RNI No.: UPENG/2014/59232

A COMPLETE HEALTH JOURNAL

Double Helical

March 2018

VOL IV, Issue IV, Rs. 100

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DOUBLE HELICAL

A COMPLETE HEALTH MAGAZINE

Volume IV Issue IV
March - 2018

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Double Helical is owned, printed and published monthly. It is printed at Polykam offset, Naraina Industrial Area Phase 1, New Delhi-110028, and published from G-1, Antriksh Green, Kaushambi, Ghaziabad-201 010.
Tel: 0120-4219575, 9953604965.
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Dear readers,

We find it immensely satisfying every month to present to you a wide range of interesting, in-depth and analytical stories pertaining to the latest trends and advancements in the world of healthcare. We hope you would derive the same value and substance after reading the current March 2018 issue of Double Helical.

Recently the decision of the Union Cabinet to remove the Clause for separate Exit Examination and to have a common final year MBBS examination, amendment to drop the provision for Bridge Course to AYUSH doctors and subsequent registration to practice modern medicine and introduction of a new punitive clause for quacks and unqualified persons for practicing modern medicine were welcomed.

Although, the Cabinet approved draft of NMC Bill has marginally increased the state representation and control of the govt. over 50% of the fee levied, IMA feels that these are cosmetic in nature and the Bills still remains Anti-poor, Anti-federal, non-representative and undemocratic.

IMA strongly expressed concern about the un-addressed major issues like token presence of elected members, sub-optimal representation to State Governments and Health Universities and the lack of autonomy of NMC itself. The Bill still remains anti-poor, anti-federal, pro-rich, anti-democratic and lacks national character. The Bill does not address the issues of DNB (Diplomat of National Board) and practical difficulties with NEET and foreign graduates. The Action Committee took the view that much has not happened to change the already decided course of action.

This time we bring you as our cover story entitled Mission TB Free India- a comprehensive package enriched with analysis and expert viewpoints. Our Prime Minister Narendra Modi's statement to India is determined to address the challenge of TB in mission mode. He is confident that India can be free of TB by 2025. As he recently inaugurated the Delhi End TB Summit and launched the TB Free India Campaign.

In addition to the well-known risk factors contributing to the rise of tuberculosis cases in India, like human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), poor nutritional status, and young age, realization that other emerging factors like diabetes mellitus, indoor air pollution, alcohol abuse, tobacco smoke are also fuelling the epidemic, is adding more complexities to tuberculosis control and making the task onerous. Individually and in combination risk factors tend to increase the burden two to three times.

Unless addressed concurrently these numbers are likely to overwhelm the tuberculosis control programme and annul its efforts. The eight states of the North Eastern region characterized by hilly, forested area, sparsely inhabited mainly by tribal populations also share high prevalence of emerging risk factors for tuberculosis. India has set itself a target of elimination of tuberculosis by 2025.

To achieve the target in the North Eastern states special resources would be needed to be put in place for controlling these risk factors as well. A comprehensive integrated approach taking help of other departments in health sector and beyond is critical.

There are two risk factors like diabetes mellitus and tobacco smoking which impact a larger section of North-Eastern population and accelerate progression of tuberculosis disease. Some of the states here have highest prevalence of HIV in India, notably Manipur (1.15%), Nagaland and Mizoram (0.7–0.8%). India has an average of 0.26%. People with HIVhave a 20–30 times higher risk of developing active tuberculosis, which is more of the extra pulmonary type and throws up challenges of diagnosis and management. What does all this mean to the tuberculosis elimination programme?

Elimination of TB means stopping transmission. That is reach every person suspected to have tuberculosis, get diagnosis confirmed, and if positive put on appropriatetreatment and help to complete the therapy. Given the difficult terrain and hard to reach population, more resources would be needed. Health workers may have to travel long distances to bring one patient under treatment successfully. Finding TB cases is critical.

Another special story of this issue entitled Uveitis may occur as a normal immune response to fight an infection inside the eye. Research suggests that there may be a link between black tattoo ink and uveitis. It is thought that skin tattoeing may trigger an immune response.

The word "uveitis" is used because the swelling most often affects the part of your eye called the uvea. An eye is made of layers. The uvea is the middle layer. It is right between the white part of your eye called the sclera and the inner layers of your eye. Uveitis refers generally to a range of conditions that cause inflammation of the middle layer of the eye, the uvea, and surrounding tissues. It can be painful, the eye or eyes may be red, and vision may be cloudy.

An injury to the eye, a viral or bacterial infection, and some underlying diseases may cause uveitis. It can cause swelling and damage in the tissues of the eye. Untreated, it can lead to vision loss. It can affect one or both eyes.

There are many more stories based on deep analysis and expert viewpoints. We hope you will enjoy reading such topical stories and encouraging us with your feedback to enable us to further improve your favourite magazine.

Amresh K Tiwary,
Editor-in-Chief

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LaQshya program to benefit pregnant woman

Ministry of Health and Family Welfare has recently announced the launch of program 'LaQshya', aimed at improving quality of care in labour room and maternity Operation Theatre (OT). The Program will improve quality of care for pregnant women in labour room, maternity Operation Theatre and Obstetrics Intensive Care Units (ICUs) and High Dependency Units (HDUs). The LaQshya program is being implemented at all Medical College Hospitals, District Hospitals and First Referral Unit (FRU), and Community Health Center (CHCs) and will benefit every pregnant woman and new-born delivering in public health institutions.

'LaQshya' will reduce maternal and newborn morbidity and mortality, improve quality of care during delivery and immediate post-partum period and enhance satisfaction of beneficiaries and provide Respectful Maternity Care (RMC) to all pregnant women attending public health facilities.

The Program aims at implementing 'fast-track' interventions for achieving tangible results within 18 months. Under the initiative, a multi-pronged strategy has been adopted such as improving infrastructure up-gradation, ensuring availability of essential equipment, providing adequate human resources, capacity building of health care workers and improving quality processes in the labour room.

To strengthen critical care in Obstetrics, dedicated Obstetric ICUs at Medical College Hospital level and Obstetric HDUs at District Hospital are operational zed under LaQshya program.

The Quality Improvement in labour room and maternity OT will be assessed through NQAS (National Quality Assurance Standards). Every facility achieving 70% score on NQAS will be certified as LaQshya certified facility. Furthermore, branding of LaQshya certified facilities will be done as per the NQAS score. Facilities scoring more than 90%, 80% and 70% will be given Platinum, Gold and Silver badge accordingly. Facilities achieving NQAS certification, defined quality indicators and 80% satisfied beneficiaries will be provided incentive of Rs 6 lakh, Rs 3 lakh and Rs 2 lakh for Medical College Hospital, District Hospital and FRUs respectively.

India has come a long way in improving maternal survival as Maternal Mortality Ratio (MMR) has reduced from 301 maternal deaths in 2001-03 to 167 in year 2011-13, an impressive decline of 45% in a decade. India is further committed to ensuring safe motherhood to every pregnant woman in the country.

A transformational improvement in the quality of care around child-birth-relating to intrapartum and immediate postpartum care shall dramatically improve maternal and new-born outcomes.

A major step towards Universal Health Coverage"

The Union Cabinet chaired by Prime Minister Narendra Modi has approved the Centrally Sponsored National Health Protection Mission (NHPM) having central sector component under Ayushman Bharat, anchored in the Ministry of Health and Family Welfare.

Thanking the Prime Minister Narendra Modi for his visionary leadership and constant guidance, Nadda said that NHPM is a major step towards Universal Health Coverage. It will protect around 50 crore people (from about 10 crore families) from catastrophic healthcare spending. This shall boost our resolve to serve the poorest of the poor in the country as there is an increased benefit cover to nearly 40% of the population, covering almost all secondary and many tertiary hospitalizations, he said.

Nadda further stated that the coverage of Rs. 5 lakh for each family has no restriction of family size and age. "This will give underprivileged families the financial support required when faced with illnesses requiring hospitalization," ShriNadda added. Families belonging to poor and vulnerable population based on Socio Economic Caste Census database shall be benefitted through the Ayushman Bharat-NHPM.NHPM will subsume the on-going centrally sponsored scheme "RashtriyaSwasthyaBimaYojana" (RSBY) and Senior Citizen Health Insurance Scheme (SCHIS).

Poised to be the largest public funded health insurance scheme in the world, the Union Health Minister

-NHPM will protect about 50 crore people from catastrophic healthcare spending: J P Nadda

further said that the beneficiaries can avail of the benefits in both public and empanelled private facilities. All public hospitals in the States implementing Ayushman Bharat-NHPM, will be deemed empanelled for the scheme. As for private hospitals, they will be empanelled online based on defined criteria.

Nadda stated that the Ayushman Bharat-NHPM will leverage on Comprehensive Primary Health Care through Health and Wellness Centres for preventive, promotive and curative care and will ensure seamless continuum of care. He also said that this will avoid overcrowding and improve quality of care at secondary and tertiary facilities and provide universal health coverage and make services equitable, affordable and accessible.

"Ayushman Bharat-NHPM is in synergy with NHM and will strengthen public health infrastructure.Various measures like identity validation through Aadhaar, cost control etc., make the Ayushman Bharat-NHPMeasily accessible and transparent in approach," Nadda said.

The Union Health Minister added that the National Health Protection Missionwill ensure rapid advancement towards attaining universal healthcare as there will be substantial reduction in out-of-pocket expenditure through the National Health Protection Mission, safeguarding about 50 crore people."Ayushman Bharat-NHPM will contribute immensely to ease of living and will enable beneficiaries to health facilities from any part of the country," he reiterated.

The Health Minister said that Ayushman Bharat-NHPM will also strengthen spirit of cooperative federalism. "NHPM provides ease to be merged with the ongoing health protection or Insurance schemes in various ministries and governments," he said.

Nadda further stated that all pre-existing conditions will be covered from day one of the policy. A defined transport allowance per hospitalisation will also be paid to the beneficiary. He further added that benefits of the scheme are portable across the country and a beneficiary covered under the Mission will be allowed to take cashless benefits from any public/ private empanelled hospitals across the country.

"This will lead to increased access to quality health and medication. In addition, the unmet needs of the population which remained hidden due to lack of financial resources will be catered to. This will lead to timely treatments, improvements in health outcomes, patient satisfaction, improvement in productivity and efficiency, job creation thus leading to improvement in quality of life," Nadda elaborated.

Health Ministry grants approval for admission under Disabilities Quota

The Ministry of Health and Family Welfare has granted approval to amend the regulation for admission to PG medical courses in order to expand the scope of persons with disabilities getting benefit of reservation. The percentage of seats to be filled up by persons with disabilities has been increased from 3% to 5% in accordance with the Rights of Persons with Disabilities Act, 2016.

Commenting on this decision, J P Nadda stated that after twenty years the Government has taken a historical decision for welfare of divyang sisters and brothers in line with the Prime Minister's vision of 'sabkasaath, sabkavikaas', ensuring that they are equal contributors to the progress of the nation. "Now all 21 benchmark disabilities as per the Rights of Persons with Disabilities Act, 2016 can register for admission to medical courses", Nadda added.

According to the amended provision, 21 kinds of Disabilities (as per Rights of Persons with Disabilities Act, 2016) that includesBlindness, Low-vision, Leprosy Cured persons, Hearing Impairment (deaf and hard of hearing), Locomotor Disability, Dwarfism, Intellectual Disability, Mental Illness,Autism Spectrum Disorder, Cerebral Palsy, Muscular Dystrophy, Chronic Neurological conditions, Specific Learning Disabilities,Multiple Sclerosis, Speech and Language disability, Thalassemia, Hemophilia, Sickle Cell disease, Multiple Disabilities (including deaf blindness), Acid Attack victim, Parkinson's disease, will now be considered under the reservation provided for persons with disabilities.

Accordingly, the software used by DGHS for central counseling has also been amended to allow registration of all such candidates. Registration/allotment of seats would be followed by a medical examination to ascertain the level of Disability before finally granting admission to candidates selected under the reserved quota.

Mission Steering Group of NHM

Ashwini Kumar Choubey, Minister of State for Health and Family Welfare released the manual on oral health promotion for health workers and school teachers at a function to mark the World Oral Health Day, here today. Preeti Sudan, Secretary (Health) was also present at the occasion.

Choubey stated that the manual encompasses the health, disease and prevention components and highlights the basic oral health care and the role of health workers and school teachers with respect to the common dental diseases. He further said that the high incidence of oral cancers can be prevented if we maintain oral hygiene and avoid use of tobacco. "It's high time that good oral hygiene becomes a social movement- Jan Abhiyaan." We need to educate children right at the beginning for good oral health so that they can become our health ambassadors, he said.

