country. It is during these months that maximum transmission of malaria takes place. In the immediate post-monsoon period from October to December, collection of rainwater in pits and puddles promotes mosquito breeding and subsequently the transmission of malaria. In India, DDT and hexachlorocyclohexane (HCH) were introduced for public health use (vector control) during the 1950s, and malathion was brought in for vector control during the 35 1960s. Synthetic pyrethroids (SP) have been introduced during the last one and a half decades for IRS and impregnation of mosquito nets. This is the only insecticide group recommended for net treatment. Currently, insecticides of the organochlorine (DDT), organophosphate (malathion) and synthetic pyrethroid (deltamethrin, cyfluthrin, lambdacyhalothrin, alphacypermethrin, permethrin, bifenthrin) groups are used for the control of vectors in India.

The key strategies for prevention and control of malaria under the NVBDCP, as per the Operational Manual for Implementation of Malaria Programme 2009, are:

1. Surveillance and case management • Case detection (passive and active) • Early diagnosis and complete treatment • Sentinel surveillance

2. Integrated vector management • Indoor residual spraying • Insecticide treated bed nets (ITNs)/Long-lasting insecticidal nets (LLINs) • Anti-larval measures including source reduction

3. Epidemic preparedness and early response

Supportive interventions • Capacity building • Behaviour change communication • Intersectoral collaboration • Monitoring and evaluation (M&E) • Operational and applied field research

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TUBERCULOSIS BURDEN IN INDIA

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Data on the epidemiological situation of tuberculosis among the population of India are given, the main causes of the development of the disease and its wide distribution, the main approaches and methods of diagnosis, treatment and prevention are shown. ***Keywords:*** *tuberculosis, India, programs of control, treatment, diagnostic.*

Приведены данные по эпидемиологической ситуации по туберкулезу среди населения Индии, показаны основные причины развития болезни и ее широкого распространения, основные подходы и методы диагностики, лечения и профилактики. ***Ключевые слова:*** *туберкулез, Индия, программы контроля, лечение, диагностика.*

India has been engaged in Tuberculosis (TB control activities for more than 50 years). Yet TB continues to be India's severest health crisis. Each year about 2.2

million people develop TB in India and an estimated 220,000 die from the disease [1]. Some estimates calculate the deaths as being twice as high. TB can affect any age, caste or class but cases are mainly poor people. Slum dwellers, tribal populations, prisoners and people already sick with compromised immune systems are over-represented among the cases, compared to their numbers in the population. The economic burden of TB is extremely high. Between 2006 and 2015, TB cost the Indian economy a massive USD 340 billion.

Treatment and care of tuberculosis in India is provided by the government's Revised National TB Control Programme (RNTCP) as well as through private sector health providers. In 2015 the RNTCP covered a population of 1.28 billion. A total of 9,132,306 cases of suspected TB were examined by sputum smear microscopy and 1,423,181 people were diagnosed and registered for tuberculosis treatment [2].

TB Case notification. The notification of TB cases is estimated to be only 58%. Over one third of cases are not diagnosed, or they are diagnosed but not treated, or they are diagnosed and treated but not notified to the RNTCP. This could be even higher, and the WHO (World Health Organisation) estimates that possibly as many as another 10 lakh (1,000,000) Indians with TB are not notified.

One of the reasons for the low case notification is the largely unregulated and unmonitored private sector which accounts for almost half of the TB care delivered in India.

National TB statistics for India. India is the country with the highest burden of TB. The World Health Organisation (WHO) TB statistics for India for 2015 give an estimated incidence figure of 2.2 million cases of TB for India out of a global incidence of 9.6 million. The TB incidence for India is the number of new cases of active TB disease in India during a certain time period (usually a year).

