORTION OF UNITS REPORTING	NO OF RU, NO OF REPORTS RECEIVED	99%	60%
4.3	FLEXIBILITY	POSSIBILITY OF NEW DISEASE BEIGN REPORTED ON THE SAME FORM	SAPCE ON FORM FOR NEW DISEASE, PERCEPTION OF LEVEL OF DIFFCIULTY IN REPORTING ADDITIONAL DISEASE OR CHANGED CASE DEFINTION	YES	No., 62% said diffi. To report
4.4	SENSITIVITY	PROPORTION OF PATIENTS GOING TO PVT SECTOR, PARTICIPATION RATE OF PVT SECTOR	NUMBER OF CASES GOING TO PVT DOCTORS, NO OF PVT DOCTRS ENROLLED AS RU AND REPORTING	<25%	<10%
4.5	POSITVE PREDICTIVE VALUE	PROPRTION OF CASES LAB CONFIRMED	CASES WITH SPUTUM EXAMINED / PRESUMPTIVE CASES	12%	**1%-4%**
4.6	TIMELINESS	PROPRTION OF REPORTS SUMMITTED IN TIME	NUMBER OF REPORTS RECEIVED IN TIME, TOTAL REPORTS RECEIVED	60%	40%
4.7	USEFULNESS	ACTION TAKEN ON DATABASE	NO OF DETHS DISABILITY AVEERTED	Yes	**No action-20% Tele-17% Monthly meeting-11%**
4.8	SUPERVISION	VEHICLE AVAILABLE	EARMARKED VEHICLE	NA	NA
		PROPORTION UNITS SUPERVISED	UNIT SUPERVISED	50%	53%
		PROPORTION OF NON REPORTING UNITS VISITED/ TELEPHONICALLY CONTACTED	NON REPORTING UNITS VISITED/ TELEPHONCALLY CONTACTED	100%	50%
		FRECUENCY OF VISITS/ FEEDBACK FROM SENIOR OFFICERS	LAST TIME VISIT BY SSO	MONTH BACK	42%

ANNEXURE III

MATRIX FOR EVALUATING THE VARIOUS COMPONSNETS & ATTRIBUTES OF IDSP- DSO LEVEL.

S.No.	OBJECTIVE	*INDICATOR*	INFORMATION	RESULTS
1	**DESCRIPTION OF SURVEILLANCE SYTEM**		OBJECTIVES,	clear
			DATA FLOW SYSTEM, PROFORMA,	systematic
			DISEASES UNDER SURVEILLANCE, CASE DEFINITIONS	ALL
2	**ASCERTAINING PUBLIC HEALTH PRIROTY OF TB**	INCDIDENCE, MORTALITY, PREVALENCE	Suspected Cases of TB	479
		TREND	COMPARISON OF CASES WITH PAST YEARS	increasing
3	**ASSESSING IF SURVEILLANCE OBJECTIVES ARE SMART**			
3.1	CASE DETECTION	INDICATORS IDENTIFIED FOR TB SURVEILLANCE	LIST OF INDICATORS	AVAILABLE
3.2	CASE MGT	INDICATORS IDENTIFIED FOR INFORMATION GENEARTED BY TB SURVEILLANCE	LIST OF INDICATORS	AVAILABLE
4	**COMPONENTS OF SURVEILLANCE SYSTEM**			
4.1	POPULATION UNDER SURVEILLANCE	PROPORTION OF POPULATION COVERED	TOTAL POPN (**7,64,961**)	100%
			POPULATION COVERED	
4.2	CASE DEFINITION	KNOWLEDGE OF CASE DEFINTION	AWARE OF CASE DEFINITITONS	YES
4.3	TYPE OF SYSTEM		Monthly meeting/ Tour	Yes
4.4	DATA STRUCTURE		TYPE OF DATA COLECTED AT VARIOUS LEVELS	NUMBERS
4.5	INDICATORS	KNOWLEDGE OF INDICATORS	LIST OF INDICATORS	YES
4.6	DATA FLOW	RECCOMENDED, VS ACTUAL FRECUENCY OF DATA FLOW, DATA ANALYSIS	FRECUENCY OF REPORTING, TO WHOM REPORTING, DATA ANLYSIS LEVEL	WEKLY
4.7	FEEDBACK	FRECUENCY OF FEEDBACK RECEIVED, FRECUENCY OF FEEDBACK GIVEN	WRITTEN FEEDBACK AVAILABLE	MONTHLY
4.8	COORDINATION	COMPARABILITY OD DATASETS	NUMBER OF SUSPECT CASES, CONFIRMED CASES AT DSO AND DTO OFFICE	NOT COMPATIBLE
4.9	RESPONSE MECHANISM	ACTION TAKEN ON FEEDBACK		YES

5	ATTRIBUTES			RESULTS
5.1	SIMPLICITY	PROPORTION OF FORMS RECEIVED, COMPLETEDLY FILLED	FORM RECEIVED, FORMS WITH ERRORS	60%
5.2	ACCEPTABILITY	PROPORTION OF UNITS REPORTING	NO OF RU, NO OF REPORTS RECEIVED	80%
5.3	FLEXIBILITY	POSSIBILITY OF NEW DISEASE BEIGN REPORTED ON THE SAME FORM	SAPCE ON FORM FOR NEW DISEASE, PERCEPTION OF LEVEL OF DIFFCIULTY IN REPORTING ADDITIONAL DISEASE OR CHANGED CASE DEFINTION	YES
5.4	SENSITIVITY	PROPORTION OF PATIENTS GOING TO PVT SECTOR, PARTICIPATION RATE OF PVT SECTOR	NUMBER OF CASES GOING TO PVT DOCTORS, NO OF PVT DOCTRS ENROLLED AS RU AND REPORTING	25%, 2
5.5	POSITVE PREDICTIVE VALUE	PROPRTION OF CASES LAB CONFIRMED	PRESUMPTIVE CASES	9%
			CASES WITH SPUTUM EXAMINED	
5.6	TIMELINESS	PROPRTION OF REPORTS RECEIVED IN TIME	NUMBER OF REPORTS RECEIVED IN TIME, TOTAL REPORTS RECEIVED	40%
5.7	REPRESENTATIVENESS	PROPRTION OF AREA EFFECTIVELY COVERED	NO OF HEALTH INSTITUTIONS, NO OF RU, NO OF REPORTS RECEIVED	75%
5.8	USEFULNESS	ACTION TAKEN ON DATABASE	NO OF DETHS DISABILITY AVEERTED	NA
5.9	COST	TIMELY AND SUFFICIENT FUND FLOW	NO OF MONTHS WITH DELAYED FUND FLOW	1 Year
6	SUPERVISION	VEHICLE AVAILABLE	EARMARKED VEHICLE	No
		PROPORTION UNITS SUPERVISED	UNIT SUPERVISED	25%
		PROPORTION OF NON REPORTING UNITS VISITED/ TELEPHONICALLY CONTACTED	NON REPORTING UNITS VISITED/ TELEPHONCALLY CONTACTED	75%
		FRECUENCY OF VISITS/ FEEDBACK FROM SENIOR OFFICERS	LAST TIME VISIT BY SSO	One

ANNEXURE IV

MATRIX FOR EVALUATING THE VARIOUS COMPONSNETS & ATTRIBUTES OF IDSP- LT LEVEL.

S.No.	OBJECTIVE	*INDICATOR*	INFORMATION	RESULTS
1	**DESCRIPTION OF SURVEILLANCE SYTEM**	PROPRTION TRAINED, PROPORTION AWARE OF CORRECT DISEASE UNDER LAB SURVEILLANCE,	PROFORMA, DISEASES UNDER SURVEILLANCE, TESTS	20% trained
2	**ASCERTAINING PUBLIC HEALTH PRIROTY OF TB**	BURDEN OF CASES, TRENDS	COMPARISON OF CASES WITH PAST YEARS	increasing
3	**COMPONENTS OF SURVEILLANCE SYSTEM**			
3.1	POPULATION UNDER SURVEILLANCE	PROPORTION OF POPULATION COVERED	TOTAL POPN (**7,64,961**) POPULATION COVERED	100%
3.2	CASE DEFINITION	KNOWLEDGE OF CASE DEFINTION	AWARE OF CASE DEFINITITONS	100%
3.3	DATA STRUCTURE		TYPE OF DATA COLECTED AT VARIOUS LEVELS	List- 56% No.- 44%
3.4	INDICATORS	KNOWLEDGE OF INDICATORS	LIST OF INDICATORS	66%
3.5	DATA FLOW	RECCOMENDED, VS ACTUAL FRECUENCY OF DATA FLOW, DATA ANALYSIS	FRECUENCY OF REPORTING, TO WHOM REPORTING, DATA ANLYSIS LEVEL	MO-10% BMO-20% DSO- 45%
3.6	FEEDBACK	FRECUENCY OF FEEDBACK RECEIVED, FRECUENCY OF FEEDBACK GIVEN	MECHANISM OF FEEDBACK TO MPW ON CASES	100%
3.7	COORDINATION	REPORT SENT TO DSO/ DTO	DSO	45%
3.8	RESPONSE MECHANISM	ACTION TAKEN ON FEEDBACK		100%

4	ATTRIBUTES			RESULTS
4.1	SIMPLICITY	PROPORTION OF FORMS SUBMITTED, COMPLETEDLY FILLED	FORM RECEIVED, FORMS WITH ERRORS	100%
4.2	ACCEPTABILITY	PROPORTION OF WEEKS REPORTS SENT	NO OF WEEKS REPORTS SENT	100%
4.3	FLEXIBILITY	POSSIBILITY OF NEW DISEASE BEIGN REPORTED ON THE SAME FORM	SAPCE ON FORM FOR NEW DISEASE, PERCEPTION OF LEVEL OF DIFFCIULTY IN REPORTING ADDITIONAL DISEASE OR CHANGED CASE DEFINTION	difficult to report, no space say 77%
4.4	SENSITIVITY	PROPORTION OF PATIENTS GOING TO PVT SECTOR, PARTICIPATION RATE OF PVT SECTOR	NUMBER OF CASES GOING TO PVT DOCTORS, NO OF PVT DOCTRS ENROLLED AS RU AND REPORTING	5%
4.5	POSITVE PREDICTIVE VALUE	PROPRTION OF CASES LAB CONFIRMED	PRESUMPTIVE CASES 26 CASES WITH SPUTUM EXAMINED 137	19%
4.6	TIMELINESS	PROPRTION OF REPORTS SUMMITTED IN TIME	NUMBER OF REPORTS RECEIVED IN TIME, TOTAL REPORTS SUBMITTED	100%
4.7	USEFULNESS	ACTION TAKEN ON DATABASE	NO OF DETHS DISABILITY AVEERTED	NA
4.8	SUPERVISION	FRECUENCY OF VISITS/ FEEDBACK FROM SENIOR OFFICERS	LAST TIME VISIT BY BMO	Yes, 44%
			LAST TIME VISIT BY SUP	Yes, 45%
		ACTION ON NON REPRTING	OFFCIER VISITED/ TELEPHONCALLY CONTACTED OR REPRIMANDED IN MEETING ON NON SUBMISSION OF REPORT	Yes, 60%

ANNEXURE V

MATRIX FOR EVALUATING THE VARIOUS COMPONSNETS & ATTRIBUTES OF IDSP- PP LEVEL.

S.No.	OBJECTIVE	*INDICATOR*	INFORMATION	RESULTS
1	**ASCERTAINING PUBLIC HEALTH PRIROTY OF TB**	INCIDENCE, MORTALITY, PREVALENCE	CASES	0
2	**CASE DEFINITION**	KNOWLEDGE OF CASE DEFINITION	CORRECT KNOWLEDGE,	YES
			TRAINING	NO
3	**CO ORDINATION**	FRECUENCY OF MEETING WITH DSO	NUMBER OF MEETINGS	NIL
4	**SIMPLICITY**	PROPORTION OF REPORTS SENT	NUMBER OF REPORTS	2
		EASE OF REPORT SENDING	DATA FLOW	TO DSO
		DATA ANALYSIS	FREQUENCY OF DATA ANALYSIS	IRREGULAR
5	**SEPCIFICITY**	PROPORTION OF CASES CONFIRMED BY LAB	SUSPECT CASES, CONFIRMED CASES	0
6	**COST**	SYSTEM OF COST REIMBURSEMENT OF OPERATIONAL COSTS	PAYMENTS	NIL

Sampling procedure:

	Category	Sample
1	Chief medical officer	1
2	District Surveillance Officer	1
3	Block Medical Officers/ Medical Officers	36
4	Multi Purpose Workers (MPW).	208
5	Laboratory Technicians	9
6	Medical College Heads of Department Community Medicine	1
7	Private practitioners qualifying criteria under IDSP	2

1. Urban and rural government health centers : At heath care providers in health units, we sent self administered questionnaires through DSO to the health personnel and 15 days time were given for returning the filled questionnaires. We used questionnaires for different levels for MPW, MO and LT. We sent 3 reminders to officers not responding at intervals of 15- 30 days each. For any fields left out or missed in any question, respective officer were contacted telephonically and response obtained.

2. Private practitioners : We obtained a line list of private practitioners in the district, and enquired about list of private practitioners participating in IDSP from DSO to select 2 practitioners for interview.

3 **Medical college** : From department of Community Medicine, we had informal discussion with head of department if available or next level officiating person.

Fig 1: No. of cases of cough>3 weeks reported by IDSP.

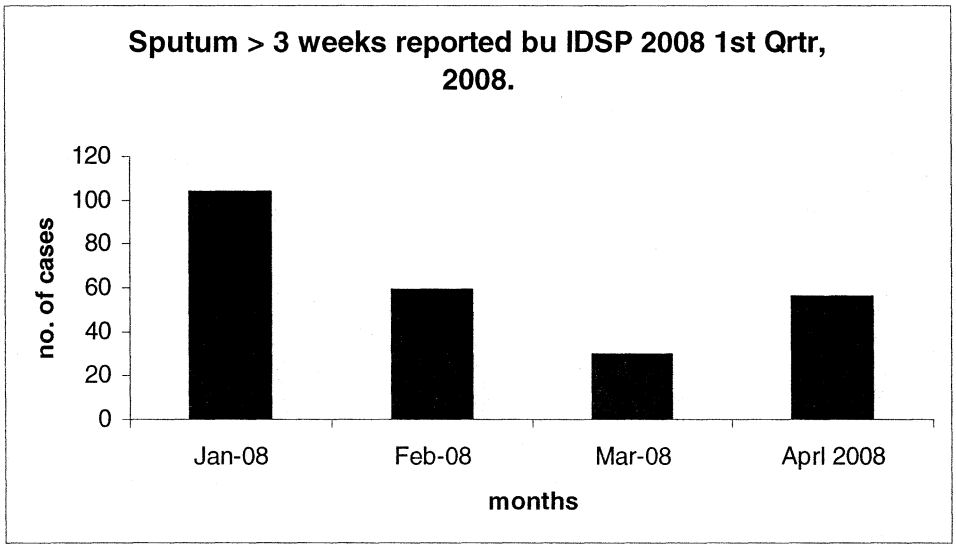


Fig 2 : No. of cases reported by IDSP and no. put on DOTS by RNTCP, 1ST Qurtr, 2008

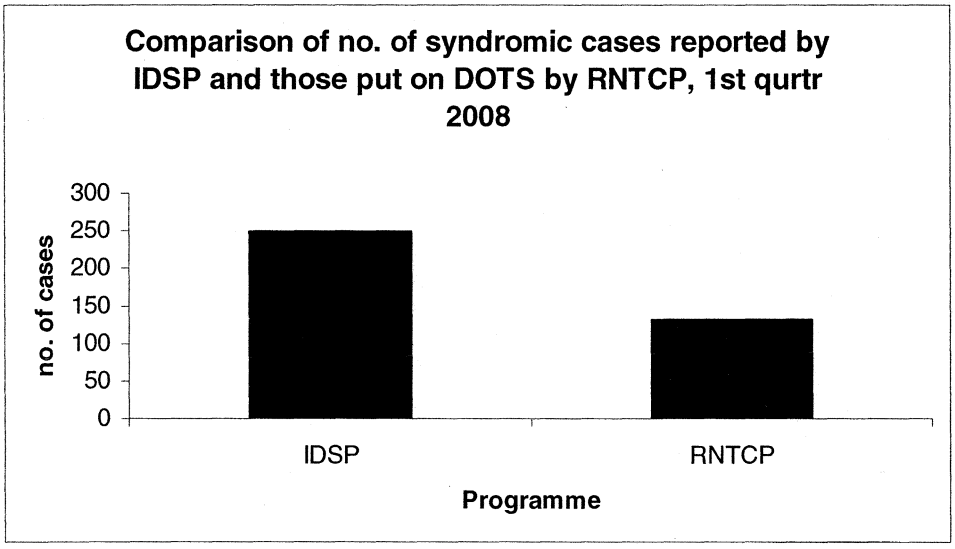


Table 1: IDSP Report for the year 2007, District Shimla, Himachal Pradesh.

Name of Block	Name of Disease							
	Only Fever	Cough <3Week	Cough >3Week	Dia. Some much Dehydration	With no Dehy.	Measles	Typhoid	Acute Jaundice
January	300	185	48	98	75	6	18	2
February	290	131	30	91	72	0	17	13
March	300	114	40	87	82	1	18	12
April	290	120	47	78	59	3	9	0
May	270	129	38	116	72	1	15	0
June	261	172	35	90	98	0	18	0
July	312	78	37	105	124	7	32	0
August	330	189	34	112	97	7	29	0
September	300	149	42	106	99	5	29	0
October	330	165	37	95	82	1	29	0
November	252	168	45	91	89	19	28	0
December	104	235	46	80	75	0	28	0
Total	**3339**	**1835**	**479**	**1149**	**1024**	**50**	**270**	**27**

Fig 3: The consolidated report below show more cases added at district level reported from district hospital data, but No surveillance for Leishmeniasis is being done by DSO, officially.

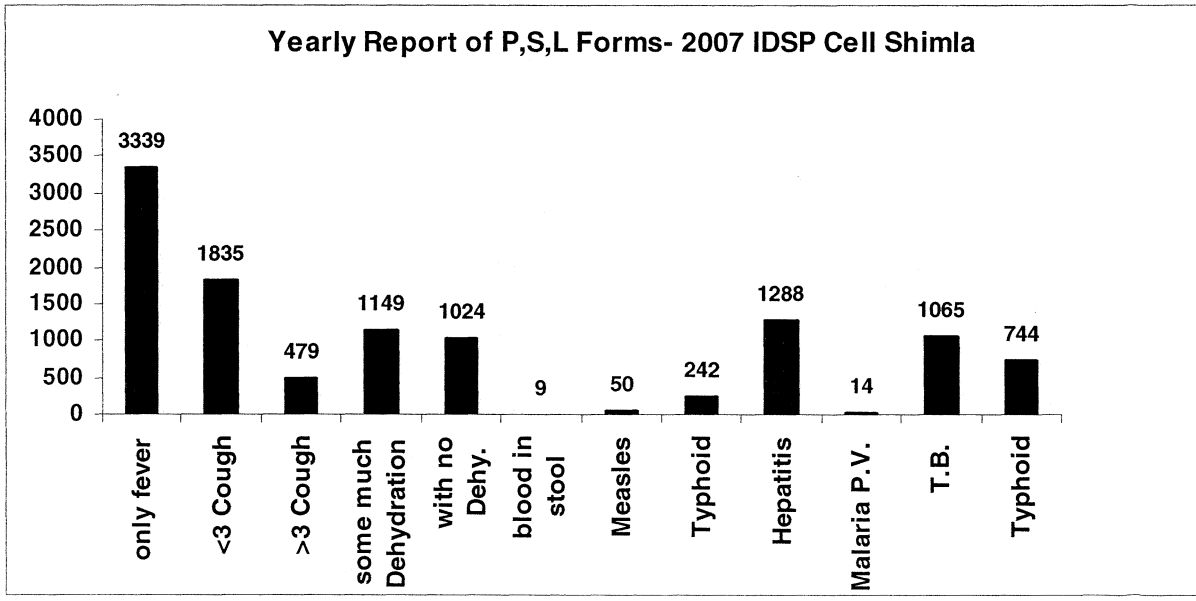
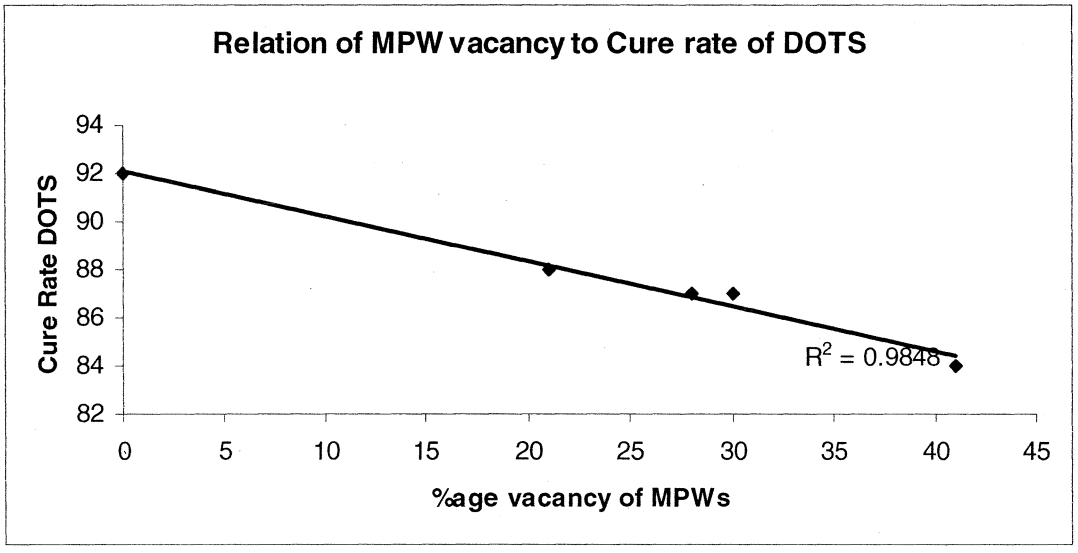


Table 2: Comparison of key indicators with other districts, RNTCP evaluation,Himachal 2008.

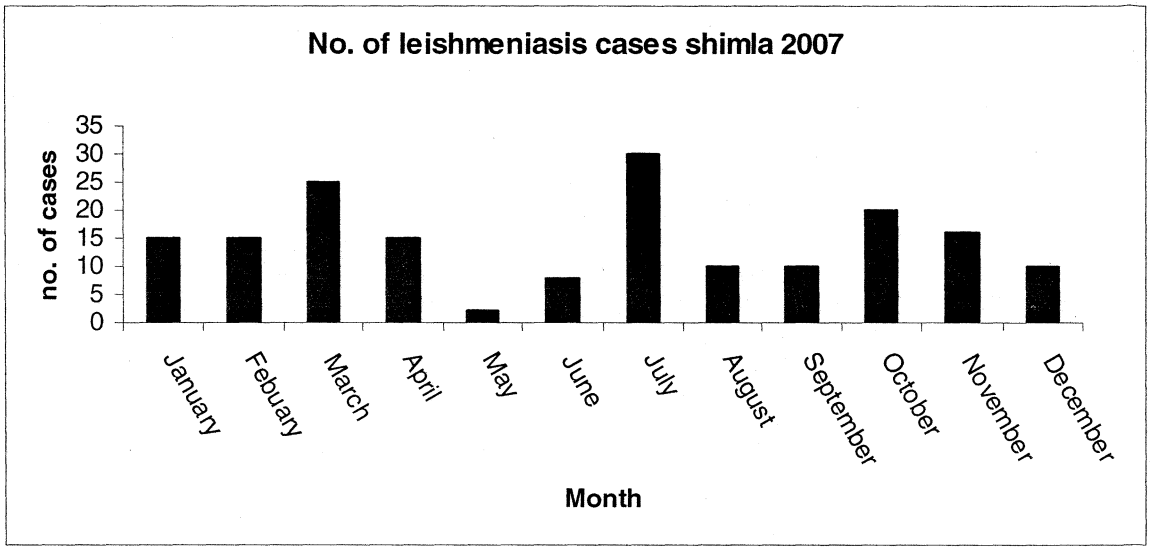
Distt /Indicator	Solan	Bilaspur	Shimla	Chamba	Kangra
Population 2005 (lakh)	5.3	3.7	7.7	5.1	14.2
Proportion of MPW vacant	**0**	**28**	**30**	**41**	**21**
No of TU	3	2	4	3	5
No of DMC	15	11	20	10	29
Proportion doctor trained	82	83	80	95	100
Proportion LT trained	87	88	65%	97	100
Proportion of chest sympomatics screened	1.5	1.8	1.9	2.2	1.5
NSP Case detection rate (%) Q1 08	**101**	**89**	**72**	**81**	**80**
Cure rate of cases put on treatment 13-15 months earlier	**92**	**87**	**87**	**84**	**88**
Failure Rate	2.6	2.5	3.4	**6.7**	3.0
Default rate	0.9	**5**	**6**	4.4	4.0
Remarks	Plain Urbanized	High default	Under staffed	Inadequately staffed	Large distt./ difficult terrene

Fig 4: Relation of vacancy of MPWs with that of cure rate.



As the vacancy position increases the cure rate in RNTCP decreases, Correlation is significant at the 0.01 level (2-tailed).

Fig 5: Leishmeniasis in Shimla is emerging disease and still not kept under IDSP for surveillance.



Source: Reports gathered from IG Medical college and Rampur regional hospital, Shimla.

Despite the fact that Leishmeniasis now has spread from the Tribal district of Kinnaur to adjoining districts of Shimla and Kullu, no record exists at state cell of IDSP and though the disease has been kept under IDSP for surveillance, showing inflexibility of IDSP Programme in the state.

Table 3: Summary of Methods for description and evaluation of surveillance system:

S.No	**Method**	**Sample size**	**Tool**
A	**Review of documents**		
1	National Project Implementation Plan (PIP), 2004.	1	Abstraction form
2	Operational Manual for District Surveillance Units.	1	
3	Operational Manual for Medical Officers.	1	
4	Operational Manual for Health Workers.	1	
5	Manual of laboratory techniques for District Public Health Laboratories.	1	
6	Reporting formats – Form 'S' for syndromic surveillance, Form 'P' for presumptive surveillance, Form 'L' for laboratory surveillance and Form 'W' for water quality surveillance	1	
7	Himachal State Project Implementation Plan.	1	
8	Training records of all categories of personnel involved in surveillance	1	
B	**Discussion with stakeholders**		
1	Chief Medical Officer	1	Informal discussion
2	District Surveillance Officer	1	
3	Block Medical Officers	All	
4	Medical Officers,	All	
5	Multi Purpose Workers (MPW).	All	
6	Medical College Heads of Department: (Microbiology, Medicine, Community Medicine, Pediatrics)	1	
7	Private practitioners qualifying criteria under IDSP	2	

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ANNEXURES

Annexure I: Abstraction form of documents for description of surveillance system.

a. Name of document /publication /article :
b. Full reference of document reviewed :

Sr. NO.	Description contents	Details obtained	Remarks
1 a. b	Introduction : Relevance of IDSP Rationale		Not available
2	Goals of Integrated Disease Surveillance Project		
3	Specific objectives of disease under surveillance selected for description and assessment		
4	Diseases of public health priority kept under surveillance for Integrated Disease Surveillance Project National State		
5	Health infrastructure of Integrated Disease Surveillance Project - For HP - For your district	Organogram of 1. health infrastructure 2. manpower responsible at different levels of system	
6*	Case definitions (Write the suspected, Probable and confirmatory case definition as per document review for Integrated Disease Surveillance Project for the disease selected by you.)	Compare case definitions of IDSP with those of WHO recommended surveillance standards 2001 if different mention it in your report	
7*	Population kept under surveillance for various		

	diseases under surveillance: Total Sentinel Special		
8*	Reporting mode Passive Active		
9*	Data structure Individual data Aggregated data		
10*	Types of reporting units Public Rural Urban Medical colleges Laboratories Private Individual practitioners Nursing homes Hospitals Medical colleges Laboratories		
11*	Data flow and frequency from various reporting units Flow chart for data from Periphery Intermediate level Secondary Tertiary		
12*	Data analysis Include frequency and indicators for analysis for disease selected		
13*	Feedback Include flow chart to show frequency and flow of feedback for disease selected		
14*	Others (Specify)		

Annex II: MATRIX FOR EVALUATING THE VARIOUS COMPONSNETS & ATTRIBUTES OF IDSP- DISTRICT LEVEL.

	OBJECTIVE	*INDICATOR*	INFORMATION	SAMPLE SIZE	DATA COLLECTION TECHNIQUE	DATA COLLECTION TOOL
1	**DESCRIPTION OF SURVEILLANCE SYTEM**		OBJECTIVES, DATA FLOW SYSTEM, PROFORMA, DISEASES UNDER SURVEILLANCE, CASE DEFINITIONS	ALL PIP, TRG MANUALS	REVIEW OF RECORDS/ DOCUMENTS	ABSTRACTION FORM/ CHECKLIST
					INFORMAL DISCUSSION WITH SATKEHOLDERS	INTERVIEW SCHEDULE
2	**ASCERTAINING PUBLIC HEALTH PRIROTY OF TB**	INCDIDENCE, MORTALITY, PREVALENCE	CASES	DSO=1, DTO =1	REVIEW OF SECONDAY DATA	ABSTRTACTION FORM
		TREND	COMPARISON OF CASES WITH PAST YEARS	DSO=1, DTO =1	INTERVIEW WITH STAKEHOLDERS	INTERVIEW SCHEDULE
3	**ASSESSING IF SURVEILLANCE OBJECTIVES ARE SMART**					
3.1	CASE DETECTION	INDICATORS IDENTIFIED FOR TB SURVEILLANCE	LIST OF INDICATORS	DSO=1, DTO =1	INTERVIEW WITH STAKEHOLDERS	INTERVIEW SCHEDULE
3.2	CASE MGT	INDICATORS IDENTIFIED FOR INFORMATION GENEARTED BY TB SURVEILLANCE	LIST OF INDICATORS		REVIEW OF SECONDAY DATA	ABSTRTACTION FORM
4	**COMPONENTS OF**	**SURVEILLANCE SYSTEM**				
4.1	POPULATION UNDER SURVEILLANCE	PROPORTION OF POPULATION COVERED	TOTAL POPN POPULATION COVERED	DSO=1	INTERVIEW	INTERVIEW SCHEDULE
4.2	CASE DEFINITION	KNOWLEDGE OF CASE DEFINTION	AWARE OF CASE DEFINITITONS	DSO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE

4.3	TYPE OF SYSTEM			DSO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE
4.4	DATA STRUCTURE		TYPE OF DATA COLECTED AT VARIOUS LEVELS	DSO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE
4.5	INDICATORS	KNOWLEDGE OF INDICATORS	LIST OF INDICATORS	DSO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE
4.6	DATA FLOW	RECCOMENDED, VS ACTUAL FRECUENCY OF DATA FLOW, DATA ANALYSIS	FRECUENCY OF REPORTING, TO WHOM REPORTING, DATA ANLYSIS LEVEL	DSO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE
4.7	FEEDBACK	FRECUENCY OF FEEDBACK RECEIVED, FRECUENCY OF FEEDBACK GIVEN	WRITTEN FEEDBACK AVAILABLE	DSO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE
4.8	COORDINATION	COMPARABILITY OD DATASETS	NUMBER OF SUSPECT CASES, CONFIRMED CASES AT DSO AND DTO OFFICE	DSO=1, DTO=1	INTERVIEW, REVIEW OF RECORDS	ABSTRACTION FORM, INTERVIEW SCHEDULE
4.89	RESPONSE MECHANISM	ACTION TAKEN ON FEEDBACK		DSO=1		INTERVIEW SCHEDULE
5	**ATTRIBUTES**					
5.1	SIMPLICITY	PROPORTION OF FORMS RECEIVED, COMPLETEDLY FILLED	FORM RECEIVED, FORMS WITH ERRORS	DSU	INTERVIEW, REVIEW OF FORMS	ABSTRACTION FORM
5.2	ACCEPTABILITY	PROPORTION OF UNITS REPORTING	NO OF RU, NO OF REPORTS RECEIVED	DSU		ABSTRACTION FORM
5.3	FLEXIBILITY	POSSIBILITY OF NEW DISEASE BEIGN REPORTED ON THE SAME FORM	SAPCE ON FORM FOR NEW DISEASE, PERCEPTION OF LEVEL OF DIFFCIULTY IN REPORTING ADDITIONAL DISEASE OR CHANGED CASE DEFINTION	DEO=1, DSO=1	INTERVIEW	INTERVIEW SCHEDULE

5.4	SENSITIVITY	PROPORTION OF PATIENTS GOING TO PVT SECTOR, PARTICIPATION RATE OF PVT SECTOR	NUMBER OF CASES GOING TO PVT DOCTORS, NO OF PVT DOCTRS ENROLLED AS RU AND REPORTING	DSO=1	INTERVIEW	INTERVIEW SCHEDULE
5.5	POSITVE PREDICTIVE VALUE	PROPRTION OF CASES LAB CONFIRMED	PRESUMPTIVE CASES CASES WITH SPUTUM EXAMINED	DSO=1	INTERVIEW	INTERVIEW SCHEDULE
5.6	TIMELINESS	PROPRTION OF REPORTS RECEIVED IN TIME	NUMBER OF REPORTS RECEIVED IN TIME, TOTAL REPORTS RECEIVED	DSU	REVIEW RECORDS	ABSTRACTION FORM
5.7	REPRESENTATI VENESS	PROPRTION OF AREA EFFECTIVELY COVERED	NO OF HEALTH INSTITUTIONS, NO OF RU, NO OF REPORTS RECEIVED	DSU	INTERVIEW, REVIEW OF FORMS	INTERVIEW SCHEDULE, ABSTRACTION FORM
5.8	USEFULNESS	ACTION TAKEN ON DATABASE	NO OF DETHS DISABILITY AVEERTED	DSO=1	INTERVIEW	INTERVIEW
5.9	COST	TIMELY AND SUFFICIENT FUND FLOW	NO OF MONTHS WITH DELAYED FUND FLOW	DSU ACCT	INTERVIEW	INTERVIEW SCHEDULE
6	SUPERVISION	VEHICLE AVAILABLE	EARMARKED VEHICLE	DSO=1	INTERVIEW	INTERVIEW SCHEDULE
		PROPORTION UNITS SUPERVISED	UNIT SUPERVISED			
		PROPORTION OF NON REPORTING UNITS VISITED/ TELEPHONICALLY CONTACTED	NON REPORTING UNITS VISITED/ TELEPHONCALLY CONTACTED			
		FRECUENCY OF VISITS/ FEEDBACK FROM SENIOR OFFICERS	LAST TIME VISIT BY SSO			

Annex VII: Questionnaire for MPW

MPW

FORM A: I dentification, institution and training status.

No.	Questions and filters		Coding categories	Skip
1	NAME			
2	[RECORD SEX OF RESPONDENT]		Female Male	1 2
3	How old are you? [RECORD AGE OF RESPONDENT]		Age in years	[__|__]
4	What is your qualification? [RECORD RESPONSE]			
5	What is your length of service		Years	
6	Duration of Stay at Present Post		Years	
II	**Institution profile:**			
7	What is the Population served by your institution? How many villages?		_____	
8	Tell us about the staff of your institution			
	Category	Sanctioned	In position	
	MPW M			
	MPW F			
	Other			
III	**Training Particulars**			
9	Have you undergone any training in IDSP?		NO	
10	YES	When	Duration (Days)	
11	Have you undergone any training in RNTCP?		NO	IF YES GOTO
11B	YES	When	Duration (Days)	
12	Has training enabled you to perform your duty?		YES NO	1 2

12B	Give reasons for your answer

Form B **DESCRIPTION OF IDSP IN THE DISTRICT** ID NO.