Speaking at the occasion, Choubey further stated the oral health manual for health workers is a comprehensive output for training frontline workers on oral health promotion as it familiarizes the frontline workers with features of healthy mouth. He also said that the manual outlines the basic features of oral diseases which will guide the frontline workers in identifying oral diseases. "It also outlines the duties to be performed for promoting oral health in families and communities," he said. ShriChoubey further said that the manual gives tips on dental emergency management like acute tooth pain, trauma, bleeding and swelling/abscess.

Speaking about the manual for school teachers, Choubey stated that it aims at enhancing the role of teachers and the school environment in child health. "It describes the common oral diseases in children, their prevention and some initiatives that maybe executed at school level to improve oral health and reduce absenteeism due to acute dental pain," he stated

Preeti Sudan, Secretary (Health) stated that there is an urgent need to get these manuals translated in other languages so that people from other states can also benefit from it. Smt. Sudan further said that the manual also connects the teachers to the parents and the communities at large, reiterating the concept of an Integrated School Community. She added that there shall be school health ambassadors under Ayushman Bharat programme to promote preventive and promotive health in schools. These shall be a boy and girl student in each class. Also present at the function were Dr. B.D. Athani , DGHS, Sanjeeva Kumar AS (Health), Sunil Kumar (Joint Secretary) along with other senior officers of the Ministry and AIIMS.

Health Ministry launches new initiatives to combat TB

On the occasion of 'World TB Day, Preeti Sudan, Secretary (Health) Govt of India, said, "We are already aligned with world TB treatment protocols. It has to a mission to End TB by 2025, through community participation, involving civil societies and other stakeholders."

She further stated that the global target to end TB is 2030 but we will end it by 2025. This is a tall order but I am confident that if we all work together, if all the partners combine together and we ensure full treatment is given on regular basis we can show the world this can be achieved. I am confident of this and my confidence is backed by our success in eradicating Polio.

At recently held function, the Health Secretary also released the TB INDIA 2018 Report and National Drug Resistance Survey Report. She also launched the NikshayAushadi Portal and shorter regimen for Drug Resistant TB.

Preeti Sudan commended the TB warrior, Shri Suman, a graduate student who narrated his experience living with TB. The Health Secretary stated that early identification and complete treatment of TB is a key to achieving our goal of TB elimination. We need many TB warriors like Suman to fight against this disease and spread positive message across the communities to burst the myths and misconceptions around TB.

Addressing the participants, the Health Secretary further stated that Hon'ble Prime Minister has called for 'TB Mukth Bharat' which can only possible if we ensure our panchayat and blocks are declared TB free. "For that Government has adequately provisioned drugs and diagnostic in every part of the country," she added.

Also present at the event were Dr B D Athani, DGHS, Sanjeeva Kumar, Additional Secretary (Health), A. K. Jha, Economic Advisor, Ministry of Health & Family Welfare, Vikas Sheel, Joint Secreatry, Dr. Sunil Khaparde, DDG(TB), and other senior officers of the Health Ministry, representatives of WHO and other development partners.


Ministry of Health & Family Welfare
Government of India
World Health Organization
South-East Asia

TB Free India Campaign

The Prime Minister stated that State governments play a very important role in elimination of TB. Thus strengthening the spirit of cooperative federalism, he has personally written to the State Governments to join in this mission,. The frontline workers also play a crucial role in TB elimination along with the people who have demonstrated great courage in defeating this disease...

BY TEAM DOUBLE HELICAL

India is determined to address the challenge of TB in mission mode. I am confident that India can be free of TB by 2025." This was stated by Prime Minister Narendra Modi as he inaugurated the Delhi End TB Summit and launched the TB Free India Campaign, recently.

J P Nadda, Union Minister of Health and Family Welfare, Anupriya Patel, Minister of State for Health and Family Welfare, Dr Tedros Adhanom Ghebreyesus, Director-General, WHO, Lucica Difiu, Ex. Director, Stop TB Partnership along with the Health Ministers from 20 countries were also present at the inaugural function of the summit, which is being co-hosted by the Ministry of Health and Family Welfare, Government of India, WHO South East Asia Regional Office (SEARO) and Stop TB Partnership.

The Prime Minister said that this event will always be known as a landmark event towards the elimination of TB in the World. "The global target for eliminating TB is 2030, but today I announce that the target for India to eliminate TB is 2025, five years before the global target," the Prime Minister added. He further stated that TB mainly affects poorest of the poor and every step taken towards the elimination of this disease is a step towards improving the lives of the poor.

The Prime Minister stated that State governments play a very important role in elimination of TB. "Thus strengthening the spirit of cooperative federalism, I have personally written to the State Governments to join in this mission," the Prime Minister said. The Prime Minister further stated that the frontline workers also play a crucial role in TB elimination along with the people who have demonstrated great courage in defeating this disease. He applauded their courage.

Citing the of examples of Mission Indradhanush and Swachh Bharat, the Prime Minister said that immunization and sanitation coverage has increased drastically in the last four years, therefore a right approach is needed to achieve the targets. These are crucially associated with a healthy society.

The Prime Minister also mentioned about the two major initiatives in health sector, as part of Ayushman Bharat programme. He said that the National Health Policy, 2017 has envisioned Health and Wellness Centres as the foundation of India's health system. Under this, 1.5 lakh centres will bring comprehensive primary health care systems closer to the homes of people.

He further said that under National Health Protection Scheme, the second flagship programme under Ayushman Bharat, 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) will be provided a coverage upto 5 lakh rupees per family per year for secondary and tertiary care hospitalization. This will be the world's largest government funded health care programme. Adequate funds will be provided for smooth implementation of this programme, he elaborated.

Speaking at the function, Shri J P Nadda, Union Minister of Health and Family Welfare, said that the unwavering support of the Prime Minister has always been a source of great inspiration. ShriNadda further stated that it is the Hon'ble Prime Minister who has driven us to take this ambitious task upon ourselves to

advance our targets and accelerate our actions.

Reiterating the commitment of the Government, ShriNadda stated that to achieve 'End TB' targets, the Government has rolled out new `National Strategic Plan (NSP) to end TB by 2025` which has been appreciated by the global community as a model plan for combating Tuberculosis. "We are starting new scheme for nutritional support, expanding public-private partnership models and aligning our strategies to follow the similar success we got in HIV /AIDS. We are using Information Technology (IT) tools for monitoring the programme and treatment adherence. Community engagement is the hallmark and it is becoming a social movement to End TB in India," Nadda elaborated.

Nadda further said that budget will never be an issue for health schemes and this has been demonstrated by increasing the budget for health and through the announcement of two path breaking initiatives under 'Ayushman Bharat' that address health holistically. He further mentioned that to reduce out of pocket expenditure for poor, the Government has started Affordable Medicines and Reliable Implants for Treatment (AMRIT) pharmacies across the country and have made stents and knee replacement affordable for the common man.

Speaking at the function, Dr Tedros Adhanom Ghebreyesus, Director-General, WHO said that this is the right place to have this event and India's plans to achieve the targets 5 years before the global target is bold, courageous and ambitious? DrTedrosthanked Prime Minister for his personal and political commitment and said that such commitment is

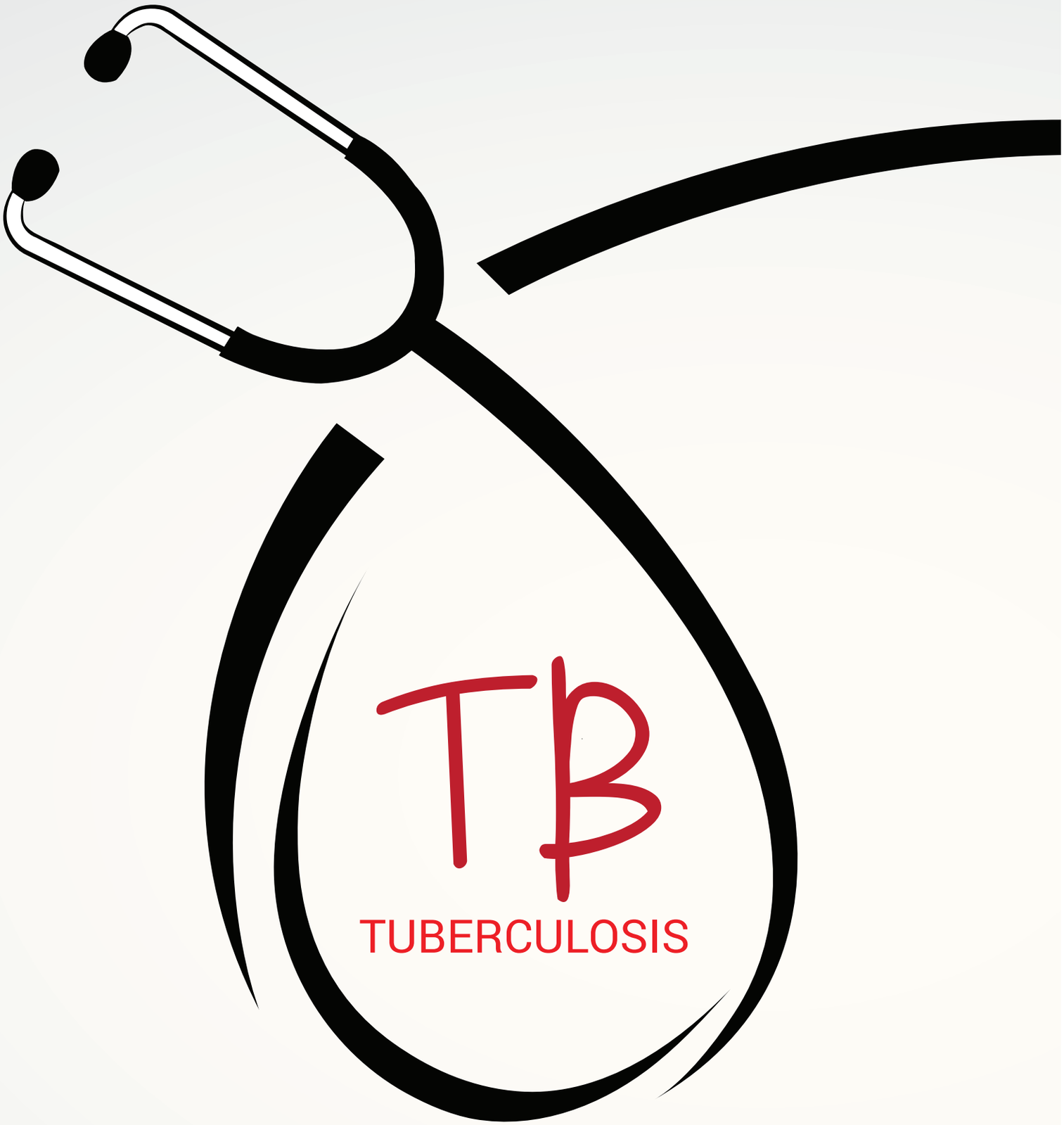
needed to win the war against TB.

J P Nadda and Dr Tedros Adhanom Ghebreyesus, Director-General, WHO also chaired a session on "Tracking Progress on Delhi Call to Action". Nadda also presided over a meeting with State Health Ministers. He highlighted the importance of active participation by the States through intense review and regular monitoring, to meet the time bound goal of ending TB by 2025.

TB is the leading infectious killer in India. There were an estimated 28 lakh new cases of TB in 2016, with over 4 lakh people succumbing to the disease, including those with TB and HIV. The new NSP adopts a multi-pronged approach which aims to 'Detect' all TB patients with an emphasis on reaching TB patients seeking care from private providers and undiagnosed TB in high-risk populations, 'Treat' all patient irrespective of where they seek care adopting a patient centric approach, 'Prevent' emergence of TB in susceptible population groups and 'Build' empowered institutions and human resources to streamline implementation.

India is also implementing the National Strategic Plan for TB elimination that is backed by a historic funding of over 12,000 crore rupees for the next three years to ensure every TB patient has access to quality diagnosis, treatment, and support. The Prime Minister's vision to end TB by 2025, five years ahead of the SDG's has galvanized the efforts of the Revised National Tuberculosis Programme, which has treated over 2 Crore patients since its inception.