TB case finding & notification statistics for India

YEAR	POPULATION OF INDIA COVERED UNDER RNTCP (millions)	PEOPLE SPUTUM TESTED	PEOPLE DIAGNOSED SPUTUM SMEAR POSITIVE	TOTAL RATE OF TB CASES NOTIFIED TO RNTCP	TOTAL TB CASES NOTIFIED IN THE PRIVATE SECTOR
2010	1192	7550522	939062	128	n/a
2011	1210	7875158	953032	125	n/a
2012	1228	7867194	933905	119	3106
2013	1247	8121514	928190	113	38596
2014	1266	8783551	929043	114	106414
2015	1285	9132206	902732	111	184802

The estimated TB prevalence figure for 2015 is given as 2.5 million.1 The TB prevalence is the number of people in India who are living with active TB. Prevalence is usually, but not always given as a percentage of the population.2

It is estimated that about 40% of the Indian population is infected with TB

bacteria, the vast majority of whom have latent TB rather than .

Most of the national TB statistics for India are collected by the government Revised National Tuberculosis Control Programme (RNTCP) which was started in 1997, and which was then expanded across the country.TB disease.

Diagnosing TB. It is very difficult to diagnose TB by a person's symptoms on their own. This is because some other diseases have the same symptoms.

A diagnosis is usually only certain when there is definite evidence of TB bacteria. Some of the TB tests used for diagnosis look directly for the bacteria. Others such as the chest X-ray look for the effect of the bacteria on the person suspected of having TB. Tests for diagnosis include the TB skin test, sputum microscopy, the culture test as well as the new Genexpert test.

Major problems with the tests are the lack of accuracy as well as the time they take. With newer tests a major issue is the cost.

Strategies for TB prevention. TB prevention consists of several main parts. The first part of TB prevention is to stop the transmission of TB from one adult to another. This is done through firstly, identifying people with active TB, and then curing them through the provision of drug treatment.

With proper TB treatment someone with TB will very quickly not be infectious and so can no longer spread the disease to others. The second main part of TB prevention is to prevent people with latent TB from developing active, and infectious, TB disease.

Anything which increases the number of people infected by each infectious person, such as ineffective treatment because of drug resistant TB, reduces the overall effect of the main TB prevention efforts. The presence of TB and HIV infection together also increases the number of people infected by each infectious person. As a result it is then more likely that globally the number of people developing active TB will increase rather than decrease.

The pasteurization of milk also helps to prevent humans from getting bovine TB.

There is a vaccine for TB, but it makes only a small contribution to TB prevention, as it does little to interrupt the transmission of TB among adults.

Preventing TB transmission in households

In order to reduce exposure in households where someone has infectious TB, the following actions should be taken whenever possible:

- Houses should be adequately ventilated;
- Anyone who coughs should be educated on cough etiquette and respiratory hygiene, and should follow such practice at all times;
- While smear positive, TB patients should:
- Spend as much time as possible outdoors;
- If possible, sleep alone in a separate, adequately ventilated room;
- Spend as little time as possible on public transport;
- Spend as little time as possible in places where large numbers of people gather together.

Cough etiquette and respiratory hygiene means covering your nose and mouth when coughing or sneezing. This can be done with a tissue, or if the person doesn't have a tissue they can cough or sneeze into their upper sleeve or elbow, but they should not cough or sneeze into their hands. The tissue should then be safely

disposed of.3 Educating people about TB is also an important part of TB prevention, as well as ensuring that people who need TB treatment receive it as soon as possible.

TB prevention in health care facilities. Doctors and other health care workers who provide care for patients with TB, must follow infection control procedures to ensure that TB infection is not passed from one person to another. Every country should have infection control guidance which clearly needs to take into account local facilities and resources, as well as the numbers of people being provided with care. However, infection control guidance must not only be written but also implemented.