13. What is the job of the health workers?

---

14. How do you suspect as a case of TB under the IDSP?

---

15. What do you do for that case?

---

16. Do you lookout for cases house to house

---

17. Is the list of cases sent to the higher level, or just the number?

---

18. What reports are to be sent?

---

19. How often are the reports to be sent?

---

20. What data analysis is done on the forms?

	FORM C **PUB HEALTH PRIORITY OF TB**		ID NO
21	HOW MANY CASES OF TB ARE THERE IN YOU AREA ON TREATMENT AND CURED IN THE LAST 12 MONTHS?	CASES	
22	DO YOU THINK THE PROBLEM OF TB IN YOUR AREA IS	INCREASING	1
		DECREASING	2
		STATIC	3
		DON'T KNOW	4
23	HOW MANY PERSONS HAVE DIED OF TB IN LAST ONE YEAR	NUMBER	
	COMPONENTS OF TB SURVEILLANCE		
		NO	2
	CASE DEFINITION		
24	IS THE CASE DEFINITION AVAIABLE FOR TB?	YES	
		NO	
25	HAS THE CASE DEIFINITION CHANGED RECENTLY?	YES	
		NO	
	ATTRIBUTES		
	SIMPLICITY		
26	HOW DO DIAGNOSE A PATIENT AS TB	CASE DEFINTION CORRECT	1
		INCORRECT	2
		DON'T KNOW	3
		OTHER	4
27	HOW DO YOU COME TO KNOW ABOUT PATIENT OF COUGH MORE THAN 3 WEEKS	VISIT TO VILLAGE	1
		PATIENT COME TO SUB CENTRE	2
		LOCAL VILAGE DOCTOR/ RMP	3
		VILLAGE PANCHAYAT	4
		ANGANWARI WORKERS	5
		MAHILA MANDAL	6
		YUVAK MANDAL	7
		TEACHER	8
		NEIGHBOUR/ RELATIVE OF PATIENT	9
		CASE DIAGNOSED AT HOSPITAL AND MEDICINES SENT	10

28	DO YOU FACE ANY DIFFCULTY IN GATHERING INFORMATION ON TB CASES	YES, PEOPLE TRY TO HIDE DISEASE EVEN FROM US	
		NO, PEOPLE COME OPENLY TO TELL ME	
		OTHER (Specify)_____	
29	AFTER HOW MANY DAYS ARE YOU ABLE TO VISIT EVERY VILLAGE	NUMBER OF DAYS	
30	IN MONSOON OR WINTER HOW AMNY DAYS IN A MONTH ARE YOU ABLE TO VISIT THE VILLAGES	NUMBER OF DAYS PER MONTH	
31	HOW MANY PATIENTS VISIT YOUR SUBCENTRE EVERY MONTH	NUMBER OF PATIENTS	
32	DO YOU UNDERSTAND THE COLUMNS IN THE REPORT FORM	YES	
		PARTIALLY	
		NO	
33	DO YOU FIND ANY DIFFICULTY IN FILLING THE FORM?	YES	1
		NO	2
		DON'T KNOW	9
34	DO YOU SEND REPORTS	YES, ALWAYS	1
		YES SOMETIMES	2
		NO, NEVER SENT	3
35	HOW EASY OR DIFFICULT DO YOU FIND IT TO SEND THE REPORT FORM	EASY	
		DIFFCULT	
36	WHAT HAPPENS IN RAINS OR SNOWFALL	NOT ABLE TO OPEN SUBCENTRE	
	TICK ALL THAT APPLY	GET INFORMATION TELEPHOINICALY FROM INFORMERS	
		THE POSTAL SYSTEM DOES NOT WORK, REPORT CANT BE SENT	
37	HOW MUCH TIME DO YOU SPEND PER WEEK ON SURVEILLANCE (GATHERING INFORMATION, MAKING REPORT AND SENDING REPORT)	HOURS	
38	ON WHICH FORM DO YOU SEND REPORTS	S FORM	1
		OTHER	2
39	WHICH DISEASES ARE REPORTED	DIARRHOEA	

	[TICK ALL THAT APPLY]	DIARRHOEA WITH DEHYDRATION	
		DIARHOEA WITH BLOOD	
		FEVER	
		FEVER WITH RASH	
		COUGH <3 WEEKS	
		COUGH > 3 WEEKS	
		JAUNDICE	
		AFP	
		OTHERS (SPECIFY)	
		_____	
40	HOW OFTEN DO YOU HAVE TO SEND REPORT	DAILY	1
		WEEKLY	2
		FORTNINGHTLY	3
		MONTHLY	4
41	HOW OFTEN DO YOU ACTUALLY SEND THE REPORTS	WEEKLY	1
		FORTNIGHTLY	2
		MONTHLY	3
		OTHER	
	Reasons For Doing so		
42	TO WHOM DO YOU SEND REPORT	MEDICAL OFFICER	1
		BLOCK MEDICAL OFFICER	2
		DISTRICT SURVEILANCE OFFICER	3
43	HOW DO YOU SEND REPORT	PERSONALY	1
		THROUGH SUPERVISOR	2
		POST	3
		TELEPHONE	4
44	IF YOU ARE NOT ABLE TO SEND REPORT, WHY IS IT SO?	FORM NOT AVAILABLE	1
		DON'T UNDERSTAND HOW TO FILL	2
		NO CASE, NOTHING TO REPORT	3
		UNNECSSSARY PAPERWORK	4
		NO PERSON TO SEND REPORT	5
		NO POSTAGE OR TRAVEL EXPENSE	6
		FORGOT	7
		OTHER_____	8

45	IF YOU DID NOT SEND REPORT, WAS ANY ACTION TAKEN BY YOUR SUPERIORS	NO ACTION	1
		TELEPHONIC REMINDER	2
		WRITTEN REMINDER	3
		REPRIMAND IN MONTHLY MEETING	4
		VISIT BY SUPERIOR OFFICER	5
		OTHER _____	9
46	IS THE DATA ANALYSED	YES	
		NO	
	IF YES, WHO ANALYSES THE DATA	BMO	
		DSO	
		SSO	
47	AT WHAT FREQUENCY IS THE DATA ANALYSED	WWEKLY	
		MONTHLY	
		QUARTLRLY	
		HALF YEARLY	
		ANNUALLY	
48	HOW IS THE PATIENT PRIVACY ENSURED	NAME NOT MENTIONED	
		RECORD KEPT CONFIDENTIAL	
		OTHER	
49	DO YOU GET FEDBACK FROM THE OFFICERS ON IDSP REPORTS	YES	
		NO	
	FLEXIBILITY		
50	IF YOU WERE ASKED TO REPORT A NEW DISEASES, SAY MDR TB, WOULD IT BE	EASY	1
		DIFFICLULT	2
		TIME CONSUMING	3
		OTHER (Specify)	9
51	IF CASE OF COUGH MORE THAN 3 WEEKS REPORTS UNUSUAL SYMPTOMS, HOW WILL YOU REPORT IT		
	ACCEPTABILITY		
52	HOW MANY REPORTS DO YOU HAVE TO FILL EVERY MONTH		
53	WHICH OF THE FOLLOWING SYSTEMS DO YOU	SYSTEM BEFOR IDSP	
		SYSTEM AFTER IDSP	
		BOTH ARE EQUALLY EASY	
		BOTHARE EQUALLY DIFFCICULT	
	SENSITIVITY		
54	WHAT PROPORTION OF CASES OF COUGH > 3 WEEKS DO YOU FEEL, THET YOU ARE ABLE TO	<25%	1
		26-50%	2

	REPORT		
		51-75%	3
		>75%	4
	POSITIVE PREDICTIVE VALUE		
55	OF THE CASES YOU REPORTED FOR COUGH > WEEKS, IN LAST 6 MONTH, HOW MANY WERE DIGNOSED AS TB	COUGH CASES	
		TB CASES	
		%	
	REPRESENTATIVENESS		
56	HOW MANY AREAS ARE DIFFCIULT TO VISIT AND YOU AREABLE TO GO ONLY ONCE IN THREE MONTH	NUMBER OF HAMLETS	
		DIFFICULT HAMLETS	
57	ARE THERE ANY SPECIAL POPULATION GROUPS LIKE MIGRANT, GUJJAR WHICH YOU ARE NOT ABLE TO COVER FULLY	YES	
		NO	
	TIMELINESS		
58	HOW MUCH TIME DOES IT TAKE FOR THE AUTHORITIES TO TAKE ACTION IF SUDDENLY LOT OF CASES OF ONE DISEASE OCCUR AND REPORTED BY YOU?		
	USEFULNESS		
59	HAVE YOU FOUND AN INCREASE OR DECREASE IN TB CASES IN YOUR AREA OVER THE LAST THREE YEARS?	YES	1
		NO	2
60	IS EVERYBODY DETECTED AS CASE GETTING FREE MEDICINE	YES	1
		NO	2
	SUPERVISION- DATA QUALITY		
61	HOW OFTEN DO YOU GET FEEDBACK FROM OFFICERS ON REPORTS	_____	
62	DESCRIBE THE TYPE OF FEEDBACK RECEIVED	TIMELINESS	
		COMPLETENSS	
		ACCURACY	
		DECISION OR INSTRUCTION FOR ACTION	
		TB PREVALENCE RATES	
		TB TRENDS	
		OTHERS	
63	DID YOU RECEIVE ANY FEEDBACK FROM HIGHER AUTHORITIES ON MISTAKES IN	YES	1
		NO	2

	FORM		
64	DID YOU EVER RECEIVE ANY FEEDBACK FROM HIGHER AUITHORITIES ONDISEASE PATTERN OF YOUR AREA?	YES	1
		NO	2
65	DID ANY SUPERVISOR/MO/DOCTOR VISIT YOU IN THE LAST SIX MONTHS?	YES	1
		NO	2
66	DID HE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES	1
		NO	2
	DID THE OFFICER TALLY THE REPORT WITH OPD REGISTER?	YES	1
		NO	2

STRENGTHS

67. What are the strengths of IDSP programme in your area?

CONSTRAINTS

68. What constraints (problems) do you face in implementing IDSP in your area?

SUGGESTIONS

69. What are your suggestions to improve the working of IDSP ?

70. Any other comment

Thank you for your time.

Annex VIII: Questionnaire for Medical Officers/ Block Medical Officers

MEDICAL OFFICER/ BLOCK MEDICAL OFFICER FORM A: Identification, institution and training status.

No.	Questions and filters		Coding categories	Skip
1	NAME			
2	[RECORD SEX OF RESPONDENT]		Female Male	1 2
3	How old are you? [RECORD AGE OF RESPONDENT]		Age in years	[__|__]
4	What is your qualification? [RECORD RESPONSE]		MBBS PG diploma MD DNB Other _____	1 2 3 4 5
5	What is your length of service		Years	
6	Duration of stay at Present Post		Years	
II	**Institution profile:**			
7	What is the Population served by your institution?		_____	
8	Tell us about the staff of your institution			
	Category	Sanctioned	In position	
	Doctors			
	Nurse			
	Pharmacist			
	MPW			
	Lab technician			
III	**Training Particulars**			
9	Category	TRAINED IDSP	TRAINED TB	
	Doctor			
	Lab technician			
	Pharmacist			
	MPW			
10	Have you undergone any training in IDSP?		NO	If yes GOTO 11
10B	YES	When	Duration (Days)	
11	Have you undergone any training in IDSP?		NO	IF YES GOTO 12
11B	YES	When	Duration (Days)	

12	Has training enabled you to perform your duty?			YES NO	1 2
12B	Give reasons for your answer				

Form B: DESCRIPTION OF IDSP IN THE DISTRICT ID NO.

13. Why is the IDSP project launched in your area?

_____

14. What are the goals of the IDSP?

_____

15. What are the diseases of national importance kept under the IDSP?

_____

16. What state specific diseases are kept under the IDSP?

_____

17. Why is TB kept under surveillance?

_____

18. Under the IDSP how many reporting units do you have?

_____

19. What is the job of the health workers?

_____

20. What is the job of medical officers in disease surveillance?

_____

21. What is the role of medical colleges in disease surveillance?

_____

22. How do you suspect as a case of TB under the IDSP?

_____

23. How do you confirm a TB case?

_____

24. Do the staff lookout for cases house to house or just wait for cases to come to hospital?

_____

25. Is the list of cases sent to the higher level, or jus the number?

_____

26. What reports are to be sent?

_____

27. How often are the reports to be sent?

_____

28. What data analysis is done on the forms?

FORM C: Evaluation. ID NO

No.	Questions and filters	Coding categories	Skip
I	**Public health priority**		
29	How many cases of TB are there in you area on treatment and cured in the last 12 months?	Female _____ Male _____	
30	Do you think the problem of TB in your area is	INCREASING DECREASING STATIC DON'T KNOW	1 2 3 4
31	On an average, How many patients visit your OPD every month	No	
32	How many suspects were sent for sputum examination?	No	
II	**Knowledge of TB**	Write here	Leave for coding
33	How do you suspect case of TB?		
34	How do you diagnose a case of TB?		
35	What the different types of TB case? Classification		
36	How do you categorize the TB patients?		

37 What are the different regimens

CAT I

CAT II

CAT III

CAT IV

38 What is the schedule of sputum examination for TB patient on treatment?

39 How you declare a TB case as cured?

40 How do you declare a TB case as defaulter?

41 How do you declare a TB case as failure?

42 How do you declare a TB case as relapse?

43 If cough more than 3 week patient is having 3 sputum smear negative, what is to be done?

III ATTRIBUTES

Simplicity

44 Who prepares the IDSP report in your hospital

CLERK
COMPUTOR
SELF
OTHER DOCTOR
OTHER_____

45 Does he find any difficulty in filling the form?

YES
NO

46	How often do you have to send report	DAILY WEEKLY FORTNINGHTLY MONTHLY other _____	
47	How often do you send the report	DAILY WEEKLY FORTNINGHTLY MONTHLY other _____	
48	To whom do you send the report?	BMO DSO DTO DHS	
49	How do you send the report?	PERSONALY THROUGH SUPERVISOR POST TELEPHONE OFFICE MANAGES THIS WORK	
50	Do you send reports	YES, ALWAYS YES SOMETIMES NO, NEVER SENT	1
51	How easy or difficult do you find it to send the report form	EASY DIFFCULT	
52	What happens in rains or snowfall tick all that apply	NOT ABLE TO OPEN HOSPITAL GET INFORMATION TELEPHOINICALY FROM INFORMERS THE POSTAL SYSTEM DOES NOT WORK, REPORT CANT BE SENT	
53	how much time do you spend per week on surveillance (gathering information, making report and sending report)	HOURS	
54	on which form do you send reports	S FORM OTHER	
55	is the data analysed	Yes No	
56	if yes, who analyses the data	MO BMO DSO SSO DTO	
57	how often is the data analysed	WEEKLY MONTHLY QUARETERLY HALF YEARLY ANNUALY	
58	how is patient's privacy ensured?	Name not mentioned Record kept confidential Any other (Specify)	

FLEXIBILITY

59	if you were asked to report a new diseases, say MDR TB, would it be	EASY DIFFICLULT TIME CONSUMING OTHER (Specify)
60	if cough more than 6 months has to be reported, where will you report it on the form?	UNUSUAL SYNDROME NO SPACE OTHER
61	if case of cough more than 3 weeks reports unusual symptoms, how will you report it	
	ACCEPTABILITY	
62	how many reports do you have to fill every month	
63	was the earlier system of month report better	EASIER EQUALLY SAME DIFFICLULT
	SENSITIVITY	
64	What proportion of cases of cough > 3 weeks do you feel, thet you are able to report	<25% 26-50% 51-75% >75%
	POSITIVE PREDICTIVE VALUE	
65	of the cases you reported for cough > weeks, in last 6 month, how many were dignosed as TB	COUGH CASES TB CASES %
	REPRESENTATIVENESS	
66	how many areas are difficult to visit and you are able to go only once in three month	NUMBER OF HAMLETS DIFFICULT HAMLETS
67	are there any special population groups like migrant, gujjar which you are not able to cover fully	YES NO
	TIMELINESS	
68	how much time does it take for the authorities to take action if suddenly lot of cases of one disease occur and reported by you?	
	USEFULNESS	
69	have you found an increase or decrease in tb cases in your area over the last three years?	YES NO
70	is everybody detected as case getting free medicine	YES NO
	SUPERVISION/ FEEDBACK	

71	If your sub centres do not send reports, what action do you take?	No action Telephonic reminder Written reminder Reprimand in monthly meeting Other	
72	DID YOU VISIT YOUR SUBCENTRE IN THE LAST SIX MONTHS?	YES NO	
73	DID YOU CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	3
	DID YOU OFFICER TALLY THE REPORT WITH OPD REGISTER?	YES	1
		NO	2
74	DID YOU GIVE ANY DEEDBACK TO SUB CENTRES ON MISTAKES IN FORM	YES NO NA, FORM SENT DIRECTLY OTHER	1 2
75	DID YOU EVER GIVE ANY DEEDBACK TO SUB CENTRES ON DISEASE PATTERN OF HIS/HER AREA?	YES	1
		NO	2
76	**SUPERVISION OF SUBCENTRES BY SUPERVISOR**		
77	DID YOUR SUPERVISOR VISIT YOUR SUBCENTRE IN THE LAST SIX MONTHS?	YES	1
		NO	2
78	DID HE/ SHE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
	DID HE/SHE TALLY THE REPORT WITH OPD REGISTER?	YES	1
		NO	2
79	**SUPERVISION OF MO/BMO BT DISTRICT AUTHORITIES**		
	DID YOU RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ON MISTAKES IN FORM	YES NO	1 2
80	DID YOU EVER RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ONDISEASE PATTERN OF YOUR AREA?	YES NO	1 2
81	DID ANY OFFICER VISIT YOU IN THE LAST SIX MONTHS?	YES	1
		NO	2
82	DID HE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
83	DID THE OFFICER TALLY THE REPORT WITH OPD REGISTER?	YES	1
		NO	2
84	HOW OFTEN DO YOU GET FEEDBACK FROM OFFICERS ON REPORTS	_____	
85	DESCRIBE THE TYPE OF FEEDBACK	TIMELINESS	

	RECEIVED	
		COMPLETENSS
		ACCURACY
		DECISION OR
		INSTRUCTION FOR ACTION
		TB PREVALENCE RATES
		TB TRENDS
		OTHERS
86	DID YOU RECEIVE ANY FEEDBACK FROM HIGHER AUTHORITIES ON MISTAKES IN FORM	YES
		NO
87	DID YOU EVER RECEIVE ANY FEEDBACK FROM HIGHER AUITHORITIES ONDISEASE PATTERN OF YOUR AREA?	YES
		NO

INTEGRATION WITH PRIVATE PRACTIONERS

84. Are private practitioners / hospitals / nursing homes operating in your area?

Yes (1) No (2)

85. If "Yes" please specify the categories they belong to: (Tick all that apply)

a. Individual private practitioners

b. Private nursing homes

c. Private hospitals

d. Private poly clinics

e. Other (specify)

86. What system(s) of medicine do the private practitioners belong to (tick all that apply)

a. Allopathy

b. Homeopathy

c. Ayurveda

d. Siddha

e. Faith headers

f. Others (specify)

87. What proportion of total disease burden in your area is taken care of by private sector? (Tick the most appropriate)

a. < 10% e. > 60% i. Other (specify)

b. < 25% f. > 70%

c. < 35% g. > 80%

d. < 50% h. > 90%

88. In your district have you been able **to identify** and **enlist** private partners for IDSP?

a. Identify: Yes (1) No (2)

b. Enlist: Yes (1) No (2)

89 If "yes" please give details as requested below:

A. "Identification"

90. Please mention the **methods used** to identify private partners (Tick all that apply)

- Use IMA/IAP, etc. to obtain list of private partners
- Carried out a survey
- Obtained list from local health workers
- Others (Specify)

91. Please indicate what categories (with numbers) the private partners belong to: (Tick all that apply)

Categories	**Numbers identified**
- Private practitioner	
- Poly clinics (Pvt)	
- Private hospitals	
- Private nursing homes	
- Others (specify)	

B. Enlisting:

92. Please mention how many private partners have you been able to **enlist** for IDSP in your area?

Categories	**Numbers Enlisted**
Private practitioner	
Poly clinics (Pvt)	
Private hospitals	
Private nursing homes	
Others (specify)	

93. If the total numbers of private partners identified are less than that suggested by IDSP for the 1st year of implementation, please give reasons:

a.

b.

94. If response to question (88) is "No" please give reasons:

S.No	Activity	Reasons
1.	**Identification**	
2.	**Enlisting**	

STRENGTHS

95. What are the strengths of IDSP programme in your area?

CONSTRAINTS

96. What constraints (problems) do you face in implementing IDSP in your area?

SUGGESTIONS

97. What are your suggestions to improve the working of IDSP?

Any other comment

Annex IX: Questionnaire for Lab Technician

LAB TECHNICIAN: FORM A: Identification, institution and training status.

No.	Questions and filters		Coding categories		Skip
1	NAME				
2	[RECORD SEX OF RESPONDENT]		Female Male		1 2
3	How old are you? [RECORD AGE OF RESPONDENT]		Age in years		[__|__]
4	What is your qualification? [RECORD RESPONSE]				
5	What is your length of service		Years		
6	Duration Of Stay At Present Post		Years		
II	**Institution profile:**				
7	What is the Population served by your institution?		_____		
8	Tell us about the staff of your institution				
	Category	Sanctioned	In position		
	Lab technician				
	Lab attendent				
	Cl IV/Sweeper				
III	**Training Particulars**				
9	Have you undergone any training in IDSP?		NO		If yes GOTO 11
10	YES	When	Duration (Days)		
11	Have you undergone any training in RNTCP?		NO		IF YES GOTO 12
11B	YES	When	Duration (Days)		
12	Has training enabled you to perform your duty?			YES NO	1 2
12B	Give reasons for your answer				

Form B.

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	
	DESCRIPTION OF SURVEILLANCE SYSTEM TB		
1	HAVE YOU HEARD OF IDSP	YES NO	1 2
	DO YOU SEND IDSP REPORTS	YES, ALWAYS YES SOMETIMES NO, NEVER SENT	1 2 3
	ON WHICH FORM DO YOU SEND REPORTS	L FORM OTHER	1 2
	WHICH DISEASES ARE REPORTED *[TICK ALL THAT APPLY]*	MALARIA TB TYPHOID CHOLERA HEAPTITIS HIV WEIL FELIX OTHER	
	HOW OFTEN DO YOU HAVE TO SEND REPORT	WEEKLY FORTNIGHTLY MONTHLY OTHER	1 2 3 9
	HOW OFTEN DO YOU ACTUALLY SEND REPORT	WEEKLY FORTNIGHTLY MONTHLY OTHER	1 2 3 9
	Reasons for doing so _____		
	TO WHOM DO YOU SEND REPORT	MEDICAL OFFICER BLOCK MEDICAL OFFICER DISTRICT SURVEILANCE OFFICER	1 2 3
	HOW DO YOU SEND REPORT	PERSONALY THROUGH SUPERVISOR POST TELEPHONE OFFICE MANAGES THIS WORK	1 2 3 4 5
	IF YOU ARE NOT ABLE TO SEND REPORT, WHY IS IT SO?	FORM NOT AVAILABLE DON'T UNDERSTAND HOW TO FILL	1 2

	NO CASE, NOTHING TO REPORT	3
	UNNECSSSARY PAPERWORK	4
	NO PERSON TO SEND REPORT	5
	NO POSTAGE OR TRAVEL EXPENSE	6
	FORGOT	7
	OTHER_____	9
IF YOU DID NOT SEND REPORT, WAS ANY ACTION TAKEN BY YOUR SUPERIORS	NO ACTION	1
	TELEPHONIC REMINDER	2
	WRITTEN REMINDER	3
	REPRIMAND IN MONTHLY MEETING	4
	VISIT BY SUPERIOR OFFICER	5
	OTHER _____	9
ON AN AVERAGE, HOW MANY PATIENTS ATTEND YOUR OPD MONTHLY?	APPROX NUMBER	
HOW MANY NEW CASES ARE REFERED BY DOCTORS BY SPUTUM AFB?	APPROX NUMBER	
	APPROX PERCENTAGE	
HOW MANY OF THEM ARE POSIITVE?	APPROX NUMBER	
	APPROX PERCENTAGE	
HOW MANY SPUTUM SAMPLES DO YOU TAKE FOR A PATIENT?	ONE	1
	TWO	2
	THREE	3
	OTHER	9
AFTER HOW MUCH TIME ARE YOU ABLE TO GIVE THE REPORT	SAME DAY	1
	NEXT DAY	2
	OTHER	9
IF REAGENT IS OUT OF STOCK, WHAT DO YOU DO	REFER TO OTHER INSTITUTION FOR INV	1
	TAKE SAMPLE AND PROCESS LATER	2
	ASK PATIENT TO COME LATER	3
	OTHER	9
HOW DO YOU GIVE FEEDBACK TO MPW ON TB CASE DETECTED/ CONFIRMED FOR HIS AREA?	NO MECHANISM	1
	TELEPHONICALLY	2
	ASK PATIENT TO CONTACT HIM/HER	3
	TELL IN MONTHLY MEETING	4
	WHEN WORKERS COME TO PHC/CHC, THEY ENQUIRE FROM ME	5
	SUPERVISOR MANAGES	6

PUB HEALTH PRIORITY OF TB		
HOW MANY CASES OF TB ARE THERE IN YOU AREA ON TREATMENT AND CURED IN THE LAST 12 MONTHS?	CASES	
Form C		
ATTRIBUTES		
SIMPLICITY		
DO YOU FIND ANY DIFFICULTY IN FILLING THE FORM?	YES NO DON'T KNOW	1 2 3
USEFULNESS		
HAVE YOU FOUND AN INCREASE OR DECREASE IN TB CASES IN YOUR AREA OVER THE LAST THREE YEARS?	YES NO	1 2
FLEXIBILITY		
IF SPUTUM +++++ HAS TO BE REPORTED, WHERE WILL YOU PUT IT ON THE FORM?	UNUSUAL SYNDROME NO SPACE REMARKS ALONG WITH TB	1 2 3
	OTHER	9
SUPERVISION		
SUPERVISION OF LAB BY MO/BMO		
DID YOU RECEIVE ANY DEEDBACK FROM MO/BMO ON MISTAKES IN FORM	YES NO	1 2
DID YOU EVER RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ON DISEASE PATTERN OF YOUR AREA?	YES NO	1 2
DID ANY OFFICER VISIT YOU IN THE LAST SIX MONTHS?	YES NO	1 2
DID HE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
DID THE OFFICER TALLY THE REPORT WITH LAB REGISTER?	YES NO	1 2
SUPERVISION OF LAB BY STLS	YES	1
DID YOUR SUPERVISOR VISIT YOUR LAB IN THE LAST SIX MONTHS?	NO	2
DID HE/ SHE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
DID HE/SHE TALLY THE REPORT WITH LAB REGISTER?	YES	1

	NO	2
ON CROSS CHECKING, WAS ANY DISCREPANCY FOUND IN POSTIVITY?	YES	1
	NO	2
SUPERVISION OF LAB BT DISTRICT AUTHORITIES		
DID YOU RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ON MISTAKES IN FORM	YES	1
	NO	2
DID YOU EVER RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ON DISEASE PATTERN OF YOUR AREA?	YES	1
	NO	2
DID ANY OFFICER VISIT YOU IN THE LAST SIX MONTHS?	YES	1
	NO	2
DID HE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES	1
	NO	2
DID THE OFFICER TALLY THE REPORT WITH LAB REGISTER?	YES	1
	NO	2

Integration

Is there a co-ordination mechanism with other labs to cross check indeterminate slides or helping case of staff going on leave, reagent stock out or any problem

YES NO

IF yes, kindly describe the mechanism.
If no, kindly tell what problems are encountered and suggest some mechanism.

STRENGTHS

98. What are the strengths of IDSP programme in your area?

CONSTRAINTS

99. What constraints (problems) do you face in implementing IDSP in your area?

SUGGESTIONS

100. What are your suggestions to improve the working of IDSP ?

Any other comment

Thank you for your time.

Annex X: Questionnaire for District Surveillance Officer

FORM A: Identification, institution and training status.

No.	Questions and filters		Coding categories		Skip
1	NAME				
2	[RECORD SEX OF RESPONDENT]		Female Male		1 2
3	How old are you? [RECORD AGE OF RESPONDENT]		Age in years		[__|__]
4	What is your qualification? [RECORD RESPONSE]		MBBS PG diploma MD DNB Other _____		1 2 3 4 5
5	What is your length of service		Years		
6	Duration Of Stay At Present Post		Years		
7	When was the IDSP started in your district?		_____		
	Institution profile:				
8	What is the Population in your district?				
9	What proportion is covered under IDSP?				
10	Have you undergone any training in IDSP?		NO		
10B	YES	When	Duration (Days)		
12	Has training enabled you to perform your duty?			YES NO	1 2
12B	Give reasons for your answer				

Form B DESCRIPTION OF IDSP IN THE DISTRICT ID NO.

13. Why is the IDSP project launched in your area?

---

14. What are the goals of the IDSP?

---

15. What are the diseases of national importance kept under the IDSP?

---

16. What state specific diseases are kept under the IDSP?

---

17. Why is TB kept under surveillance?

---

18. Under the IDSP how many reporting units do you have?

---

19. What is the job of the health workers?

---

20. What is the job of medical officers in disease surveillance?

---

21. What is the role of medical colleges in disease surveillance?

---

22. How do you suspect as a case of TB under the IDSP?

---

23. How do you confirm a TB case?

---

24. Do the staff lookout for cases house to house or just wait for cases to come to hospital?

---

25. Is the list of cases sent to the higher level, or jus the number?

---

26. What reports are to be sent?

---

27. How often are the reports to be sent?

_____

28. What data analysis is done on the forms?

FORM C: Evaluation.			
No.	**Questions and filters**	**Coding categories**	**Skip**
I	**Public health priority**		
29	How many cases of TB are there in you area on treatment and cured in the last 12 months?	Registered _____ Cured _____ Defaulter _____ Died _____	
30	Do you think the problem of TB in your area is	INCREASING DECREASING STATIC DON'T KNOW	1 2 3 4
31	On an average, How many patients visit hospitals in the district every month?	No	
32	How many suspects were sent for sputum examination?	No	
III	ATTRIBUTES		
	Simplicity		
44	Who prepares the IDSP report in your district	CLERK DATA ENTRY OPERATOR SELF OTHER DOCTOR OTHER_____	
45	Does he find any difficulty in filling the form?	YES NO	
46	Are you sending reports If no, Give reasons	YES NO	
47	How often do you have to send report	DAILY WEEKLY FORTNINGHTLY MONTHLY other _____	
48	How often do you send the report	DAILY WEEKLY FORTNINGHTLY MONTHLY	

		other _____	
49	To whom do you send the report?	DHS SSU NICD	
50	How do you send the report?	PERSONALY THROUGH SUPERVISOR POST TELEPHONE FAX EMAIL OFFICE MANAGES THIS WORK	1
51	How easy or difficult do you find it to send the report form	EASY DIFFCULT	
52	What happens in rains or snowfall tick all that apply	NOT ABLE TO OPEN HOSPITAL GET INFORMATION TELEPHOINICALY FROM INFORMERS THE POSTAL SYSTEM DOES NOT WORK, REPORT CANT BE SENT	
53	How much time do you spend per week on surveillance (gathering information, making report and sending report)	HOURS	
54	On which form do you send reports	S FORM P FORM L REPORT W FORM OTHER_____	
55	is the data analyzed	Yes No	
56	if yes, who analyses the data	MO BMO DSO SSO DTO	
57	how often is the data analysed	WEEKLY MONTHLY QUARETERLY HALF YEARLY ANNUALY	
58	how is patient's privacy ensured?	Name not mentioned Record kept confidential Any other (Specify)	
	FLEXIBILITY		
59	if you were asked to report a new diseases, say MDR TB, would it be	EASY DIFFICLULT TIME CONSUMING OTHER (Specify)	
	ACCEPTABILITY		

62	How many reports do you have to fill every month	
63	was the earlier system of month report better	EASIER
		EQUALLY SAME
		DIFFICLULT
	SENSITIVITY	
64	What proportion of cases of cough > 3 weeks do you feel, that you are able to report	<25%
		26-50%
		51-75%
		>75%
	POSITIVE PREDICTIVE VALUE	
65	Of the cases you reported for cough > weeks, in last 6 month, how many were dignosed as TB	COUGH CASES
		TB CASES
		%
	REPRESENTATIVENESS	

	HOW MANY HEALTH INSTITUTIONS ARE THERE IN THE DISTT	GOVT PVT MED COLLEGE AYURVEDA ARMY/ ECHS OTHER
	HOW MANY OF THEM ARE TRAINED	GOVT PVT MED COLLEGE AYURVEDA ARMY/ ECHS OTHER
	IF ALL NOT TRAINED, GIVE REASONS FOR THE SAME CATEGORY WISE	
	HOW MANY OF THOSE ARE ENROLLED AS REPORTING UNITS	GOVT PVT MED COLLEGE AYURVEDA ARMY/ ECHS OTHER

	HOW MANY OF THOSE ARE REPORTING IN LAST 6 MONTHS	GOVT PVT MED COLLEGE AYURVEDA ARMY/ ECHS OTHER	
	HOW MANY OF THOSE ARE REPORTING ON TIME IN LAST 6 MONTHS	GOVT PVT MED COLLEGE AYURVEDA ARMY/ ECHS OTHER	
	WHAT ACTIONS ARE INITATED TO IMPROVE THE RECRUITMENT AND PARTIICPATION OF VARIOUS STAKEHOLDERS		
	WHAT ACTIONS ARE INITATED TO IMPROVE THE REPORTING IN IDSP		
	WHAT ACTIONS ARE INITATED TO IMPROVE THE TIMELINES OF REPORTSIN IDSP		
	ARE THERE ANY SPECIAL POPULATION GROUPS LIKE MIGRANT, GUJJAR WHICH YOU ARE NOT ABLE TO COVER FULLY	YES NO	

67	are there any special population groups like migrant, gujjar which you are not able to cover fully	YES NO
	TIMELINESS	
68	how much time does it take for the authorities to take action if suddenly lot of cases of one disease occur and reported by you?	
	USEFULNESS	
69	have you found an increase or decrease in tb cases in your area over the last three years?	YES NO

70	is everybody detected as case getting free medicine	YES NO	
	SUPERVISION/ FEEDBACK		
	IF YOU DID NOT SEND REPORT, WAS ANY ACTION TAKEN BY YOUR SUPERIORS	NO ACTION TELEPHONIC REMINDER WRITTEN REMINDER REPRIMAND IN MONTHLY MEETING VISIT BY SUPERIOR OFFICER OTHER _____	1 2 3 4 5 9
	SUPERVISION OF SUBCENTRES BY MO/BMO		
	DID YOU GIVE ANY DEEDBACK TO SUB CENTRES ON MISTAKES IN FORM	YES NO NA, FORM SENT DIRECTLY	1 2 3
	DID YOU EVER GIVE ANY DEEDBACK TO SUB CENTRES ON DISEASE PATTERN OF HIS/HER AREA?	YES NO	1 2
	DID YOU VISIT YOUR SUBCENTRE IN THE LAST SIX MONTHS?	YES NO	1 2
	DID YOU CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
	DID YOU OFFICER TALLY THE REPORT WITH OPD REGISTER?	YES NO	1 2
	SUPERVISION OF SUBCENTRES BY SUPERVISOR		
	DID YOUR SUPERVISOR VISIT YOUR SUBCENTRE IN THE LAST SIX MONTHS?	YES NO	1 2
	DID HE/ SHE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
	DID HE/SHE TALLY THE REPORT WITH OPD REGISTER?	YES NO	1 2
	SUPERVISION OF MO/BMO BT DISTRICT AUTHORITIES		
	DID YOU RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ON MISTAKES IN FORM	YES NO	1 2
	DID YOU EVER RECEIVE ANY DEEDBACK FROM HIGHER AUITHORITIES ONDISEASE PATTERN OF YOUR AREA?	YES NO	1 2
	DID ANY OFFICER VISIT YOU IN THE LAST SIX MONTHS?	YES NO	1 2
	DID HE CHECK IF IDSP REPORT WAS SENT FROM THE OFFICE COPY?	YES NO	1 2
	DID THE OFFICER TALLY THE REPORT WITH OPD REGISTER?	YES NO	1 2

	HOW OFTEN DO YOU GET FEEDBACK FROM OFFICERS ON REPORTS		
	DESCRIBE THE TYPE OF FEEDBACK RECEIVED	TIMELINESS COMPLETENSS ACCURACY DECISION OR INSTRUCTION FOR ACTION TB PREVALENCE RATES TB TRENDS OTHERS	
	DID YOU RECEIVE ANY FEEDBACK FROM HIGHER AUTHORITIES ON MISTAKES IN FORM	YES NO	1 2
	DID YOU EVER RECEIVE ANY FEEDBACK FROM HIGHER AUITHORITIES ONDISEASE PATTERN OF YOUR AREA?	YES NO	1 2

INTEGRATION WITH PRIVATE PRACTIONERS

84. Are private practitioners / hospitals / nursing homes operating in your area?

Yes (1) No (2)

85. If "Yes" please specify the categories they belong to: (Tick all that apply)

a. Individual private practitioners

b. Private nursing homes

c. Private hospitals

d. Private poly clinics

e. Other (specify)

86. What system(s) of medicine do the private practitioners belong to (tick all that apply)

a. Allopathy
b. Homeopathy
c. Ayurveda
d. Siddha
e. Faith headers
f. Others (specify)

87. What proportion of total disease burden in your area is taken care of by private sector? (Tick the most appropriate)

a. < 10% e. > 60% i. Other (specify)

b. < 25% f. > 70%

c. < 35% g. > 80%

d. < 50% h. > 90%

88. In your district have you been able **to identify** and **enlist** private partners for IDSP?

a. Identify: Yes (1) No (2)

b. Enlist: Yes (1) No (2)

89 If "yes" please give details as requested below:

A. "Identification"

90. Please mention the **methods used** to identify private partners (Tick all that apply)

- Use IMA/IAP, etc. to obtain list of private partners
- Carried out a survey
- Obtained list from local health workers
- Others (Specify)

91. Please indicate what categories (with numbers) the private partners belong to: (Tick all that apply)

Categories	**Numbers identified**
- Private practitioner	
- Poly clinics (Pvt)	
- Private hospitals	
- Private nursing homes	
- Others (specify)	

B. Enlisting:

92. Please mention how many private partners have you been able to **enlist** for IDSP in your area?

Categories	**Numbers Enlisted**
Private practitioner	
Poly clinics (Pvt)	
Private hospitals	
Private nursing homes	
Others (specify)	

93. If the total numbers of private partners identified are less than that suggested by IDSP for the 1st year of implementation, please give reasons:

a.

b.

c.