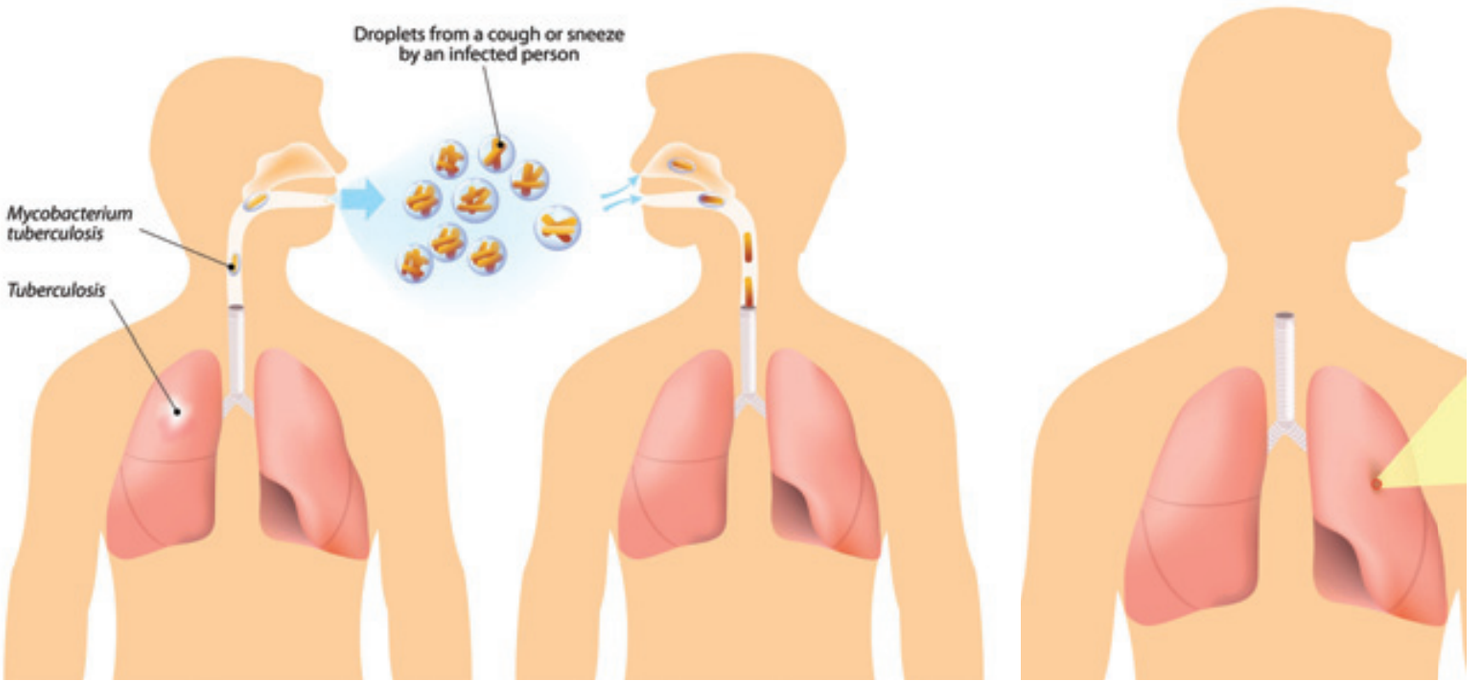
Also present at the event were Health Ministers from the States, senior officers of the Ministry and representatives and delegates from across the globe.


TB
TUBERCULOSIS

Mission TB FREE India

Elimination of TB means stopping transmission. That is reach every person suspected to have tuberculosis, get diagnosis confirmed, and if positive put on appropriate treatment and help to complete the therapy. Given the difficult terrain and hard to reach population, more resources would be needed...

BY AMRESH KUMAR TIWARY



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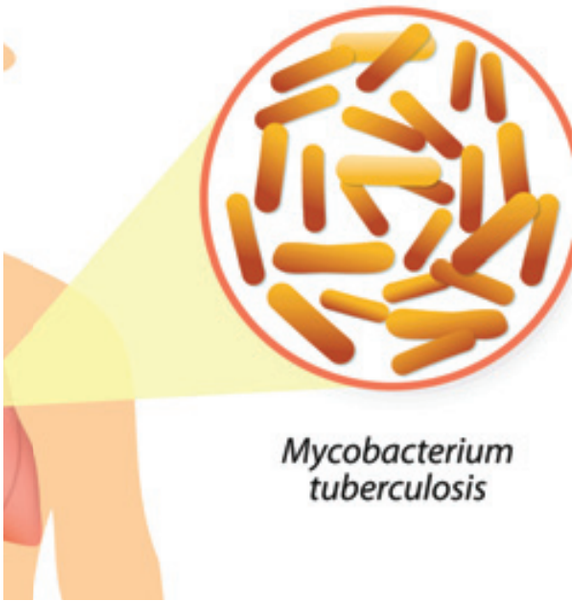
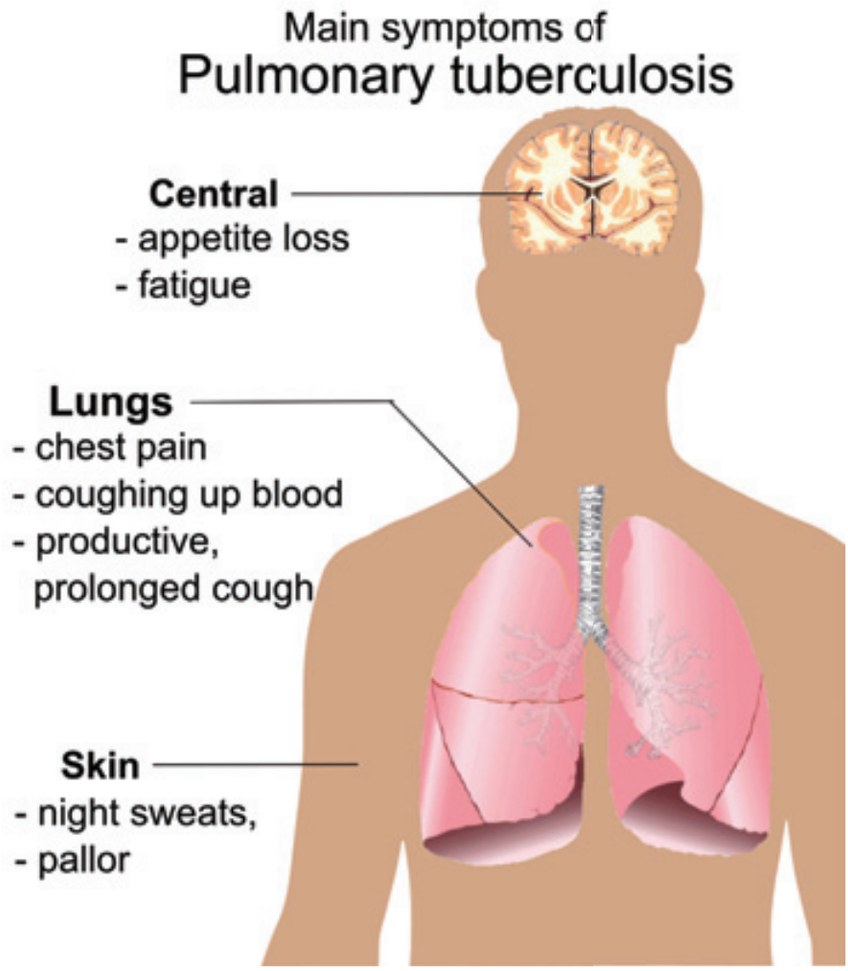
There are two risk factors like diabetes mellitus and tobacco smoking which impact a larger section of North-Eastern population and accelerate progression of tuberculosis disease. Some of the states here have highest prevalence of HIV in India, notably Manipur (1.15%), Nagaland and Mizoram (0.7–0.8%). India has an average of 0.26%. People with HIV have a 20–30 times higher risk of developing active tuberculosis, which is more of the extra pulmonary type and throws up challenges of diagnosis and management.

Tobacco consumption is highest in this region of the country. On an average people in NE smoke more tobacco than rest of India. Mizoram and Meghalaya have a prevalence of over 60%, Tripura follows at 40%. India's average is around 26%. One in four Mizo women smokes, whereas average for India is 1 per hundred. Smokers are two-three times at higher risk of developing tuberculosis than non-smokers. The disease is more severe. A regular smoker has twice the risk of getting the disease again, recurrences are more often. If an HIV infected individual also smokes, the risk increases three folds.

Diabetes is the third risk factor. Results of an India-wide show high prevalence of pre-diabetes especially amongst the urban poor in the states of Arunachal Pradesh, Manipur, and Meghalaya which is of major concern.3 Diabetes again increases the risk of tuberculosis to three folds and the risk of multi drug resistant (MDR) among diabetics who get TB is 2–8 times higher. The progression of the disease is rapid. And it develops more frequently when the diabetes control is poor.

What does all this mean to the tuberculosis elimination programme?





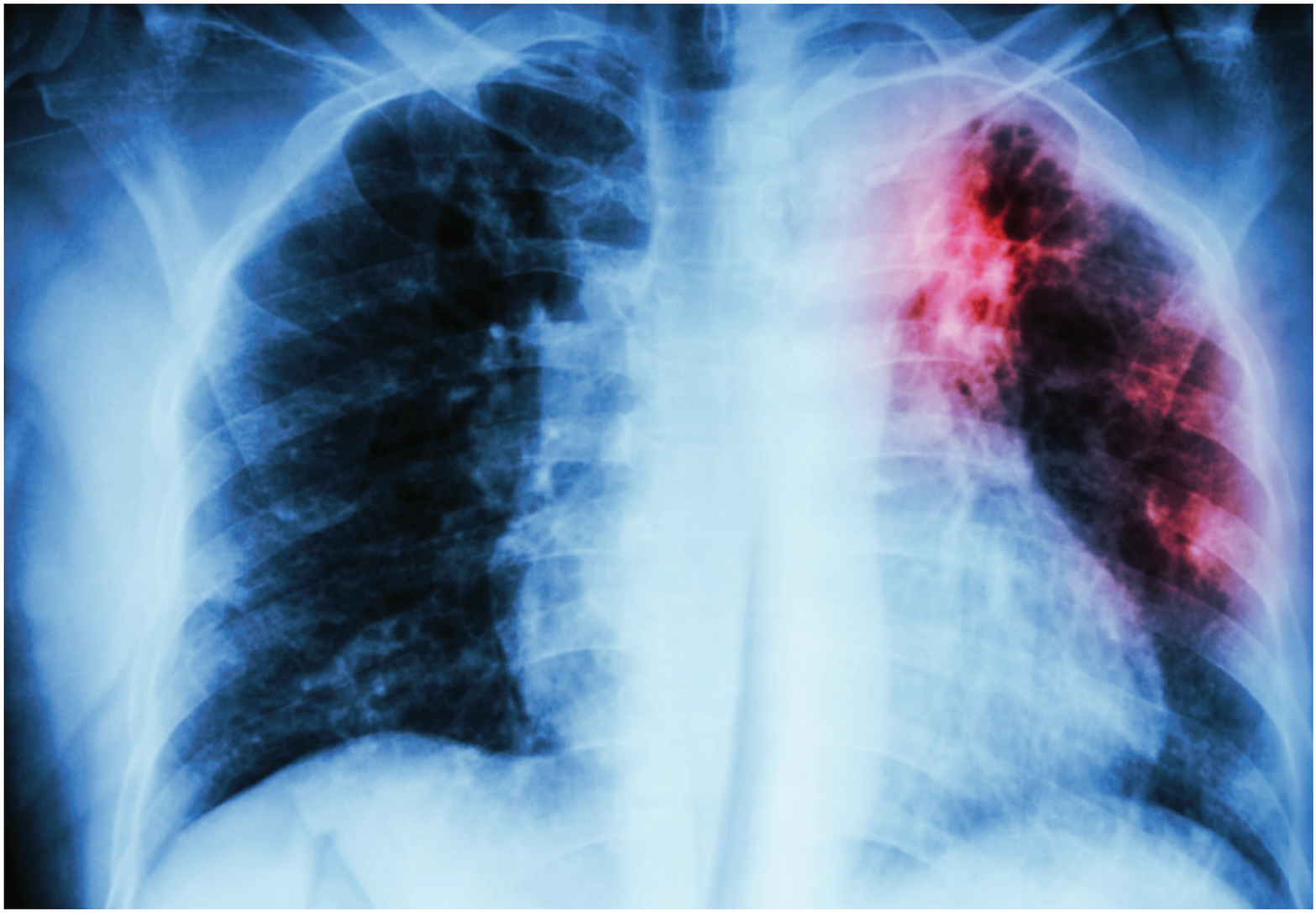
Elimination of TB means stopping transmission. That is reach every person suspected to have tuberculosis, get diagnosis confirmed, and if positive put on appropriate treatment and help to complete the therapy. Given the difficult terrain and hard to reach population, more resources would be needed. Health workers may have to travel long distances to bring one patient under treatment successfully. Finding TB cases is critical.