It is not just in resource poor countries that TB transmission occurs in hospitals. In 2012 it was reported that a patient in the UK had become infected with TB and had died, as a result of receiving kidney dialysis when sitting next to another patient with infectious TB.4

CONCLUSION. Despite these odds, countries have repeatedly demonstrated that TB can be controlled in the modern era, as long as TB is diagnosed early and treated properly and transmission thus interrupted. The overwhelming challenge facing TB control in India remains delayed diagnosis and inadequate treatment, particularly among patients seeking care from private providers, who alone are illequipped to sustain their patients on prolonged, costly treatment. Patients seeking care in the public sector have a better chance of treatment but still 1/3rd are lost between care-seeking and successful cure. India also has a large burden of multi-drug resistant (MDR-)TB and extensively drug resistant (XDR-)TB most of whom are undetected and continue to transmit disease; even those who are detected endure long toxic and costly treatments only to have poor odds of treatment success, along with a high loss to follow up. Although India has managed to scale up basic TB services in the public health system, treating more than 10 million TB patients under RNTCP, the rate of decline is too slow to meet the 2030 Sustainable Development Goals (SDG) and 2035 End TB targets. Although sufficient insight and expertise exists to inform TB program decision-making, these resources have often been underutilized in terms of meeting the needs of policy makers for quantitative analysis and improvements in TB control policy and implementation. The requirements for moving towards TB elimination have been integrated into the four strategic pillars of “Detect – Treat – Prevent – Build” (DTPB).“TB Mukt Bharat” (the national “sweep out TB”) campaigns, which are massive, repetitive, intensive and persuasive, for case-finding and community commitment at panchayat, district and state level. Tracking the progress A national level annual review of the programme will be undertaken by the TB elimination board chaired by the Prime Minister’s Office (PMO).

By taking a Detect – Treat – Prevent – Build approach the national programme can achieve significant positive change and make a real difference in the lives of the many people it serves. The impact of this NSP will be seen with commensurate investments, proposed as Rs 16500 crores in the national TB programme, especially in view of the required massive increase in notification from the private sector and building patient support mechanisms for all TB patients.

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CRIMEAN-CONGO HEMORRHAGIC FEVER OUTBREAK IN CHAKWAL, PAKISTAN

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Crimean-Congo hemorrhagic fever (CCHF) is the most fatal viral disease with extensive geographical distribution. In Pakistan it is being reported with sporadic outbreaks in cattle rearing areas. The authors in this study presented a clinical case of CCHF in one of cattle rearing district Chakwal of Punjab Province. The serums and plasma samples from suspected patients along with Hyalomma ticks from reported area were collected and diagnosed for CCHF antigen and IgG antibodies by two step sandwich enzyme-linked immunosorbent assay (ELISA) using Vector BEST Company, Crimean-CHF-antigen kit, Novosibirsk, Russia. Crimean-Congo hemorrhagic fever (CCHF) was suspected in three patients among which two patients died. The only survived patient was diagnosed for CCHF by detecting IgG. Out of 62 Hyalomma ticks collected from livestock of endemic area, 9.67% (6/62) were positive for the CCHF virus. This confirms the emergence of CCHF virus in new areas and the potential risk of its wide spread in different areas of Punjab, Pakistan. ***Keywords:*** *CCHF, tick, livestock, CCHF deaths, diagnostics, clinical symptoms.*

Геморрагическая лихорадка Крым-Конго (CCHF) является наиболее смертельным вирусным заболеванием с обширным географическим распространением. В Пакистане сообщается о спорадических вспышках в районах, где интенсивно выращивается крупный рогатый скот. Авторы данного исследования представили клинический случай CCHF в одном из районов, специализирующемся на разведении крупного рогатого скота - район Чаквал провинции Пенджаб. Сыворотки и образцы плазмы у подозреваемых пациентов вместе с клещами Hyalomma из сообщаемой области были собраны и диагностированы на антиген CCHF и IgG-антител с помощью двухступенчатого сэндвич-фермент-связанного иммуносорбентного анализа (ELISA) с использованием Vector BEST Company, набора крымских-CHF-антигенов, Новосибирск, Россия. Геморрагическая лихорадка Крым-Конго (CCHF) подозревалась у трех пациентов, из которых умерли два пациента. Единственный выживший пациент был диагностирован на CCHF по обнаружению IgG. Из 62 клещей Hyalomma, обнаруженных на крупном рогатом скоте эндемического района,