94. If response to question (88) is "No" please give reasons:

S.No	Activity	Reasons
1.	**Identification**	
2.	**Enlisting**	

IF MEDICAL COLLEGE IN DISTRICT,

Is there a co-ordination mechanism between the medical college and DSU? YES
NO

IF yes, kindly describe the mechanism.
If no, kindly tell what problems are encountered and suggest some mechanism.

STRENGTHS

101. What are the strengths of IDSP programme in your area?

CONSTRAINTS

102. What constraints (problems) do you face in implementing IDSP in your area?

SUGGESTIONS

103. What are your suggestions to improve the working of IDSP ?

Any other comment

Thank you for your time.

Annexure XI: Checklist for district level

IDSP
CHECKLIST FOR DSITRICT SURVEILLANCE UNIT

NO	CHECKLIST ITEM	CODING CATEGORIES	TICK
	IDENTIFICATION PARTICULARS		
1	DSITRICT LOCATION _____	ID NO _____	
2	STATE_____	CONTACT NO_____	
3	STAFF	DATA ENTRY OPERATORS ACCOUNTANT	
4	INFRASTRUCTURE	FUNCTIONAL VSAT PHONE FAX COMPUTER INTERNET	
5	FUND	FUND IN SALARIES HEAD FUND IN TRAINING HEAD	
		FUND IN CONSUMABLE HEAD FUND IN POL HEAD FUND IN TA HEAD	
6	AVAIALBLITY OF ADEQUATE LOGISTICS	S FORM P FORM L FORM TRANING MANUALS MEDICAL OFFICER TRANING MANUALS HEALTH WORKER TRANING MANUALS LAB TECHNICIAN	
7	ADEQAUTE SPACE	ROOM FOR DATA ENTRY OPERATOR SPACE FOR STORING FORMS ROOM FOR DSO ROOM FOR VSAT VIDEOCONFERENCING	
8	MOBILITY	DEDICATED VEHICLE FOR DSO DEDICATED VEHICLE FOR RRT POL FOR VEHICLE	
9	IDENTIFIED STAKEHOLDERS	LIST OF PP LIST OF PRI	
10	DIST SURVEILLANCE COMITTE	MEETING PROCEEDING AVAILABLE	
11	CASE DETECTION RATE OF TB	_____	
12	CURE RATE OF TB AMONG NSP	_____	
13	DISPLAY OF CHART POSTER	_____	

Annex XI B: Abstraction form at district level.

ABSTRACTION FORM AT DISTRICT LEVEL

NATIONAL INSTITUTE OF EPIDEMIOLOGY, CHENNAI.
EVALAUTION OF IDSP WITH REFRENCE TO TUBERCULOSIS

NAME OF DISTRICT

	Level of health facility (PHC-CHC/ HSC/ LAB)	NAME OF HEALTH FACILITY	IS IT A REPORTING UNIT (Y/N)	Is the staff TRANINED (Y/N)	REPORTING STATUS IN April 2008 (REPORTS RECEIVED TIMELY=1, REPORTS RECEIVED LATE =2, REPORTS NOT RECEIVED =3)					DATA QUALITY 1 MONTH- Blank				DATA QUALITY 1 MONTH- Complete-ness				DATA QUALITY 1 MONTH- Correct-ness			
					WEEK 20	WEEK 21	WEEK 22	WEEK 23		Week 20	Week 21	Week 22	Week 23	Week 20	Week 21	Week 22	Week 23	Week 20	Week 21	Week 22	Week 23
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Annex XII: Questionnaire for private practitioners.

PRIVATE REPORTING UNITS

FORM A: Identification, institution and training status.

No.	Questions and filters	Coding categories	Skip
1	NAME		
2	[RECORD SEX OF RESPONDENT]	Female Male	1 2
3	How old are you? [RECORD AGE OF RESPONDENT]	Age in years	[__|__]
4	What is your qualification? [RECORD RESPONSE] Specialisation_____	MBBS PG diploma MD DNB Other _____	1 2 3 4 5
5	WHAT IS THE TYPE OF PRECTICE	Clinic Nursing Home Hospital Policlinic Lab Other (specify)	
6	Duration of practice	Years	
II	**Institution profile:**		
7	What is the Area/ Population served by your institution? OPD per day	_____	
8	Tell us about the staff of your institution		

Category	Sanctioned	In position
Doctors		
Nurse		
Pharmacist		
MPW		
Lab technician		

III	**Training Particulars**			
9	Category	TRAINED IDSP	TRAINED TB	
	Doctor			
	Lab technician			
	Pharmacist			

	MPW				
10	Have you undergone any training in IDSP?		NO		If yes GOTO 11
10B	YES	When	Duration (Days)		
11	Have you undergone any training in RNTCP?		NO		IF YES GOTO 12
11B	YES	When	Duration (Days)		
12	Has training helped you in your clinical practice?			YES NO	1 2
12B	Give reasons for your answer				

D. CLIENT PARTICULARS

13. Disease encountered:
    CDs : TB, Malaria, ARI, Gastroenteritis etc

    NCDs : CVDs, Hypertention, DM, Cancer, Ocular problems, Accidents – minor injuries, Burns, poisoning, etc
14. Geographic distribution of clients (tick all that apply)
    Rural /urban / urban slum / hilly region
15. Age distribution of clients (Tick all that apply)
    a. Children
    b. Adolescents
    c. Adults
    d. Elderly
16. Sex distribution of clients
    Women only (1) Men only (2) Both (3)

E. PARTICULA5RS OF PREVIOUS EXPERIENCE WITH GOVERNMENT HEALTH PROGRAMME

17. Have you been involved in any Govt. Health Programmes

    If "Yes" go to question 28 ; If "No" go to question 34

18. Name the Govt. Health Programme you were involved with

19. What was the nature of involvement in each of the programme(s) mentioned in (28)

20. Give the duration of involvement for each of the programme(s) mentioned in (28)
21. Were you satisfied with the involvement?
    Yes (1) No (2)
22. State your reasons for the answer to (31)

23. Has your previous experience motivated you to participate?

    Yes (1) No (2) Give reasons

F. SERVICE PROVIDERS KNOWLEDGE ON SURVEILLANCE EPIDEMICS

24. What do you understand by the terms :
    Epidemic,
    Outbreak
    Surveillance
    Survey

G. CRITERIA FOR AND PROCESS(S) ADOPTED FOR IDENTIFICATION AND SELECTION OF PPs

25. List the reason(s) for your being selected as a partner for IDSP by the Govt?
    (Tick all that apply)

Willingness to participate:	(1)
Previous experience with Govt. Health Programmes	(2)
Large and varied clientele load	(3)
Wide geographic coverage	(4)
Others (Specify)	(5)

26. Did the government official approach you directly?
    Yes (1) No (2)
27. Were you approached by the government through a professional association?
    Yes (1) No (2)
    If "Yes" go to question 38; If "No" go to question 39
28. Name the professional association(s) who approached / encouraged you to participate
29. List your reasons for participating in the IDSP

H . TRAINING FOR IDSP

40. Were you provided any training prior to participation
    Yes (1) No (2)
    If"Yes" go to question 41; If "No" go to question 43
41. Give the following details on the training undergone:

    Institution conducting training

    Duration of training (in days)

42 Do you think the training enabled you to participate in the IDSP effectively? Give reasons
43. Are your familiar with the following?

IDSP manual:	Yes (1)	No (2)
Case definition:	Yes (1)	No (2)
Reporting formats	Yes (1)	No (2)
Frequency of reporting required	Yes (1)	No (2)
Person to whom reports are to be sent	Yes (1)	No (2)

I PARTICULARS OF REPORTING BY PROVIDER

44. List the diseases you have been requested to report

1	5
2	6
3	7
4	8

45. For each of the diseases listed in (44) indicate the frequency with which you are required to report

1	5
2	6
3	7
4	8

46. Have reporting formats been provided to you? (Collect sample format)

Yes (1) No (2)

If "Yes" go to question 47 ; If "No" go to question 49

47. Are the formats provided in adequate numbers?

Always adequate (1) , sometimes adequate (2), sometimes Inadequate (3),

always inadequate (4), other (specify) (5)

48. Are the reporting formats user friendly?

Yes (1) No (2) Give reasons for your choice

49. What do you do if formats are inadequate or are not provided?

50. Have you been given any reasons for the lack or inadequacy of formats?

51. Who is responsible for filling the formats?

52. Has the person (s) responsible for filling the formats undergone any training?

Yes (1) No (2)

53. Is the person(s) responsible for filling the format familiar with:

- IDSP	Yes (1)	No (2)
- Case definitions	Yes (1)	No (2)
- zero reporting	Yes (1)	No (2)

54. Whom do you send the reports to?

55. How do you send the report? (tick all that apply)

Email	(1)
Telephone	(2)
Courier	(3)
Post	(4)
Other (specify)	(5)

56. Have you been provided any assistance to send your reports

Yes (1) No (2)

If "Yes" go to question 57 If "No" go to question 58

57. Please describe the type and adequacy of assistance provided?

58. If assistance provided is "Nil" or inadequate please explain how do you manage to send your reports

59. Does lack or inadequate assistance affect the regularity of your reporting? Please explain your answer.

Yes (1) No (2)

60. How do you maintain records of your clients?

1. Register of patients
2. Computerised data
3 Do not maintain any record
4. Other (specify)

61. What type of information do you record for your patients and why?

62. Who is responsible for record keeping?

63. How much time is spent on record keeping each day?

64. Do you face any difficulty in keeping records? Explain

65. Have you been provided any assistance with record keeping?

Yes (1) No (2)

If "Yes" go to question 66 ; If "No" go to question 67

66. Please describe the type and adequacy of assistance provided

67. If inadequate or no assistance is provided please describe the type of assistance you would like to have?

68. In your opinion has the lack or inadequacy of assistance affected the quality of record keeping? Explain

69. How much time per day is spent on record keeping?

J. PARTICULARS ON FEED BACK

70. Have you been receiving feedback from the government agency

    Regularly (1) Irregularly (2) Rarely (3)

71. Have you taken any action to improve the situation in (70) Explain

72. Please state the outcomes of the actions initiated by you

K. PARTICULARS OF RESOURCES EXPENDED ON PRIVATE -PARTNERSHIP

73. On average in a day how much time is spent on IDSP activity? Give details (activity wise) of time spent

74. Per month what is the total expense incurred on IDSP activity? Give details (item wise) of expenses incurred

75. Are any of the expenses reimbursed in full or part? Give details (Itemwise)

76. How would you classify the expenses incurred by you on account of IDSP:

    Heavy (1) Moderate (2) Low (3) Negligible (4)

L. EXPECTATIONS AND/OR GAINS ACCRUED THROUGH PARTICIPATION IN IDSP

77. When you decided to participate in the IDSP what were your expectations?

78. Have your expectations been fulfilled? Give reasons for your response

Fully (1) Partially (2) Not at all (3)

79. Have you benefited from this partnership? Explain your answers

80. How would you rate the level of benefit accrued by you ?

Very high (1) High (2) Moderate (3) Low (4) Very low (5) Nil (6)

Other (specify) (7)

81. Are you satisfied with the partnership as it is at present? Give reasons for your response

82. What are your suggestions to improve your satisfaction with the partnership?

83. List the major problems you have encountered during this partnership?

84. What measures would you suggest to resolve and/or reduce the problems mentioned in (83).

85. How would you describe the role played by professional agencies, e.g. IMA/IAP/API etc in facilitating partnership?

86. Are there any thing else that you would like to comment about ?

Thank you for your time and valuable contribution.

Annex XIII: Talking points for Medical College Stakeholders.

Why is the IDSP project launched in your area?

What are the goals of the IDSP?

What are the diseases of national importance kept under the IDSP?

What state specific diseases are kept under the IDSP?

Why is TB kept under surveillance?

Under the IDSP is your department sending reports?

What coordination do you have with the district surveillance unit?

Do you help the district surveillance units in data analysis?

How do you suspect as a case of TB under the IDSP?

How do you confirm a TB case?

Is the list of cases sent to the higher level, or jus the number?

What reports are to be sent?

How often are the reports to be sent?

What data analysis is done on the forms of your institution?

Annex XIII: List of indicators for attributes of surveillance system (adapted from CDC checklist)

Attribute/ LEVEL	HSC	PHC	LAB	DSU	PP/ Med college
Simplicity	Proportion of participants knowing correct case definition	Proportion of participants knowing correct case definition	Proportion of participants knowing correct case definition	Proportion of participants knowing correct case definition	Proportion of participants knowing correct case definition
	Proportion of participants knowing where to send report	Proportion of participants knowing where to send report	Proportion of participants knowing where to send report	Proportion of participants knowing where to send report	Proportion of participants knowing where to send report
	Proportion of participants knowing how often to send report	Proportion of participants knowing how often to send report	Proportion of participants knowing how often to send report	Proportion of participants knowing how often to send report	Proportion of participants knowing how often to send report
Flexibility	Proportion of participants who feel that they can send report of failure cases on the existing form	Proportion of participants who feel that they can send report of failure cases on the existing form	Proportion of participants who feel that they can send report of failure cases on the existing form	Proportion of participants who feel that they can send report of failure cases on the existing form	Proportion of participants who feel that they can send report of failure cases on the existing form
Data quality	Proportion of form correctly filled	Proportion of form correctly filled	Proportion of form correctly filled	Proportion of form correctly filled	Proportion of form correctly filled
	Proportion of form completely filled	Proportion of form completely filled	Proportion of form completely filled	Proportion of form completely filled	Proportion of form completely filled
	Proportion of forms with all blank/ all zero	Proportion of forms with all blank/ all zero	Proportion of forms with all blank/ all zero	Proportion of forms with all blank/ all zero	Proportion of forms with all blank/ all zero
Acceptability	Proportion of reports received timely	Proportion of reports received timely	Proportion of reports received timely	Proportion of reports received timely	Proportion of reports received timely
	Proportion who do not find new system of weekly report difficult	Proportion who do not find new system of weekly report difficult	Proportion who do not find new system of weekly report difficult	Proportion who do not find new system of weekly report difficult	Proportion who do not find new system of weekly report difficult

				Proportion of private practitioners willing to report	Proportion of private practitioners willing to report
Sensitivity	Cases detection rate	Cases detection rate	Cases detection rate	Cases detection rate	Cases detection rate
	Proportion of cases going to private doctors	Proportion of cases going to private doctors	Proportion of cases going to private doctors	Proportion of cases going to private doctors	Proportion of cases going to private doctors
PPV	Proportion of suspected cases lab confirmed	Proportion of suspected cases lab confirmed	Proportion of suspected cases lab confirmed	Proportion of suspected cases lab confirmed	Proportion of suspected cases lab confirmed
Representativeness	Proportion of villages that health worker is able to visit every week	--		Proportion of units covered under IDSP	--
Timeliness	Proportion of reports sent in time	Proportion of reports sent in time	Proportion of reports sent in time	Proportion of reports sent in time	Proportion of reports sent in time
				Proportion of reports received in time	
Usefulness	Proportion who interpreted time trends in TB	Proportion who interpreted time trends in TB	Proportion who interpreted time trends in TB	Proportion of months for which data was analyzed at DSU	Proportion who interpreted time trends in TB
Stability	--	--	--	Proportion of months for which fund diversion done to pay salaries to incremental staff	Proportion of RU who dropout after 6 months

Section 2:

Second field posting

Evaluation of the Revised National Tuberculosis Control Programme, District Shimla, Himachal Pradesh, India, 2008.

1.Background and justification.

TB remains a massive global health problem with nearly 9.2 million new cases and 1.7 Million deaths every year, most of which occur in South-East Asia and Africa[1]. The global incidence of tuberculosis is growing at approximately 1.1% per year and number of cases at 2.4% per year. The global burden of disease in terms of DALYs lost was about 34.73 million (2002) with low income countries carrying most of the burden with incidence rate of 197 per lakh population and high income countries are having incidence rate of 9 per lakh population. The South- East Asia region countries contributes 38% of the global burden of tuberculosis, with 3 million new cases and nearly 0.6 million deaths occurring every year.

India is among 22 high burden countries of the world and contribute 20% of the global incidence annually[2]. Every year 1.8 million people in India develop tuberculosis[3], of which 800,000 are infectious. Annually 3,70,000 have died until recently and 1000 die every day. More than 80% of the burden of tuberculosis is due to premature death, as measured in terms of disability adjusted life years (DALYs) lost. In India, over 70% of the cases occur in the economically productive age group (15–54 years) and is one of the leading infectious diseases causing death. TB causes huge economic loss with about 170 workdays lost due to the disease. The annual economic cost of tuberculosis to the Indian economy is at least US$ 3 billion[2] (more than Rs 13,000 crore).

Indian government launched Revised National Tuberculosis Control Programme (RNTCP) in1997, by December 2005, 97% of the population was covered and the entire country was covered by 24th March 2006. Every day in India, under the RNTCP, more than 15,000 suspects are being examined for TB[3], free of charge. In 2005, more than 1290,000 cases were placed on treatment - largest cohort of cases, more than any other country in the world. By March 2007, more than 6.7 million patients have been initiated on treatment, saving more than a 1.3 million additional lives. As a result the Tb mortality has reduced from 42/Lakh in 1990 to population to 28/Lakh in 2006[1].

Himachal Pradesh has an annual risk of tuberculosis infection of 1.9% against a national average of 1.5%. In 1995 RNTCP was started as a pilot project in Hamirpur district and by December 2001 the whole of Himachal Pradesh was included[4]. The disease burden of tuberculosis in Shimla is high as every year more than 1000 cases are added and prevalence of TB in the district 257/lakh[5] which is higher than the state (235/lakh) figure. The case detection rate is 93% and cure rate is 88%, new smear positive cases are 81%. The reason for the high prevalence of TB in the district need to be studied to derive lessons to strengthen and sustain TB control initiative in the region. Barriers and constrains identified will help the planners to address them to further improve TB case control and management.

2 Objectives

The present evaluation research study seek to answer following research question:

1. To describe the RNTCP and DOTS in Shimla district and to study the factors associated with low case detection rate and high default using logic model for the case detection rate, case management, IEC and participation of medical college and the private sector.
2. To assess the achievements of the objectives of the RNTCP in Shimla district.
3. To identify the strengths and constraints of RNTCP in the district.
4. To propose recommendations to sustain the strengths and overcome the constraints based on the above finding of 1, 2 and 3.

3.Methods:

Methods will be described according to each objective separately.

3.1.Objective 1: To describe the RNTCP and DOTS in Shimla district

To describe the RNTCP-DOTS in Shimla district we reviewed the following documents:

- Operational manual for District Tuberculosis Officer
- Operational manuals for medical officers and STLS/STS
- Tuberculosis India RNTCP status reports for 2007, 2008 and
- Reporting formats for DTC/TU/PHI

3.2.Objective 2: To assess the achievements of the objectives of RNTCP in Shimla district

Using a logic frame, we evaluated the following indicators.

1. Factors associated with low case detection both NSP and NSN in RNTCP in Shimla district.
2. Factors associated with case management RNTCP in Shimla district especially in relation to high default rate.
3. Factors associated with less IEC activities in RNTCP in Shimla district.
4. Factors associated with less Involvement of public private mix (PPM) and MC in Shimla district..

3.3.1.Engaging stake holders

All the stake holders were identified and details of the evaluation project were shared with them to have a consensus on (1) Evaluation objectives, (2) Evaluation issues under assessment, (3) Methodology to be adopted for evaluation, (4) Data analysis and (5) Dissemination of results and obtained their suggestions.

3. This evaluation study seeks to answer the following research questions:

3.1.1.Case detection

With regard to ***new sputum positive case detection rate*** we would like to identify the factors associated with a relatively low CDR (72%) for Shimla district compared to other districts of the state viz. Bilaspur,77%, Kangra, 80%, Chamba, 77% and Solan,101%.

With regard to ***new sputum positive to new sputum negative ratio (NSP: NSN)*** we would like to identify the factors associated to low NSN detection in Shimla district compared to NSP case detection. The ratio of NSP:NSN is 1:0.5 in Shimla compare to Chamba 1.:0.5, Kangra 1:0.4 , Bilaspur and Solan 1:0.6.

We used logic model to identify the factors associated with case detection, details of which are provided in Table 1.

3.1.2.Case management (outcome):

With regard to ***cure rate*** we would like to identify the factors associated to low cure rate in Shimla compared to other districts viz. Bilaspur, Chamba and Solan.

With regard to ***default rate*** we would like to identify the factors associated to high default rate compared to Kangra, Chamba, Bilaspur and Solan districts.

With regard to ***failure rate*** we would like to identify the factors associated to high failure rate compared to districts Bilaspur, Kangra, Chamba and Solan.

We used logic model to identify the factors associated to treatment outcome, details of which are provided in Table 2.

3.2 To identify the strengths and constraints of RNTCP, district Shimla

To identify the strengths and constraints, we compared the programme indicators and organizational set up by reviewing input, process, output and outcome levels of the programme. We identified specific issues that required attention and addressal.

3.3 To propose recommendations to sustain the strengths and overcome the constraints based on the above finding of 1, 2 and 3.

Based on the findings of the above three objectives we proposed recommendations to sustain strengths and overcome constrains.

4.1 Study Area

Shimla is the capital town of Himachal and has a population of 7.7 Lakh (2001 census) with a total of 4 Tuberculosis Units (TU) namely Shimla, Rohroo, Chopal and Rampur with 20 Microscopy Centers and 584 DOTS centers.

Methods for the evaluation are discussed as objective wise and are discussed below.

4.2.Sampling size:

For study units

The only district TB centre (DTC) is selected as the primary study unit. All the 4 treatment units (TU) and all 20 DMCs were selected.

All the primary health centres and all the health sub centres were selected.

4.3.Study participants:

District tuberculosis officer (DTO), all medical officer treatment centre (MOTC), all senior treatment supervisor (STS) and all senior tuberculosis laboratory supervisor (STLS) from each of the enrolled TUs, all medical officers in charge and all laboratory technician from enrolled TUs & DMCs, medical officers and govt. DOT providers under the enrolled TUs were selected.

4.4. Data collection

The principal investigator collected data to elicit information on patient, provider and system related issues. In addition information on public private participation for DOTS, NGOs as well as Medical Colleges involvement for DOTS was also collected.

The information on patient issues was collected by interviewing study subjects using a pre-tested self administered semi-structured questionnaire to know personal identifiers,

demographic characteristics, socio-economic status, treatment details, delay in diagnosis (date of onset of first symptoms of disease, date of diagnosis and date of initiation of RNTCP treatment), factors for delay in treatment (including patients knowledge of TB and level of stigma, distance of DOTS center from residence of patient, health seeking behavior of the patient), access awareness ability attitude (time taken to travel to the health facility). During the interview data elements Sputum conversion status, relief of various symptom of PTB, any adverse effects of TB medicines experienced by the patient, difficulties in getting DOTS medicines, any consequences of stigma and discrimination experienced by the patient direct and indirect at any given time during the course of treatment and suggestions for improvement in provision of DOTS was also be recorded.

Under the provider issues the doctors were interviewed using semi structured questionnaire for issues pertaining to attitude of doctors to patients, knowledge of RNTCP and training, information given to patients (communication) and observing them by checklist. Similarly laboratory technicians and DOT providers were interviewed for the knowledge, attitude and practice including training.

System issues were addressed by interviewing all the stakeholders of the RNTCP for availability of infrastructure, DOTS providers (public and private), availability of drugs, supervision, IEC material and activities using a checklist to address several system issues and scrutiny of records and patient treatment cards.

Participants were recruited as soon as the sputum microscopy results are made available to them by the microscopy center. Follow up at DOTS center to ensure the quality, regularity, precision in delivering DOTS by DOTS provider and sustained acceptance by

the study subjects. Two focus group discussions (one each for males and females) were organized to know the awareness and knowledge of community about tuberculosis. Each participant was individually asked to answer verbal questions and the proportion was calculated based on the correctness of the questions.

4.5.Quality assurance

The quality of DOTS and data was verified and validated by the principal investigator by randomly checking the study units and study subjects with the checklists provided.

Describing the results:

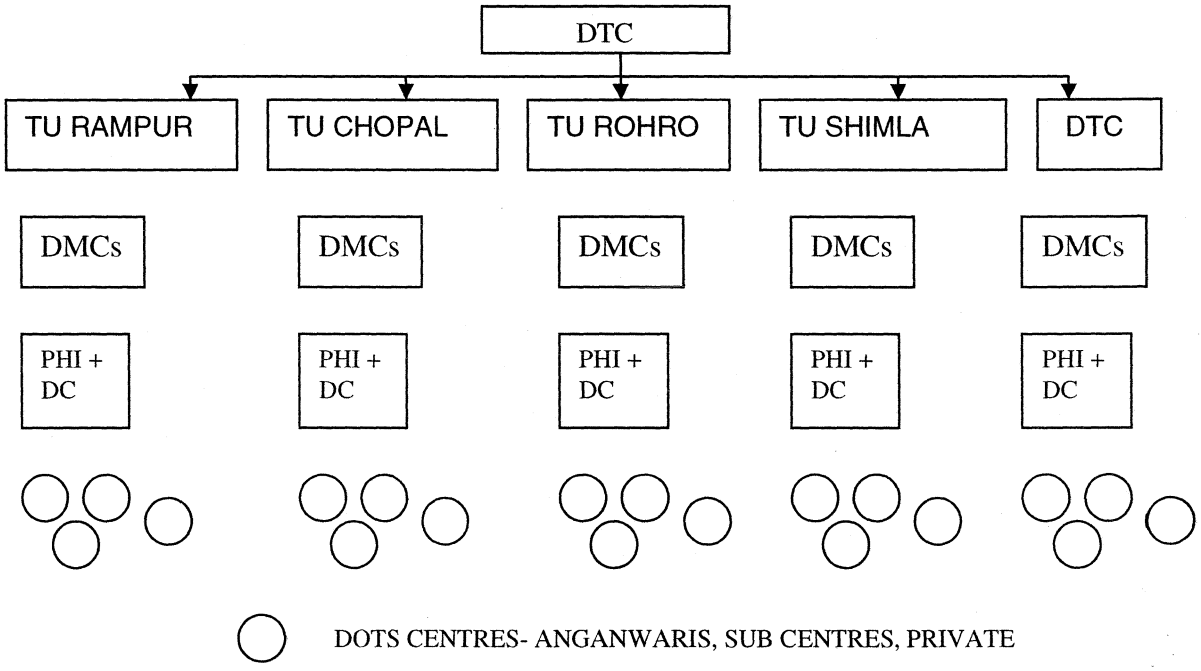
Profile of the study subjects:

We interviewed the DTO, 3/4 STS and 3/4 STLS, 23 NSP, 13 NSN, 22 public DOTS providers, 23/72 MOPHI, 5/38 Lab technicians, 4/20 MODMC, 3/4 MOTC, and one MODMC Medical college using semi-structured questionnaire.

a. Engaging Stakeholders:

We informally met the CMO of the district and got him to endorse our evaluation project in the monthly meeting. We interviewed the DTO on various indicators of he programme in the district. DTO is a microbiologist working in Shimla for the last 4 years. A total of 7.7 Lakh population is under surveillance and he opined that the district can do better but due to hilly area and uncertain weather conditions patients find it difficult to reach the health institutions and high vacancy of doctors and lab technicians is a problem in the district. He thinks that to make the programme more successful we may need to reduce the number of drugs by combination drugs, it would lead to better compliance as well. He terms the programme in the district as successful despite all odds.

b. Flow Diagramme RNTCP:



4.1 Description of RNTCP in the District:

Setting: Shimla is hilly district in Himachal Pradesh and is the Capital town of Himachal Pradesh. The district is predominantly rural (95%). **Health System and DOTS Status:** RNTCP was implemented in the district in the year July 2000. There are 4 TUs, 20 DMCs and one medical college involved in the programme. There are 584 DOTS providers identified that include anganwari workers and Ayurvedic workers.

Monthly reports are prepared by the PHI, and DMC, and sent through the STS of TU to DTC. Quarterly reports are also compiled on case finding, programme management and treatment outcome. Surveillance of tuberculosis in the district is supervised by Senior Tuberculosis Laboratory Supervisor (STLS), Senior Treatment Supervisor (STS) & Tuberculosis Social Worker under guidance & control of Senior Medical Officer

(Programme) who is designated as District Tuberculosis Officer. The data is forwarded to the State TB officer, Directorate of health Services Himachal Pradesh.

1. Evaluating low case detection in RNTCP, district Shimla, Himachal Pradesh.

Factors associated with low Case detection, both NSP and NSN in RNTCP:

Case detection rate is only 72% and because 7 DMCs out of a total of 20 are without lab technicians, it is difficult to achieve targets of NSP or NSN cases diagnosed. Out of 90, 48 posts of lab techs are vacant and 37 doctors are not in place, is a another major reason for low case detection, both NSP and NSN. 142 posts of health workers are also vacant in the district, affecting the programme. Low IEC, lack of trainings and poor participation of private sector also contributed to the low case detection of both the NSP and NSN cases in the district as assessed by logic models given in Table 1-4.

No trainings or refresher courses have been organized in the recent years for doctors, health workers or Lab technicians. Only 80% of M.O.s and 82% health worker were trained in RNTCP. And only 65% lab technicians working presently in 13 DMCs are trained but on evaluation we found only 30% doctors trained and all the lab techs available are trained.

Ratio of NSP:NSN is also low 1:0.5. As is evident from Fig 3, the proportion of NSN cases detected is low in the first quarter of 2008. Less number of NSN detected and put on DOTS is there since the inception of the programme in 2000. Overall low NSN case detection rate needs to be seen in the context of the high vacancy of lab techs and doctors as well as correct diagnosis by the clinicians.

Therefore all the input and process issues are responsible for low case detection rate and both provider and system related issued need to be in place.

2.1: Evaluating case management in RNTCP Shimla with respect to low cure and high default rate:

Initial default is very high, 22% and out of all cases put on treatment the treatment default is also very high, 6% and 4% are failures. The high default may be due to the fact very high case detection rate is there but those actually put on DOTS are small number (Fig 1), this may be due to shortage of DOTS providers (294/436) and also due to the fact that most of the cases are migratory and no feedback about them is received. High default is also associated with low treatment of cases. Tough terrain or distance of the DOTS centre, are also the contributing reason for low cure rate of 87%. Therefore all the input and process issues are responsible for low case detection rate and the provider and system related issued need to be in place but the patient related issue is education and awareness of the patient to his disease.

3: Evaluation for less IEC activities in RNTCP Shimla:

Awareness levels regarding TB were only 71% in the district. 3.8% of total budget is allotted for IEC though field assessment but less IEC activities indicate less IEC mechanism in place. On observation more of the health facilities demanded funds for IEC. 100% of the health facilities utilize the funds for IEC but only 3% conducted IEC camps in the previous 3 months.

Again all the input process and output issues are responsible for low case detection rate and the provider and system related issued need to be in place but the patient related issue is education and awareness of the patient to his disease.

4.Evaluation of Medical College Shimla w.r.t. integration with other departments:

Case detection rate is 2.5%, cure rate is 40% and default rate in 1st qrtr 08 is 16%. Very high number of patients, 36% are referred from the medical college to other districts or states but follow-up report of only 40% of the patients is received, which needs immediate attention and foolproof monitoring mechanism.

Only 4/20 doctors are trained and 1/20 lab tech are trained. Only 1/5 of the departments have IEC material and 4/12 of the visits are there for internal quality. No training have been provided to any of the health care providers including doctors and lab techs during previous years.

Here the major issue is process related that we could follow each case after he is detected positive.

5. Participation of private practitioners:

Out of a total of 65 private practitioners/ institutions, none is involved in RNTCP.

Discussion with reference to Shimla district:

The RNTCP in Shimla district needs a major overall as the indicators though appear to be good but lots of gaps are there to explain, e.g. district is achieving high indicators despite the fact that more than a third of DMCs are not having lab techs (Fig 4) and also many of the doctors and paramedics are not trained. There is high default rate and relapse rate is also high. The participation of medical college, private practitioners and the NGOs is negligible as only one separate wing called as DMC in the medical college is functioning and the inter-sectoral coordination is lacking between different relevant departments like chest and TB , radiology, medicine , pediatrics and microbiology and Pathology.

(21/168) 12% of the doctors are not in place and (52/90), 58% lab tech posts are vacant in the district. (65/118), 56% of the pharmacist posts, (37/75), 50% of posts of supervisors and (126/420), 30% of sub-centers are vacant in the district. There is some no coordination between IDSP and RNTCP. The frequent transfers of lab technicians is a problem and despite there being a provision for a tie up with private labs or to keep a lab tech on contract, nothing has been done and a third of DMCs are just not functioning due to this causing problems to the patients and adding to relapse and under treatment.

In Chopal TU that caters to the needs of 1,40,000 population in a remote hilly block, there are 16 posts of medical officers and out of that only 8 are present and only 4 trained in RNTCP. The average distance to be covered by the suspected patient to reach a health facility for diagnosis is 25 kilometres, and is very high for a remote hilly area like this. With half of the posts vacant and tough terrine the indicators are best in the district show that there are more hidden cases that need to be brought out through outreach screening camps.