Modelling studies have shown that if the case detection is increased by 25%, it can translate in to about 40% reduction in mortality, the prevalence decreases by about 30% and the reduction of incidence cases is by more than 20% in 10 years.4 For persons with chest symptoms, sputum examination for acid-fast bacilli (AFB) is the recommended test. Acid fast staining of sputum for AFB performs poorly as a screening test. Its sensitivity is poor. The cartridges based nucleic acid amplification test (Cartridge Based Nucleic Acid Amplification test, CB-NAAT) is now available at the district level as it needs a controlled temperature and dust free environment.

A nucleic acid amplification test (True Nat MTB), a chip based test has been developed by an Indian company. It is reported to have good sensitivity and specificity.5 It has recently been validated in 100 designated microscopy centres in 50 districts in 10 states in which 18,000 samples have been tested. This battery operated test takes around an hour to give the result whether a sputum sample is positive for TB, for positive samples resistance can be determined in another hour's time. It does not require dust proof air-conditioned environment. It is projected as a test to be used at primary health centre (PHC) level. If it is found to have an acceptable sensitivity and specificity, this test should be deployed in the NE states on a priority basis.

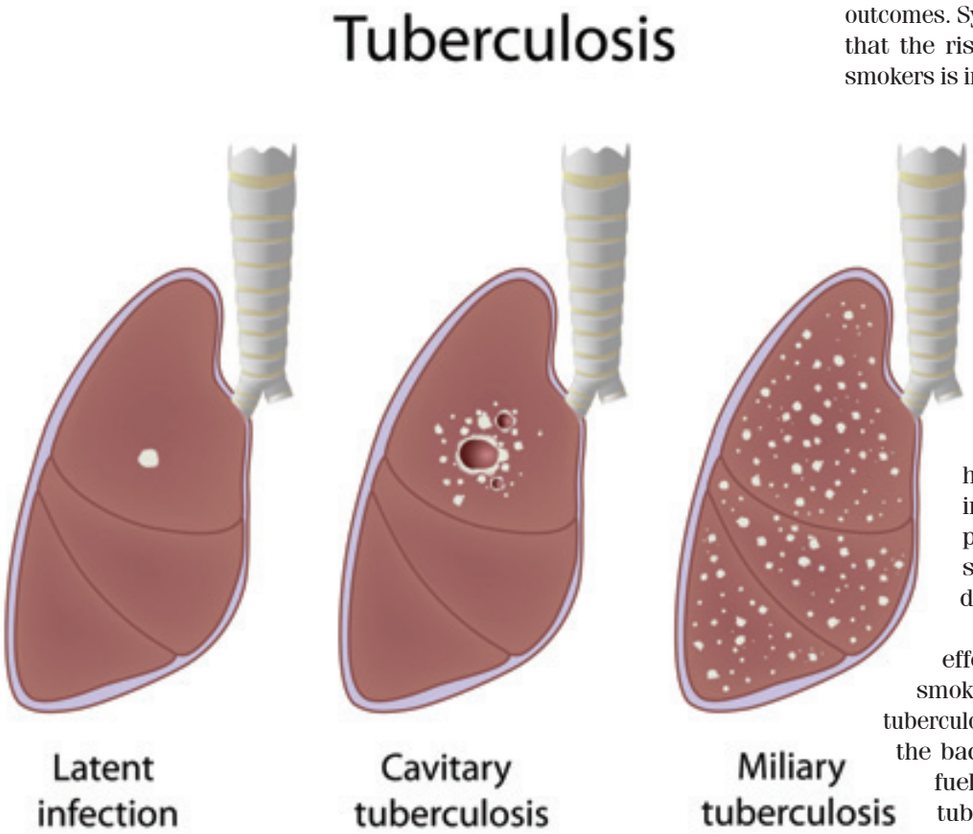
Relying on symptoms-screen alone may be contributing to delayed diagnosis of tuberculosis. Using chest X-rays (CXR) as a pre-screen test can reduce numbers needed to test for each case of tuberculosis. Abnormal CXRs could, therefore, be key to active case finding by identifying cases that otherwise would have not have been diagnosed by conventional, passive case finding,

Today, CXR is becoming more accessible in remote settings due to technological advances such as digital imaging instead of film-processed images. The sensitivity of CXR has been shown to increase if computer-aided diagnosis (CAD) software is used to analyse digital images. It gives a probability percentage consistent with TB. It could possibly be used as a 'filter' in TB screening to identify that gets tested by CB NAAT (GeneXpert). We need a locally available and economic version of the CAD4TB



which would help in improving diagnosis especially in areas where a radiologist is not available to interpret the CXR. Diabetes triples the risk for active tuberculosis, thus the increasing burden of type 2 diabetes will further burden the TB elimination programme. An epidemiological model in India indicates that diabetes mellitus may account for 15% of TB cases. The International Diabetes Federation has predicted an increase in diabetes prevalence to 10% world wide by 2035. Modelling exercises have predicted that if such an increase does happen it could undercut the decrease in new cases of tuberculosis by about 3%. Some believe that increase in the prevalence of diabetes in India has contributed in part to a negligible reduction in new cases of tuberculosis between 1988 and 2008.

Diabetic tuberculosis patients have a higher risk of treatment failure, death, and recurrent tuberculosis as compared to non-diabetic tuberculosis patient. Poorly controlled diabetes increase the risk of tuberculosis and leads to unfavourable tuberculosis treatment outcomes. Researchers have long known that diabetes patients have higher blood sugar levels making their disease difficult to control and putting them at greater risk of developing complications. A bidirectional screening for tuberculosis and diabetes mellitus at hospital and community level has been shown to be feasible and effective.10,11 Such a screening should be piloted at hospital and community level and scaled-up. This presents a unique opportunity to capture persons presenting with either of these two conditions as potential targets for screening and treatment. Patients with diabetes often present with atypical symptoms and pose hurdles in diagnosing tuberculosis. Clinical management of patients with both diseases can be difficult. Tuberculosis patients with diabetes have a lower concentration of tuberculosis drugs and a higher of drug toxicity than tuberculosis patients without diabetes. Besides drug treatments for tuberculosis and diabetes, other interventions, such as



education, intensive monitoring, and lifestyle interventions, might be needed, especially for patients with newly diagnosed diabetes or those who need insulin.

Modelling study analysed the potential effect of diabetes on tuberculosis epidemiology in 13 countries with high TB burden. The study estimated the tuberculosis burden that can be reduced by alternative scenarios of diabetes lowering the prevalence of diabetes by an absolute level of 6.6–13.8% could accelerate the decline of tuberculosis incidence by an absolute level of 11.5–25.2% and tuberculosis mortality by 8.7–19.4%. If interventions reduce diabetes incidence by 35% by 2025, 7.8 million tuberculosis cases and 1.5 million tuberculosis deaths could be averted by 2035.

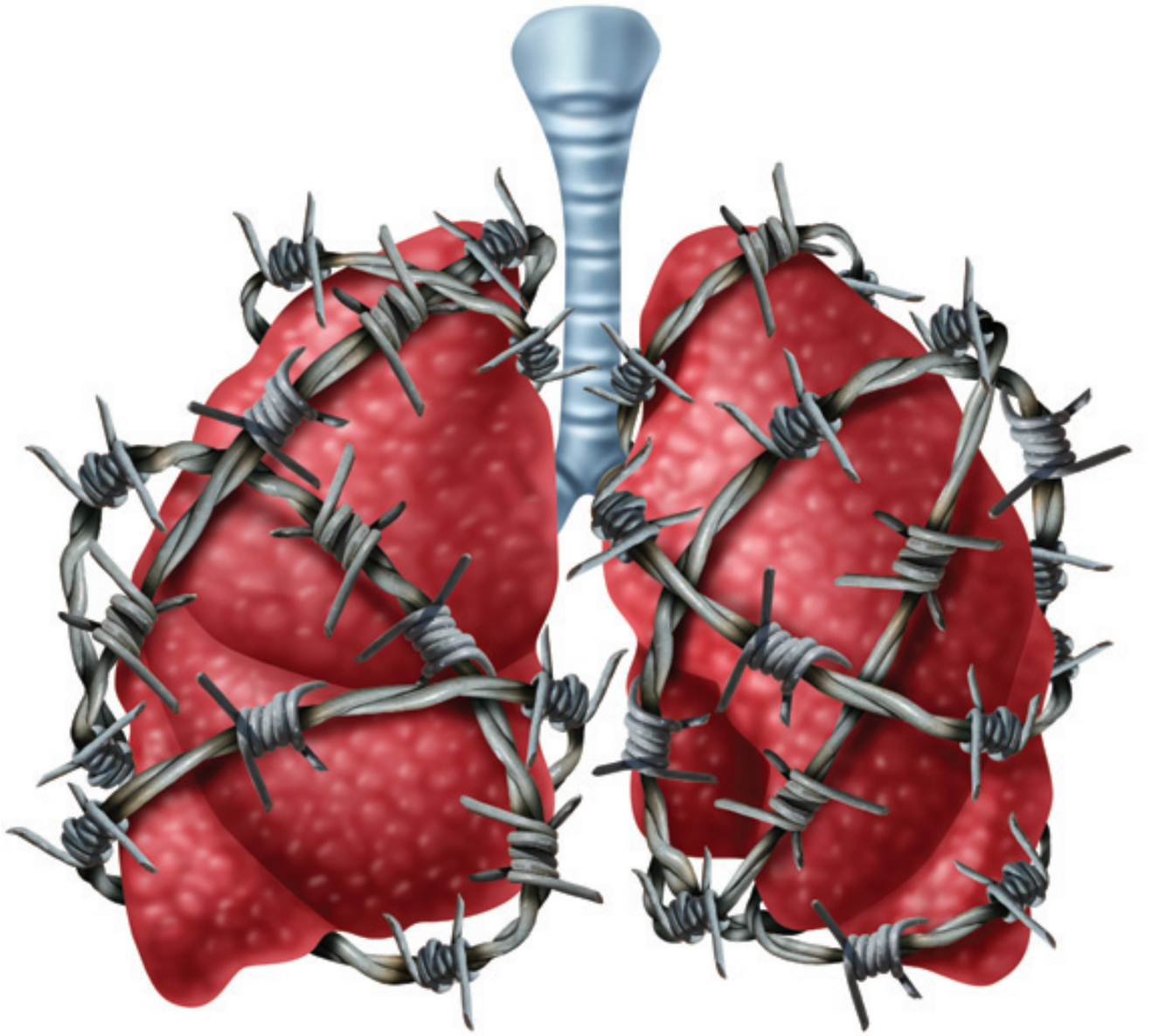
The evidence for an regular tobacco smoking increases risk of TB in active smokers is well established. There is also some evidence that second hand smoking (passive smoking) is a risk factor for developing tuberculosis especially in children 0–5 years. When exposed to second hand smoke, household/ environmental factors (crowding, biomass fuel burning) may increase risk for developing tuberculosis. In addition, smoking has been associated with cavitary lesions, bacillary load, smear conversion delay, and high risk of reactivation and death during or after treatment. Smoking rates are high among men in North Eastern states, and, together with rising rates of diabetes, the risk of progression to tuberculosis disease will also increase.

Interventions like smoking cessation and early screening for tuberculosis can be advocated, but the impact of interventions in reducing TB risk remains negligible at population level. Both active and passive smoking increase susceptibility to TB infection, progression to active TB disease and the risk of adverse anti-TB treatment outcomes. Systematic reviews suggest that the risk of TB disease among smokers is increased two to threefold compare with people who have never smoked. Tobacco control and smoking cessation among people with diabetes and tuberculosis can therefore play an important role in limiting the burden of TB. It is also known that diabetic smokers have more than 5-fold increased risk of pretreatment positive smears than do non-diabetic non-smokers.

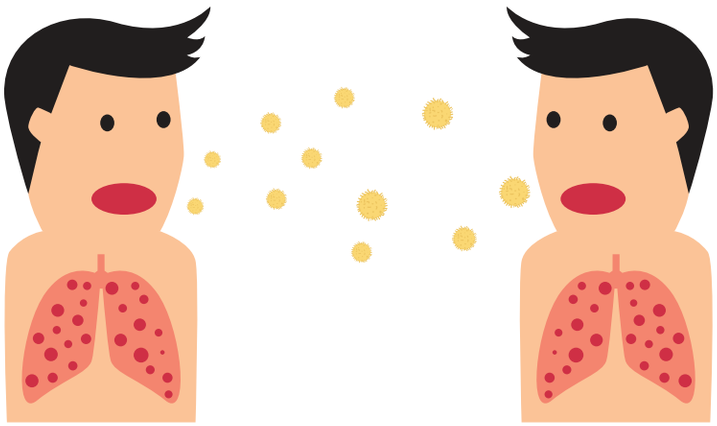
This is a remarkable joint effect of diabetes and smoking that increased risk of tuberculosis transmission. Against the background of risk factors fuelling the epidemic of tuberculosis in India, a critical assessment of the tuberculosis control programme (like strengths, weaknesses, opportunities and threats (SWOT) analysis) especially in the North- Eastern region would be helpful in identifying the areas that need strengthening to deal with these risk factors, and the resultant possible increase in number of active tuberculosis patients. From a health systems point of view, issues such as delays in diagnosis, initiation of appropriate treatment and its successful completion would be crucial. Experience from the combating combined HIV/TB disease would be helpful. But more operational research would be needed to tackle diabetes and tobacco smoking.

The Revised National Tuberculosis Control Program (RNTCP) would need to solicit assistance from other programmes within and outside the health sector to develop integrated comprehensive approach in meeting the targets of tuberculosis elimination in the North Eastern region.

What is Tuberculosis?



Transmission



Tuberculosis (TB) is a multisystemic infectious disease caused by Mycobacterium tuberculosis (or TB), a rod-shaped bacterium. According to the World Health Organization, tuberculosis is the most common cause of infectious disease-related mortality worldwide (about 10 million people worldwide were sick with TB in 2015, and about 1.8 million people died from TB worldwide in 2015.

HIV-associated TB infections are a leading cause of death in HIV patients. TB symptoms can span such a wide range that TB is termed the "great imitator" by many who study infectious diseases because TB symptoms can mimic many different diseases. Additional terms are used to describe TB. The terms include consumption, Pott's disease, active, latent, pulmonary, cutaneous, and others (see the following section), and they appear in both medical and nonmedical publications. In most instances, the different terms refer to a specific type of TB with some unique symptoms or findings.

TB has likely been infecting humans for many centuries; evidence of TB infections has been found in cadavers that date back to about 8000 BC. The Greeks termed it as a wasting away disease (phthisis). For many European countries, TB caused death in about 25% of adults and was the leading cause of death in the U.S. until the early 1900s. Robert Koch discovered TB's cause, Mycobacterium tuberculosis, in 1882. With increased understanding of TB, public health initiatives, treatment methods like isolation of patients (quarantine), and the development of drugs to treat TB, the incidence of the disease, especially in developed countries, has been markedly reduced. However, the CDC estimates one-third of the world's population is infected with TB with about 1.8 million deaths per year. About 60% of all TB-infected people are located in India, Indonesia, China, Nigeria, Pakistan, and South Africa.

There are many types of tuberculosis, but the main two types are termed either active or latent tuberculosis infection. Active TB is when the disease is actively producing symptoms and can be transmitted to other people; latent disease is when the person is infected with Mycobacterium tuberculosis bacteria, but the bacteria are not producing symptoms (usually due to the body's immune system suppressing the bacterial growth and spread) and have no TB bacteria in the sputum.

People with latent TB usually cannot transfer Mycobacterium tuberculosis bacteria to others unless the immune system fails; the failure causes reactivation (bacterial growth is no longer suppressed) that results in active TB so the person becomes contagious. Latent TB resembles chickenpox infection that goes dormant and may reactivate years later.

Who is at RISK?

Many other types of TB exist in either the active or latent form. These types are named for the signs and for the body systems Mycobacterium tuberculosis preferentially infect, and these infection types vary from person to person. Consequently, pulmonary tuberculosis mainly infects the pulmonary system, cutaneous TB has skin symptoms, while miliary TB describes widespread small infected sites (lesions or granulomas about 1 mm-5 mm) found throughout body organs. It is not uncommon for some people to develop more than one type of active TB.

The cause of TB is infection of human tissue by the bacterium Mycobacterium tuberculosis (mycobacteria or TB). These bacteria are slow growing, aerobic, and can grow within body cells (an intracellular parasitic bacterium). Its unique cell wall helps protect it from the body's defenses and gives mycobacteria the ability to retain certain dyes like fuchsin (a reddish dye) after an acid rinse that rarely happens with other

bacterial, fungal, or parasitic genera.

Mycobacteria that escape destruction by body defenses may be spread by blood or lymphatic pathways to most organs, with preference to those that oxygenate well (lungs, kidneys, and bones, for example). Typical TB lesions, termed granulomas, usually consist of a central necrotic area, then a zone with macrophages, giant Langerhans cells and lymphocytes that become surrounded by immature macrophages, plasma cells, and more lymphocytes. These granulomas also contain mycobacteria.

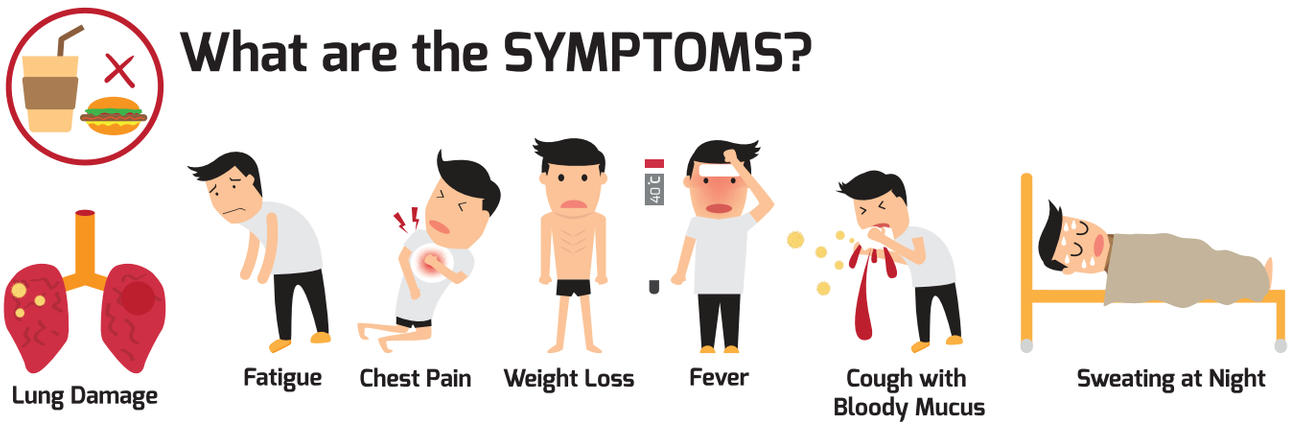
In latent infections, a fibrous capsule usually surrounds the granulomas, and in some people, the granulomas calcify, but if the immune defenses fail initially or at a later time (reactivate), the bacteria continue to spread and disrupt organ functions.

for some people to develop more than one type of active TB. More types will be listed in the symptoms and signs section below.

TB is contagious and can be spread to others by airborne droplets during sneezing, coughing, and contact with sputum, so you can get the disease by close contact with infected people; outbreaks occur in crowded conditions. The incubation period may vary from about two to 12 weeks. A person may remain contagious for a long time (as long as viable TB bacteria are present in sputum) and can remain contagious until they have been on appropriate therapy for several weeks. However, some people may be infected but suppress the infection and develop symptoms years later; some never develop symptoms or become contagious.

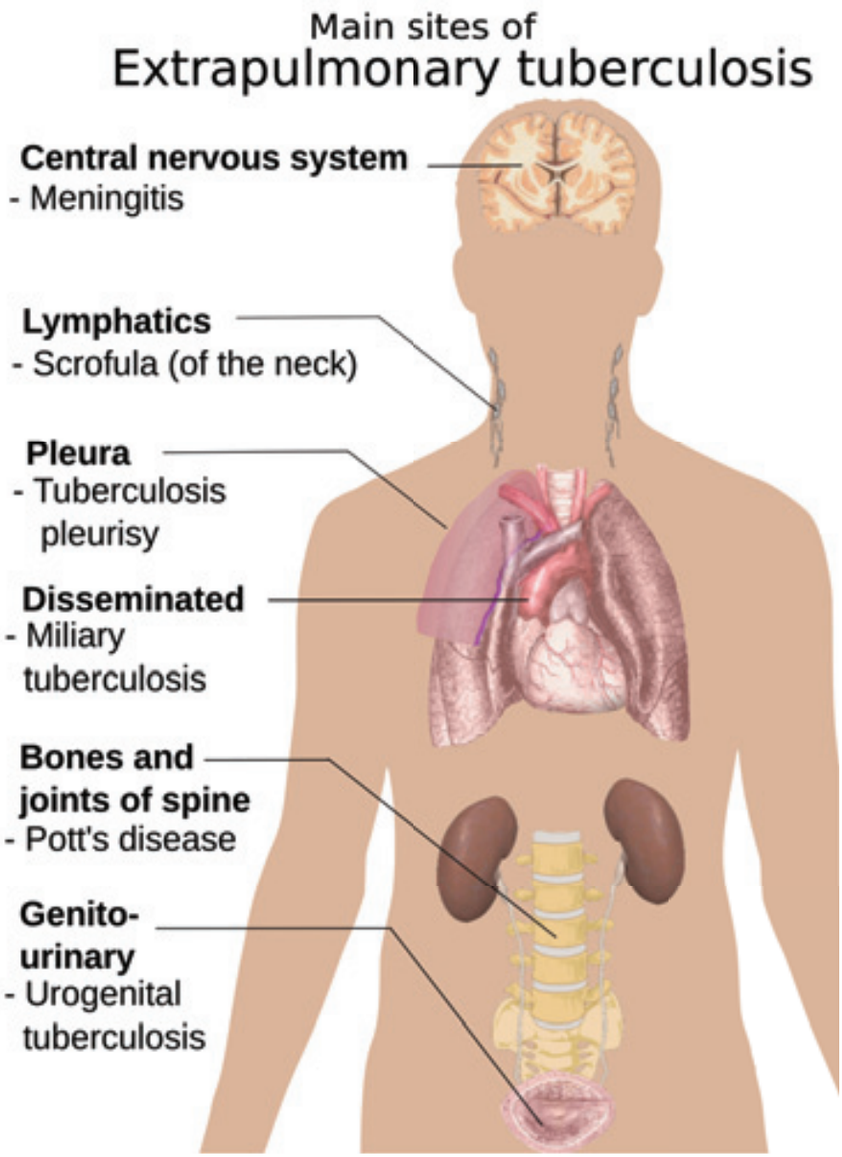
Because TB may occur as either a latent or active form, the definitive diagnosis of active tuberculosis depends on the culture of mycobacteria from sputum or tissue biopsy. However, it may take weeks for these slow-growing bacteria to grow on specialized media. Since patients with latent TB do not require isolation or immediate drug therapy, it is useful to determine if a person is either not infected, has a latent infection, or is actively infected with transmissible TB bacteria. Consequently, doctors needed a presumptive test(s) that could reasonably assure that the person was infected or not so therapy could begin. After getting a patient's history and physical exam data, the next usual test is the skin test (termed the Mantoux tuberculin skin test or the tuberculin skin test or TST). The test involves injecting tuberculin (an extract made from killed mycobacteria) into the skin. In about 48-72 hours, the skin is examined for induration (swelling) by a qualified person; a positive test (induration) strongly suggests the patient has either been exposed to live mycobacteria or is actively infected (or had been vaccinated); no induration suggests the person tests negative for TB. This test can have false-positive results (especially in individuals vaccinated for TB with the BCG vaccine). False negative results can be caused by patients who are immunocompromised.

Another test, IGRA (interferon-gamma release assays) can measure the immune response to Mycobacterium tuberculosis. Other quick tests are useful; chest X-rays can give evidence of lung infection while a sputum smear stained with certain dyes that are retained mainly (but not exclusively) by mycobacteria can show the presence of the bacterium. These tests, when examined by a doctor, are useful in establishing a presumptive diagnosis of either latent or active TB, and most doctors will initiate treatment based on their judgment of



these tests. In addition, some of these tests are useful in the U.S. and elsewhere only in people who are not vaccinated with a TB vaccine (see below) but are less useful in vaccinated people. For some patients, culture studies still should be completed to determine the drug susceptibility of an infecting TB strain.

Other tests have been developed. For example, a PCR test (polymerase chain reaction) to detect TB antigens and the LED-FM microscopic technique to identify TB organisms with microscopy may be used. Two other TB blood tests (also called interferon-gamma release assays or IGRAs) have been approved by the FDA and measure how strongly the body's immune system reacts to TB bacteria. IGRAs are recommended in testing patients who have been vaccinated against TB (see prevention section below). People with positive symptoms, positive blood tests, sputum smear, or culture positive are considered infected with TB and contagious (active TB).