The problem of migration has added to the already strained system of RNTCP. As more of the cases are detected to be smear positive and 50% of them are referred outside within state or out of state.(Fig 1), but do all of them get DOTS is not verified and there is no foolproof mechanism to do so. Many of the laborers are either referred back to their parent state or are not taking medicine out of stigma of the disease.

Lack of focus on training new manpower is another are of concern. Many of the old trained doctors have either been transferred or promoted and the programme is running by default.

There is only one NGO and one private practitioner informally involved by one of the TU which is performing well despite being in remote area of the district. The participation of PPs in Shimla is not there and we need to learn from other districts in this respect. We need to realize that the involvement of private sector needs to be there for the success of RNTCP, so input issues really need attention like engaging the stakeholders, trainings and their active participation.

The programme being a separate programme has become a parallel programme whereas the PHI and medical college do not feel a part of it. Similarly there is no integration of IDSP and RNTCP and no mechanism to track the fact that how many patients identified to have cough more than 3 weeks at the sub-centre level were referred to the PHI and how many of them took treatment as per guidelines, in the process we underestimate or overestimate the prevalence in a particular DMC and depend more on the averages calculated at the district level, which is major fallacy and gives a wrong sense of relief or panic.

Comparison with other districts:

Though the district has achieved minimum indicators given under RNTCP but compare to other districts of the state, district Shimla is has to catch up to achieve many indicators. The case detection rate is lowest with high default and delay in treatment. This may be due to lack of monitoring of all the smear positive cases and tough terrain in the district as two third of it is rural and hilly and one DMC is land locked and difficult to access. While highest %age of the health professionals is trained with highest training in Chamba[6] the observed training in Shimla district is 30% of doctors and 65% of lab technicians. Health workers in all the districts are well trained except Shimla (91%). While proportion of cases detected sputum positive in Chamba was highest 18% the observed value for Shimla district was 20%. The case detection rate is highest in Solan[7], 101% while it is lowest in Shimla, 72%. The number of TB patients having delayed treatment was highest in Shimla 8% and lowest in Solan 0%. While Kangra has lowest ratio 1:0.45, Bilaspur and Shimla(1:0.54) have less proportion of NSN than NSP, in first quarter of 2008, Solan have the highest proportion of NSN:NSP, 1:0.65

Cure rate and failure rate is less in Shimla but is better than that of Chamba district which may be due to more vacancy position in Chamba than in Shimla district. There is sufficient amount of drugs and reagents available in all the districts. No. of DOTS providers are highest in Chamba, 94% and lowest in Shimla 63% but highest no. of patients cured are in Solan 92% and lowest in Chamba 84.4%. Patient default is highest in Shimla 8% and lowest in Solan,0.9% while failure is highest in Chamba 6.7% and lowest in Bilaspur[8] 2.5%.

All the districts have high awareness about Tb except Bilaspur where it is lowest 73%. In Solan 96% people have correct knowledge of TB, kangra 83%, Chamba 88%. Solan has 1.7% of funds for IEC, Kangra 10.7%, Chamba 3.8% and Bilaspur has 1.9% funds for IEC.

The participation of private sector (PP) is not there, though in other districts the PPs are taking 4-7% of the total load of cases. The private sector is contributing well in other districts of the state where it has been involved. A total 22 out of 40 PPs are involved in Solan, one of the best districts in RNTCP in the state. They are detecting 1% of the total OPD as chest symptomatic and disbursing DOTS to 6.8% of the patients. Similarly 2 out of 33 PPs are involved in Kangra[9] district and are disbursing DOTS to 10 patients which is 4% of the total patients put on DOTS in first quarter of 2008.

The participation of all the departments of medical college is not there and also proper follow-up of cases referred from the medical colleges is not done and no foolproof mechanism exist for that.

Conclusions:

The initial default in Shimla is very high as every fourth person defaults. No feedback is received from the half of the cases referred by medical college and treatment default is also high. The NSP case detection is just above the required one, but the low NSN cases detection is there compared to NSP cases. The input factors are mainly responsible for low case detection both NSP and NSN.

Recommendations:

We need to redesign our strategies to cover maximum number of patients and monitor them and the mechanism to monitor the referred patients needs to be more stringent to not to miss even a single case detected as sputum positive.

High NSP: NSN ratio also need some strategic inputs, may be in the form of more trainings to the doctors and lab technicians in the district and strengthening the lab infrastructure.

Added to the problem is migratory population from Bihar and Chattisgarh, and adds to initial default All DMC need to be made functional by appointing lab techs on contract basis. Many of the health institutions are without doctors and lab techs and there is huge difference between the number diagnosed as sputum positive and those put on DOTS and needs immediate attention. More IEC activities need to be done and provision of mobile sputum lab need to be there in remote areas where there is high focus of Tb patients .

The participation of private sector and NGOs is not there and need to be strengthened along with effective monitoring and case tracking of all the smear positive cases

including initial default cases to check the spread of tuberculosis that is increasing by each passing year.

Strict monitoring of each case detected as smear positive or negative and effective coordination between different districts of the state and neighboring states should be there. Provision of Lab technicians on contract/ or tie-up with private labs and need to fill lab tech posts. Regular trainings to MOs and LTs and more awareness camps in remote areas, more funds for IEC. Participation of medical college departments, private clinics and NGOs is required. Integration with IDSP from the PHI level and a list of cases having cough >3weeks be sent to DTO as well. Special screening camps in remote and inaccessible areas and for migratory population from outside, with a focus on not to default.

Results: Table 1: Case Detection RNTCP In Shimla District

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for **Case Detection**					
Level	**Programme elements**	**Indicators**	**Data needed for the indicator DTC (Interview)**	**Results (%)** DTC	Interview
Input	Trained medical officers	Proportion of the medical officers who attended the DOTS training	Number of medical officers who attended the DOTS training : **135** / Total number of medical officers: **168**	**80%**	**30%**
	Trained lab. Technician	Proportion of the laboratory technicians who attended the DOTS training	Number of lab. technicians who attended the DOTS training: **20** / Total Number of the lab. Technicians: **20**	**100%**	**65%**
	Trained health care workers	Proportion of the health care workers who attended the DOTS training	Number of the health workers who attended the DOTS training **240** / Total number of health workers: **240**	**100%**	**91%**
	Laboratory reagents and equipments	Number of the microscopic centre's equipped with reagents, slides and microscope	Number of the microscopic centers equipped with reagents, slides and microscope: **20** / Total number of the microscopic centre:**20**	**100%**	**65%**
	Internal quality control	Number of supervisory visits for internal quality control	Number of supervisory visits conducted: **59** / Number of supervisory visits planned **59**	**100%**	**40%**
Process	Trainings	Number of the trainings sessions conducted	Number of the trainings conducted: **0** / Number of the training sessions planned:0	**0%**	**0%**
	Sputum collection and examination	Proportion of the suspected cases referred for sputum microscopy	Number of the suspected cases referred for sputum microscopy: **2333** / Total number of the suspected cases: **2333**	**100%**	**100%**
	Cross checking of slides	Proportion of the slides cross checked	Number of slides cross checked: **558** / Total number of slides collected: **2333**	**24%**	**15%**
Output	Cases identified for sputum positivity	Proportion of the cases detected as sputum positive	Number of the cases detected sputum positive: **263** / Number of cases referred for sputum microscopy: **2333**	**11.2%**	**20%**
	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	Number of persons who know they should seek attention for cough longer than three weeks and its treatment: **24** / Population surveyed: **35**	**80%**	**69%**
Outcome	Reduction in transmission	Chest symptomatics screened -2-3% of pop screened	Total chest symptomatics screened: **2333** / Total no. of adult OPD: **117024**	**1.99%**	**2%**
		Case detection rate (>70%)	No. of NSP cases in 1q08 **131** x 100 / Population in lacs x 4 x 95	**72%**	**NA**
	Mean median time b/w registration and diagnosis for TB cases 1q08	Prop of TB patients delay (System Delay 1)	No. of TB pts delayed: **10** / Total no. of TB pts put on DOTS in 1q08: **131**	**8%**	**0%**

Table 2 CASE MANAGEMENT RNTCP IN SHIMLA DISTRICT

***The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for* Case Management**					
Level	Programme elements	Indicators	Data needed for the indicator DTC (Interview)	Results (%)	
				DTC	Interview
Input	Drugs	Drugs available as per requirement	Drugs available: **5000** Drugs required: **2840**	**170%**	**100%**
	DOTS providers	Number of the DOTS providers in position	Number of the DOTS providers in position: **584** Number of the DOTS providers sanction: **926**	**63%**	**100%**
	Senior treatment supervisors	Number of the senior treatment supervisors in position	Number of the senior treatment supervisors in position: **4** Number of the senior treatment supervisors sanction:**4**	**100%**	**75%**
	Treatment cards	Treatment cards available as per requirement	Treatment cards available: **5000** Treatment cards required: **2840**	**170%**	**100%**
Process	Supervised treatment	Proportion of the patients receiving the supervised treatment	Number of the patients receiving supervised treatment: **205** Total number of the patients put on treatment: **205**	**100%**	**100%**
	Supportive supervision	Number of the supervisory visits	Number of the supervisory visits conducted: **59** Number of the supervisory visits planned: **59**	**100%**	**60%**
Output	The patients completing the treatment	Proportion of the patients completing the treatment	Number of patients completing the treatment: **0** Total number of patients put on treatment: **149**	**0%**	**0%**
Outcome	The patients cured	Proportion of new sputum positive patients cured	Number of the new sputum positive patients cured: **129** Total number of the new sputum positive patients put on treatment: **149**	**87%**	**80%**
	Patients defaulted	Proportion of new sputum positive patients defaulted	Number of the new sputum positive patients defaulted: **9** Total number of the new sputum positive patients put on treatment: **149**	**6%**	**NA**
	Failures	Proportion of new sputum positive patients failure	Number of the new sputum positive patients failure: **5** Total number of the new sputum positive patients put on treatment: **149**	**3.4%**	**NA**

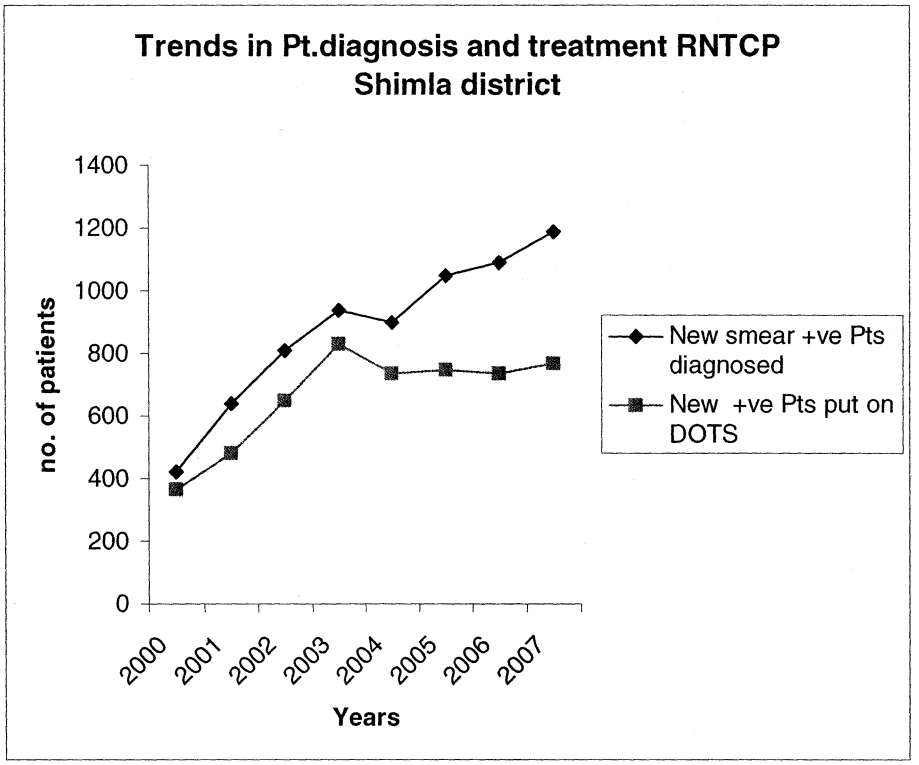
Table 3 IEC RNTCP IN SHIMLA DISTRICT

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for *IEC*				
Level	*Indicators*	Data needed for the indicator DTC (Interview)	Results (%)	
			DTC	Interview
Input	Proportion of tuberculosis funds allocated for IEC activities	Fund allocated for IEC for year 2007: **Rs. 1,00,000** / Total funds for year 2007: **Rs. 25,91,432**	**3.8%**	**0%**
Input	Proportion of the health facilities having materials for IEC	Number of the health facilities having materials for IEC: **472** / Total number of health facilities: **472**	**100%**	**100%**
Process	Proportion of the health facilities utilizing the funds for IEC	Number of the health facilities utilizing the funds for IEC:**472** / Total number of health facilities :**472**	**100%**	**0%**
Process	Proportion of the health facilities conducting IEC activities during last 3 months	Number of the health facilities conducting IEC activities: **14** / Total number of the IEC health facilities planned for IEC activities: **14**	**100%**	**50%**
Output	Proportion of the people having correct knowledge about tuberculosis	Number of people having correct knowledge: 25 / Population surveyed: 35	**100%**	**71%**
Outcome	Awareness among TB cases regarding TB	No. of pts aware: 36 / TB pts scrutinised: 36	**100%**	**100%**
	Awareness among TB cases regarding TB causes etc.	No. of pts aware: 36 / TB pts scrutinised: 36	**100%**	**100%**

Table 4 : Involvement of medical college (MC) in Shimla district

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for **MCs**					
Levelof logic model	Programme elements	Indicators	Data needed for the indicator	Results%	
				MC I/C	**Interview**
Input	Trained Doctors Of Medical College	Proportion of the Doctors trained in RNTCP	Number of Doctors trained in RNTCP 4 / Total number of doctors of MC 20	20%	5%
	Trained lab. Technician Of Medical College	Proportion of the laboratory technicians who attended the DOTS training	Number of lab. technicians who attended the DOTS training 1 / Total Number of the lab. Technicians in MC 20	20%	5%
	Trained health care workers (Pharmacists, S/Ns, M/Ws) in MC	Proportion of the health care workers who attended the DOTS training	Number of the health workers who attended the DOTS training 4 / Total number of health workers 4	100%	100%
	Laboratory reagents and equipments in MC labs	Number of the MCs equipped with reagents, slides and microscope	Number of the MC equipped with reagents, slides and microscope / Total number of the MC	100%	100%
	IEC materials (posters, banners, pamphlets etc.) in MC	Number of Depts. in MC having IEC materials	Number of Depts. in MC having IEC materials / Total number of the depts.	100%	14%
	Internal quality control at MC	Number of supervisory visits for internal quality control by MOTC (MC)/STLS	Number of supervisory visits conducted 4 / Number of supervisory visits planned 12	100%	25%
Process	Trainings at MC	Number of the trainings	Number of the trainings conducted / Number of the trainings planned	0	0
	Sputum collection and examination at MC	Proportion of the suspected cases referred for sputum microscopy	Number of the suspected cases referred for sputum microscopy / Total number of the suspected cases	2532	100%
	Display of the IEC materials	Proportion of the depts. displaying IEC materials	Number of the depts. displaying IEC materials / Total number of the depts..	100%	14%
	Cross checking of slides	Proportion of the slides cross checked	Number of slides cross checked,**150** / Total number of slides collected,**2532**	6%	6%
Output	Cases identified for sputum positivity	Proportion of the cases detected sputum positive	Number of the cases detected sputum positive **299** / Number of cases referred for sputum microscopy **2532**	12%	12%
Outcome	TB cases referred/diagnosed/treated by MC	Prop of TB cases referred/diagnosed/treated by MC	No. of TB cases referred/diagnosed/treated by MC / Total no. of TB pts in 1Q08	36%	36%
	Cure rate	TB register of MC	Review of TB register MC	40%	40%
	Default rate 1st Qrtr 2008	TB register of MC	Review of TB register MC	16%	16%

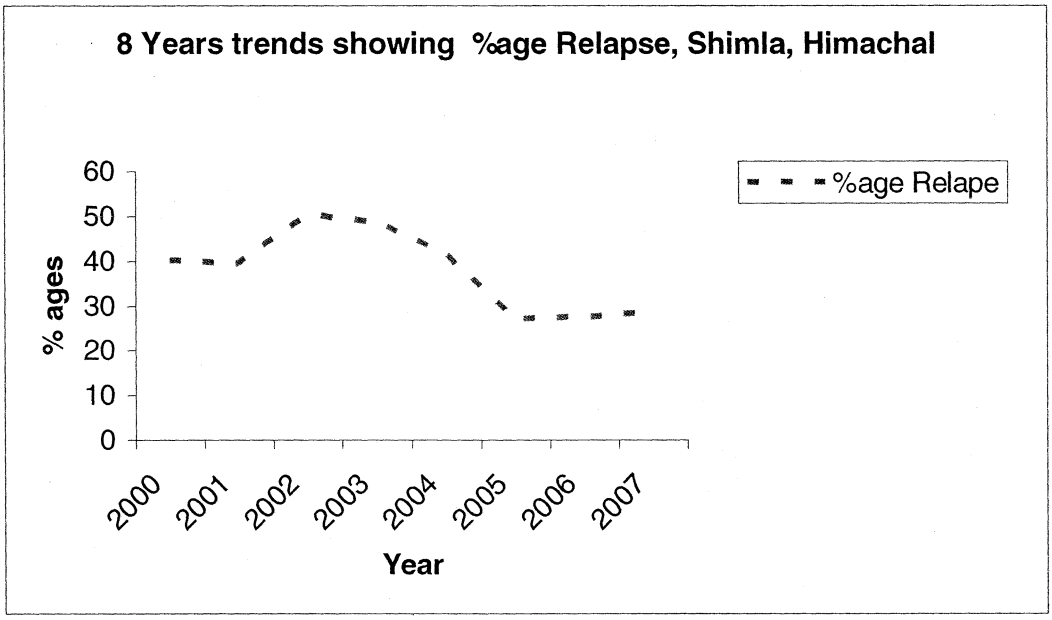
Fig 1: To assess the achievements of the objectives of RNTCP, district Shimla :



Source: Annual reports from the DTO office.

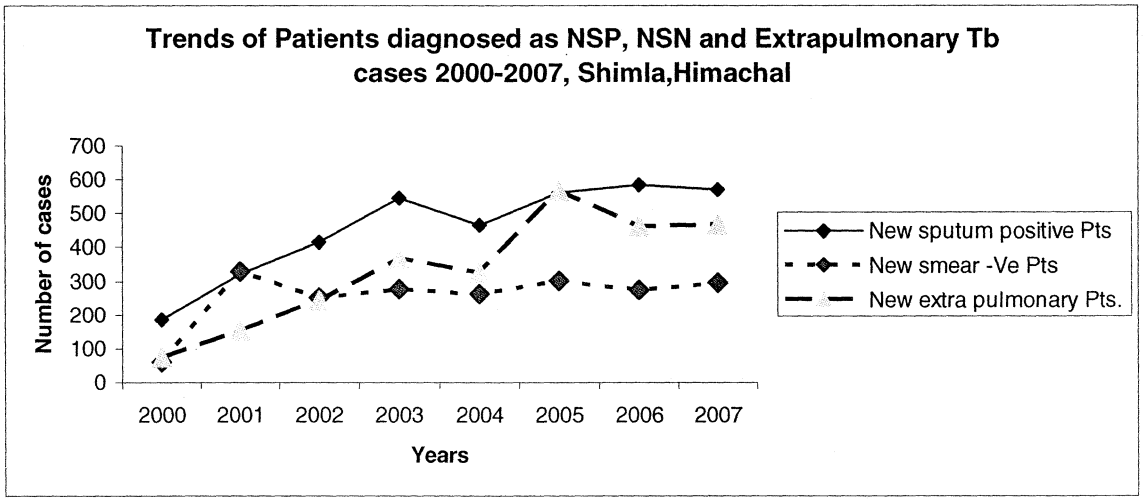
The increasing trend of patients diagnosed as smear positive and unusually large number of them being migratory and reffered out for treatment, needs through follow-up of these patients.

Fig 2: Despite decreasing trend there is high relapse rate.



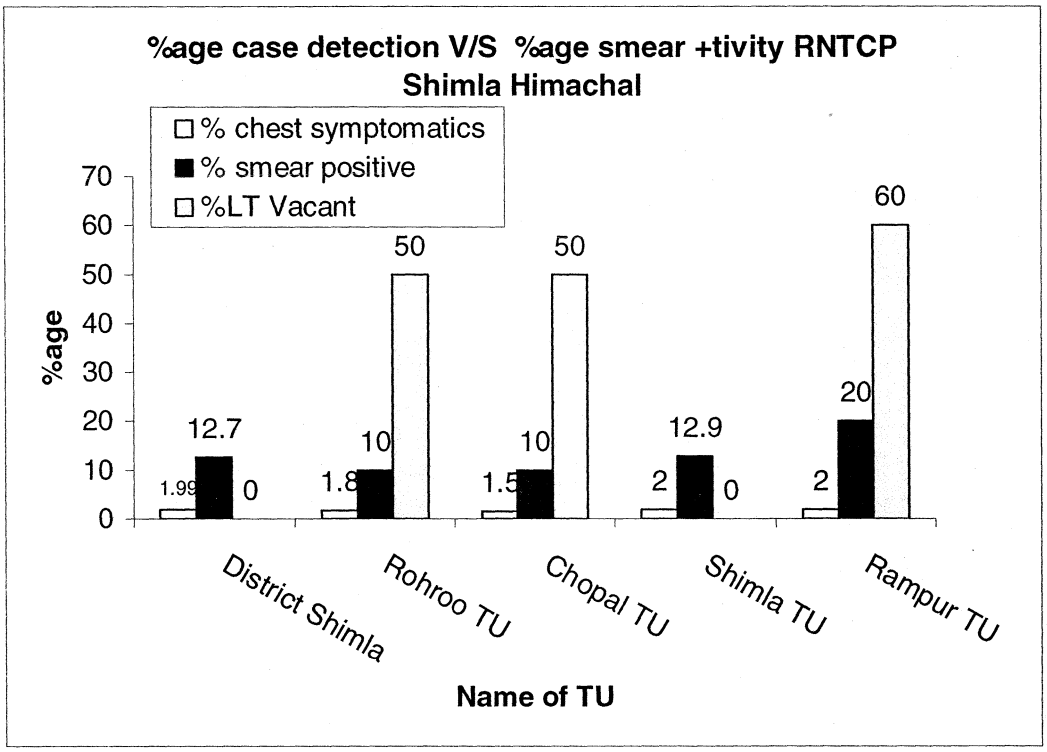
Source: Annual report from the DTO office 2008. High relapse rate need to be investigated further to know the gaps and to bridge them.

Fig 3: Trends in case detection 2000-2007, Shimla Himachal.



Source: DTO Shimla. Proportion of NSN cases detected is decreasing while cases of extrapulmonary increasing except in 2006-07, overall NSN is consistently lower than NSP.

Fig 4: %age of TU wise indicators, RNTCP, Shimla districts Himachal Pradesh India, 2008.



Source: Annual report from the DTO office 2008 and interview of DTO.

Despite high %age of vacancies of Lab Technicians in DMCs, the district achieves high indicators pointing towards more hidden smear positive cases in the district.

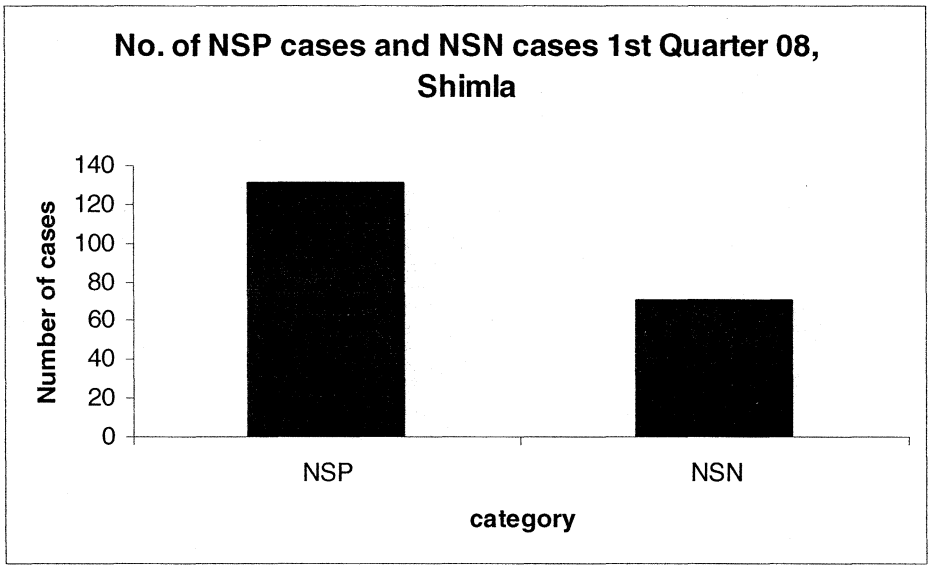
Table 5: Trends of different TB indictors 2000-2007, Shimla district, Himachal 2008.

Year	Population in Lakh	New sputum positive Pts	Relapse Pts	New smear -Ve Pts	New extra pulmonary Pts.	Total Patients	Cat-I	Cat-II	Cat-III	Total	No. of new OPD Pts.	No.of chest symptomatic	NSP Pts diagnosed	New +ve Pts put on DOTS	Annualised total new case detection rate/Lakh popn.	Sputum smear +ve rate/Lakh Popn/ year	Sputum conversion rate %age	Cure Rate %age
2000	7.11	184	74	61	75	412	212	92	108	412	137404	3745	421	365	116	52	95	89
2001	7.21	321	127	328	156	1051	482	246	323	1051	305977	8439	639	480	146	45	98	89
2002	7.33	416	210	251	243	1246	515	336	395	1246	280437	6967	810	648	170	57	93	87
2003	7.45	545	265	276	368	1582	715	393	474	1582	327602	7539	936	830	212	73	96	89
2004	7.57	466	194	262	326	1416	636	362	418	1416	379676	7128	899	735	187	62	93	90
2005	7.63	561	153	302	568	1760	856	329	575	1760	350810	9841	1049	745	231	74	95	91
2006	7.69	584	161	273	463	1700	866	380	454	1700	546395	9816	1091	735	221	76	94	88
2007	7.7	570	165	295	468	1690	908	357	425	1690	537479	9350	1189	766	219	74	96	92
Total		3647	1349	2048	2667	10857	5190	2495	3172	10857	2865780	62825	7034	5304				

Table 6: Comparison of key indicators with other districts, Himachal 2008.

Distt Indicator/	Solan	Bilaspur	Shimla	Chamba	Kangra
Population 2005 (lakh)	5.3	3.7	7.7	5.1	14.2
Proportion of MPW vacant	**0**	**28**	**30**	**41**	**21**
No of TU	3	2	4	3	5
No of DMC	15	11	20	10	29
Proportion doctor trained	82	83	80	95	100
Proportion LT trained	87	88	65%	97	100
Proportion of chest sympomatics screened	1.5	1.8	1.9	2.2	1.5
NSP Case detection rate (%) Q1 08	**101**	**89**	**72**	**81**	**80**
Cure rate of cases put on treatment 13-15 months earlier	**92**	**87**	**87**	**84**	**88**
Failure Rate	2.6	2.5	3.4	**6.7**	3.0
Default rate	0.9	**5**	**6**	4.4	4.0
Remarks	Plain Urbanized less vacancy	High default high vacancy	Under staffed	Inadequately staffed	Large distt./ difficult terrains

Fig 7: Comparison of NSP with NSN cases 1st quarter 2008, Shimla, Himachal Pradesh.



Source: Annual report from the DTO office 2008.

The number of cases of NSP:NSN show a ratio of 1.8:1 which is higher not only in the first quarter of 2008 but since the inception of the RNTCP programme in 2000, which need to be inquired into to observe the gaps.

References:

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ANNEXURES

Annexures for Evaluation of RNTCP:

Table 1 Methods for data collection, Shimla, Himachal Pradesh, 2008

Activity		Sample size	Data Collection Tools
Review of records	All records at District Tuberculosis Centre (DTC), Treatment Units (TU), Designated Microscopy Centres (DMC), Primary Health Institutions (PHI), Health Sub Centres (HSC)	5	1. TB, Laboratory , outpatient department registers & treatment card of patients 2. Checklists
Interview of stakeholders	District Tuberculosis Officer (DTO)	1	Interview schedule consisting of semi structured questionnaire
	Medical Officer Tuberculosis Centre (MOTC)	2	Interview schedule consisting of semi structured questionnaire
	Medical Officer (Designated Microscopy Centres)	4	Interview schedule consisting of semi structured questionnaire
	Medical Officer (Primary Health Institutions)	10	Interview schedule consisting of semi structured questionnaire
	Senior Treatment Supervisor (STS)	2	Interview schedule consisting of semi structured questionnaire
	Senior tuberculosis laboratory supervisor (STLS)	2	Interview schedule consisting of semi structured questionnaire
	Laboratory technicians (LT)	4	Interview schedule consisting of semi structured questionnaire
	DOTS Provider (Govt.)	40	Interview schedule consisting of semi structured questionnaire
	DOTS Providers (At private practitioners)	6	Semi structured questionnaire same as DOTS Provider (Govt.)
	DOTS Providers (Non Private Practitioners)	6	Semi structured questionnaire same as DOTS Provider (Govt.)
	Medical College	Nil	Semi structured questionnaire
	Non governmental organizations	1	Semi structured questionnaire

Objective: 2

To assess the achievements of the objectives of RNTCP, district Shimla

Using a logic frame, we will evaluate the following indicators.

Table 2 CASE DETECTION RNTCP IN SHIMLA DISTRICT

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for *Case Detection*								
Level of logic model	Programme elements	Indicators	Data needed for the indicator	Source of data	Evaluation design	Sample size	Data collection	
							Techniques	Tools
Input	Trained medical officers	Proportion of the medical officers who attended the DOTS training	Number of medical officers who attended the DOTS training / Total number of medical officers	District training records	Review of records Interview	DTC-1	Interview DTO	Interview schedule, Training register/checklist
	Trained lab. Technician	Proportion of the laboratory technicians who attended the DOTS training	Number of lab. technicians who attended the DOTS training / Total Number of the lab. Technicians	District training records	Review of records Interview	DTC-1 TUs-2	Interview DTO	Interview schedule, Training register
	Trained health care workers	Proportion of the health care workers who attended the DOTS training	Number of the health workers who attended the DOTS training / Total number of health workers	District training records	Review of records Interview	DTC-1, TUs-2	Interview DTO	Interview schedule, Training register
	Laboratory reagents and equipments	Number of the microscopic centre's equipped with reagents, slides and microscope	Number of the microscopic centers equipped with reagents, slides and microscope / Total number of the microscopic centre	District stock registers/ records	stock registers / records	DTC-1, TUs-2	Review by observation Stock register	Checklist
	Internal quality control	Number of supervisory visits for internal quality control	Number of supervisory visits conducted / Number of supervisory visits planned	District Tuber-culosis office records	Review of records	DTC-1 TUs-2	Interview DTO, MOTC	Interview schedule, Tour dairy
Process	Trainings	Number of the trainings sessions conducted	Number of the trainings conducted / Number of the training sessions planned	District tubercu-losis office records	Review of records	DTC-1	Interview DTO,	Interview schedule, Training register
	Sputum collection and examination	Proportion of the suspected cases referred for sputum	Number of the suspected cases referred for sputum microscopy	Health care facility OPD	Review of OPD register	DTC-1 TUs-2	Interview DTO, MOTC	Interview schedule, OPD, and laboratory

		microscopy	Total number of the suspected cases	register				register
	Cross checking of slides	Proportion of the slides cross checked	Number of slides cross checked / Total number of slides collected	Tuber-culosis unit	Review of the record	DTC-1	observation and scrutiny of lab register	Checklist
Output	Cases identified for sputum positivity	Proportion of the cases detected as sputum positive	Number of the cases detected sputum positive / Number of cases referred for sputum microscopy	Lab. register of micro-scopic centre	Review of the laboratory register	DTC-1 TUs-2	Interview Lab.Techini cians	Interview schedule
	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	Number of persons who know they should seek attention for cough longer than three weeks and its treatment / Population surveyed	Comm-unity	Randomly select one TU, and select one village	TUs- 2	Focus group discussion	Village people
Outcome	Reduction in transmission	Case detection rate -2% of pop -screened >70% CDR	Total chest symptomatics screened / Total no. of adult OPD	DTC record	Review of the record	DTC-1	Quarterly report and OPD register	Interview schedule, checklist
	Mean median time b/w registration ad diagnosis for TB cases 1Q08	Prop of TB patients delay	No. of TB pts delayed / Total no. of TB pts put on DOTS in 1Q08	DTC record	Review of the record	DTC-1	Quarterly report, OPD and TB registers	Interview schedule, checklist

Table 3 CASE MANAGEMENT RNTCP IN SHIMLA DISTRICT

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for *Case Management*								
Level of logic model	Programme elements	Indicators	Data needed for the indicator	Source of data	Evaluation design	Sample size	Data collection	
							Techniques	Tools
Input	Drugs	Drugs available as per requirement	Drugs available / Drugs required	Health care facility	Review of the records	DTC-1	Stock register	Check list
	DOTS providers	Number of the DOTS providers in position	Number of the DOTS providers in position / Number of the DOTS providers sanction	District records	Survey of DTO, STS DOT Provider	DTO, STS & DOT Provider	Interview	Interview schedule
	Senior treatment supervisors	Number of the senior treatment supervisors in position	Number of the senior treatment supervisors in position / Number of the senior treatment supervisors sanction	District records	Review of records	DTC-1 Tus-2	Checklist	Record of DTC
	Treatment cards	Treatment cards available as per requirement	Treatment cards available / Treatment cards required	Health care facility	Review of records	DTC-1 Tus-2	Checklist	District tuberculosis centre record
Process	Supervised treatment	Proportion of the patients receiving the supervised treatment	Number of the patients receiving supervised treatment / Total number of the patients put on treatment	Patients / Health care facility	Interviews of the patients Reviews of records	DTC-1 Tus-2	Interview of STS, Patient	Interview schedule
	Supportive supervision	Number of the supervisory visits	Number of the supervisory visits conducted / Number of the supervisory visits planned	District records	Review of the records	DTC-1, TUs-2	Interview of DTO,MOTC	Tour dairy

Output	The patients completing the treatment	Proportion of the patients completing the treatment	Number of patients completing the treatment / Total number of patients put on treatment	District records	Review of records	DTC-1, TUs-2	Scrutiny of TB register, review of records	Check list NSP pts 1Q08
Outcome	The patients cured	Proportion of new sputum positive patients cured	Number of the new sputum positive patients cured / Total number of the new sputum positive patients put on treatment	Districts records	Review of records	DTC-1, TUs-2	Scrutiny of TB register, review of records	Check list NSP pts 1Q08
	Patients defaulted	Proportion of new sputum positive patients defaulted	Number of the new sputum positive patients defaulted / Total number of the new sputum positive patients put on treatment	Districts records	Review of records	DTC-1, TUs-2	Scrutiny of TB register, review of records	Check list NSP pts 1Q08
	Failures	Proportion of new sputum positive patients failure	Number of the new sputum positive patients failure / Total number of the new sputum positive patients put on treatment	Districts records	Review of records	DTC-1, TUs-2	Scrutiny of TB register, review of records	Check list NSP pts 1Q08