TREATMENT

The treatment for TB depends on the type of TB infection and drug sensitivity of the mycobacteria. For latent TB, three anti-TB drugs are used in four different recommended schedules. The drugs are isoniazid (INH), rifampin (RIF; Rifadin), and rifapentine (RPT; Priftin) and the CDC's four recommended schedules are below and are chosen by the treating doctor based on the patients overall health and type of TB the patient was likely exposed to The most current treatment guidelines need to be reviewed and correlated to the patient's specific condition and circumstances before any treatment is started.

Treatment of drug-resistant and multidrug-resistant tuberculosis TB can be difficult. Patients with these infections are recommended by the CDC to involve infectious-disease specialists as there are multiple approaches that involve other anti-TB drugs and variable treatment schedules that can be used. In addition, there are new drugs and treatment schedules being developed and approved by the FDA.

The infectious-disease consultant may be aware of these newest treatments that may benefit specific patients. For example, bedaquiline (Sirturo) has been approved for treatment of MDR TB, and research with an antimicrobial drug, moxifloxacin, suggests it may help in treatment protocols. Some side effects of treatment may include: Loss of appetite, Nausea and/or vomiting, Jaundice, Paresthesia, Bruise formation, bleeding and Vision changes.

Patients are urged to see their doctor if any side effects occur. In some patients, the lung destruction may be severe and the only treatment left may be surgical resection of the diseased lung tissue. Medications are needed for TB treatment. Home remedies will not treat TB but at best may help reduce symptoms. Home remedies may include milk, pineapple, Indian gooseberry, bananas, and many others. Patients should discuss these remedies with their doctors before use.

Smt. Preeti Sudan, Secretary (Health) addressing the participants at a function on the occasion of 'World TB Day'.

Health Ministry launches new initiatives to combat TB

On the occasion of 'World TB Day, Preeti Sudan, Secretary (Health) Govt of India, said, "We are already aligned with world TB treatment protocols. It has to a mission to End TB by 2025, through community participation, involving civil societies and other stakeholders."

She further stated that the global target to end TB is 2030 but we will end it by 2025. This is a tall order but I am confident that if we all work together, if all the partners combine together and we ensure full treatment is given on regular basis we can show the world this can be achieved. I am confident of this and my confidence is backed by our success in eradicating Polio.

At recently held function, the Health Secretary also released the TB INDIA 2018 Report and National Drug Resistance Survey Report. She also launched the NikshayAushadi Portal and shorter regimen for Drug Resistant TB.

Preeti Sudan commended the TB warrior, Shri Suman, a graduate student who narrated his experience living with TB. The Health Secretary stated that early identification and complete treatment of TB is a key to achieving our goal of TB elimination. We need many TB warriors like Suman to fight against this disease and spread positive message across the communities to burst the myths and misconceptions around TB.

Addressing the participants, the Health Secretary further stated that Hon'ble Prime Minister has called for 'TB Mukth Bharat' which can only possible if we ensure our panchayat and blocks are declared TB free. "For that Government has adequately provisioned drugs and diagnostic in every part of the country," she added.

Also present at the event were Dr B D Athani, DGHS, Sanjeeva Kumar, Additional Secretary (Health), A. K. Jha, Economic Advisor, Ministry of Health & Family Welfare, Vikas Sheel, Joint Secreatry, Dr. Sunil Khaparde, DDG(TB), and other senior officers of the Health Ministry, representatives of WHO and other development partners.

Smt. Preeti Sudan, Secretary (Health) lighting the lamp at a function on the occasion of 'World TB Day', here today.

Smt. Preeti Sudan, Secretary (Health) releasing the TB INDIA 2018 Report at a function on the occasion of 'World TB Day'

Smt. Preeti Sudan, Secretary (Health) launching the shorter regimen for Drug Resistant TB at a function on the occasion of 'World TB Day', here today.

Uveitis: Don't ignore

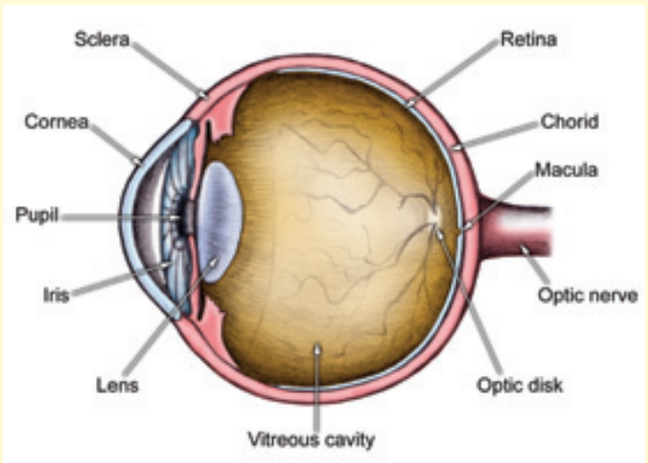
Uveitis may occur as a normal immune response to fight an infection inside the eye. Research suggests that there may be a link between black tattoo ink and uveitis. It is thought that skin tattoeing may trigger an immune response……

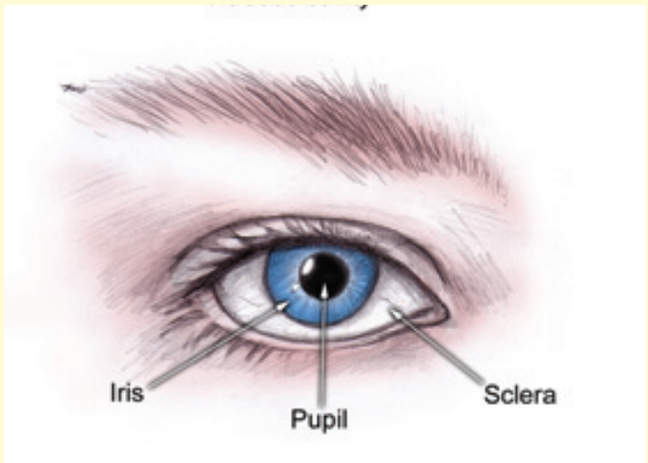
BY DR SHISHIR NARAYAN

If you have eye redness, pain, blurry or lessened vision and sensitivity to light and floaters it is important to go see your eye doctor. You may have Uveitis which is basically eye inflammation and swelling that can destroy eye tissues. If you don't take it serious it can lead to poor vision or blindness. Prompt diagnosis and treatment can help save your vision.

The word "uveitis" is used because the swelling most often affects the part of your eye called the uvea. An eye is made of layers. The uvea is the middle layer. It is right between the white part of your eye -- called the sclera -- and the inner layers of your eye

According to **Dr Shishir Narayan, Senior Eye Specialist, Shroff Eye Hospital, New Delhi.** Uveitis refers





HOW IS UVEITIS TREATED?

Uveitis treatments primarily try to eliminate inflammation, alleviate pain, prevent further tissue damage, and restore any loss of vision. Treatments depend on the type of uveitis a patient displays. Some, such as using corticosteroid eye drops and injections around the eye or inside the eye, may exclusively target the eye whereas other treatments, such immunosuppressive agents taken by mouth, may be used when the disease is occurring in both eyes, particularly in the back of both eyes.

An eye care professional will usually prescribe steroidal anti-inflammatory medication that can be taken as eye drops, swallowed as a pill, injected around or into the eye, infused into the blood intravenously, or, released into the eye via a capsule that is surgically implanted inside the eye. Long-term steroid use may produce side effects such as stomach ulcers, osteoporosis (bone thinning), diabetes, cataracts, glaucoma, cardiovascular disease, weight gain, fluid retention, and Cushing's syndrome. Usually other agents are started if it appears that patients need moderate or high doses of oral steroids for more than 3 months.

Other immunosuppressive agents that are commonly used include medications such as methotrexate, mycophenolate, azathioprine, and cyclosporine. These treatments require regular blood tests to monitor for possible side effects. In some cases, biologic response modifiers (BRM), or biologics, such as, adalimumab, infliximab, daclizumab, abatacept, and rituximab are used. These drugs target specific elements of the immune system. Some of these drugs may increase the risk of having cancer.

ANTERIOR UVEITIS TREATMENTS

Anterior uveitis may be treated by:

•Taking eye drops that dilate the pupil to prevent muscle spasms in the iris and ciliary body (see diagram).

•Taking eye drops containing steroids, such as prednisone, to reduce inflammation.

INTERMEDIATE, POSTERIOR, AND PAN-UVEITIS TREATMENTS

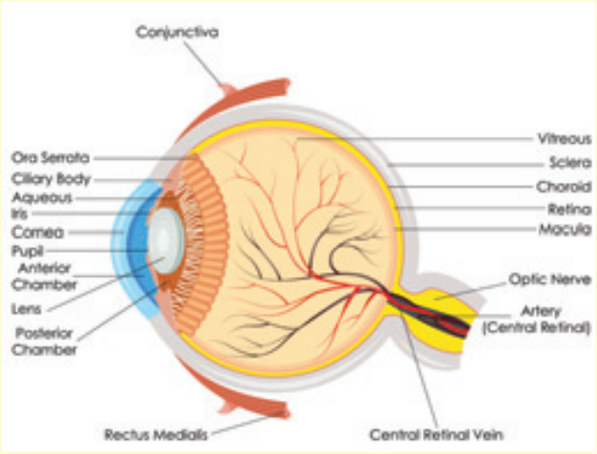
Intermediate, posterior, and pan-uveitis are often treated with injections around the eye, medications given by mouth, or, in some instances, time-release capsules that are surgically implanted inside the eye. Other immunosuppressive agents may be given. A doctor must make sure a patient is not fighting an infection before proceeding with these therapies.

A recent NEI-funded study, called the Multicenter Uveitis Treatment Trial (MUST), compared the safety and effectiveness of conventional treatment for these forms of uveitis, which suppresses a patient's entire immune system, with a new local treatment that exclusively suppressed inflammation in the affected eye. Conventionally-treated patients were initially given high doses of prednisone, a corticosteroid medication, for 1 to 4 weeks which were then reduced gradually to low doses whereas locally-treated patients had a capsule that slowly released fluocinolone, another corticosteroid medication, surgically inserted in their affected eyes. Both treatments improved vision to a similar degree, with patients gaining almost one line on an eye chart. Conventional treatment produced few side effects. In contrast, the implant produced more eye problems, such as abnormally high eye pressure, glaucoma, and cataracts. Although both treatments decreased inflammation in the eye, the implant did so faster and to a greater degree. Nevertheless, visual improvements were similar to those of patients given conventional treatment.

The National Eye Institute conducts and supports a number of studies investigating uveitis, including:Testing new methods for treating uveitis. Investigating the possible causes of uveitis.Learning who is most susceptible to the disease. This research should provide better ways to detect, treat, and prevent uveitis.

Anterior Uveitis: Most commonest form of intraocular inflammation

Research is still ongoing to find out who is most likely to develop uveitis, the possible causes, and new ways of treating it. Anterior uveitis is the commonest form of intraocular inflammation with a varying incidence in the general population of various countries around the world. The potential severe consequences of recurrent or untreated anterior uveitis are probably underestimated.



Anterior uveitis involves inflammation of the iris alone (iritis), anterior part of ciliary body (anterior cyclitis) or both structures (iridocyclitis). It is commoner than posterior segment inflammation and is generally less sight-threatening and less serious, especially if treated early. Anterior uveitis normally causes reduction in the vision during the acute stage but it is the sequelae of anterior uveitis which can have long-lasting impact.

Detailed medlars search was carried out to review the articles and case reports on anterior uveitis. The methods used to collect/select evidence were hand-searches of published literature (primary sources) and searches of electronic databases. The current guidelines for diagnosis and management of anterior uveitis are based on the literature search using the National Library of Medicine's Medline database and the Vision Net database.

The uveitis was classified in different ways. Classification based on the duration of uveitis was based on Standardization of Uveitis Nomenclature (SUN) criteria in which anterior uveitis was classified as limited (less than or equal to three months duration) and persistent (more than three months). Based on the course of uveitis, anterior uveitis was classified as acute anterior uveitis with episodes of sudden onset and limited duration, recurrent anterior uveitis with repeated episodes separated by periods of inactivity without treatment ≥ three months in duration, and chronic uveitis which persists and relapses in less than three months after discontinuing treatment.

Based on etiology anterior uveitis was classified as infectious (such as viral, bacterial, fungal or protozoal), autoimmune with only ocular involvement or with systemic disease association or presenting as masquerade syndrome. Anterior uveitis with other etiologies can be post-traumatic, post-surgical, lens-induced and drug-induced. Pathologically anterior uveitis was classified as granulomatous or non-granulomatous based on the nature of keratic precipitates.