Table 4 IEC RNTCP IN SHIMLA DISTRICT

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for *IEC*								
Level of the logic model	Indicators	Data needed for the indicator	Source of data	Evaluation design		Sample size	Data collection	
							Techniques	Tools
Input	Proportion of tuberculosis funds allocated for IEC activities	Fund allocated for IEC / Total funds	District records	Review of records	DTC-1	DTC	Interview of DTO	Inter view sche-dule
	Proportion of the health facilities having materials for IEC	Number of the health facilities having materials for IEC / Total number of health facilities	District records	Review of records	DTC-1 Tus-3	DTC & TUs	Checklist	Stock register
Process	Proportion of the health facilities utilizing the funds for IEC	Number of the health facilities utilizing the funds for IEC / Total number of health facilities	Health facility/District record	Review of records	DTC-1 Tus-3	Interview of DTO (1) /MOTC (3)		Interview schedule
	Proportion of the health facilities conducting IEC activities during last 3 months	Number of the health facilities conducting IEC activities / Total number of the IEC health facilities	Health facility/District records	Health facilities survey/Review of the records	DTC-1 Tus-4	DTC (1) TUs (3)		Check list
Output	Proportion of the people having correct knowledge about tuberculosis	Number of people having correct knowledge / Population surveyed	Community	Randomly select one TU out of three and select one village	TU	Interview villager		Village people
Outcome	Awareness among TB cases regarding TB and its causes etc.	No. of pts aware / TB pts scrutinised	Community	Randomly select one TU out of three and select one village	TU	Interview of NSP cases 1Q08		Interview schedule of NSP cases 1Q08

Table 5 INVOLVEMENT OF PUBLIC PRIVATE MIX (PPM) IN SHIMLA DISTRICT

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for PPM								
Level of logic model	Programme elements	Indicators	Data needed for the indicator	Source of data	Evaluation design	Sample size	Data collection	
							Techniques	Tools
Input	Private practioners identified	Prop. of private practioners identified	No. of PPs under PPM / Total no. of PPs	District training records	Review of records Interview	PPs under DTC-1 Tus-2	Interview DTO	Interview schedule, Training register/checklist
	PPs trained	Prop of PP trained	No. of PPs trained / Total no. of PPs	District training records	Review of records Interview	PPs under DTC-1 TUs-2	Interview DTO	Interview schedule, Training register
	PPs invited for local / Distt. Level meetings	Prop PPs invited for local / Distt. Level meetings	Total no. of PPs invited / Total no. of PPs	District meeting records	Review of records, Interview	PPs under DTC-1 TUs-2	Interview DTO / MOTC	Interview schedule, monthly meeting register
	PPs giving feedbacks	Prop of PPs giving feedbacks	Total no. of Pps giving feedbacks / Total no. of PPs	District records	Review of records, Interview	PPs under DTC-1 TUs-2	Interview DTO / MOTC	Interview schedule, register
	DMCs in Private sector	Proportion of DMCs in Private sector	Number of DMC in Private Sector / Total number of Private labs	District records	Review of records Interview	PPs under DTC1 TUs-2	Interview DTO, MOTC	Interview schedule, TB register
	DOTS centre in private sector	Proportion of DOTS centre in private sector	Number of DOTS centre identified under PPM / Total no. of PPs	District Tuber-culosis office records	Review of records	PPs under DTC-1	Interview DTO, MOTC	Interview schedule, Tour dairy
Process	PPs sending reports	Prop. of private practitioners sending reports	No. of PPs sending reports / No. of PPs under PPM	District training records	Review of records Interview	PPs under DTC1 TUs-2	Interview DTO, MOTC	Interview schedule, TB register
	Patients taking TB treatment at private facility	Prop of patients taking treatment at private facility for treatment of TB	Total no. of Pts taking DOTS at Pvt. facility / Total no. of DOTS provider under PPM	District records	Review of records Interview	PPs under DTC1 TUs-2	Interview DTO, MOTC	Interview schedule, TB register
	Trainings of PPs	Number of the trainings	Number of the trainings conducted for PPs / Number of the trainings planned for PPs	District tubercul osis office records	Review of records	PPs under DTC-1	Interview DTO,	Interview schedule, Training register

	Sputum collection and examination under PPM	Proportion of the suspected cases referred for sputum microscopy by PPs	Number of the suspected cases referred for sputum microscopy by PPs / Total number of the suspected cases at Pvt. facility	Private Health care facility OPD register	Review of OPD register	PPs under DTC-1 Tus	Interview DTO, MOTC	Interview schedule, OPD, and laboratory register
	Display of the IEC materials at PPs health facility	Proportion of the private health facilities displaying IEC materials	Number of the Pvt. health facilities displaying IEC materials / Total number of the health facilities	Private Health facilities	Survey of health facilities	PPs under DTC1 TUs-2	Survey of the TUs	Checklist,
	Cross checking of slides of Pvt. DMCs	Proportion of the slides cross checked at Pvt. DMC	Number of slides cross checked / Total number of slides prepared	Pvt. DMC	Review of the record of Pvt. DMC	PPs under DTC-1	Laboratory register	Checklist
Output	Cases identified for sputum positivity by PPs	Proportion of the cases detected sputum positive by Pvt. Health facilities	Number of the cases detected sputum positive by Pvt. Health facilities / Number of cases referred for sputum microscopy by Pvt. Health facilities	Lab. register of micro-scopic centre by Pvt. Health facilities	Review of the laboratory register by Pvt. Health facilities	PPs under DTC-1	Pvt. Health facilities Lab register	Checklist
Outcome	Cases reported by PPM	Prop of cases reported by PPM	Total no. of cases reported by PPM / Total no. of OPD attendance	DTC record and OPD of PPs	Review of records	PPs under DTC-1	Pvt. Health facilities OPD register	Checklist
	Cases managed by PPM	Prop of cases managed by PPM	Total no. of cases managed by PPM / Total no. of cases reported by PPM	DTC record and OPD of PPs	Review of records	PPs under DTC-1	Pvt. Health facilities OPD register	Interview of PPs and Checklist

Table 6 INVOLVEMENT OF MEDICAL COLLEGE (MC) IN SHIMLA DISTRICT

The logic model for Programme Evaluation of RNTCP in Shimla District Himachal Pradesh for *MCs*								
Level of logic model	Programme elements	Indicators	Data needed for the indicator	Source of data	Evaluation design	Sample size	Data collection	
							Techniques	Tools
Input	Trained Doctors Of Medical College	Proportion of the Doctors trained in RNTCP	Number of Doctors trained in RNTCP / Total number of doctors of MC	District training records / MOTC (MC)/MS	Review of records Interview	Doctors in MC	Interview DTO, MOTC (MC)	Interview schedule, Training register/checklist
	Trained lab. Technician Of Medical College	Proportion of the laboratory technicians who attended the DOTS training	Number of lab. technicians who attended the DOTS training / Total Number of the lab. Technicians in MC	District training records / MOTC (MC)	Review of records Interview	Lab Techs in MC	Interview DTO, MOTC (MC)	Interview schedule, Training register
	Trained health care workers (Pharmacists, S/Ns, M/Ws) in MC	Proportion of the health care workers who attended the DOTS training	Number of the health workers who attended the DOTS training / Total number of health workers	District training records / MOTC (MC)	Review of records Interview	Pharmacists, S/Ns, M/Ws in MC	Interview DTO, MOTC (MC)	Interview schedule, Training register
	Laboratory reagents and equipments in MC labs	Number of the microscopic centres equipped with reagents, slides and microscope	Number of the microscopic centers equipped with reagents, slides and microscope / Total number of the microscopic centre	District training records / MOTC (MC)/MS	Review of records Interview	Lab in MC	Stock register of MC lab	Checklist
	IEC materials (posters, banners, pamphlets etc.) in MC	Number of Depts. in MC having IEC materials	Number of Depts. in MC having IEC materials / Total number of the depts.	District training records / MOTC (MC)/MS	Review of district/MOTC (MC) stock registers / records	Depts. of MC	Stock register of DTO/MOTC(MC)	Checklist
	Internal quality control at MC	Number of supervisory visits for internal quality control by MOTC (MC)/STLS	Number of supervisory visits conducted / Number of supervisory visits planned	District Tuber-culosis office /MOTC (MC)/STLS records	Review of records	All depts. of MC	Interview DTO/ MOTC (MC)/STLS	Interview schedule, Tour dairy

Process	Trainings at MC	Number of the trainings	Number of the trainings conducted / Number of the trainings planned	District Tuber-culosis office /MOTC (MC)/STLS records	Review of records	All staff of MC involved in RNTCP	Interview DTO/MOTC (MC)	Interview schedule, Training register
	Sputum collection and examination at MC	Proportion of the suspected cases referred for sputum microscopy	Number of the suspected cases referred for sputum microscopy / Total number of the suspected cases	MC OPD registers	Review of OPD register	Lab Techs of MC	Interview DTO, MOTC (MC)	Interview schedule, OPD, and laboratory register
	Display of the IEC materials	Proportion of the depts. displaying IEC materials	Number of the depts. displaying IEC materials / Total number of the depts..	Depts. of MCs	Survey of health facilities	All depts. of MC	Survey of the Depts. of MCs	Checklist,
	Cross checking of slides	Proportion of the slides cross checked	Number of slides cross checked / Total number of slides collected	Tuber-culosis unit/DTC	Review of the record	Total slides prepared	Laborator y register	Checklist
Output	Cases identified for sputum positivity	Proportion of the cases detected sputum positive	Number of the cases detected sputum positive / Number of cases referred for sputum microscopy	Lab. register of micro-scopic centre of MC	Review of the laboratory register	MC DMC	Interview laboratory technician	Interview schedule
Outcome	TB cases referred/diagnosed/treated by MC	Prop of TB cases referred/diagnosed/treated by MC	No. of TB cases referred/diagnosed/treated by MC / Total no. of TB pts in 1Q08	TB register of MC	Review of TB register of MC	MC	Checklist	Interview of Nodal Officer

ANNEXURE – I

DATA COLLECTION INSTRUMENTS

QUESTIONNAIRE - DTO

(CONFIDENTIAL)

We are interested in knowing what is the situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for DTO in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of DTO_____
3. No. of service years in the district_____
4. Total length of service _____
5. Qualification _____
6. Name of institution_____
7. Name of TU of Distt _____

II. Health facility particulars

8. When was the RNTCP launched in District Shimla of Himachal Pradesh?
9. What is the population coverage under RNTCP?
10. How many TUs are there in your district?
11. How many DMCs are there in your district?
12. How many MOTC are there in place in the TUs?
    One (1) Two (2)
    Three (3)
13. How many PPs are there in your district?
14. How many DMCs have LTs?
15. Do all the DMCs have recommended infrastructure?
    Yes (1) No (2)
16. Do all the DMCs have binocular microscope?
    Yes (1) No (2)
17. Has there been any drug stock out in the district in the past one year?
    Yes (1) No (2)
18. Is an updated DOT directory available?
    Yes (1) No (2)

III. Training and meetings

19. Are you trained in RNTCP?
    Yes (1) No (2)
20. If yes, How long ago? _____
21. Where were you trained? _____
22. Who trained you? _____
23. Has training enabled you to perform your duty?
    Yes (1) No (2)
24. How many MOTC are trained?
    One (1) Two (2)
    Three (3)
25. How many PPs are trained? _____
26. How many LTs are trained? _____
27. Is any RNTCP training for Medical Officers and health workers organized?
28. How many meetings were held with PPs in the district in 2008?
29. How many technical and administrative review meetings do you hold with MOTC and all STS/STLS in a year?

PART – B

IV. Description of RNTCP

Why was RNTCP project launched in your area?

What are the goals of the RNTCP?

What are the objectives of RNTCP?

What are the treatment regimens under RNTCP?

Why is TB kept under Integrated Disease Surveillance Project?

Under RNTCP how many reporting units do you have?

What is the job of the health workers of subcentres in RNTCP?

What is the job of medical officers in RNTCP?

What is the job of medical colleges in RNTCP?

How do you suspect a case of TB under the RNTCP?

How do you confirm a TB case?

Do the staff lookout for cases house to house or just wait for cases to come to hospital under RNTCP?

Is the list of cases sent to the higher level, or just the number?

What reports are to be sent?

How often are the reports to be sent?

What data analysis is done on the forms at various levels?

PART – C

V. Knowledge / Awareness

30. Why was RNTCP started in your district?
31. What are the objectives of RNTCP
32. What are the treatments regimens prescribed under RNTCP?
33. In your opinion what is the time taken by a TB patient to seek first help from the time of onset of symptoms? (no. in days)
34. Is there any delay in seeking health care?
35. What do you think could be the reasons for the delay if any?
36. In your opinion what is the average time taken for diagnosis from yhe time patient first visits your health facility? (no. in days)
37. Give reason for your answer.
38. In your opinion what is the average time taken from date of diagnosis to initiation of a treatment? Enter the exact no. in days?
39. Give reason for your answer.
40. What are the indicators for the 1st Quarter of 2008 for RNTCP in your district? [1]
    - Case Detection Rate
    - Cure Rate
    - Sputum Conversion Rate
    - Default Rate
    - Failure Rate
41. During last year how many patients were examined
    New cases.....Follow up cases .....

[1] Cross check with local records

42. During last year how many cases were positive?
    New cases.....
    Follow up cases .....
43. How would you rate the performance of your district with respect to RNTCP?
    Satisfactory (achieved targets set out by RNTCP) (1)
    Unsatisfactory (did not achieve targets set out by RNTCP) (2)
    Could do better (achieved targets but can do better) (3)
44. Please give reason for your answer in Q 43
45. In your opinion what further steps can make the programme more successful?

VI. Compliers (NSP)

46. During intensive phase proportion of patients have taken regular DOTS?
47. During continuation phase proportion of patients have taken regular DOTS?

VII. Defaulters (NSP)

48. How many initial defaulters were there in the 1st quarter of 2008?
49. What was the action taken?
50. Who retrieved these defaulters?
51. After how many days of diagnosis he was registered for treatment?

VIII. NSN

52. What was done when the three sputum samples were negative?
53. How do you follow a patient with three negative sputum samples?
54. Was he put on DOTS trial?
    Yes (1) No (2)
55. If not, then what was done?

IX. Supervision

56. How often do you visit Tuberculosis Unit of your district in a quarter?
57. How often do you visit the Microscopic Centers of your district?
58. Do you have supervisory visits schedule?
59. Out of all PHIs how many of each category were paid supervisory visits during 2008?

Type of PHI	*Number*	*No. visited*	*Total no. implemented*
DMC	.....	.....	.....
PHC (X-ray)	.....	.....	.....
DOT Centres	.....	.....	.....

60. How often does the District Magistrate review the programme and facilitates coordination with other sectors including PPs / programmes?
61. How often does the Chief Medical Officer review the programme?
62. Has there been any expiry of drugs in the District in the past one year?
63. If yes please list the drugs that have been expired. Please also indicate how much time was taken to replace the expired drugs?

X. Referral

64. How is the information about the patients referred for treatment to other districts / TU compiled and conveyed
65. No. of patients referred to other district / TU in the first quarter 2008?
66. Out of these number whose feedback was received?
67. Out of these no. put on DOTS?
68. What is the system for sending feedback for the diagnosed TB patients received from other districts?

XI. Constraints

69. Please list any specific problem you encountered in implementing RNTCP in Shimla district?

70. Would suggest could you prepare to tackle the problems included above?
71. Is there anything you could like to add regarding performance of RNTCP in your district?

OBSERVATIONAL CHECKLIST – DTO

(CONFIDENTIAL)

Name of the DTO .....

DTC .....Distt.

S. No.	*Questions*	*Yes No*	*Number*	*Total*
1	Are all the MOs in the TU/DMC/PHI trained in RNTCP?			
2	Are all the LTs in the TU/DMC/PHI trained in RNTCP?			
3	Is the copy of last monthly PHI report available in the DTC?			
4	Does all the MOs review patients treatment activities with health worker on a fortnightly basis			
5	Do the MO visit regular / defaulting patients to bring them back on treatment?			
6	Is the supervisory register available and maintained?			
7	Is there any visible IEC material in the DTC campus			
8	Does the DTC have adequate drug stock to last one month?			
9	Are sufficient funds available with the DTO?			
10	Are sufficient stocks of medicines available?			
11	Are sufficient stocks of lab regents available?			
12	Are sufficient stocks of binocular MCs available?			
13	Is data entry operator in place?			
14	Are quarterly reports being sent regularly to the higher ups?			
15	Do superiors visit your DTC on regular basis?			

QUESTIONNAIRE - MOTC

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for MOTC in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of MOTC_____
3. No. of service years in the district_____
4. Name of institution_____
5. Name of TU_____
6. Name of the DOTS centre _____
7. Area: Rural (1) Urban (2)

II. Health facility particulars

8. What is the population of the area served by this TU?
9. What are the numbers of outpatients for last one year?
10. How many sputum examination done for TB suspects? How many tested positive?
11. What is the staff available in the institution?

III. Training

12. Are you trained in RNTCP? If "No" go to question 16.
    Yes (1) No (2)
13. When were you trained in RNTCP? _____
14. Where were you trained? _____
15. Who trained you? _____
16. Did you undergo refresher training in RNTCP?
    Yes (1) No (2)
17. Did the STS undergo refresher training in RNTCP?
    Yes (1) No (2)
18. Did the STLS undergo refresher training in RNTCP?
    Yes (1) No (2)
19. How often health workers trained?
    Once in 6 months (1)
    Once a year (2)

PART – B

IV. Description of RNTCP

Why was RNTCP project launched in your area?
What are the goals of the RNTCP?
What are the objectives of RNTCP?
What are the treatment regimens under RNTCP?
Why is TB kept under Integrated Disease Surveillance Project?
Under RNTCP how many reporting units do you have?
What is the job of the health workers of subcentres in RNTCP?
What is the job of medical officers in RNTCP?
What is the job of medical colleges in RNTCP?
How do you suspect a case of TB under the RNTCP?
How do you confirm a TB case?
Do the staff lookout for cases house to house or just wait for cases to come to hospital under RNTCP?
Is the list of cases sent to the higher level, or just the number?
What reports are to be sent?
How often are the reports to be sent?
What data analysis is done on the forms at various levels?

_____

PART – C

IV. Knowledge / Awareness

20. What definition do you use for TB suspect?
21. Where does screening of TB suspect take place?
22. Who does the screening of TB suspect?
23. How is the screening of TB suspect done?
24. What routine investigation is advised for TB suspects?
25. How many new patients do you see per day?
26. How many sputum smear examinations are advised for a TB suspect?
27. Where does patient get their treatment?
28. What treatment categories, regimens and dosage are used?
29. Who directly observe treatment?
30. What quantity of medicines is dispensed in the intensive phase?
31. What quantity of medicine is dispensed in the continuous phase?
32. Who gives patient education and counseling?
33. How would you rate the performance of your district with respect to RNTCP?
    Satisfactory (achieved targets set out by RNTCP) (1)
    Unsatisfactory (did not achieve targets set out by RNTCP) (2)
    Could do better (achieved targets but can do better) (3)
34. Please give reason for your answer to the above question
35. In your opinion what further steps can make the programme more successful?

VI. Compliers (NSP)

36. During intensive phase proportion of patients have taken regular DOTS?
37. During continuation phase proportion of patients have taken regular DOTS?

VII. Defaulters (NSP)

38. How many initial defaulters were there in the 1st quarter of 2008?
39. What was the action taken?
40. Who retrieved these defaulters?
41. After how many days of diagnosis he was registered for treatment?

VIII. NSN

42. What was done when the three sputum samples were negative?
43. How do you follow a patient with three negative sputum samples?
44. Was he put on DOTS trial?
    Yes (1) No (2)
45. If not, then what was done?

VI. Supervision

46. How often are patients called for follow up during treatment?
    Once (1) Twice (2)
    Thrice (3)
47. How often are smear examinations ordered during treatment?
    Once (1) Twice (2)
    Thrice (3)
48. By whom, when and how is the late patient tracing done?
    DOT provider (1)
    Health Worker (2)
    STS (3)
    All (4)
49. Who maintains treatment cards and TB registers?
50. Who prepares the quarterly reports?
    DTO (1)
    MOTC (2)

STS (3)
Data entry operator (4)

51. Is there a system for cross checking the TB registers with the laboratory register?
    Yes (1) No (2)
52. How often do RNTCP supervisors visit the institution?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
53. Do supervisors use a supervision checklist?
    Yes (1) No (2)
54. Is feedback verbal or written provided by the supervisors?
    Verbal ()1 Written (2)
    Both (3)
55. How often do supplies of medicines come?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
56. Are quantities sufficient?
    Yes (1) No (2)
57. Has there been any expiry of drugs in the District in the past one year?
58. If yes please list the drugs that have been expired.
59. Please also indicate how much time was taken to replace the expired drugs?
60. How many supervisory visits have you made in last one month to the Peripheral Health Institutions?
    Less than 10 (1) More than 10 (2)
61. What was the smear conversion rate reported for the TU in the first quarter of 2008?
62. What was the cure rate reported for the TU in the last quarter?
63. What are the IEC activities done during the last one year?

VII. Referral

64. How is the information about the patients referred for treatment to other districts / TU compiled and conveyed
65. No. of patients referred to other district / TU in the first quarter 2008?
66. Out of these number whose feedback was received?
67. Out of these no. put on DOTS?
68. What is the system for sending feedback for the diagnosed TB patients received from other districts?

XI. Constraints

69. Please list any specific problem you encountered in implementing RNTCP in your TU?
70. Would suggest could you prepare to tackle the problems included above?
71. Is there anything you could like to add regarding performance of RNTCP in your TU?

OBSERVATIONAL CHECKLIST - MOTC

(CONFIDENTIAL)

Name of the TU ..... Distt

S. No.	*Questions*	*Yes / No*	*Number*	*Total*
1	Are all the MOs in the TU trained in RNTCP?			
2	Is the copy of last monthly PHI report available in the TU?			
3	Does the MO review patients treatment activities with health worker on a fortnightly basis			
4	Does the MO visit regular / defaulting patients to bring them back on treatment?			
5	Is the supervisory register available and maintained?			
6	Is there any visible IEC material in the TU level?			
7	Does the TU have adequate drug stock to last one month?			

QUESTIONNAIRE – MO (PHI)

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for MO (PHI) in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of MO (PHI)_____
3. No. of service years in the district_____
4. Name of institution_____
5. Name of TU_____
6. Name of the DOTS centre _____
7. Area

   Rural (1)
   Urban (2)

II. Health facility particulars

8. What is the population of the area served by this PHI?
9. What is the population of the area served by this PHI?
10. What are the numbers of outpatients for last one year?
11. How many sputum examination done for TB suspects? How many tested positive?
12. What is the staff available in the institution?

III. Training

13. Are you trained in RNTCP? If "No" go to question 75.

    Yes (1) No (2)
14. When were you trained in RNTCP?
15. Where were you trained?
16. Who trained you?
17. When was the last RNTCP training for health workers in the institution?
18. How often are health workers trained?

    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)

PART – B

IV. Description of RNTCP

Why was RNTCP project launched in your area?
What are the goals of the RNTCP?
What are the objectives of RNTCP?
What are the treatment regimens under RNTCP?
Why is TB kept under Integrated Disease Surveillance Project?
Under RNTCP how many reporting units do you have?
What is the job of the health workers of subcentres in RNTCP?
What is the job of medical officers in RNTCP?
What is the job of medical colleges in RNTCP?
How do you suspect a case of TB under the RNTCP?
How do you confirm a TB case?
Do the staff lookout for cases house to house or just wait for cases to come to hospital under RNTCP?
Is the list of cases sent to the higher level, or just the number?
What reports are to be sent?
How often are the reports to be sent?
What data analysis is done on the forms at various levels?

PART – C

V. Knowledge / Awareness

19. What are the numbers of outpatients for last one year?
20. What is the definition used for TB suspect?
21. Where does screening of TB suspect take place?
22. Who does the screening of TB suspect?

DTO	(1)
MOTC	(2)
MO (DMC)	(3)
MOs in the OPDs	(4)
All	(5)

23. How is the screening of TB suspect done?
24. What routine investigation is advised for TB suspects?
25. How many sputum smear examinations are advised for a TB suspect?
26. How do you manage a chest symptomatics?
    Advice the patient to go to the nearest DMC for microscopy? (1)
    Collect and transport the sputum samples to the nearby DMC? (2)
    Transport the slides prepared at Primary Health Centre to DMC? (3)
27. What is the method of feedback from DMC?
    Telephone (1) Messenger (2)
    Any other, if any (89)
28. How many patients are on DOTS in your institutions?
29. Categorize the patients on the basis of CAT-I, II and III?
    CAT I CAT II CAT III
30. What treatment categories, regimens and dosage are used?
31. Who directly observe treatment?
32. What quantity of medicines is dispensed in the intensive phase?
33. What quantity of medicine is dispensed in the continuous phase?
34. Who gives patient education and counseling?
35. How often are patients called for follow up during treatment?
    Once (1) Twice (2)
    Thrice (3)
36. How often are smear examinations ordered during treatment?
    Once (1) Twice (2)
    Thrice (3)

VI. Compliers (NSP)

37. During intensive phase proportion of patients have taken regular DOTS?
38. During continuation phase proportion of patients have taken regular DOTS?

VII. Defaulters (NSP)

39. How many initial defaulters were there in the 1st quarter of 2008?
40. What was the action taken?
41. Who retrieved these defaulters?
42. After how many days of diagnosis he was registered for treatment?

VIII. NSN

43. What was done when the three sputum samples were negative?
44. How do you follow a patient with three negative sputum samples?
45. Was he put on DOTS trial?
    Yes (1) No (2)
46. If not, then what was done?

IX. Supervision

47. How often are patients called for follow up during treatment?
    Once (1) Twice (2)
    Thrice (3)
48. How often are smear examinations ordered during treatment?

Once (1) Twice (2)
Thrice (3)

49. By whom, when and how is the late patient tracing done?
    DOT provider (1) Health Worker (2)
    STS (3) All (4)
50. Who maintains treatment cards?
51. Who prepares the monthly reports?
    MO I/c (1) Pharmacist (2)
    Others, if any specify (3)
52. Is there a system for cross checking the TB registers with the laboratory register?
    Yes (1) No (2)
53. How often do RNTCP supervisors visit the institution?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
54. Do supervisors use a supervision checklist?
    Yes (1) No (2)
55. Is feedback verbal or written provided by the supervisors?
    Verbal ()1 Written (2)
    Both (3)
56. How often do supplies of medicines come?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
57. Are quantities sufficient?
    Yes (1) No (2)
58. Has there ever been shortage of anti TB medicines?
    Yes (1) No (2)
59. Has there been any expiry of drugs in the District in the past one year?
60. If yes please list the drugs that have been expired.
61. Please also indicate how much time was taken to replace the expired drugs?
62. How many supervisory visits have you made in last one month to the Peripheral Health Institutions?
    Less than 10 (1) More than 10 (2)
63. How often do you review patient treatment activities with Multi Purpose Worker?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
64. What was the smear conversion rate reported for the TU in the first quarter of 2008?
65. What was the cure rate reported for the TU in the last quarter?
66. What are the IEC activities done during the last one year?

X. Referral

67. How is the information about the patients referred for treatment to other districts / TU compiled and conveyed
68. No. of patients referred to other district / TU in the first quarter 2008?
69. Out of these number whose feedback was received?
70. Out of these no. put on DOTS?
71. What is the system for sending feedback for the diagnosed TB patients received from other districts?

XI. Constraints

72. Please list any specific problem you encountered in implementing RNTCP in Shimla district?
73. Would suggest could you prepare to tackle the problems included above?
74. Is there anything you could like to add regarding performance of RNTCP in your district?

OBSERVATIONAL CHECKLIST – MO (PHI)

(CONFIDENTIAL)

Name of the DMC....., TU .....Distt.

S. No.	*Questions*	*Yes / No*	*Number*	*Total*
1	Are all the MOs in the DMC trained in RNTCP?			
2	Is the copy of last monthly PHI report available in the PHI?			
3	Does the MO review patients treatment activities with health worker on a fortnightly basis			
4	Does the MO visit regular / defaulting patients to bring them back on treatment?			
5	Is the supervisory register available and maintained?			
6	Is there any visible IEC material in the PHI campus			
7	Does the PHI have adequate drug stock to last one month?			

QUESTIONNAIRE – MO (DMC)

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for MO (DMC) in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of MO (DMC)_____
3. No. of service years in the district_____
4. Name of institution_____
5. Name of TU_____
6. Name of the DOTS centre _____
7. Area: Rural (1) Urban (2)

II. Health facility particulars

8. What is the population of the area served by this DMC?
9. What is the population of the area served by this DMC?
10. What are the numbers of outpatients for last one year?
11. How many sputum examination done for TB suspects? How many tested positive?
12. What is the staff available in the institution?

III. Training

13. Are you trained in RNTCP? If "No" go to question 75. Yes (1) No (2)
14. When were you trained in RNTCP?
15. Where were you trained?
16. Who trained you?
17. Did you undergo refresher training in RNTCP? Yes (1) No (2)
18. Did the STS undergo refresher training in RNTCP? Yes (1) No (2)
19. When was the last RNTCP training for health workers in the institution?
20. How often are health workers trained?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)

PART – B

IV. Description of RNTCP

Why was RNTCP project launched in your area?
What are the goals of the RNTCP?
What are the objectives of RNTCP?
What are the treatment regimens under RNTCP?
Why is TB kept under Integrated Disease Surveillance Project?
Under RNTCP how many reporting units do you have?
What is the job of the health workers of subcentres in RNTCP?
What is the job of medical officers in RNTCP?
What is the job of medical colleges in RNTCP?
How do you suspect a case of TB under the RNTCP?
How do you confirm a TB case?
Do the staff lookout for cases house to house or just wait for cases to come to hospital under RNTCP?
Is the list of cases sent to the higher level, or just the number?
What reports are to be sent?
How often are the reports to be sent?
What data analysis is done on the forms at various levels?

PART – C

V. Knowledge / Awareness

21. What are the numbers of outpatients for last one year?
22. What is the definition used for TB suspect?
23. Where does screening of TB suspect take place?
24. Who does the screening of TB suspect?

DTO	(1)	MOTC	(2)
MO (DMC)	(3)	MOs in the OPDs	(4)
All	(5)		

25. How is the screening of TB suspect done?
26. What routine investigation is advised for TB suspects?
27. How many sputum smear examinations are advised for a TB suspect?
28. What treatment categories, regimens and dosage are used?
29. Who directly observe treatment?
30. What quantity of medicines is dispensed in the intensive phase?
31. What quantity of medicine is dispensed in the continuous phase?
32. Who gives patient education and counseling?
33. How often are patients called for follow up during treatment?

Once	(1)	Twice	(2)
Thrice	(3)		

34. How often are smear examinations ordered during treatment?

Once	(1)	Twice	(2)
Thrice	(3)		

VI. Compliers (NSP)

35. During intensive phase proportion of patients have taken regular DOTS?
36. During continuation phase proportion of patients have taken regular DOTS?

VII. Defaulters (NSP)

37. How many initial defaulters were there in the 1st quarter of 2008?
38. What was the action taken?
39. Who retrieved these defaulters?
40. After how many days of diagnosis he was registered for treatment?

VIII. NSN

41. What was done when the three sputum samples were negative?
42. How do you follow a patient with three negative sputum samples?
43. Was he put on DOTS trial?

Yes	(1)	No	(2)

44. If not, then what was done?

IX. Supervision

45. How often are patients called for follow up during treatment?

Once	(1)	Twice	(2)	Thrice	(3)

46. How often are smear examinations ordered during treatment?

Once	(1)	Twice	(2)	Thrice	(3)

47. What was the number of sputum smears examined last month in the MC?
48. What percentages of sputum smears examined last month in the MC were positive?
49. By whom, when and how is the late patient tracing done?

DOT provider	(1)	Health Worker	(2)
STS	(3)	All	(4)

50. Who maintains treatment cards and TB registers?
51. Who prepares the quarterly reports?

DTO	(1)	MOTC	(2)
STS	(3)	Data entry operator	(4)

52. Is there a system for cross checking the TB registers with the laboratory register?

Yes	(1)	No	(2)

53. How often do RNTCP supervisors visit the institution?

Monthly	(1)	Quarterly	(2)

Half yearly (3) Yearly (4)

54. Do supervisors use a supervision checklist?
    Yes (1) No (2)
55. Is feedback verbal or written provided by the supervisors?
    Verbal ()1 Written (2) Both (3)
56. How often do supplies of medicines come?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
57. Are quantities sufficient?
    Yes (1) No (2)
58. Has there ever been shortage of anti TB medicines?
    Yes (1) No (2)
59. Has there been any expiry of drugs in the District in the past one year?
60. If yes please list the drugs that have been expired.
61. Please also indicate how much time was taken to replace the expired drugs?
62. How many supervisory visits have you made in last one month to the Peripheral Health Institutions?
    Less than 10 (1) More than 10 (2)
63. How often do you review patient treatment activities with Multi Purpose Worker?
    Monthly (1) Quarterly (2)
    Half yearly (3) Yearly (4)
64. What was the smear conversion rate reported for the TU in the first quarter of 2008?
65. What was the cure rate reported for the TU in the last quarter?
66. What are the IEC activities done during the last one year?

X. Referral

67. How is the information about the patients referred for treatment to other districts / TU compiled and conveyed
68. No. of patients referred to other district / TU in the first quarter 2008?
69. Out of these number whose feedback was received?
70. Out of these no. put on DOTS?
71. What is the system for sending feedback for the diagnosed TB patients received from other districts?

XI. Constraints

72. Please list any specific problem you encountered in implementing RNTCP in Shimla district?
73. Would suggest could you prepare to tackle the problems included above?
74. Is there anything you could like to add regarding performance of RNTCP in your district?

OBSERVATIONAL CHECKLIST – MO (DMC)

(CONFIDENTIAL)

Name of the DMC TU ....., Distt. .....

S.No.	*Questions*	*Yes / No*	*Number*
1	Are all the MOs in the DMC trained in RNTCP?		
2	Is the copy of last monthly PHI report available in the DMC?		
3	Does the MO review patients treatment activities with health worker on a fortnightly basis		
4	Does the MO visit regular / defaulting patients to bring them back on treatment?		
5	Is the supervisory register available and maintained?		
6	Is there any visible IEC material in the DMC campus		
7	Does the DMC have adequate drug stock to lastg one month?		

QUESTIONNAIRE – STS

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for Senior Treatment Supervisor in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of DOTS provider_____
3. No. of service years in the district_____
4. Name of institution_____
5. Name of TU_____
6. Name of the DOTS centre _____
7. Area Rural (1) Urban (2)

PART – B

II. Knowledge / Awareness

8. How do you confirm that sputum positive patient has been put on treatment?
9. How do you manage the contacts of sputum positives?
10. How often do you visit each DOT center in your TU area?
    Weekly (1) Monthly (2)
    Quarterly (3) Yearly (4)
11. What do you do to bring irregular patient/defaulters back on treatment?
    Contact the contact person (1)
    Inform MPW of the area (2)
    Perform home visits (3)
    All (4)
12. How often do you review patient treatment activities with Multi Purpose Worker?
    Weekly (1)
    Monthly (2)
    Quarterly (3)
    Yearly (4)
13. How do you maintain details of your field activities?
    Keeping record in file (1)
    Keeping record in diary (2)
14. Details of the IEC activities done in the last one year?
15. Do you visit house of patient within one week of initiation of treatment?
    Yes (1) No (2)
16. What is the purpose of home visit?

III. Compliers (NSP)

17. During intensive phase proportion of patients have taken regular DOTS?
18. During continuation phase proportion of patients have taken regular DOTS?

IV. Defaulters (NSP)

19. How many initial defaulters were there in the 1st quarter of 2008?
20. What was the action taken?
21. Who retrieved these defaulters?
22. After how many days of diagnosis he was registered for treatment?

V. NSN

23. What was done when the three sputum samples were negative?
24. How do you follow a patient with three negative sputum samples?
25. Was he put on DOTS trial?
    Yes (1) No (2)
26. If not, then what was done?

QUESTIONNAIRE – STLS

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for Senior Treatment Laboratory Supervisor in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of STLS
3. No. of service years in the district
4. Name of institution
5. Name of TU
6. Area Rural (1) Urban (2)

II. Training

7. Are you trained in RNTCP? Yes (1) No (2)
8. Do you provide on spot / retraining to LTs? Yes (1) No (2)

PART – B

III. Knowledge / Awareness

9. What is adult OPD of your TU during last quarter?
10. How many DMCs are in your TU?
11. How many suspected cases examined?
12. How many were sputum positive?
13. What is the positivity rate of your TU during last quarter?