Anterior uveitis can present with acute, chronic or recurrent attacks. Anterior uveitis is the commonest type of intraocular inflammation and commonly presents as unilateral presentation with pain or photophobia, circumlimbal redness and anterior chamber cells and flare. Patients with anterior uveitis usually complain of pain, redness, blurred vision, and photophobia, watering.

Most of the patients would have had repeated attacks and would have sought consultation with multiple ophthalmologists and would have used topical and/or systemic medications on and off. Blurring of vision, which is perhaps the commonest symptom, is caused by turbidity of the aqueous. Photophobia is commonly due to ciliary muscle spasm but anterior chamber cellular infiltration, corneal epithelial edema and pupillary muscle involvement can also contribute. Varying degree of pain seen in anterior uveitis can be attributed to ciliary muscle spasm. It is usually a dull aching type of pain or a throbbing sensation. Severe pain can be associated with raised intraocular pressures. The common clinical signs with which a patient of anterior uveitis can present are:

Nil to varying degrees of lid edema may be a presenting sign in patients with anterior uveitis. Circumcorneal congestion may be seen due to enlargement of the episcleral vessels in the region of the ciliary body. Keratic precipitates (KPs) are cellular deposits on the corneal endothelium. Fine KPs are presumed to be of non-granulomatous allergic type of inflammation whereas large and mutton fat KPs are associated with granulomatous inflammation. Colored or pigmented KPs suggest prior episodes of anterior uveitis. Microscopically, KPs are accumulation of lympho-plasmocytic inflammatory cells, with epitheloid cells seen additionally in granulomatous KPs.

Aqueous cells and flare are due to cellular infiltration and protein exudation into the anterior chamber. Aqueous cells are an early and definite sign of active inflammation. The translucence of the aqueous due to its high albumin content is called

aqueous flare. It is an indefinite sign of active inflammation. Examination of the anterior chamber involves observing with high magnification while directing a small, intense beam obliquely through the aqueous, following relative dark adaptation. Anterior chamber cells and/or flare are visible owing to the Tyndall effect of the bright beam. The grading of cellular reaction in the anterior chamber helps in the assessment of the severity of anterior uveitis [Table 1]. Grading is useful in determining the patients' response to therapy as well as long-term monitoring. Miosis can be due to reflex spasm of the sphincter or due to vascular distension of the iris vessels. Iris nodules are accumulations of leukocytes lying on the anterior iris; Koeppe's nodules are seen at the pupillary margin whereas Busaca's nodules are present on the anterior iris stroma.

The nodules on the surface of the iris need to be differentiated from infected nodules. Posterior synechiae are the adhesions between the anterior lens surface and the iris; posterior synechiae extending for 360° are called seclusio pupillae while occlusio pupillae refer to a membrane obscuring the lens surface; anterior chamber can show fibrinous reaction hypopyon, pupillary membrane with hypopyon and hyphema. Iris atrophy is associated with chronic iridocyclitis and occurs due to ischemia. Neovascularization can occur on the iris stroma or in the anterior chamber angle, which may lead eventually to neovascular glaucoma. Anterior vitreous cells are far exceeded by aqueous cells in iritis, whereas in iridocyclitis with intermediate uveitis the cells are distributed equally between the two compartments. Complicated cataract occurs due to thickened lens capsule due to posterior synechiae or altered membrane permeability.

Inflammation can result in either increased or decreased intraocular pressure. Acute attack of anterior uveitis with severe anterior chamber inflammation can lead to increase in intraocular pressure and is most commonly seen in viral keratouveitis or Posner Schlosman syndrome. However, idiopathic anterior uveitis can also present with raised intraocular pressure. Fuchs' heterochromic iridiocyclitis is known to be associated with intractable open-angle glaucoma in late stages and the patients need to be counselled about the same. Severe inflammation of the ciliary body may lead to decreased aqueous production and subsequent fall in intraocular pressure may be a result of the inflammation itself, sequelae of inflammation, or because of the steroid treatment. Presence of cyclitic membrane over ciliary body in cases with chronic or recurrent intermediate uveitis with spillover anterior uveitis also leads to severe hypotony. In active inflammation, raised intraocular pressure can be due to associated trabeculitis or can be due to secondary angle closure. Though associated trabeculitis is not typical of any specific anterior uveitis entity it can be commonly seen in cases with viral keratouveitis. Gonioscopy would reveal gonio-synechiae or neovascularization in angles, and the angles could be open or closed angles depending on the stage of uveitis . The following features should be looked on fundus examination such as disc edema and hyperemia, vascular sheathing, perivascular exudates, cystoid macular edema, retinitis, chorodial infiltrates, retinal detachment, pars plana exudates or snow banking. Presence of positive findings on posterior segment examination indicates anterior uveitis as a part of panuveitis (e.g. sarcoidosis, tuberculosis, Vogt Koyanagi Harada Disease, sympathetic ophthalmia) or as spillover uveitis in cases with intermediate uveitis..

generally to a range of conditions that cause inflammation of the middle layer of the eye, the uvea, and surrounding tissues. It can be painful, the eye or eyes may be red, and vision may be cloudy.

An injury to the eye, a viral or bacterial infection, and some underlying diseases may cause uveitis. It can cause swelling and damage in the tissues of the eye. Untreated, it can lead to vision loss. It can affect one or both eyes.

The term uveitis is not only used to refer to an inflammation of the uvea, but to any part of the inside of the eye. It is not a single disease, and it has different causes. It is the fifth leading cause of vision loss in the United States, and so it has serious social and economic implications. It mainly affects people aged from 15 years to 40 years and above.

An uvea contains three important structures like The iris: That's the colored circle at the front of your eye, The ciliary body: Its job is to help your lens focus and keep it healthy and The choroid: This is a group of blood vessels that give your retina the nutrients it needs.

There are different types of Uveitis like Anterior uveitis which is the most common. It affects the front of your eye, Intermediate : it uveitis affects your ciliary body and Posterior uveitis: it affects the back of your eye.If your entire uvea is inflamed, you have pan-uveitis.

WHAT CAUSES IT?

The exact cause of uveitis is often unclear, but some factors increase the chance of it happening.These include Juvenile arthritis, psoriasis and other autoimmune disorders, such as rheumatoid arthritis. Inflammatory disorders, such as Crohn's disease, ulcerative colitis, AIDS/HIV and other diseases that weaken the immune system,

Uveitis may occur as a normal immune response to fight an infection inside the eye. Research suggests that there may be a link between black

THE TREATMENT OF UVEITIS

The treatment of uveitis is undergoing significant change as a result of the development of new therapeutic approaches, of which the biologic agents form a major part. These targeted therapies have shown great promise for the treatment of refractory disease and some have now undergone systematic evaluation through prospective clinical trials, unlike many of their predecess or drugs.

Uveitis is one of the leading causes of blindness worldwide. Noninfectious uveitis may be associated with other systemic conditions, like human leukocyte antigen B27-related spondyloarthropathies, inflammatory bowel disease, juvenile idiopathic arthritis, Behçet's disease, and sarcoidosis. Conventional therapy with corticosteroids and immunosuppressive agents (such as methotrexate, azathioprine, mycophenolate mofetil, and cyclosporine) may not be sufficient to control ocular inflammation or prevent non-ophthalmic complications in refractory patients. Off-label use of biologic response modifiers has been studied as primary and secondary therapeutic agents. They are very useful when conventional immunosuppressive therapy has failed or has been poorly tolerated, or to treat concomitant ophthalmic and systemic inflammation that might benefit from these medications.

Biologic therapy, primarily infliximab, and adalimumab, have been shown to be rapidly effective for the treatment of various subtypes of refractory uveitis and retinal vasculitis. Other agents like golimumab, abatacept, canakinumab, gevokizumab, tocilizumab, and alemtuzumab may have great future promise for the treatment of uveitis. It has been shown that with proper monitoring, biologic therapy can significantly improve quality of life in patients with uveitis, particularly those with concurrent systemic symptoms.

According to **Dr Mahipal S Sachdeva, Chairman and Medical Director, Centre for Sight, New Delhi**, however, given high cost as well as the limited long-term safety data, we do not routinely recommend biologics as first-line therapy for noninfectious uveitis in most patients. These agents should be used with caution by experienced clinicians. The present work aims to provide a broad and updated review of the current and in-development systemic biologic agents for the treatment of noninfectious uveitis.

The term "uvea" comes from the Latin word for grape. The eye includes three layers. The middle layer, or uvea, encompasses the iris, ciliary body, and choroid. Inflammation of the uvea is termed uveitis, but it is usually diagnosed on the basis of inflammation in adjacent structures which include the anterior chamber, the vitreous humor, or the retina. Inflammation in the uvea can be due to infections, masquerades such as B-cell lymphoma, or immune-mediated diseases. The latter can be a systemic disease such as sarcoidosis or a disease confined to the eye such as sympathetic ophthalmia. Anatomic classification of uveitis is extremely useful, since the differential diagnosis is distinct for anterior, intermediate (involving the vitreous humor), posterior (involving the retina or choroid), and panuveitis.1

Dr Rajesh Ranjan, Senior Eye Specialist, Eye 7 Hospital, Indiapuram (Ghaziabad), said, "Uveitis is the third leading cause of blindness in the developed countries. The annual incidence is estimated between 17 and 52 per 100,000 persons, and the prevalence is 38–714 per 100,000 persons.2 The incidence and prevalence vary among different geographic locations worldwide. Males and females are generally equally affected overall, but sex preponderance may be observed in some uveitis groups, such as male predominance in human leukocyte antigen (HLA)-B27-associated uveitis and female preponderance in juvenile idiopathic arthritis (JIA)-related uveitis. Uveitis may occur at any age, but most commonly affects the working population aged between 20 and 59 years. Childhood uveitis is relatively less common, but may cause long-term severe visual loss.2 Therefore, the burden of this sight-threatening condition is very significant."

Dr. Prof. L.D. Sota, MS - Ophthalmology, Max Super Speciality Hospital Vaishali. said, "The most common symptoms of uveitis are decreased vision, eye pain, redness, light sensitivity, and floaters. The redness and eye pain are generally seen in eyes with acute anterior inflammation, but may not be prominent in chronically inflamed eyes or those in which the inflammation is confined only to the posterior segment."

Uveitis is typically an immune-mediated condition, which involves

chemical mediators resulting in vascular dilation (conjunctival injection), increased vascular permeability (aqueous flare), and chemotaxis of inflammatory cells into the eye (aqueous and vitreous cellular response). With variable chronicity and severity, uveitis may be complicated by cataract, glaucoma, band keratopathy, hyphema, vitreous hemorrhage, cystoid macular edema (CME), retinal detachment, retinal ischemia, optic atrophy, chronic eye pain, and blindness.

Uveitis can be caused by infectious and noninfectious etiologies. Causative infectious origins may include bacteria, viruses, fungi, and parasites. The precise diagnosis is crucially important to establish an appropriate therapy. Specific antimicrobial treatment is typically required for infectious uveitis. In rare occasions, neoplastic diseases (eg, lymphoma) may masquerade as ocular inflammation, and an appropriate diagnosis is needed for proper management.

For noninfectious uveitis, excluding masquerade neoplasms, the control of inflammation is the key to treatment success. We generally use a stepladder approach; the treatment includes local corticosteroids, systemic corticosteroids, and systemic immune modulators, often sequentially starting with topical therapy. Noninfectious uveitides are often associated with other systemic conditions, such as HLA-B27-related spondyloarthropathies, inflammatory bowel disease (IBD), JIA, Behçet's disease (BD), and sarcoidosis. The treatment of systemic symptoms may also improve ocular inflammation.

tattoo ink and uveitis. It is thought that skin tattooing may trigger an immune response that affects both the eyes and the skin, in some people.

TYPES

There are different types of uveitis.

Anterior uveitis is also known as iritis, affects the colored part of the eye, the iris. Iridocyclitis is similar, but it include inflammation of the ciliary body. Intermediate uveitis can be vitritis or pars planitis. Vitritis is an inflammation of the jelly-like part of the eye, the vitreous cavity. An inflammation of the pars plana is called pars planitis. Posterior uveitis is an inflammation of the retina and choroid. Posterior refers to the back of the eye. Pan-uveitis is an inflammation in all layers of the uvea.

SIGNS AND SYMPTOMS OF UVEITIS

- General vision problems, including blurred or cloudy vision
- Floaters, spots in the eye that look like tiny rods or chains of transparent bubbles floating around in the field of vision
- Eye pain and redness
- Photophobia, an abnormal sensitivity to light
- Headaches
- A small pupil
- Alteration of the color of the iris

Symptoms can appear on gradually or rapidly.