IV. Supervision

14. How do you maintain details of your field activities?
    Keeping record in file (1)
    Keeping record in diary (2)
14. What is your supervisory visit schedule?
    Weekly (1) Monthly (2)
    Quarterly (3) Yearly (4)
15. Any DMC without Lab Technician?
16. What is the smear positivity rate of your TU?

V. External quality assurance (EQA)

17. How often on site evaluation of DMC is done?
    Weekly (1) Monthly (2)
    Quarterly (3) Yearly (4)
18. How do you review the slides?
19. When do you review the slides?
    Weekly (1) Monthly (2)
    Quarterly (3) Yearly (4)
20. How often Random blind rechecking (RBRC) of slides done?
    Weekly (1) Monthly (2)
    Quarterly (3) Yearly (4)
21. Where RBRC does takes place?
    DTC (1) TU (2) DMC (3)
22. Who does the blinding and coding of slides in RBRC?
    DTO (1) MOTC (2)
    STLS (3) LT (4)
23. Has the feedback by DTO based on RBRC report and TU on site evaluation check list from STLS sent to DMC? Yes (1) No (2)
24. Has the RBRC report and monthly lab summery of the district being sent to IRL / STDC? Yes (1) No (2)

QUESTIONNAIRE – LAB TECHNICIAN

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for Laboratory Technicians (DMC) in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of Doctor_____
3. No. of service years in the district_____
4. Name of institution_____
5. Name of TU_____
6. Area

   Rural (1) Urban (2)

PART – B

II. Knowledge / Awareness

7. When you get the samples how much time did you take to process them.

   Same day (1) 1-3 days (2)
   >3 days (3)

8. When did you give report

   Next day (1) 1-3 days (2)
   >3 days (3)

9. When did you disseminate the information to the patient?

   Same day (1) 1-3 days (2)
   >3 days (3)

10. What are the numbers of staff working in the laboratory?

    One (1) Two (2)
    Three (3)

11. What is the number of staff who does smear examination?

    One (1) Two (2)
    Three (3)

12. What are number of sputum smears examined each day for AFB?

    < 10 (1) 10 - 20 (2)
    20 - 30 (3) > 30 (4)

13. What are number of sputum smears examined each month for AFB?

    < 200 (1) 200 - 300 (2)
    300 - 400 (3) > 400 (4)

14. What are number of sputum smears examined each year for AFB?

    < 2000 (1) 2000 - 3000 (2)
    3000 - 4000 (3) > 4000 (4)

15. How many days in the last year the binocular microscope was not in a working condition?

    < 15 (1) 15 - 30 (2)
    30 - 45 (3) > 45 (4)

16. Are there adequate supplies of reagents, slides and other consumables for the next one-month? Yes (1) No (2)
17. Who prepares the reagents, how are they prepared and where are they prepared?
18. Are reagents labeled?

    Yes (1) No (2)

19. How long are reagents used for?

    One month (1) Two months (2)
    Three months (3)

20. Where do patients cough up their sputum specimens?
    In open (1) In closed room (2)
21. Does anyone observe them?
    Yes (1) No (2)
22. How are sputum containers labeled?
    On the top of cup (1) On the side of cup (2)
23. How many sputum specimens are collected for each TB suspect?
    One (1) Two (2)
    Three (3)
24. How frequently slides are prepared?
    Daily (1) Bi-weekly (2)
    Weekly (3)
25. Who prepares the smears?
    Sweeper (1) Peon (2)
    Lab Tech (3)
26. Who stains them?
    Sweeper (1) Peon (2)
    Lab Tech (3)
27. How long does it take to examine a negative smear?
    < 1 minutes (1) 1 – 3 minutes (2)
    3 – 5 minutes (3) > 5 minutes (4)
28. Do you have a smear examination form?
    Yes (1) No (2)
29. Who fills it in?
    Doctor (1)
    Pharmacist (2) Lab Tech (3)
30. Do you have an RNTCP laboratory register?
    Yes (1) No (2)
31. Who fills it in?
    Doctor (1)
    Pharmacist (2) Lab Tech (3)
32. Are slides kept for quality control after examination?
    Yes (1) No (2)
33. How do you preserve slides for review by STLS?
34. How often are slides sent for quality control?
    Monthly (1) Quarterly (2) Yearly (3)
35. Has the laboratory received any feedback on quality of smear examination?
    Yes (1) No (2)
36. How the reports smear examination of referred cases from the PHI are conveyed?
37. What is the importance of 3 sputum exams for diagnosis and 2 sputum exams for follow up?
38. What is the schedule of sputum examination at intensive phase?
39. What is the schedule of sputum examination at continuation phase?
40. How the sputum cups, slides and infective material are disposed?

OBSERVATIONAL CHECKLIST – LABORATORY TECHNICIAN

(CONFIDENTIAL)

Name of the DMC TU ....., Distt.

S No.	*Questions*			*Yes / No*
1	Population of DMC			
2	No. of new adult OPD patients in the last quarter			
3	No. of TB suspects in the quarter.			
4	Out of the above 3 No of diagnosed sputum + patients in the quarter			
5	Out of \the above 3 No of diagnosed sputum + patients referred outside the district.			
6	No. of initial defaults in the quarter.			
7	Proportion of TB suspects for whom 3 sputum smear were done for diagnosis.	N	D	%
8	Proportion of TB patients for whom 2 sputum smear were done during follow up examination.			
9	Is there a functional binocular microscope in the DMC			
10	Is a trained LT doing the sputum microscopy?			
11	Are there adequate supply of the regents, slides and other consumables?			
12	Are the lab reagents freshly prepared?			
13	If yes, where are they prepared (MC/TU/District)			
14	Are the names and addresses in the lab TB register written legibly?			
15	Are the positive results written in red and negative in blue and black?			
16	Is there a summery of the microscopy activities at the end of each month			
17	Is the LT preserving slides for review by the STLS as per the quality assurance protocol			
18	Is the STLS reviewing slides preserved by the LT during the on sight evaluation			
19	Is the DMC getting feedback on the results of RBRC done at district level?			
20	Check one randomly selected + and one – slide. Is the quality of slides prepared are satisfactory in terms of smear thickness, evenness, size and staining?			
21	Is the bio medical waste from the DMC disposed as per bio medical waste (management and handling) rules 1998?			

QUESTIONNAIRE – DOTS PROVIDERS

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for DOTS provider in the public and private health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of DOT Provider_____
3. No. of service years in the district_____
4. Name of institution_____
5. Name of TU_____
6. Name of the DOTS centre _____
7. Area
   Rural (1)
   Urban (2)

PART – B

II. Knowledge / Awareness

8. What is the population covered by you?
   No. of persons .....
   No. of households .....
9. Have you been trained in TB case finding and treatment?
   Yes (1) No (2)
10. How often do you visit each household in a year?
11. What signs and symptoms and duration most often make you suspect TB in a patient and lead you to refer him/her for tB diagnosis?
12. How many KMs away is the TB clinic or Hospital where you refer patients for diagnosis?
13. Do you record somewhere that you have referred a patient for diagnosis?
    Yes (1) No (2)
14. How many chest symptomatics do you estimate you have referred for TB diagnosis?
15. Validate with record in the last month
    In the last one month
    In the last one year
16. If the patient refuses to go to the Primary Health Centre for TB diagnosis do you make sputum smears in the field and post them to your PHC for diagnosis of TB?
    Yes (1) No (2)
17. How are you informed that you should initiate ambulatory chemotherapy for a TB patient?
18. How many TB patients do you currently provide ambulatory therapy to?
19. Any supervisory visit from the DTO or your supervisory officer relating to TB case finding and / or treatment?
20. Have you experienced any shortages or interruptions in drug supplies or logistics?
21. What do you think are the major problems you face in
    Identifying TB suspects
    In treating TB patients
22. Are patient wise drug boxes being marked and maintained for each patients?
    Yes (1) No (2)
23. Do patients receive every dose of drugs under direct observation in intensive phase?
    Yes (1) No (2)
24. Are patients receiving at least one dose a week under direct observation in continuation phase?
    Yes (1) No (2)

25. Are the facilities (Clean water, disposable cups, privacy) for DOTS are available?
    Yes (1) No (2)
26. Do the treatment cards being marked at the time of giving each dose?
    Yes (1) No (2)
27. Do the patients bringing back blister packs when they collect weekly drugs?
    Yes (1) No (2)
28. Do there consistency between no. of doses and treatment card and drug box?
    Yes (1) No (2)
29. Does the treatment observer make home visits to verify the address of patients?
    Yes (1) No (2)
30. Does the treatment observer make prompt home visits to bring irregular patients back on treatment?
    Yes (1) No (2)
31. Does the treatment observer know at what dose in intensive phase he is supposed to give the sputum container for follow up examination?
    Yes (1) No (2)

OBSERVATIONAL CHECKLIST – DOT PROVIDER

(CONFIDENTIAL)

Name of the DOT Provider

Under DMC/TU....., Distt. ...

Observe the DOT Centre and Pt. Wise Boxes and records (Complete one form for each DOT Centre)

S.No.	Questions	Yes / No
1	Are patient wise drug boxes being marked and maintained for each patient	
2	Are the facilities (Clean water, disposable cups, privacy) for DOTS are available?	
3	Is there adequate arrangement available for providing Inj. SM (for CAT II patients)	
4	Is there consistency between the no. of doses on treatment card and drug box? (check any two boxes) Box 1 (Name:.....) Box 2 (Name:.....)	
5	Are the prompt home visits made to bring irregular pts back on treatment?	
6	Have any of the drugs in the pt wise boxes (PWB) cross the date of expiry? Box 1 (Name:.....) Box 2 (Name:.....)	
7	Is home address verification done for pts. Before the start of Treatment? (check Treatment.Card)%	

If this DOT centre is a PHI and has other DOT centers' attached to it then ask the following regarding monitoring (Please look at the original cards maintained with the MO)

S.No.	Questions	Yes / No
8	Are the original cards available for all DOT centres at in the PHI?	
9	Do the original Treatment cards have the basis for the type & categorization of the pt.	
10	Were these updated with in the last one month?	
11	Does the PHI staff update these cards?	
12	Does the PHI staff prepare the monthly PHI report?	
13	Is there any IEC material visible at the DOT centre?	

QUESTIONNAIRE – PATIENT (NSP)

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for NSP patients in the public and private health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information from the patient

1. ID. No.
2. TB No.
3. Name of patient _____Sex
4. Name of TU
5. Name of the DOTS centre
6. Area

Urban	(1)	Sub urban	(2)
Rural	(3)	Homeless/displaced/migratory	(4)

7. Age (calculated in years and months)
8. Date of birth
9. Marital statue

Single	(1)	Married	(2)
Divorced	(3)	Widowed	(4)
Separated	(5)		

10. Type of family

Nuclear	Non nuclear

11. Family size

< 3	3-5	6-7	>7

12. Religion:

Hindu	(1)	Christian	(2)
Muslim	(3)	Buddhist	(4)
Sikh	(5)	Other, specify	(89)

13. Caste:

SC	(1)	ST	(2)
OBC	(3)	GC	(4)
Other, specify	(89)		

14. Address
15. Duration of stay at present address
16. Native Place
17. Frequency of visits to native place

Frequently	(1)	Rarely	(2)
None	(99)		

18. Patient's Qualification

Illiterate	(0)	Primary	(1)
Middle	(2)	High School	(3)
Graduate	(4)	Professional	(5)

II. Socio-economic status

1. Place of living: Rented (0) Own (1)
2. Type of house:

Kutcha	(1)	Semi Pucca	(2)
Pucca	(3)	Bungalow	(4)

3. Occupation of the patient

Presently not employed gainfully			(0)
Not Skilled	(1)	Semi Skilled	(2)
Skilled	(3)	Managerial	(4)
Professionals	(5)		

PART – B

III. Knowledge / Awareness

19. Do you know that you are undergoing treatment for TB?
    Yes (1) No (2)
20. Have you provided at least 2 sputum samples before the start of treatment?
21. What is the test report of your sputum?
22. When did you first experienced symptoms?
23. What were your symptoms?
24. What was the duration of your symptoms?
25. When did you attend the clinic?
26. After how many days of symptoms how many sputum samples taken?
27. Were you informed about your positive and negative status?
    Yes (1) No (2)
28. Were you given a course of antibiotics after negative results?
    Yes (1) No (2)
29. Was repeat sputum examination done?
    Yes (1) No (2)
30. If yes, after how many days?
31. Do you know the correct duration of your TB treatment?
    Yes (1) No (2)
32. Have you taken 20 to 24 doses for TB under direct observation in the Intensive phase?
    Yes (1) No (2)
33. Have you taken one dose of weekly TB treatment under direct observation in the Continuation phase?
    Yes (1) No (2)
34. Do you know that not taking drugs under direct observation can lead to unfavorable outcomes?
    Yes (1) No (2)
35. Do you feel DOT is convenient?
    Yes (1) No (2)
36. Did you pay any money for sputum examination at the MC?
    Yes (1) No (2)
37. Did you pay any money for TB drugs after being registered in the RNTCP?
    Yes (1) No (2)
38. Have you provided at least 2 sputum samples at the end of two months of treatment?
    Yes (1) No (2)
39. Do you belong to tribal area?
    Yes (1) No (2)
40. Are you satisfied with the interaction and support provided by programme staff?
    Yes (1) No (2)

INTERVIEW CHECKLIST – PATIENTS (NSP)
(CONFIDENTIAL)

Name of the TU....., Distt.
Interview of patients registered in 1st Quarter, 2008 at DMC Level (Mark 1 for Yes and 0 for No)

S. No.	Indicator TB No.	P1	P2	P3	P4	P5
Check Laboratory Register						
1	In the lab register is there a record of the patient's initial sputum examination?					
2	As per the lab register, did the patient has at least two initial sputum smear examined before start of treatment?					
3	Is the result in the lab register is consistent with the result in the TB register?					
4	Is there a record of patients two months follow up sputum examination in the lab register?					
5	Did the patient have at least two follow up sputum examination at the end of 2 months?					
6	Is the result for two months follow up sputum examination consistent between lab register and TB register?					
Check for cards						
7	Is the patient's 2 month follow up sputum result on Rx card consistent with result and grade recorded in lab register?					
8	Is the patient's treatment regimen on the Rx card is consistent with the categorization in the TB register					
9	As per the Rx card, is the patient reported to have been on DOTS during IP (at least 20 to 24 doses)					
10	As per the Rx card, is the patient reported to have been on DOTS during CP (at least 1 dose a week)					

QUESTIONNAIRE – PATIENT (NSN)

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for NSN patients in the public and private health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information from the patient

1. ID. No.
2. TB No.
3. Name of patient _____Sex _____
4. Name of TU_____
5. Name of the DOTS centre _____
6. Area

Urban	(1)	Sub urban	(2)
Rural	(3)	Homeless/displaced/migratory	(4)

7. Age (calculated in years and months)
8. Date of birth
9. Marital status

Single	(1)	Married	(2)
Divorced	(3)	Widowed	(4)
Separated	(5)		

10. Type of family

Nuclear	Non nuclear

11. Family size

< 3	3-5	6-7	>7

12. Religion:

Hindu	(1)	Christian	(2)	Muslim	(3)
Buddhist	(4)	Sikh	(5)	Other, specify	(89)

13. Caste:

SC	(1)	ST	(2)	OBC	(3)
GC	(4)	Other, specify		(89)	

14. Address
15. Duration of stay at present address
16. Native Place
17. Frequency of visits to native place

Frequently	(1)	Rarely	(2)	None	(99)

18. Patient's Qualification

Illiterate	(0)	Primary	(1)	Middle	(2)
High School	(3)	Graduate	(4)	Professional	(5)

II. Socio-economic status

19. Place of living: .....

Rented	(0)	Own	(1)

20. Type of house: .....

Kutcha	(1)	Semi Pucca	(2)
Pucca	(3)	Bungalow	(4)

21. Occupation of the patient.....

Presently not employed gainfully			(0)
Not Skilled	(1)	Semi Skilled	(2)
Skilled	(3)	Managerial	(4)
Professionals	(5)		

PART – B

II. Knowledge / Awareness

1. Do you know that you are undergoing treatment for TB?
   Yes (1) No (2)
2. Have you provided at least 2 sputum samples before the start of treatment?
   Yes (1) No (2)
3. Were you sputum positive at the time of diagnosis?
   Yes (1) No (2)
4. Do you know the correct duration of your TB treatment?
   Yes (1) No (2)
5. ave you taken 20 to 24 doses for TB under direct observation in the Intensive phase?
   Yes (1) No (2)
6. Have you taken one dose of weekly TB treatment under direct observation in the CP?
   Yes (1) No (2)
7. Do you know that not taking drugs under direct observation can lead to unfavorable outcomes?
   Yes (1) No (2)
8. Do you feel DOT is convenient?
   Yes (1) No (2)
9. Did you pay any money for sputum examination at the MC?
   Yes (1) No (2)
10. Did you pay any money for TB drugs after being registered in the RNTCP?
    Yes (1) No (2)
11. Have you provided at least 2 sputum samples at the end of two months of treatment?
    Yes (1) No (2)
12. Do you belong to tribal area?
    Yes (1) No (2)
13. Are you satisfied with the interaction and support provided by programme staff?
    Yes (1) No (2)

INTERVIEW CHECKLIST – PATIENTS (NSN)

(CONFIDENTIAL)

Name of the TU....., Distt. .....

Interview of patients registered in 1st Quarter, 2008 at DMC Level (Mark 1 for Yes and 0 for No)

S. No.	Indicator TB No.	P1	P2	P3	P4	P5
Check Laboratory Register						
1	In the lab register is there a record of the patient's initial sputum examination?					
2	As per the lab register, did the patient has at least two initial sputum smear examined before start of treatment?					
3	Is the result in the lab register is consistent with the result in the TB register?					
4	Is there a record of patients two months follow up sputum examination in the lab register?					
5	Did the patient have at least two follow up sputum examination at the end of 2 months?					
6	Is the result for two months follow up sputum examination consistent between lab register and TB register?					
Check for cards						
7	Is the patient's 2 month follow up sputum result on Rx card consistent with result and grade recorded in lab register?					
8	Is the patient's treatment regimen on the Rx card is consistent with the categorization in the TB register					
9	As per the Rx card, is the patient reported to have been on DOTS during IP (at least 20 to 24 doses)					
10	As per the Rx card, is the patient reported to have been on DOTS during CP (at least 1 dose a week)					

QUESTIONNAIRE – NODAL OFFICER (MC)

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for NO (MC) in the health facilities in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of NO_____
3. No. of service years in the MC_____
4. Name of MC_____

II. Health facility particulars

5. When the RNTCP was started in your MC?
6. What is the population coverage under RNTCP?
7. How many TUs are there in your MC?
8. How many DMCs are there in your MC?
9. How many MOTC are there in place in the MC?
   One (1) Two (2) Three (3)
10. How many PPs are there under your MC?
11. Do the DMC has recommended infrastructure?
    Yes (1) No (2)
12. Do the DMC has binocular microscope?
    Yes (1) No (2)
13. Has there been any drug stock out in MC in the past one year?
    Yes (1) No (2)
14. Is an updated DOT directory available?
    Yes (1) No (2)

III. Training and meetings

15. Are you trained in RNTCP? Yes (1) No (2)
16. If yes, How long ago?
17. Where were you trained? Yes (1) No (2)
18. Who trained you?
19. How many MOTC are trained?
    One (1) Two (2) Three (3)
20. How many PPs are trained?
21. How many LTs are trained?
22. Is any RNTCP training for doctors of depts. and health workers organized?
23. How many meetings were held with PPs in the district in 1Q08?
24. How many technical and administrative review meetings do you hold with MOTC and all STS/STLS in a year?

PART – B

IV. Description of RNTCP

Why was RNTCP project launched in your area?

What are the goals of the RNTCP?

What are the objectives of RNTCP?

What are the treatment regimens under RNTCP?

Why is TB kept under Integrated Disease Surveillance Project?

Under RNTCP how many reporting units do you have?

What is the job of the health workers of subcentres in RNTCP?

What is the job of medical officers in RNTCP?

What is the job of medical colleges in RNTCP?

How do you suspect a case of TB under the RNTCP?

How do you confirm a TB case?

Do the staff lookout for cases house to house or just wait for cases to come to hospital under RNTCP?

Is the list of cases sent to the higher level, or just the number?

What reports are to be sent?

How often are the reports to be sent?

What data analysis is done on the forms at various levels?

PART – C

V. Knowledge / Awareness

25. What are the causes of TB?
26. RNTCP programme, its objectives, treatments regimens prescribed by RNTCP?
27. In your opinion what is the time taken by a TB patient to seek health care? Enter exact no. in days?
28. Give reasons for the delay if any?
29. In your opinion what is the average time taken from diagnosis to registration of a TB patient? Enter the exact no. in days.
30. Give reason for your answer.
31. In your opinion what is the average time taken from date of diagnosis to initiation of a treatment? Enter the exact no. in days?
32. Give reason for your answer.
33. What are the indicators for the 1st Quarter of 2008?
    Case Detection Rate Cure Rate
    Sputum Conversion Rate Default Rate
    Failure Rate
34. During last year how many patients were examined
    New cases.....
    Follow up cases .....
35. During last year how many cases were positive?
    New cases.....
    Follow up cases .....
36. How would you rate the performance of your MC with respect to RNTCP?
    Satisfactory (achieved targets set out by RNTCP) (1)
    Unsatisfactory (did not achieve targets set out by RNTCP) (2)
    Could do better (achieved targets but can do better) (3)
37. Reason for your answer in Q 36(3)
38. In your opinion what further steps can make the programme more successful?

VI. Compliers (NSP)

1. During intensive phase proportion of patients have taken regular DOTS?
2. During continuation phase proportion of patients have taken regular DOTS?

VII. Defaulters (NSP)

3. How many initial defaulters were there in the 1st quarter of 2008?
4. What was the action taken?
5. Who retrieved these defaulters?
6. After how many days of diagnosis he was registered for treatment?

VIII. NSN

7. What was done when the three sputum samples were negative?
8. How do you follow a patient with three negative sputum samples?
9. Was he put on DOTS trial?

   Yes (1) No (2)
10. If not, then what was done?

IX. Supervision

39. How often do you visit Tuberculosis Unit of your MC in a quarter?
40. How often do you visit the Microscopic Centers of your MC?
41. Do you have supervisory visits schedule?
42. Out of all below how many of each category were paid supervisory visits during 2008?

Type of PHI	*Number*	*No. visited*	*Total no. implemented*
DMC	.....	.....	.....
DOT Centres	.....	.....	.....

43. How often does the Principal review the programme and facilitates coordination with other sectors including PPs / programmes?
44. How often does the Principal review the programme?
45. Has there been any expiry of drugs in the District in the past one year?
46. If yes please list the drugs that have been expired.
47. Please also indicate how much time was taken to replace the expired drugs?

X. Referral

48. How is the information about the patients referred for treatment to other districts / TU compiled and conveyed
49. No. of patients referred to other district / TU in the first quarter 2008?
50. Out of these number whose feedback was received?
51. Out of these no. put on DOTS?
52. What is the system for sending feedback for the diagnosed TB patients received from other districts?

XI. Constraints

1. Please list any specific problem you encountered in implementing RNTCP in your TU?
2. Would suggest could you prepare to tackle the problems included above?
3. Is there anything you could like to add regarding performance of RNTCP in your TU?

QUESTIONNAIRE – NGO

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for NGOs in district Shimla Himachal Pradesh.

PART – A

I. Identification information of the NGO

1. ID. No.
2. Name of NGO _____
3. Name of DTC_____
4. Area

   Urban (1) Sub urban (2)

II. Participation particulars of NGO

1. Are the members of the NGO are trained in RNTCP?

   Yes (1) No (2)

2. What are your activities as an NGO in RNTCP?
3. What activity do you undertake in IEC?
4. How you are collaborating with the district health authorities?
5. What is the no. of patients on treatment under you as DOT provider? Do you have any hospital / lab support?

   Yes (1) No (2)

6. How many DOT providers are there in your NGO? _____
7. Are they trained in RNTCP?

   Yes (1) No (2)

8. Do you have any suggestion for improvement in RNTCP?

QUESTIONNAIRE – PRIVATE PRACTIONERS/DOT PROVIDERS (PP)

(CONFIDENTIAL)

We are interested in knowing what is situation of patients of Tuberculosis who have been placed on DOTS in district Shimla Himachal Pradesh. I will ask you some questions. Kindly spare five minutes and help us improve the services.

Data collection instrument for Private Practioners/dot Provider (PP) involved in RNTCP in district Shimla Himachal Pradesh.

PART – A

I. Identification information

1. ID. No.
2. Name of PP_____ Age _____
3. Duration in years of PP _____
4. Type of facility_____
5. Area

Urban	(1)	Sub urban	(2)
Rural	(3)		

II. Health facility particulars

6. Are you involved in PPM under RNTCP?
7. If yes, under which scheme?

Scheme 1	(1)
Scheme 2	(2)
Scheme 3a	(3)
Scheme 3b	(4)
Scheme 4a	(5)
Scheme 4b	(6)

8. Whether timely honorarium is being given to you as per the schemes under which you work?
   Yes (1) No (2)
9. Have you received any kind of training in RNTCP?
10. If yes, please give details.
11. What is your daily OPD in last one month? _____
12. What is the number of patients with cough more than 3 weeks reported to you in the last month?
13. How do you confirm the diagnosis?
14. How many TB patients are taking DOTS from your health facility?
15. What is the schedule of sputum follow up?
16. How default action is taken?

III. Particulars of previous experience with Government health programme

17. Have you been involved in any Govt. Health Programmes? If "Yes" go to question 18; If "No" go to question 23.
    Yes (1) No (2)
18. Name the Govt. Health Programme you were involved with.
19. What was the nature of involvement in each of the programme(s) mentioned in Q 22.
20. Give the duration of involvement for each of the programme(s) mentioned in Q 22.
21. Were you satisfied with the involvement?
    Yes (1) No (2)

22. State your reasons for the answer to Q 26.
23. Has your previous experience motivated you to participate?
    Yes (1) No (2)

IV. Criteria for and processes adopted for identification and selection of PPs

24. List the reason(s) for your being selected as a partner for RNTCP by the Govt.?
    - Willingness to participate: (1)
    - Previous experience with Govt. Health Programmes (2)
    - Large and varied clientele load (3)
    - Wide geographic coverage (4)
    - Others (Specify) (5)
25. Did the government official approach you directly?
    Yes (1) No (2)
26. Were you approached by the government through a professional association? If "Yes" go to question 27; If "No" go to question 28.
    Yes (1) No (2)
27. Name the professional association(s) who approached / encouraged you to participate
28. List your reasons for participating in the RNTCP?

V. Training for RNTCP

29. Were you provided any training prior to participation? If "Yes" go to question 30; If "No" go to question 32.
    Yes (1) No (2)
30. Give the following details on the training undergone:
    Institution conducting training
    Duration of training (in days)
31. Do you think the training enabled you to participate in the RNTCP effectively? Give reasons
32. Are your familiars with the following?

RNTCP manual:	Yes (1)	No (2)
Case definition:	Yes (1)	No (2)
Reporting formats	Yes (1)	No (2)
Frequency of reporting required	Yes (1)	No (2)
Person to whom reports are to be sent	Yes (1)	No (2)

PART – B

VI. Particulars of reporting by provider

33. Have reporting formats been provided to you? (Collect sample format) If "Yes" go to question 34 ; If "No" go to question 37.
    Yes (1) No (2)
34. Are the formats provided in adequate numbers?
    Always adequate (1) sometimes adequate (2)
    sometimes Inadequate (3) always inadequate (4)
    other (specify) (5)
35. Are the reporting formats user friendly?
    Yes (1) No (2)
36. Has the person (s) responsible for filling the formats undergone any training?
    Yes (1) No (2)
37. Whom do you send the reports to?
38. How do you send the report? (tick all that apply)
    Email (1) Telephone (2)
    Courier (3) Post (4)
    Other (specify) (5)

39. Have you been provided any assistance to send your reports? If "Yes" go to question 40, If "No" go to question 43.

Yes	(1)	No	(2)

40. Please describe the type and adequacy of assistance provided?
41. If assistance provided is "Nil "or inadequate please explain how do you manage to send your reports
42. Does lack or inadequate assistance affect the regularity of your reporting? Please explain your answer.

Yes	(1)	No	(2)

43. How do you maintain records of your clients?

VII. Particulars on feedback

44. Do you been receiving feedback from the government agency?

Regularly	(1)	Irregularly	(2)
Rarely	(3)		

Have you taken any action to improve the situation in Q 44?

45. Please state the outcomes of the actions initiated by you.

VIII. Expectations and /or gains accrued through participation in RNTCP

46. When you decided to participate in the RNTCP?
47. What were your expectations?
48. Have your expectations been fulfilled?

Fully	(1)	Partially	(2)
Not at all	(3)		

49. Give reasons for your response
50. Have you benefited from this partnership?

Yes	(1)	No	(2)

51. Explain your answers
52. How would you rate the level of benefit accrued by you?

Very high	(1)	High	(2)
Moderate	(3)	Low	(4)
Very low	(5)	Nil	(6)
Other (specify)	(7)		

53. Are you satisfied with the partnership as it is at present?

Yes	(1)	No	(2)

54. Give reasons for your response
55. What are your suggestions to improve your satisfaction with the partnership?
56. List the major problems you have encountered during this partnership?
57. What measures would you suggest to resolve and/or reduce the problems mentioned in Q 57.
58. How would you describe the role played by professional agencies, e.g. IMA/IAP/API etc in facilitating partnership?
59. Are there anything else that you would like to comment about?

Thank you for your time and valuable contribution.

ANNEXURE II

ABSTRACTION FORM

1. For obtaining data in RNTCP Shimla

a. Name of stake holder:
b. Designation of stake holder:
c. Duration involved with RNTCP Shimla: Month Year

Sr. No.	Description contents	Details obtained	Remarks
1 a. b	Introduction : Relevance of RNTCP Rationale	 1 2 3 1 2 3	Not available
2	Goals of RNTCP	1 2	
3	Specific objectives of TB under RNTCP selected for description and assessment		
4	Diseases of public health priority kept under surveillance for Integrated Disease Surveillance Project National State		
5	Health infrastructure of RNTCP - For HP - For your district	Organogram of 1. health infrastructure 2. manpower responsible at different levels of RNTCP	
6*	Case definitions (Write the suspected , Probable and confirmatory case definition as per document review for RNTCP)	Compare case definitions of RNTCP with those of NTCP	
7*	Population kept under RNTCP Total		
8*	Reporting mode Passive Active		
9*	Data structure Individual data Aggregated data		

10*	Types of reporting units Public Rural Urban Medical colleges Laboratories Private Individual practitioners Nursing homes Hospitals Medical colleges Laboratories		
11*	Data flow and frequency from various reporting units Flow chart for data from Periphery Intermediate level Secondary Tertiary		
12*	Data analysis Include frequency and indicators for analysis for disease selected		
13*	Feedback Include flow chart to show frequency and flow of feedback for RNTCP		
14*	Others (Specify)		

ANNEXURE - III

CASE DEFINITIONS USED IN RNTCP

Pulmonary Smear-positive tuberculosis

Tuberculosis in a patient with at least 2 initial sputum smear examinations (direct smear microscopy) positive for AFB,

Or:

Tuberculosis in a patient with one sputum examination positive for AFB and radiographic abnormalities consistent with active pulmonary Tuberculosis as determined by the treating Medical Officer,

Or:

Tuberculosis in a patient with one sputum specimen positive for AFB and culture positive for Mycobacterium tuberculosis

Pulmonary Smear-negative tuberculosis

Tuberculosis in a patient with symptoms suggestive of Tuberculosis with at least 3 sputum examinations negative for AFB, and radiographic abnormalities consistent with active pulmonary Tuberculosis as determined by an Medical Officer, followed by a decision to treat the patient with a full course of anti-tuberculosis therapy,

Or:

Diagnosis based on positive culture but negative AFB sputum examination.

Extra-pulmonary tuberculosis

In tuberculosis of organs other than the lungs, such as the pleura (TB pleurisy), lymph nodes, abdomen, genitourinary tract, skin, joints and bones, tubercular meningitis, tuberculoma of the brain, etc. diagnosis should be based on one culture-positive specimen from the extra-pulmonary site, or histological evidence, or strong clinical evidence consistent with active extra-pulmonary Tuberculosis followed by a Medical Officers decision to treat with a full course of anti- Tuberculosis therapy. Pleurisy is classified as extra-pulmonary Tuberculosis. A patient diagnosed with both pulmonary and extra pulmonary Tuberculosis should be classified as pulmonary Tuberculosis.

Types of cases

New

A patient who has never had treatment for tuberculosis or has taken anti-tuberculosis drugs for less than one month.

Relapse

A patient declared cured of tuberculosis by a physician, but who report back to the health service and is found to be bacteriologically positive.

Transferred in

A patient who has been received into a tuberculosis unit/district, after starting treatment in another unit where he has been recorded.

Treatment after default

A patient who received anti-tuberculosis treatment for one month or more from any source and who returns to treatment after having defaulted, i.e. not taken anti- tuberculosis drugs consecutively for two months or more.

Failure

A smear positive patient who is smear positive at five months or more after starting treatment. Failure also includes a patient who was initially smear-negative but who becomes smear-positive during treatment.

Chronic

A patient who remains smear-positive after completing a retreatment regimen.

Other

Patients who do not fit into the above mentioned categories. Reasons for putting a patient in this category must be specified.

Treatment outcomes

Cured

Initially smear-positive patient who has completed treatment and had negative sputum smears, on at least two occasions, one of which was at completion of treatment.

Treatment completed

Sputum smear positive cases who has completed treatment, with negative smears at the end of intensive phase of treatment, but non at the end of treatment.

Or

sputum smear-negative TB patient who has received a full course of treatment nad has not become smear-positive during or at the end of treatment.

Or

extra-pulmonary TB patient who has received a full course treatment and has not become smear-positive during or at the end of treatment.

Died

Patient who died during treatment, regardless of cause.

Failure

A smear positive patient who is smear positive at five months or more after starting treatment. Failure also includes a patient who was initially smear-negative but who becomes smear-positive during treatment.

Defaulted

A patient who, at any time after registration, has not taken anti-TB drugs for two months or more consecutively.

Transferred out

A patient who has been transferred to another Tuberculosis unit/District and his/her treatment results are not known.

Master of Applied Epidemiology (MAE) – Indian Field Epidemiology Training Programme
Scientific study critique

al information:

f the paper: *Cassia occidentalis* poisoning as the probable cause of hepatomyoencephalopathy in children in western Uttar h

rs: V. M. Vasistha, Amod Kumar, T.Jacob John & N.C.Nayak

nces:

S. Inadequate research facilities fail to tackle mystery disease BMJ 2003; 326 (7379): 12

abhushana Rao , P. Anil Kumar , T. Ananth Rao, etal Role of Chandipura virus in an "epidemic brain attack" in Andhra Pradesh, India J Neurol 2004; 2(3): 131-143

ver: Dr. Omesh K. Bharti, MAE-FETP scholar VIIth Cohort

11th December 2007

ral narrative comments:

have been recurrent outbreaks of encephalopathy in various parts of India, especially western Uttar Pradesh. The results of dy suggests that there is a significant association of *cassia occidentalis* pods consumption and subsequent poisoning with -myoencephalopathy in young children in western Uttar pradesh. The seasonal outbreak and clustering of cases during *cassia* season and histopathology negating infectious aetiology and agreeing with toxic necrosis further suggests poisoning due to *occidentalis*. The present study also negates the previous hypothesis that the encephalitis was due to viral aetiology (Viral alitis).

unity based case control study matched for age and other environmental factors concludes that odds of developing myoencephalopathy in children who consumed cassia pods are at 12.5 more risk than those who didn't eat cassia pods. Lack cological studies on humans caused by consumption of *cassia occidentalis* seems to be the limitations of this study.

PICA habit among children seems to be confounding factor. Moreover the study has methodological limitations, including ity about control selection, unmatched analysis for matched controls, no virological tests of cases to rule out viral aetiology.

	Checklist items	Grading from 1 (strongly disagree) to 5 (strongly agree) *					Explanations †
		1	2	3	4	5	
of	The background provides a description of the public issue at the global and local levels and logically introduces the need to answer a specific research question.		√				The issue of several unexplained recurrent outbreaks in India - suspected viral encephalitic deaths at the local level discussed and logically tried to answer a specific research question. The outbreaks in India not discussed (Silguri had Nipah virus isolated and measles virus antibodies in UP
	The methods section provides sufficient information on the methods used, including the type of study, the sampling strategy, the case definitions, the data collection and the data analysis.	√					A community based case control study, proper case definition with inclusion criteria used. Control selection and sampling criteria not mentioned, case definition is not explicit, data collection needs to be explained for such different findings. Estimation of risk using OR (odds ratio) with 95%CI. Significance tested by chi square & Fischer exact tests. For matched case control design, the analysis in unmatched.
	The results reports sound scientific results that meet the study's objective and the research question. They are presented with sufficient details and adequate statistical information (e.g., Confidence Intervals).	√					Results meet the study's objectives and research question that the outbreak is probably caused by consumption of pods of *cassia occidentalis*. Estimation of risk using OR (odds ratio) with 95%CI. Significance tested by chi square & Fischer exact tests. For matched case control design, the analysis in unmatched.

ppropriate box.
e explanation to justify your grading of each of the items.

	Checklist items	Grading from 1 (strongly disagree) to 5 (strongly agree) *					Explanations †
		1	2	3	4	5	
	The discussion summarizes and interprets the results, discusses the findings in view of what is already known, frames what the results of the study can support, defines the limitation of the work and suggests next steps in terms of (1) intervention and (2) research.	√					Discussion summarizes and interprets the results. It also defines the limitation of the work in term of direct toxicological evidence and suggests further cassia plant toxicological research. Measles, Nipah virus, Chandipura virus ruled out but basis not stated. Distribution of the plant is wider, and cases in Bangalore or Siliguri should also be seen in same light. PICA can lead to consumption of many other items including heavy metals.

Checklist items	Grading from 1 (strongly disagree) to 5 (strongly agree)					Explanations
	1	2	3	4	5	
The study design is adequate to meet the objective.				√		A community based case control study matched for age is used, small number of cases limits its external validity.
The study population is well defined and relevant to the research question		√				Not well defined. But it is relevant to the research question.
Definitions are specified, sound and based upon standardized criteria when available.			√			Since standardized definitions are not available for this study the disease has been defined using existing clinical, pathological and literature review data.
Sampling methods are statistically sound and adapted.		√				Sampling methods are not properly adapted and not comparable to the cases that occurred in the particular outbreak that occurred in western UP in October 2005. Control selection is not described
The sample size was estimated beforehand appropriately.		√				The sample size is not defined properly
The study is exempt from bias.	√					Interviewer bias- starts from newspaper reports, no blinding. The reliability of history of cassia consumption is suspect.
The data that were collected are well described and relevant.		√				Not well described
The data was collected was of sufficient quality.		√				Not described.
The analysis is thought beforehand and appropriate.			√			Unmatched analysis has been done for matched controls, hence not very appropriate.

	The indicators generated are appropriate and well calculated.			√			Matched case control study, unmatched analysis
	The statistical tests used are appropriate and well computed.		√				OR and CI have been computed, it would have been better to compute matched OR
	Appropriate attention has been given to human subject protection issues.			√			ID codes used,

	Checklist items	Grading from 1 (strongly disagree) to 5 (strongly agree)					Explanations
		1	2	3	4	5	
	The content is well distributed by chapters and sections.					√	The content is well presented and lucidly discussed with separate paragraphs for each issue. Chapters are not needed.
	The language is simple and clear. The word count is < 3000.					√	More, but doesn't matter. further details are needed on control selection. And discussion of similar outbreaks in the country.
	The writing is sequential, going from one point to the next.					√	Yes, the writing style is good and
	The active voice is used throughout.		√				There is a mixture of active and passive
	The vocabulary is precise, consistent and standardized.				√		The vocabulary is good and comprehensible.
d	There are no more than five tables and or figures. All are needed.				√		Only 2 tables are given. All are needed. One more table on various encephalitis outbreaks in India and results, and possible distribution of the plant in the area could be added. Time trends of the encephalitis cases could be depicted in the form of a line graph.
	The choice of graph or table to display information is judicious.					√	Tables are appropriate for the information given by the authors.
	The tables are clear, exact and the totals add up.					√	
	The graphs are effective, appropriate and understandable.	√					No graph has been given, one graph could be added to explain the seasonal trend of the diseases.

Section 3:

Outbreak investigation

An Outbreak of Hepatitis-A due to contaminated traditional water source, village, Sharair near Shimla, Himachal Pradesh 2007.

INTRODUCTION:

Global incidence of hepatitis-A is 1.4 million cases per year[1]. India is among the high endemic states of the world for hepatitis-A. In India, reported incidence of all type of hepatitis in the year 2006 was 0.015%. The trend of cases of Hepatitis-A is increasing in different age groups in the country. From the year July 1999- July 2003,the proportion of patients with acute Hepatitis due to HAV age group of 13- 20 years have increased from 27.2% to 61.5% (p=0.008)[2].

Recent studies from Delhi on sero- prevalence of HAV show that almost 100% children are sero-converted by the age of 10 years[3]. Amongst the many types of hepatitis virus, hepatitis A and E virus infection is very common during rains in India, mostly due to lack of sanitation facilities[4]. Hepatitis, which leads to liver damage, manifests through jaundice. Yellow eyes are the main sign accompanied by dark yellow urine as the main symptom of jaundice.

In 2004, an explosive hepatitis A outbreak occurred in adults from the southern state of Kerala[5] (1170 cases), in 2007, Himachal Pradesh, a north Indian state experienced epidemic of Hepatitis A[6] (450 cases) at Shimla which was found to be due to genotype IIIA like the one seen in Kerala[7]. The Shimla outbreak was investigated by a FETP scholar[8].

Pina et al, demonstrated that there was a 90-100% identity between environmental and clinical samples[9] and studies from NIV, Pune show that some of the Hepatitis viruses are present in effluent and are not treated well in our current water treatment methods, therefore we need to have a fresh look at our water treatment, which has been neglected area. A study by Mackiewicz et al[10],(2004) reported presence of HAV in saliva samples, that indicates the human to human transmission potential of the disease.

Background:

Shimla is the capital of Himachal Pradesh, a northern hilly state of the country. In the month of January 2007 there was a major outbreak of Hepatitis-A in Shimla town and hundreds of people suffered. The cause of the outbreak was mixing of the sewerage with the leaking water supply lines. The Hepatitis A virus was isolated from the contaminated water samples.

After this outbreak many small outbreaks were reported around the peripheral areas of Shimla town and when this scholar returned from the first contact session already sporadic cases were being reported from various parts of the town.

Outbreak of Hepatitis in village Sharair:

On 13/8/2007 a paediatrician of Deen Dyal Upadhyaya Hospital, Shimla informed the scholar that there are two cases of jaundice admitted in hospital from village Sharair near Shimla, and the attendants reported more cases in the village. FETP Scholar was asked to investigate the situation. A rapid response team (RRT) was constituted that included a technician, peon and a driver to visit the village next day accompanied by the scholar.

Sharair village is a small village with a population of 219 situated below a hill and have four natural sources of water apart from tap water supply that comes from the river below

the hill base. The literacy rate of the village is 95% and people are well versed with the concept of hygiene as 65% of them had toilet facility.

Methods:

We followed the ten steps recommended by WHO/CDC for the investigation of outbreaks. The steps of an outbreak investigation include (1) determining the existence of the outbreak, (2) confirming the diagnosis, (3) defining a case, (4) searching for cases, (5) using descriptive epidemiological data to generate hypotheses, (6) testing hypotheses using an analytical epidemiological study, (7) drawing conclusions, (8) comparing the findings with established facts, (9) communicating the findings and (10) executing prevention measures.

1. Determining the existence of the outbreak:

In order to determine the existence of an outbreak we collected data related to jaundice cases from nearby Primary Health Centre (PHC) for previous years. We also collected information related to similar episodes in the past from the villagers.

2.Confirming the diagnosis:

We confirmed the diagnosis by case history and clinical sign and symptoms and We collected blood and water samples for serology and coliform count respectably. Serum samples were sent to NIV, Pune for Hepatitis-A and Hepatitis-E antibody testing. All the samples taken were sent to DDU Hospital Shimla for Hepatitis-B and Hepatitis-C antibodies testing.

Water sample from different available water sources used for drinking were sent to laboratory for testing its quality, potability as well as to find out any recent contamination, if any.

3. Defining a case :

We defined a case as any person with history of acute Jaundice in the vill. Sharair from 18/6/2007 to 30/10/2007. We examined the suspected cases in the community to clinically diagnose the cases (i) by history taking (ii) recording the clinical signs and symptoms.

4. Searching for cases:

We searched for cases house to house and searched wards of D.D.U.hospital, Shimla for any admitted cases. We discussed with local health authorities to ascertain any change in surveillance and population movements reported, which was not there. Hence a outbreak was suspected and therefore we initiated further investigations.

5. Using descriptive epidemiological data to generate hypotheses:

We described the outbreak in terms of Time, Place and Person characteristics to generate the hypothesis. We hypothesised that the outbreak could be due to contaminated water supply.

6. Testing hypotheses using an analytical epidemiological study:

We did a retrospective cohort study and collected information on possible exposures from all the residents in the village. We administered a trawling questionnaire to cases to identify possible exposures.

We collected information about the water sources used, history of having a case in the school or visit to an area of recent outbreak, eating vegetables and fruits raw, sanitary latrine present or not and any other social gathering or event preceding 4 weeks of this event, in the village like marriage etc.

We calculated age and sex specific attack rate to describe the person characteristics. We constructed an epi-curve and a spot map. We carried out a literature survey and consulted experts from Deen Dyal Upadhyae Hospital, Shimla, to determine the biological plausibility of our finding.

7. Drawing conclusions:

We derived conclusions based on the findings of descriptive epidemiology, analytical study and results of the laboratory examination of water samples and blood samples.

8. Making recommendations:

We made recommendations, based on the conclusions arrived, to implement control measures and prevent future outbreaks.

9. Communicating findings:

We communicated these findings to the district and state health authorities along with the recommendations.

10. Executing preventive measures:

A model to cover the suspected water source was suggested and agreed upon by the villagers to prevent contamination.

Results:

1. Determining the existence of the outbreak:

Hospital records of nearby Primary Health Center of last three years did not show occurrence of jaundice in the affected village. The villagers reported one case each during 2005 and 2006.

2. Confirmation of the diagnosis:

Clinically all cases (17) show had yellow discoloration of eyes and 90% were having symptoms of pain abdomen, 76% had clay colored stools and dark colored urine and 65% were having itching and 40% were having vomiting, which was consistent with syndrome of jaundice.

The diagnosis was confirmed by serology, all 11 samples were found to be positive for IgM antibodies for Hepatitis-A. All the samples were found to be negative for other types of hepatitis like Hepatitis-B, Hepatitis-C and Hepatitis-E.

Serum Bilirubin of 2 cases was found to be 2.3% and 2.9 mg%.

3. Searching for cases: On house to house active case search, we found 6 more cases yielding a total of 17 cases in a population of 219 and an attack rate of 7.8%.

4. Generating hypothesis: We used descriptive epidemiology to generate hypothesis, the different distributions were as follows:

Time distribution: The epi-curve shows (Fig II) continuous transmission and no clustering of cases. The outbreak was prolonged over the three months period show that it had slow transmission. Index case had occurred on July 9, 2007 and outbreak peaked during the week 6-12 August, therefore indicating an incubation period of 3-4 weeks

Place distribution of casesshow scattered pattern and some clustering of the cases near the water bouries.

Person distribution of cases show the attack rate is 47% in children with age 5-9 years and was less, 4% in elder age group 15-44 years old and in the higher age group it was 0%. Male and females are equally affected.

Interviews of patients using trawling questionnaire did not reveal any common meal, food ice cream vendor in the area.

Environmental investigation:

Though all the four water sources were found to be contaminated by the coliform bacteria, the two heavily contaminated Bauries were having highest attack rates in the respective hamlets drinking water from them, with Peepal Bali Bauri having attack rate of 11.34% and the Jabbal 2 bauri having attack rate of 4%.

The results of water samples reported contamination with coliform bacteria in water sources of different Bauries but excellent water quality of tap water. The most frequently used source, Peepal bali Bauri, was found to be most contaminated. The peepal bali bauri, (Fig III Bouri 1) had E.Coli count as 160 MPN /100 and Jabli No. 2 Bauri had the count as 90 MPN/100 (Annex III).

Using the above information we hypothesized that this outbreak was a water borne outbreak with the Peepal bali bauri (No. 1 out of four bauries) being the source of infection.

5. Testing hypothesis:

Retrospective cohort study done to identify the different exposure factors demonstrated that there was no common event between the cases like marriage or fair and only

common event is drinking water from these natural water sources, Bauri and this peepal bali bauri was found to be significantly associated with the cases and thus a reason for this outbreak. (RR for Peepal bali bauri = 8.85, CI= 1.2-65.49). Other exposures like eating raw salad, visit to an area of recent outbreak and having toilet in household, were not found to be significantly associated.

6. Comparing the findings with existing facts about Hepatitis A:

1. Symptoms:

All the patients had jaundice like in other water born Hepatitis[11] .

2.Age:

Age distribution of cases show the attack rate is more in children with age 5-9 years which is also comparable with other studies[8], [12] and was less in elder children of 15-44 years old and nil in the higher age group. In Kerala many adults were non-immune and developed infection with HAV[7].

3.Sex:

Like many other studies our study show that both males and females were equally affected, however the earlier Shimla outbreak had more females than males affected.

4.**Lab results:** We found IgM antibodies in the serum of cases, show that the outbreak was of recent origin.

5. Exposures: Water borne transmission was reported in other outbreaks of Hepatitis A in India, Shimla outbreak was due to mixing of sewerage with water supply system [5,7].

Like many outbreaks in India referred to here, our outbreak was also found to be associated with the drinking water source and no food item was associated.

Limitation of the study:

We could not confirm the presence of HAV in the water source due to logistic constraints of testing in a hilly and remote terrain, as facility is not available in local labs. We could not identify the exact cause of contamination of the water source, Bauri.

Discussion:

The occurrence of 17 cases of jaundice in the village was an unusual event and thus confirmed to the definition of an outbreak. We came to know about the outbreak which indicated a surveillance failure. The IDSP was implemented in the state since 2005, but no weekly reports were sent by local health worker. Recently there was an outbreak of Hepatitis-A in Shimla town. The Shrair village is near to Shimla and many people come to Shimla regularly and therefore there may have been some link to the recent outbreak in Shimla but was not proven in our study.

.The epicurve is consistent with persistent common source.

Spatial analysis of the outbreak show that though there were four natural drinking water sources in the village, 95% of the cases had drunk water from Peepal bali Bauri, no.1. (Fig III)

Conclusions:

The outbreak of Jaundice in Sharair village can be attributed to the contaminated Peepal bali Bari in the village which is not covered and also because of its proximity to the road making it prone to contamination by outsiders as well. Also the Bauri is situated at low height and during floods of monsoons the water from the road enters the bauri making it further prone to contamination.

Recommendations:

The people were advised to boil the water and put chlorine tablets in all the Bauries. It was suggested to clean all the Bauries and then keep putting Chlorine tablets in them and get regular lab reports for the quality of water after cleaning the bauries.

The residents were advised to cover the Bauri to decrease contamination by feet and a model for this has been suggested (See Fig II and III). People were advised to not to eat vegetables and fruits raw and wash them before eating.

The outbreak was detected late, pointing to a surveillance failure; feedback was given to the district surveillance officer to strengthen case detection under IDSP.

Fig I: Frequency of symptoms among cases, outbreak of Hepatitis A, Sharair, Shimla HP 2007

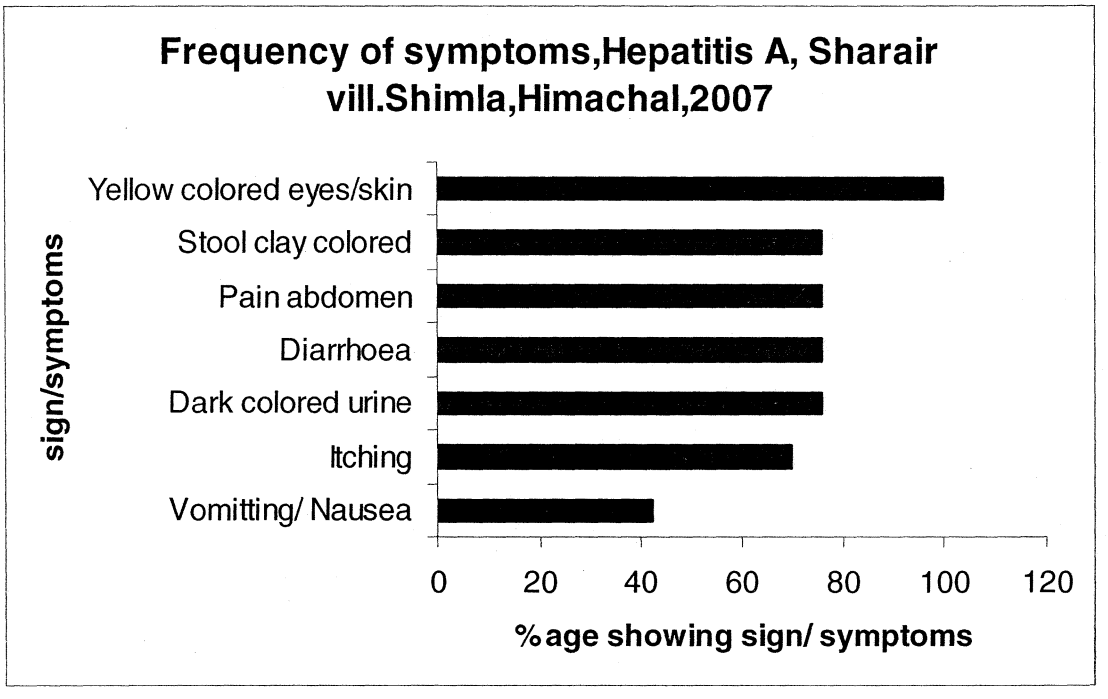


Fig II: Time distribution among cases, outbreak of Hepatitis A, Sharair, Shimla HP 2007

Epi-curve:

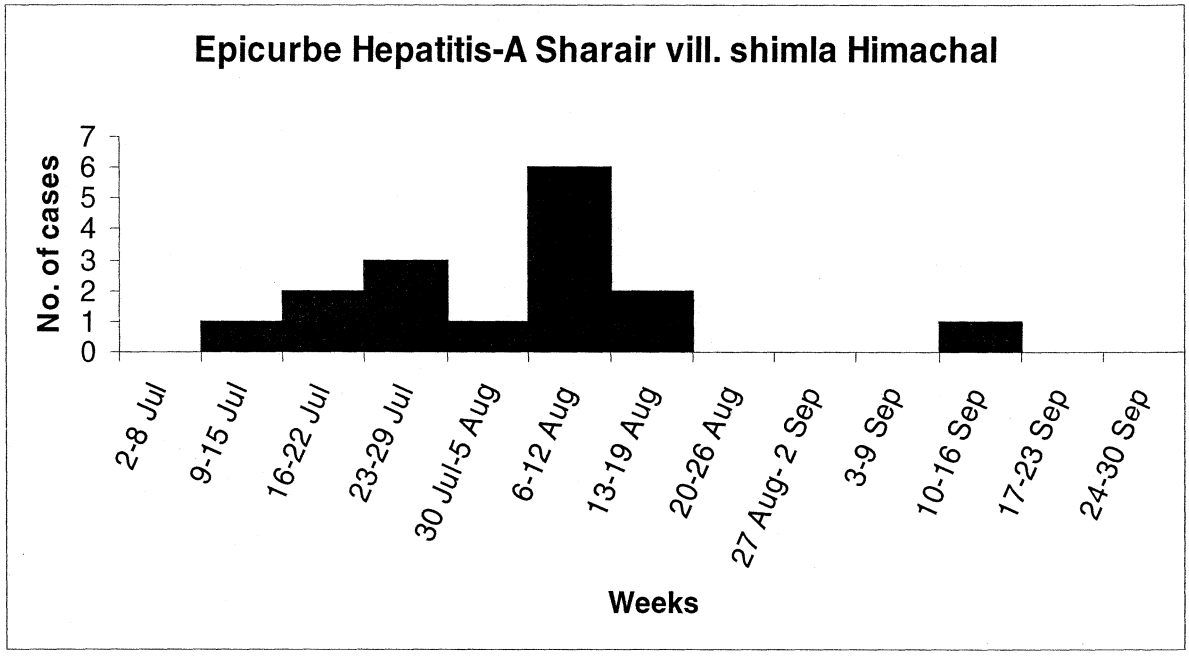


Fig III: Distribution of Hepatitis A cases by place,
Village Sharair, near Shimla, HP, India, 2007

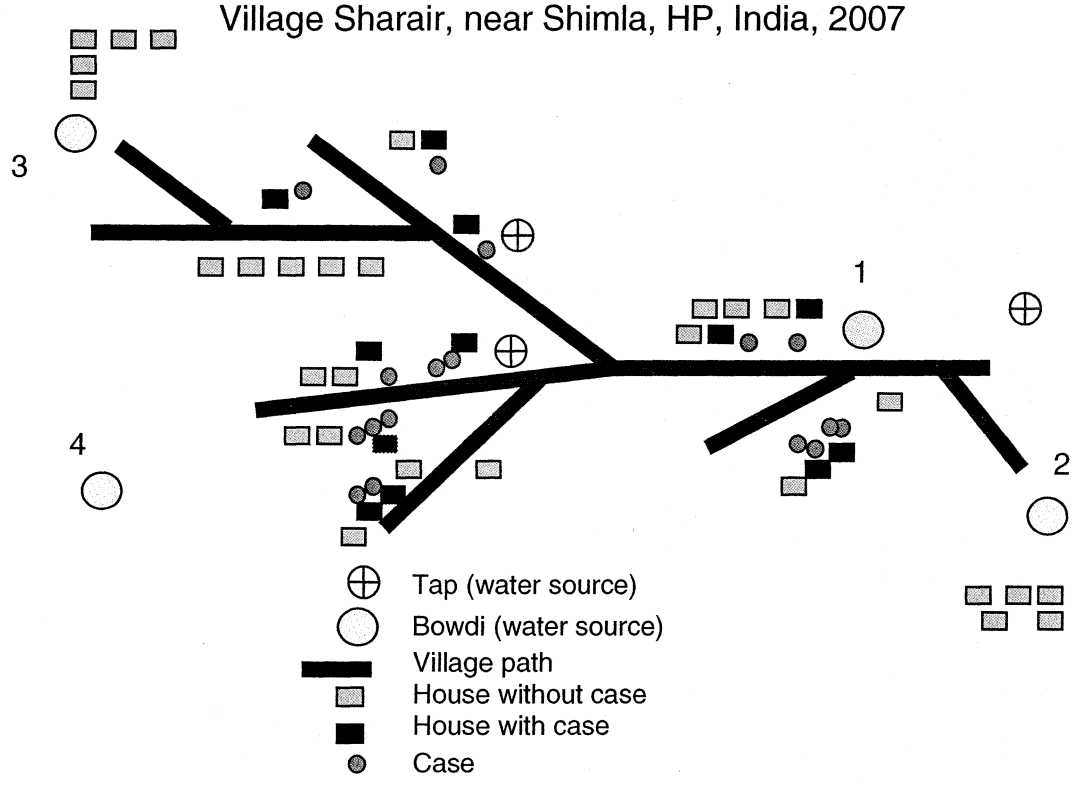


Table I : Age sex wise attack rates

Characteristic		Cases	Population	Attack rate /100
Age	0-4	3	23	13
	5-9	7	15	47
	10-14	3	8	37.5
	15-44	4	97	4.1
	>45	0	76	0
Sex	Male	8	107	7.5
	Female	9	112	8
Total		17	219	7.75

Table II:

Outbreak of Hepatitis A, attack rate by water sources, vill sharair, Shimla HP 2007

Water source	Cases	Population at risk	Attack Rate
Peepal Bali Bauri	16	141 (Hamlet-1)	11.34
Jhabbal-11	1	25 (Hamlet-1I)	4
Jhabbal-1	0	28 (Hamlet-111)	0
Dori Bauri	0	25 (Hamlet-1V)	0

Table III:

Risk of Hepatitis-b according to exposures, Shrair vill.,Shimla,Himachal, India, 2007

2x2 tables for exposure to Peepal bali bauri:

Peepal Bali Bauri	Cases	Not-ill	# exposed	RR	CI
Exposed	16	125	141	8.85	1.2-65.49
Not-exposed	1	77	78		
Total	17	202	219		

Table IV:

Risk of Hepatitis-b according to exposures, Shrair vill.,Shimla,Himachal, India, 2007

2x2 tables for exposure to raw salad/fruits:-

Raw Salad/Fruits	Disease	Not-Disease	Total	RR	CI
Exposed	5	38	43	1.7	0.63-4.6
Not-exposed	12	164	176		
Total	17	202	219		

Table V:

Risk of Hepatitis-b according to exposures, Shrair vill.,Shimla,Himachal, India, 2007

2x2 tables for exposure to the area of recent outbreak:-

Visit to area of recent outbreak	Disease	Not-Disease	Total	RR	CI
Exposed	7	92	99	0.85	0.34- 2.15
Not-exposed	10	110	120		
Total	17	202	219		

Table VI: Having a sanitary toilet and risk of Hepatitis, vill Sharair, Shimla.

Having a sanitary toilet	Disease	Not-Disease	Total	RR	CI
Having toilet	11	115	126	1.35	0.52-3.53
Not-having toilet	6	87	93		
Total	17	202	219		

Table VII: Risk of Hepatitis according to exposure, vill. Sharair, Shimla 2007.

	Risk among exposed			Risk among unexposed			Association	
	Ill	Not ill	%	Ill	Not ill	%	RR	95% CI
Peepal bali bauri (n= 219)	16	125	13	1	77	1.3	8.9	1.2- 65.5
Raw salad/fruits (n= 219)	5	38	13	12	164	7.3	1.7	0.6-4.6
Visit to epidemic area (n= 219)	7	92	7	10	113	8.9	0.9	0.3-2.2
Having toilet (n= 219)	11	115	9.5	6	87	7	1.4	0.5-3.5

ANNEXURE I : Semi-structured questionnaire for outbreak investigation:

An outbreak of hepatitis in Sharair village near Shimla, Himachal Pradesh, 2007.

ID No. patient_____ HOUSE NO. ____
Village name _____
Name of the head of the family _____
Date of Interview (DD/MM/YY) _____
Details of the family members
Name Age Sex Ill / not ill

Exposure Details:-
Drinking water exposure:-
From the BAUDI No. 1 No.2 No3 No.4
From tap supply. 1. Yes 2. No
From any other source _____
Is water is chlorinated or boiled or treated with any other method

2. History of attending any social gathering since 18-6-2007 (a month before the first case was detected)

a) Marriage b) Attending school having a schoolmate infected with jaundice.
c) Having a household contact with jaundice.
3. Habit of eating vegetables and fruits raw in the family 1. yes 2. no
4. History of travel to an area of recent Jaundice outbreak
1. yes 2. no
5. Sanitary Latrine 1. Present 1. Yes 2. NO
If yes then 1. used 2. not used
6. History of any contact with a person with jaundice outside the village---------

IF ILL WITH JAUNDICE ONLY THEN TO BE FILLED
Symptoms:- DATE OF ONSET
1.Yellow eyes/ skin
2.Pain abdomen
3. Diarrhea
4.Vomiting / nausea
5.Dark colored urine
6.Stool- clay colored / any other color
7. itching

TREATMENT HISTORY
Treatment taken: 1. Yes 2 no
If yes, then from 1. Government hospital 2. private
3. Faith healer 4. any other
2. OPD/IPD
3. Date of symptoms---------
4. Date of seeking the treatment---------
Duration of treatment----------
Medicines given 1. Oral 2. Intravenous 3. Any other
5. Tests results if any---------- diagnosis if any----------

Annex II: The water testing report for different water sources Shrair vill. Shimla, Himachal.

Lab results of water testing, Sharair, Himachal Pradesh, India, 2007

Water source	REPORT MPN/100	Result
PIPAL WALI Bauri	160	Unsatisfactory
Jabli Bauri no. 1	17	Unsatisfactory
Jabli Bauri no. 2	90	Unsatisfactory
Dori wali Bauri	35	Unsatisfactory
Household sample	180	Unsatisfactory
TAP WATER	0	Excellent

Fig I: Bauri that is existing:-

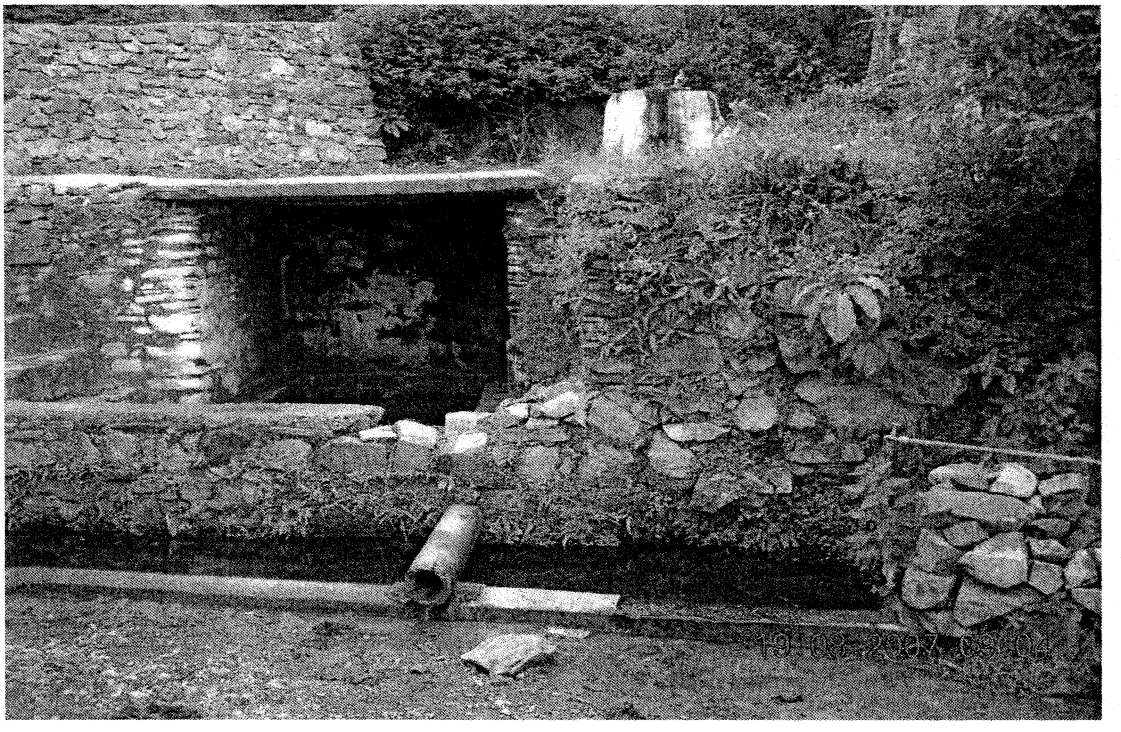


Fig II: Source of contamination by shoes as there is no protection boundary:-

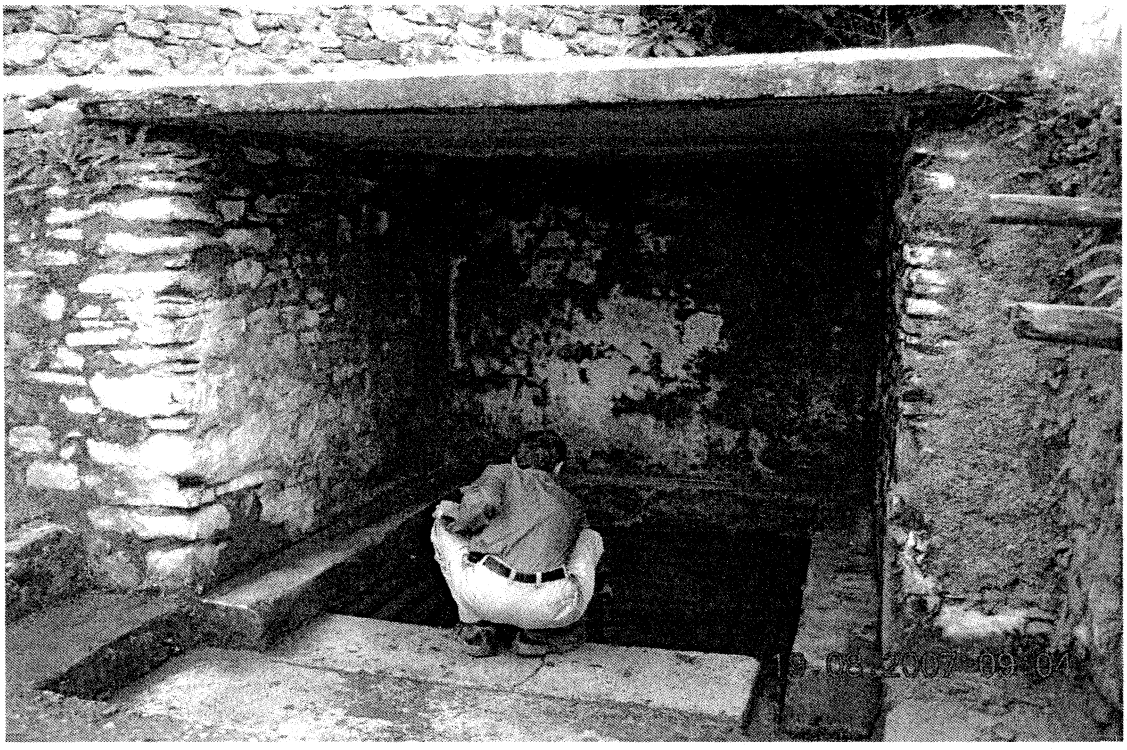


Fig III: Suggested pattern of taking water from the bauries:

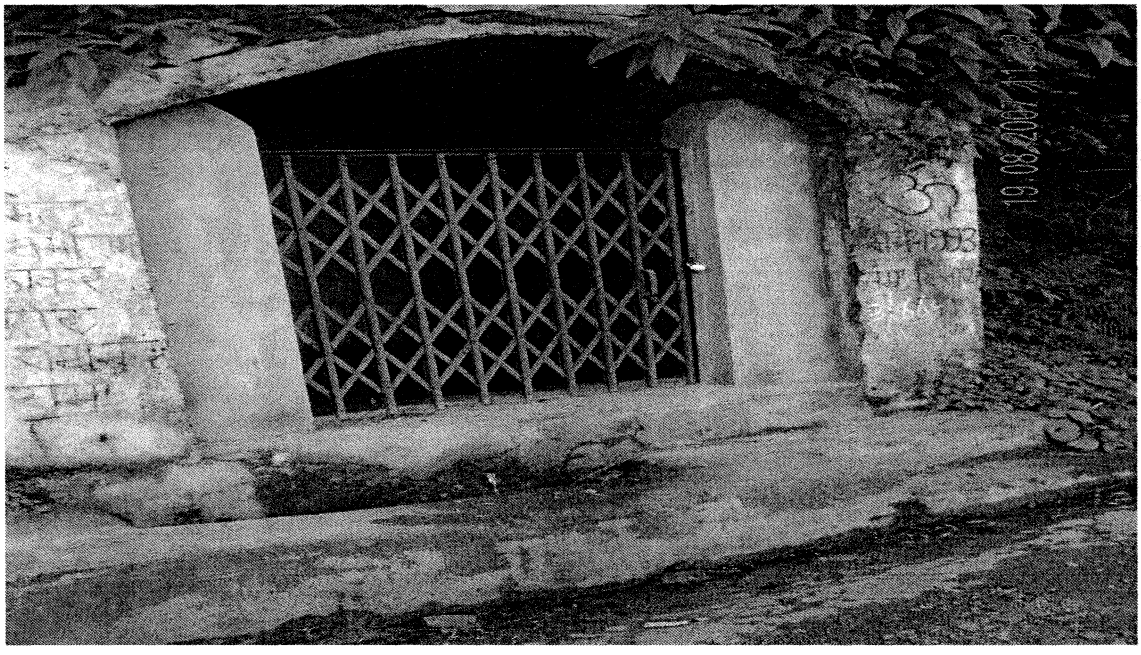
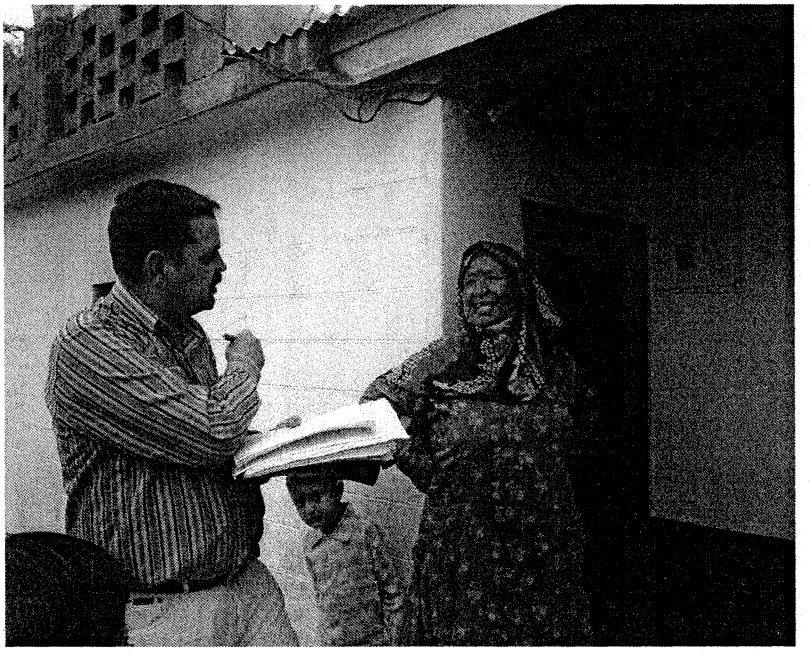


Fig IV: Hose to house survey being carried out in Sharair village, Shimla, Himachal Pradesh.



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Section 4:

Abstracts: Presented/ Submitted

OP6

Consumption of contaminated water from a local water source — "a Bawri" leads to An Outbreak of Hepatitis A in a scarcely populated hilly Village, Sharair near Shimla, Himachal Pradesh, 2007

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Background
Since January 2007 several outbreaks of Hepatitis A were reported in and around Shimla town. On 13/8/2007 a paediatrician of Deen Dyal Upadhyaya Hospital, Shimla reported two hospitalised cases of jaundicefrom village Sharer, Shimla.Their attendants reported more cases in the village. An outbreak was suspected and investigated to confirm diagnosis, control current and prevent future outbreaks.

Methods
Information on similar cases during the previous year was collected from local PHC and villagers. Changes in surveillance and population movements were considered. We defined as case as any person with history of acute Jaundice in the village. Sharair from 18/6/2007 to30/10/2007. Active house to house case search, line listing of cases, and descriptive epidemiology was carried out. 13 serum sample were tested for Hepatitis-A,E, B and C antigens. Water samples were tested for coliform count Through a retrospective cohort study, we collected information on exposures using an interview schedule consisting of semi-structured questions

Results
All 13 serum samples were found to be positive for IgM antibodies for Hepatitis-A, and negative for hepatitis E, B and C. Water samples from different Bauries tested positive for high coliform bacteria while tap water proved uncontaminated. Epicurve showed continuous transmission, Spot map indicated clustering of cases around the "peepal bali bauri". Attack rates were more among 5–9 years and 5–44 years old. Both sexes were equally affected. Water drinking from the Peepal bali Bauri was significantly associated (CI 1.2–65.49 p=0.0077).

Conclusions
An outbreak of Hepatitis A was confirmed and caused due to consumption of contaminated water from local Bauries. Villagers were advised to cover the Bauri to decrease contamination by feet, drink water from the taps, given and taught to use chlorine tablets. Local health authorities were advised to enforce routine chlorination of all water sources in the village and monitor water quality as per national surveillance guidelines.

Keywords
Outbreak, Bauri, Hepatitis.

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ABSTRACT

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Abstract Text

Shimla blood bank registers sharp declines in Hepatitis-B Seropositivity among blood donors- Analysis of eleven year blood bank data.

Background:

India, has a Hepatitis-B carrier rate of 4%, and nearly 1 million HBV infections are added to the HBV pool yearly. Of this 3.7% is transfusion related. In Shimla blood bank, all donors are screened for HbSAg, however no analysis of trends in Hepatitis-B Seropositivity is available, therefore this study was undertaken.

Methods:

Seconday data from Shimla blood bank records were abstracted and analysed from,1997-2007. Using Microsoft excel and epi-info software 3.3.2.Hepatitis-B Seropositivity rate among blood donors was calculated. Seropositivity was confirmed using highly sensitive rapid kits for detection of Hepatitis B surface antigen (HbSAg)

Results:

Of the total 10,212 blood donors , 65% were between 25-44 years of age and 87.5% males . Cumulative seropositivity rate was 0.94%. While the voluntary donation increased from 44% in 1997 to 57% in 2007, seropositivity decreased from 1.5% in 1997 to 0.7% in 2007. Trends in Seropositivity in voluntary and replacement donors showed wide fluctuations across years. Seropositivity in voluntary donors significantly decreased from 1.65% in 1997 to 0.3% in 2007($\chi^2 = 4.77$, Df= 1, P = 0.02) Among replacement donors only slight decrease was observed from 1.97% in 1997 to 1.21% in 2007. Seropositivity significantly declined among females from 8.34% in 1997, to 0.5.1% in 2007 ($\chi^2 = 9.73$, Df= 1, P = 0.001), while in males it decreased from 1.53% in 1997 to 0.74% in 2007. Voluntary blood donor retention is only 27%.

Conclusion:

Hepatitis B Seropositivity more than halved during the eleven year period and may be possibly due to the increases in voluntary donation. Therefore there is need to identify mechanisms to retain the voluntary donors to assure blood safety.

Key words: Hepatitis-B, Blood donor, blood bank.

Word count: 273

Strategic mobilization of health managers help implement low cost treatment

Key health issue- **Vaccine policy management**

Key words- Anti-Rabies-vaccine(ARV), Intradermal route, Cost-saving, affordability, Pilot project
Area-Region addressed in the abstract- **Regional Hospital, Shimla, Himachal, India.**

Learning objectives:
By the end of my presentation the participants will be able to appreciate the process of introduction of new technology, intra dermal route of post exposure prophylaxis for rabies, challenges and successful pilot model which led to cost savings & is being adopted by the state governments of Himachal Pradesh & Kerala (India).
Background:
In India every year an estimated 20,000 patients die of Rabies. Major reason for poor compliance to anti-rabies prophylaxis is the high cost of anti-rabies vaccine being prescribed intramuscularly as a routine i.e. $ 37 per course of 5 ml. In 1992 WHO recommended low cost intradermal technique for ARV.
Policy overview and relevant issues:
The intervention involves advocacy for policy shift from intramuscular to intradermal route & pilot implementation of this new technology that costs only $ 3.4 per course for 0.8 ml & saves $33.6 per course.
Current efforts and implications:
Focus Group Discussions revealed that doctors were not prescribing intradermal route as they were either not aware or confident of new intradermal technique & also the vaccine vial did not have the label for "intradermal use". These barriers were removed by advocacy efforts with policy makers & drug companies, credit sharing & team building,which led to starting of first intra dermal antirabies clinic of North India on 2nd August 2008. We trained 12 batches to replicate this technology in other parts of the state. A quick comparison was done to know the impact of intervention a month before and after implementation so that later the popularity of the service does not inflate the results. There was an increase in the hospital patient load by 2.8 times, and poor patients load by 3.2 times over the last month. The proportion of poor patients increased from 44.5% to 50.7% & was significantly higher as assessed by the test for comparing two proportions.
Each client was asked to bring one vial on first visit & rest of doses were given free by pooling strategy. In four months, over $28680 (INR one million) has been saved and 872 vials of vaccine used. The findings were shared with health minister of Himachal Pradesh, who then ordered complete implementation of the technology in the state.
The major challenge was to instill the confidence of medical community in the new technique and was overcome by the successful practical demonstration of the technique in the intradermal clinic and successful follow-up of benificieries.

Conclusions:
With intradermal clinic,We were able to successfully introduce the new cost effective technology despite all odds & vested interests & old mindset of doctors that had blocked this technique till now despite recommendations .This will go a long way in reducing burden of disease & death due to rabies from India.

Partners:
Health authorities, willing patients & vaccine manufacturers.

Co-Authors:
Dr.Vidya Ramachandran, Deputy Director National Institute of Epidemiology, Chennai, India,
Dr. L.S. Chaudhary, M.B.B.S. M.D. (Pediatrics),
Mrs. Dropda Shyam (Female Health Worker at the intradermal clinic and research centre, Shimla, Himachal).

My Profile:
Dr. Omesh Kumar is a research scholar in National Institute of Epidemiology, a pioneer vaccine research institute and where the trials for intradermal anti rabies vaccination were done to see the feasibility of its application in India. He is member of many NGOs & advises them on health issues. He presented work at various national and international forums. He also worked in Polio eradication initiative with National Polio Surveillance project (W.H.O.) in high risk area of UP, India. He is presently also involved in conceptualization and implementation of Emergency management and Response System in Himachal Pradesh, a hilly state with one of the highest number of accidents in North India and member of AEFI State committee.

Abstract on Intradermal Antirabies Vaccination in Himachal

Dr. Omesh Kumar Bharti
M.B.B.S., D.H.M.; FETP Scholar, NIE, Chennai

Introduction:
In India every year an estimated 20,000 patients die of Rabies. Major reason for poor compliance to anti-rabies prophylaxis is the high cost of anti-rabies vaccine being prescribed intramuscularly as a routine i.e. Rs. 2250/- per course of 5 injections. In 1992 WHO recommended low cost intradermal technique for ARV, which costs only Rs. 370/- per animal bite course.

Methods:

Doctors were not prescribing intradermal route as they were either not aware or confident of new intradermal technique & also the vaccine vial did not have the label for "intradermal use". These barriers were removed by advocacy efforts with policy makers & drug companies, credit sharing & team building,which led to starting of first intra dermal antirabies clinic of North India on 2nd August 2008. We trained 12 batches to replicate this technology in other parts of the state.

Results:

There was an increase in the hospital patient load by 2.8 times, and poor patients load by 3.2 times within a month compare to last month. The proportion of poor patients increased from 44.5% to 50.7% & was significantly higher as assessed by the test for comparing two proportions.
Each client was asked to bring one vial on first visit & rest of doses were given free by pooling strategy. In four months, over 15 Lakh rupees has been saved and 1000 vials of vaccine used. The findings were shared with health minister of Himachal Pradesh, who then ordered complete implementation of the technology in the state.

Conclusions:
With intradermal clinic, we were able to successfully introduce the new cost effective technology despite all odds & vested interests & old mindset of doctors that had blocked this technique till now despite recommendations by WHO 16 years back.This will go a long way in reducing burden of disease & death due to rabies from India.

Recommandations : The government of India need to press vaccine ARV manufacturers urgently to write on the vaccine vials " for Intradermal/ Intramuscular use" so that the benefit could reach to the poorest of the poor. Also free availability of the vaccine to all need to be explored to lessen the mortality and morbidity due to this dreaded disease.

Letters to editor BMJ:

Rapid Responses : *BMJ 2008; 336: 750-753.* 9 April 2008.

ANALYSIS:
Dave A Chokshi and Aaron S Kesselheim
Rethinking global access to vaccines
BMJ 2008; 336: 750-753 [Full text]

Rapid Responses: Submit a response to this article

Rapid Responses published:

Irrational Vaccine push and irrational solutions:

Omesh K Bharti,
Research Scholar, National Institute of Epidemilogy, Chennai, India
Set-9, Block-1, U.S.Club, Shimla, Himachal, India. PIN_171001,
Sood, Rajesh K

Re: Irrational Vaccine push and irrational solutions

Dear Sir,

The paper,[1] is a thought provoking one and raises issues that need further debate. The vaccine push has incapacitated the ability of the poor and the developing countries to think in terms of their own requirements, priorities and the needs to acquire capacities for producing vaccines well beyond a point when the developed countries think them to be obsolete. Instead they are forced to have vaccines the thinkers in the west would say as cost effective given their population.

The Vaccine Push is spearheaded by GAVI and WHO and surprisingly these organizations are forgetting to make available essential vaccines to the underdeveloped and developing countries and foster a co-operation amongst them in producing basic vaccines.

India is still struggling to immunize its children against six vaccine preventable diseases. In some states of India like in Bihar's Kishanganj district the routine immunization is only 8.5%[2] and in Gonda district of Jharkhand it is 10.4%2.

In India there are more than 50% districts (321/593) where the vaccine coverage for six vaccine preventable diseases is less than 50% and the routine immunization has shown a declining trend over the years, some citing the reason as fatigue of the health worker in specific and the system in general due to repeated Pulse Polio Vaccine rounds and also polio putting a drain on the already strained health budgets as now promised funding for it has stopped and the third world countries are being asked to bear the burnt of polio eradication though the idea and the ultimate cost-benefit is for the rich countries for eradication of the polio. Now India would be spending around $44 Million on polio eradication this year while the routine immunization would get only around $14 Million.

So while the paper advocates access to vaccines like Hepatitis-b and Hib, we are concerned about the access to essential cost-effective vaccines in India so the disease burden due to conventional vaccine preventable diseases (Tetanus, tuberculosis, diphtheria, pertusis, measles) is reduced before we move towards the latest vaccines.(Table:1)[3]. Newer vaccines are being foisted on poor countries in an effort to reduce the cost of the vaccines in the West, therefore helping the developed countries themselves rather than helping the poor countries!

I agree with the contention of the authors that " local logistic hurdles must be overcome to achieve equitable access", but the question is how can the logistic hurdles be removed without putting up a "Functional Vaccine Delivery Mechanism" in place. In the absence of such a mechanism where we are unable to deliver essential routine vaccines, how can we think of introducing other

vaccines when we would not be able to make them reach to the intended and so called poor!

Here lies the trick of pentavalent vaccine that makes it more costly putting a drain on already strained health systems of third world countries. Regarding the cost effective analysis as per the table number 20.6 of the book[4] the cost of pentavalent vaccines for Asia comes out to be $15.24 per person vaccinated and it is only $11.58 per person vaccinated for all the vaccines as for as the traditional EPI is concerned. The old EPI costs about $1 in India (not USA prices) for all the vaccines.

The newer GMP mechanism put by WHO have already forced the stoppage of production of essential vaccines in India[5] giving another blow to self sufficiency and creating dependence on private manufacturers as the anti-snake venom and vaccines like yellow fever, DPT,BCG and Measles are now out of stocks in many states of the country!.

So the priorities need to be seen as the ground reality in the respective countries and not in the contest of making vaccines cheaper by producing in bulk or giving assurances to the vaccine producers of using the vaccine in bulk irrespective of the need for it by the countries where they are intended to be put to use.

The vaccine manufacturers are keen for getting assurances for their supplies but are reluctant to compensate the damage by their product, this double talk need to be corrected and the poor need not be taken for guaranteed.

We strongly agree that we need to develop a mechanism whereas where relaxation in TRIPS is given to enable global distribution of vaccines as almost all trial of vaccine efficacy are done in Third world countries. This would be a just and fair trade as the trial countries are feeling alienated for not getting the benefits and are given meager compensation for the trials. Also the suggestion to

build local capacity to scale up vaccine programmes and scale up production needs a serious thought.

In India many people are dying with snake bites (Table-1), but nobody is advocating for the easy availability of anti-snake venom but all the talk is only of introducing Hepatitis-b and pentavalent vaccines!

So the argument by the authors for "wider global availability" needs thinking in the context of the ground situation in the respective countries and not the availability of vaccines in developed countries.

Table-1. The cases and deaths3 due to vaccine/ antisera /antitoxin preventable diseases, India, 2006

Condition/Disease	Cases	Deaths
Snake Bite	55490	1086
Japanese Encephalitis (J.E.)	2832	658
Typhoid	726484	651
Tetanus (other than neonatal)	2803	365
Rabies	361	361
Measles	63515	99
Neonatal Tetanus	620	80

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Diphtheria
 2745
 66

Pertusis
 23935
 17

Polio
 116
 1
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Competing interests: None declared

Section 5:

INVITATIONS

NATIONAL WORKSHOP ON DEVELOPING GUIDELINES FOR INTRA DERMAL RABIES VACCINATION IN KERALA *(IDRV KERALA 2008)*

September 20, 21 - 2008 at TAJ Residency, Thiruvananthapuram.

PATRON

Smt. P. K. Sreemathi Teacher
Hon'ble Minister for Health
& Social Welfare, Kerala

ORGANIZING COMMITTEE

Chairperson
Dr. Vishwas Mehta IAS
Secretary (H&FW)

Member Secretary
Dr. Dinesh Arora IAS
Dy.Secretary (H&FW) &
Managing Director, KMSCL

Vice Chairpersons
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Director of Health Services (i/c)

Dr. V. Geetha, MD
Director of Medical Education

MEMBERS

Dr. A. Sarath Kumar
State President, KGMCTA

Dr. Manoj Narayanan
State President, KGMOA

Dr. S. Alex Franklin
State President,
Indian Medical Association

Dr. George. F. Mulayil
President, IAP Kerala

Organizing Secretary
Dr. Thomas Mathew
Nodal Officer, SDCMC
Mob. 09447144230

04.09.08

To
Dr Omesh Bharti,
State Programme Officer for
Emergency Management & Trauma Care Services,
Directorate of Health Services,
Kasumpti, Shimla,
Himachal Pradesh -171006

Dear Dr Omesh,

Govt of Kerala along with NRHM has decided to conduct a National workshop to finalize guidelines for implementing Intra Dermal Rabies Vaccination (IDRV) in Kerala on 20th and 21st September 2008 at Thiruvananthapuram.

As an expert in this field, we would like to invite you as a resource person for presenting a paper on 'Himachal Pradesh experience on IDRV' during the workshop on 20th. We also request you to contribute towards finalizing the guidelines appropriate for the implementation of IDRV in the state of Kerala in the post workshop meeting to be held on 21st September.

Please confirm your participation and travel itenary by fax or by email at the earliest. Your travel and accommodation for this purpose shall be met from the workshop funds.

With regards

Dr Vishwas Mehta IAS,
Secretary to the Govt. of Kerala,
(Health & Family Welfare)
Chairperson, Organising Committee.

Telefax: 0471-2334343 e-mail: idrvkerala@gmail.com

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8 December 2008

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India
Telephone: +91 44 26136426
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Date of Birth: May 10 1967
Gender: Male

Dear Dr. Omesh Kumar,

We are pleased to extend this invitation to you to attend our 36th Annual Conference, *New Technologies + Proven Strategies = Healthy Communities*, to be held May 26 – 30, 2009 at the Omni Shoreham Hotel in Washington, DC. We feel that you, as a FETP scholar with National Institute of Epidemiology, Chennai, have much to share in interacting with our international audience, and that you will also carry home valuable new information to share with your colleagues.

Over its 36-year history, the Global Health Council has convened thousands of public health professionals from close to 100 countries at our annual conference. During that time, the conference has featured a wide range of health themes on women, children and youth, the environment, partnerships, post-conflict settings, and community health, to name a few. It is this diversity that has given the annual conference its reputation as the premier gathering in the field of global health. The 36th Annual Conference will highlight the ways in which technologies in combination with best practices and evidence-based policies improve health around the world. For 2009, we invite you to join our community and explore new alliances at our 36th Annual International Conference on Global Health.

This letter is to serve as an official letter of invitation for the above named individual. The above named individual is responsible for all registration fees, and all travel related costs associated with conference attendance.

We hope you will join us for what promises to be an exciting celebration and an unparalleled opportunity for learning, exchange, and reaffirmation. Should you have any questions in the meantime, please contact our office at 802-649-1340, or by email at conference@globalhealth.org.

Sincerely,

Nils Daulaire, MD, MPH
President and CEO, Global Health Council

IPHU

Invitation from International Public Health University for Talk and Participation on march 15,2008 at Jaipur, Rajasthan, India.

Minutes of the session from the internet:

http://www.phmovement.org/iphu/en/jaipur/sat15r

Reports from the field

We returned after lunch to the first of our Reports from the Field sessions. Thelma Narayan facilitated this session.

Omesh Bharti told us two stories. He commenced with some comments on vaccination policy in India. Despite the fact that many districts in India have very low vaccination rates with the basic vaccines, GAVI and WHO and the WB are pushing new and expensive vaccines onto India. He argued that it is hard to justify compulsory Hep B vaccination and the diversion of resources into polio eradication when some districts have vaccination rates as low as 8-10% and around 300 centres have no staff at all for want of staff salaries. JSA will fight these policies in the courts. More details here.

The second story Omesh told was a case study of substandard pharmaceutical formulations. At a time when JSA is arguing that doctors should prescribe generics the existence of inefficiency and

even corruption in the inspection and regulation of the medicines market (including generic medicines) provides some grounds for those who argue for brand name prescribing. The story he told involved identifying the problem serendipitously and then lobbying and local media publicity until the government agreed to take action. The miscreant is now behind bars.

We had a rich discussion of the lessons emerging from this story. Most of our discussion focused on how to move from an individual case such as this one to a more systemically focused fand movement building approach. One possible framework for institutionalizing work on this topic would be the community based monitoring component of the NRHM. In Karnataka JSA is involved in community based monitoring, at various levels from village to state with authority to come out with reports. The focus of the local monitoring could be on local stocks and drug supply but at the higher level the focus might be on drug quality.

Invitation to attend and discuss in the First Motor Vehicle Accident Conference

MoVACon

1st National

Motor Vehicle Accident Conference
26-28 Sep. 2008, Ahmedabad

Dear Mr. Omesh Bharti,

I thank you for your interest in our conference. We eagerly await your participation in the same.

Detailed arrangements for lunches and dinners will be mailed to you later.

Ms. Roochita Vashi,

Convenor,

MoVACon.

(M) 09327926004

(O) 0265-2322566

Invitation to present paper on Intradermal Antirabies vaccination at the India Development Coalition of America at New Delhi on january 12, 2009.

Dear Dr. Omesh Bharti,

It was nice talking to you and discussing on innovative antirabies clinic. I invite you to make a presentation on your innovative initiative as discussed.

We need your Bio-data and a one page abstract of presentation and also information about your organizations ASAP.

The invitation is below as also the details of the conference.

Best wishes.

Dr. Akhil K. Sangal
CEO - Indian Confederation for Healthcare Accreditation
Phone: 91-11-26884335, 24679272 Mobile: 9811061853

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New Delhi - 110 023 INDIA.
Alt E-mail: ceo_icha@bol.net.in
Please Visit Web Page: www.indmedica.com/icha, www.ichaindia.org

We are pleased to invite you to IDCA's Fifth International Conference in India to be held in New Delhi .

Conference Theme:

Strategies to Alleviate Poverty and Mitigate Climate Change

Venue:

Institute of Social Sciences, Vasant Kunj, New Delhi

Date:

January 12, 2009 (9 AM to 9 PM)

Section 6:

From Research to Action- Policy change

1. From Research to Action- My experience

It was a pleasant experience to join NIE. Here I learnt that NIE has done many field trials and evaluation studies in vaccine research. An important evaluation study done at NIE in 2006 is on feasibility of giving antirabies vaccine intra-dermally.

An estimated 55,000 persons die of rabies globally every year of which 31,000 are from the Asian continent. In India, the annual incidence of human rabies is 20,000 deaths. The frequency of human rabies deaths is 1 case every 30 minutes (1/2 hour) approximately. The animal bite incidence rate (per 1000 population) is 17.4 and this translates to a whopping 17.4 million bites every year. The frequency of animal bites in India is 1 every 2 seconds and the annual man-days lost due to animal bite is 38 million. The annual medicinal (vaccines + other drugs) cost for animal bite treatment is Rs. 2 billion approximately (2004). And with the universal use of intra-dermal antirabies vaccination, the expenditure will go down to one fifth from Rs.2 Billion to Rs.400 Million.

When I joined NIE in January, 2007, already some of our friends were upset over the fact that the cheaper intra-dermal option is not being provided to the poor patients. We had heard narrations of people dying of rabies or taking loans to immunize entire family in cases of suspected contact. So, a Public Interest Litigation (PIL) was already being prepared by one of my lawyer friends, which was later filed in the Himachal High Court by one of the consumer protection organization, Himachal Upbhogta Sanrakshan Parishad. The PIL is pending in the High Court.

At NIE Chennai, I learnt that the intra-dermal antirabies vaccination feasibility trials were done here and the report had long been submitted to the Government of India. I was surprised that why nothing was happening and why the important research is not being put into action by the government, that would save many a lives, as also money of the government and the patients!

Later, I realized that a bigger nexus of the drug companies does not want this to happen as patients' gain would be their loss. Few months later I got the copy of the Drug Controller General of India (DCGI) letter allowing the use of intradermal route for ARV vaccination. But there was a trick in this. The letter said that this will only be feasible if the companies write on their vial and the leaflet that the vaccine is fit for intradermal use. I got in touch with the manufacturers of Rabipur, being the president of Himachal Medical Officers' Association, Shimla chapter on this issue. But the company letter categorically refused to do so, citing it as a as a matter of company policy. I was surprised to note that why the DCGI is not compelling the manufacturers to write on their ARV vials are for intradermal use also?

Then, I started a campaign of sorts in this direction and first approached the Director of Health, Himachal Pradesh and tried to make him understand the importance of the issue in terms of money and lives that can be saved. As a result, the HP government sent a batch of four doctors, including myself, to Kampegoada Institute of Medical Sciences, Bangalore to undergo field training on intradermal use of antirabies vaccination in July 2008.

After the training was over, the Himachal government issued another letter for starting the intradermal route of vaccination in all the hospitals of Himachal Pradesh

I was happy that everything was on track and things would run smoothly. But but there was lot of resistance from CMOs and doctors, especially specialists. They categorically said that they do not approve of this route and will continue with the old intramuscular route for ARV. Despite clear instructions from the government, no doctor was willing to adopt this route and we could not give even a single injection for many months.

Thereafter, my deliberations with my guide Dr. Vidya Ramachandran at NIE Chennai again clarified that we can go ahead in implementing this and there are studies to substantiate the fact that intradermal ARV is effective.

Following this, I called a drug company representative (Rabipur), and asked him to sponsor me 10 vials of the ARV. The very same day I received the vials. I called all dog bite cases from the Skin OPD at Deen Dyal Upadhyaya hospital, Shimla and told the patients that whosoever wants to get free vaccine should come to me for the injections of ARV.

I requested the Senior Medical Superintendent at the hospital to inaugurate this small step of mine. When I cleared his doubts about the new technique, he was ready to support the cause. I started administering the injections of intra-dermal ARV and the whole effort took shape of a Intra-dermal Antirabies Clinic and Research Centre at DDU. All the newspapers covered the event, saying that a new, cheaper and effective technique of intradermal antirabies vaccination has been introduced in the hospital. The media projected that it was first clinic in the Northern India, and that even the pioneers PGIMER, Chandigarh or Central Research Institute (CRI), Kasauli, where first intradermal trials were done many years back, do not have such a clinic.

The research was being put to action and now every day 40-50 patients were coming for injections. In the process, while one of the drug companies in the state started supplying vaccine vials having intra-dermal written on it, and the cynicism among doctors also ended to some extent.

On November 28, 2008, I presented my paper ``on experience of operatoionalising intra-dermal antirabies vaccination in the hill state of Himachal and its cost effectiveness'' to all the CMOs in the presence of the health minister, health secretary and Director, health in Shimla.

Sensitized, the health minister of Himachal issued directions to all CMOs to start such clinics in the entire Himachal upto subdivision level.

In the mean time, I was invited by the government of Kerala to share my experience of hill model on operationlising intra-dermal ARV with the faculty of all the medical colleges of Kerala, and I was a part of the expert group to draft a manual for implementation of intradermal ARV for implementation in Kerala. On my part, apart from other details, I modified the manual and put the details of the trials at NIE, Chennai.

In Himachal, the manual is ready and it would be used for trainings all over the state.

The experience is being documented as an initiative and contribution of a FETP Scholar under the guidance of my guide and mentor Dr. Vidya Ramachandran.

Thanks

(Omesh Bharti)

31.1.09

Encl: letter issued by Himachal government to start intradermal ARV.

No.HFW-H(EPI)G(2)1/87Vol-XII
Directorate of Health & Family Welfare,
Himachal Pradesh,Shimla-171009.

To

All the Chief Medical Officers
In Himachal Pradesh,
All the Medical Superintendents
In Himachal Pradesh.

Dated Shimla-171009, th 13th May, 2008.

Subject:- Regarding Use of Intradermal(I.I)route for administration of Tissue Culture based Anti Rabies Vaccine(TCARV).

Sir/Madam,

Please find enclosed herewith a copy of letter No.Z-21020/8/2007-PH dated 1.8.2007 from Joint Secretary, Govt. of India, Ministry of Health and Family Welfare, Nirman Bhawan New Delhi addressed to Mrs Aruna Sharma, Joint Secretary NHRC New Delhi-110001 alongwith the copy of letter No. X-11026/23/05-D dated 2.05.2006 from The Drug Controller Govt. of India wherein it has been Clarified that :

"WHO has recommended the use of ID route of inoculation of ARV to economize on the quantity of vaccine and to reduce the cost. This has proved to be efficacious, safe and economical and is being effectively used in countries like Thailand, Sri Lanka and Phillipines. Based on results of clinical trials and recommendations of an expert group, Drug Controller General of India (DCG(I), vide circular dated 03.07.2007 (Copy enclosed) has approved the use of ID route for inoculation of TCARV in the country. The use of ID route is approved in those Anti Rabies Treatiment Centre (ARC) which meet the following criteria"

- Have trained staff to give ARV through ID route.
- Have cold chain facilities for vaccine storage and supply of syringes and needles.
- Are well versed in management of open vial and safe storage practices.

Keeping in view the communication from the Joint Secretary Govt. of India , and instructions issued as per Director General Health Services,Drug Section G.O.I letter as mentioned above, you are advised to take further action in the matter accordingly.

Yours faithfully,

Director of Health Services
Directorate of Health & Family Welfare,
Himachal Pradesh.

Encls: as above.

Establishing an Emergency Medical response System in Himachal Pradesh (EMRS)

2. Establishing a system of Emergency Medical response System.

The successful start of intra-dermal antirabies vaccination in Deen Dyal Upadhyaya hospital Shimla, with the initiative we had taken, probably moved the health authorities in Himachal that assigned me another important assignment of conceptualizing and developing a system of Emergency Medical Response System (EMRS) in the hill state. I was happy to do this as being a FETP Scholar I have given in detail the problem of road accidents in my situational analysis, that invariably lead to mass causalities being a hilly state.

The job was significant in view of the increasing number of road accidents in Himachal, which lead to numerous deaths on the spot or on way to hospitals for want of emergency and trauma care services on time. Himachal have one of the highest accident rates in the country. In the year 2007 itself, 2955 road accidents were reported, causing 959 deaths and 5027 disabilities. Another alarm to have the EMRS in place was in the form of unfortunate incident of a stampede in Naina Devi temple complex in Bilaspur district in Himachal on August, 2008, which had claimed 146 lives mainly because of lack of ambulance network and availability of basic emergency medical care on or near the spot.

Since the Principal Secretary Health, Himachal personally keen on having a suitable EMRS, ambulance networking and its integration with the health institutions in the hill state, he sent me for a extensive study on various models of EMRS adopted in states like Maharashtra, Kerala, Andhra Pradesh and Gujarat. I was specifically asked to visit Uttarkhand also, as it's a hill state and has a tough and remote terrain to operate as we have in Himachal Pradesh. I conducted a survey of sorts in metropolitan city Mumbai, where different types of ambulance networking models were functioning in the private

sector with call centres having GPRS equipment. All the ambulance systems in Mumbai had the provision of providing free trauma care vans to the accident victims till the hospital. In other emergency cases, the companies charged from the patients for use of ambulance. Some of the ambulances had the unique facility of fire fighting equipment as well.

In Kerala, the private ambulance network was in developing stage in Kochi as a replica of one of the Mumbai models, making the ambulance use chargeable for the users, except for accident victims.

A field study in Andhra Pradesh revealed that the state, which had a vast rural area, had emergency medical response system through basic/advanced trauma care vans in place in the entire state, with its control through a big call centre at the state head quarters Hyderabad. The high technology call centre had doctors sitting in shifts for medical advise for trauma care on the spot and during the time the patient is on way to hospital in the ambulance. The Police personnel also sat in call centre to sort out any Medico Legal cases from there, so that there is no time lapse in medical care in any kind of accident cases. This EMRS was operationalised with the expertise of private company, with state funding. However, in this service, only emergencies were dealt with, and the routine users of ambulances were not accommodated.

In Gujarat, where the concept of emergency medical care for highway accident victims was started long ago by an individual doctor, the Andhra model was being put to use for all kinds of emergencies with state funding. Here, apart from highway accidents, the delivery emergency and snake bite incidents (high incidence) were handled quite effectively in the advanced ambulances. The Gujarat date showed that the delivery deaths

in the state, which had high incidence in rural areas of the state, had reduced after pressing the well-equipped advanced ambulances in service.

After going into the depth of all these models, I made a presentation before the Health Minister, Himachal and health high ups in the state, explaining them different concepts being put to use in other states, and that how they could be integrated for use in Himachal. In Himachal, since there is nothing in the name of EMRS in the field all these years, and the proper back up of trauma care is also lacking in the health institutions even the district level, I suggested that along with the emergency medical services through ambulances, we need to have a strong back up of advanced trauma care services in the hospitals also to make the EMRS in the hill state more meaningful.

My presentation said that the ambulances pressed into service in HP should have the equipment for fire fighting and rescue teams in the event of land slides or drowning in rivers. Or for this, the government could also take up a drive for training the local community in different areas of the state in emergency response and medical care. A training programme for taxi drivers in the state could be significant, so that they could respond immediately in case of accidents and can take the victims to hospitals without lapse of time.

The uniqueness of EMRS in Himachal that was suggested by me is the formation of a society for the sustainability of the operations. I gave a concept that in the hill state of Himachal, where poor folks would not be able to pay for the ambulance use in emergency even, and the state government can also not take the burden of payment fully, the modalities of the EMRS could be worked out by carving out a separate/independent Society for the purpose. This Society would be capable of mobilizing own resources to

run the ambulance services, by reaching out to donors and it could then engage any technically sound private company to run the services. And there could be some state funding also to this Society, keeping in view the availability of funds or state capacity to manage finances through National Rural Health Mission.

The ambulances, which have been attached to different hospitals in the state, but are either lying idle for want of funds to run them, or are not functioning in emergency for general lapse of time in communication and official permissions, could be integrated with the EMRS.

After my presentation, the state government is now committed to have a suitable advanced ambulance networking and EMRS in place in the state shortly, and the matter is being taken up at the cabinet level. Whenever launched, the EMRS and ambulance networking in the hill state of Himachal would definitely come as a big relief to the accident victims, most of whom die unattended on roads itself in great numbers every year. And it would also help delivery cases, which take shape of emergency in no time in the rural areas, where the advanced medical care generally not available, reach the bigger hospital on time.

(Omesh Bharti)

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