DIAGNOSIS

An ophthalmologist, or eye specialist, will ask about signs, symptoms, and general medical history. A doctor will look at symptoms and check for underlying conditions.It is important to know whether the uveitis is caused by an infectious process or an underlying disease.If another condition appears to underlie the uveitis, the ophthalmologist may refer the patient to a specialist to make sure that condition receives proper treatment.The ophthalmologist will look at the eye with a special slit lamp. When the light hits the inside of the eye, the doctor can determine whether that area is clear or foggy.

If there is inflammation in the iris, patients may feel some pain when the pupil contracts, which is when light hits it.If uveitis is present, white blood cells and protein in the eye fluid can be seen through the microscope.

TREATMENT

A patient with uveitis who receives prompt and appropriate treatment will usually recover. Without treatment, there is a risk of cataracts, glaucoma, band keratopathy, retinal edema, and permanent vision loss.

ANTIBIOTICS OR ANTIVIRAL MEDICATION will be used if there is an infection. Corticosteroid medications are sometimes given as well, in the form of eye drops (prednisolone acetate), tablets, or as an injection into the eye. Steroids are effective in treating inflammation. Before giving corticosteroids, it is important rule out corneal ulcers by using a florescence dye test.

IMMUNOSUPPRESSANTS might be recommended if symptoms are very severe and there is a risk of vision loss, or if the patient has not responded well to other therapies.

MYDRIATIC EYE DROPS, such as atropine or cyclopentolate, dilate the pupil and help the eye to heal. It also helps with eye pain and stops the pupil from sticking to the lens. There may be blurred vision and unusual sensitivity to light, known as photophobia.

COMPLICATIONS

With prompt and proper treatment and close monitoring, the chances of complications are significantly reduced. If they do occur, they may include Glaucoma, Cataracts, Macular edema, Scar tissue, Retinal detachment, or detached retina and Vision loss.

(The author is Senior Eye Specialist, Shrooff Eye Centre, New Delhi)

Union Cabinet approves amended NMC Bill

In light of the decision of Union Cabinet recently of approving the amended National Medical Commission Bill 2017, the Action Committee of the medical fraternity comprising of IMA, United RDA, FORDA, MSN, RDA AIIMS & Association of DNB Doctors met and took stock of the situation in the light of the Cabinet decision passing the NMC Bill 2017.

Dr Ravi Wankhedkar, National President, IMA welcome the Cabinet decision on NMC Bill 2017 with caution. The Cabinet has apparently agreed to four of our 10 demands. He accepted the invitation of the Union Health Minister to further talk on the issue.

Thanking the entire medical fraternity who unitedly voiced strong opposition along with society, opposing to the anti-poor, anti-people policies in the original NMC Bill 2017, IMA dedicates this success to the entire medical fraternity, resident doctors and medical students.

The decision of the Union Cabinet to remove the Clause for separate Exit Examination and to have a common final year MBBS examination, amendment to drop the provision for Bridge Course to AYUSH doctors and subsequent registration to practice modern medicine and introduction of a new punitive clause for quacks and unqualified persons for practicing

modern medicine were welcomed.

Although, the Cabinet approved draft of NMC Bill has marginally increased the state representation and control of the govt. over 50% of the fee levied, IMA feels that these are cosmetic in nature and the Bills still remains Anti-poor, Anti-federal, non-representative and undemocratic.

Dr Ravi Wankhedkar strongly expressed concern about the un-addressed major issues like token presence of elected members, sub-optimal representation to State Governments and Health Universities and the lack of autonomy of NMC itself.

A retired Judge who is not the member of the NMC as EMRB Chairman is constitutionally and legally unsustainable. IMA also demands retaining of Section 15 (2) (B) of MCI Act which defines the privileges of the State Medical Practitioners. The autonomy of State Medical Councils should not be encroached upon.

The Union Cabinet decision to amend National Medical Commission Bill is entirely due to extra ordinary untiring efforts and unity demonstrated by the entire medical fraternity under the leadership of Indian Medical Association. The way the bill was placed on 29th Dec, 2017 on the table of Lok Sabha and the actions planned and executed by the IMA were exemplary and did compel the Government to refer the bill to Parliament.

With a mention that "because of the impending strike call given by IMA and some of the Members of Parliament across party lines not agreeing with some of the provision of the bill, the government has decided to refer it to Parliament Standing Committee of health for further discussion and recommendations" with a request to IMA to take back strike call on 02nd April, 2018. IMA strongly represented its view-point with all the members of Parliament Standing Committee of Health to convince them regarding the fallacies of this bill which forced the Parliament Standing Committee to send their recommendations with

substantially agreeing to the demands raised by Indian Medical Association.

The report was tabled in Lok Sabha on 20th March, 2018, during this time a massive campaign was launched by IMA against NMC with a vision 'Connect with the society and consolidate the profession'.

One month long IMA Yatra conducted by Dr. Ravi Wankhedkar along with other leaders including travelling of approx. 50,000 km visit 25 states and more than 300 branches, directly connecting with the community and the membership. Cycle Yatra and cycle rallies, organization of Doctors Mahapanchayat on 25th March, 2018 as a culmination of month long IMA Yatra with approximately 25,000 doctors attending was a great show of strength consolidating the fraternity for raising voice on our demands.

The doctors' Mahapanchayat compelled the Cabinet to agree to the recommendations of the Parliamentary Committee on Health and Family Welfare and improve on it and came out with the amended NMC Bill.

The details of the amended NMC Bill will have to be studied in detail further to decide upon the course of action, to get our remaining demands accepted through negotiation with the government.

Dr Vinay Aggarwal, Ex National President, IMA, said, "Our pressure at each and every step to achieve maximum demands for the benefit of the fraternity and society has to be mandated. Also our long pending demands addressing the issues of Violence against doctors, Clinical Establishment act, PCPNDT Act & Capping of Compensation still remain un-implemented since last 1 year inspite of Government agreeing in writing."

Dr Arvind Garg, President, IMA, Noida (UP), said, "We have also decided to come out with a Health Policy for the benefit of the community and fraternity and to support the Parties and the candidates who accept IMA Policy. At the meeting of the State Working Committee of IMA Karnataka State Branch on 8th April, 2018 at Raichur, the National President will launch this Policy. It will also contain that any political party not agreeing to our just demands will be opposed by medical fraternity of the country."

To finalize the strategy and decide on further course of action an emergency meetings of the Action Group involving all IMA State Presidents/Secretaries along with Joint Counicil of Young Medicos has been called at IMA headquarter New Delhi

Dr Ravi Wankhedkar, said, "The Bill still remains anti-poor, anti-federal, pro-rich, anti-democratic and lacks national character. The Bill does not address the issues of DNB (Diplomat of National Board) and practical difficulties with NEET and foreign graduates."

The Action Committee took the view that much has not happened to change the already decided course of action.

THE ACTION COMMITTEE DECIDED TO:

1) Stand by all the Resolutions (copy attached) of the Doctors' Mahapanchayat.

2) To continue the agitation till the demands are met. The United Young

Medicos comprising of medical students, Resident doctors & Junior doctors will go on a token strike for 2 hours on 2nd April, 2018 all over India and it will be supported by Indian Medical Association. They agreed to abide by the decision of the National President on the basis of negotiations he has with the Health Minister and after perusal of the details of the amendments in the NMC Bill 2017.

3) Continue the laison with all the Lok Sabha and Rajya Sabha MPs.

4) To support Assembly and Parliament candidates who agree with the IMA's demands in all ensuing Assembly and Parliamentary elections. The campaign will be initiated by the National President at the State Working Committee of IMA Karnataka Branch on 8th April, 2108 at Raichur.

5) Campaign of "Modern Medicine Mukt Bharat" to be taken forward by asking every state medical practitioner to surrender the registration to IMA National President for appropriate action.

6) The Action committee endorsed the National President, IMA to take a decision on the 3-day strike by doctors of modern medicine at an appropriate time.

Grim Scenario

One woman dies of cervical cancer every 8 minutes in India. In the absence of a nationwide screening program, there are disparities in screening, treatment, and also survival of cervical cancer patients...

BY ABHIGYAN/ABHINAV

If you are experiencing abnormal vaginal bleeding, such as bleeding after sex (vaginal intercourse), bleeding after menopause, bleeding and spotting between periods, and having longer or heavier (menstrual) periods than usual, you must consult your doctor. You might have the symptoms of cervical cancers. Bleeding after douching, or after a pelvic exam is a common symptom of cervical cancer but not pre-cancer.

In addition, an unusual discharge from the vagina – the discharge may contain some blood and may occur between your periods or after menopause and pain during sex can also be caused by conditions other than cervical cancer.

Women with early cervical cancers and pre-cancers usually have no symptoms. Symptoms often do not begin until a pre-cancer becomes a true invasive cancer and grows into nearby tissue.

Cervical cancer starts in the cells of the cervix, the part of the womb (or uterus) that opens to the vagina. Cervical cancer is caused by a virus called HPV (human papilloma virus). Women who do not get tested, or who do not get tested as often as they should, have the greatest chance of getting cervical cancer.

HPV is spread through sex, and it can cause an infection in the cervix. The infection usually doesn't last very long because your body is able to fight it. HPV infection can change cervix cells into pre-cancer cells.

Some women have a greater chance of getting cervical cancer if theyhave HPV and it doesn't go away, Have HIV or AIDS and Smoke.

Any man or woman who has ever had sex can get HPV. The virus is spread by sex. Condoms do not completely protect you from HPV, but they are helpful in protecting you from other infections that can be spread through sex. Cervical cancer starts in the cells of the cervix, the part of the womb (or uterus) that opens to the vagina. Cervical cancer is caused by a virus called human papilloma virus (HPV). Women who do not get tested, or who do not get tested as often as they should, have the greatest chance of getting cervical cancer.

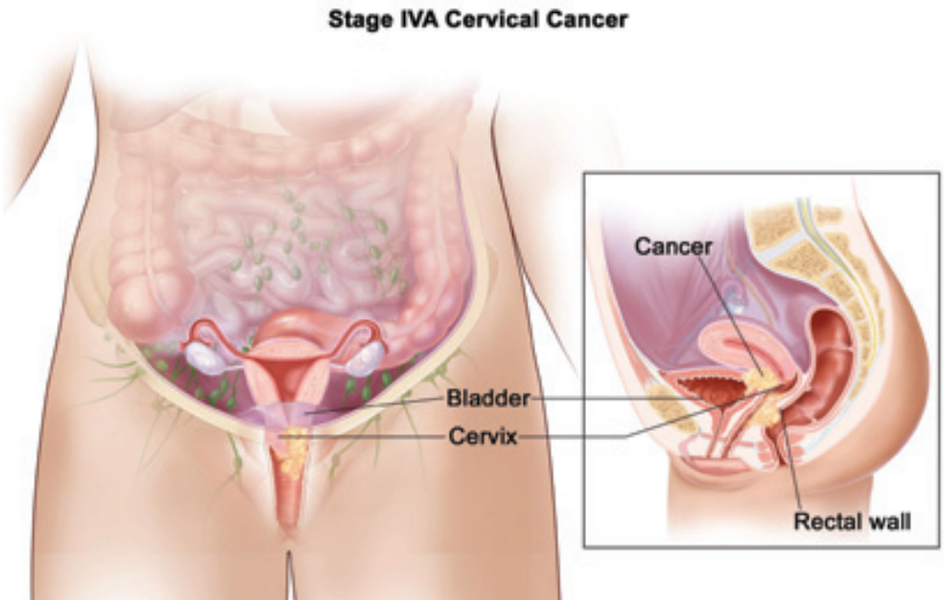
HPV is spread through sex, and it can cause an infection in the cervix. The infection usually doesn't last very long because your body is able to fight it. HPV infection can change cervix cells into pre-cancer cells.

Some women have a greater chance of getting cervical cancer if they have HPV and it doesn't go away, have HIV or AIDS and smoke. If the body clears the infection, the cervical cells return to normal. But if the body doesn't clear the infection, the cells in the cervix can continue to change abnormally. This can lead to precancerous changes or cervical cancer.

Cervical cancer is on the declining trend in India according to the population-based registries yet it continues to be a major public health problem for women in India. Multifactorial causation, potential for prevention, and the sheer threat it poses make cervical cancer an important disease for in-depth studies.

Specific types of oncogenic HPV-16,

CANCER OF THE CERVIX HAS BEEN THE MOST IMPORTANT CANCER AMONG WOMEN IN THE PAST TWO DECADES. IN INDIA THE PEAK AGE FOR CERVICAL CANCER INCI-DENCE IS 55–59 YEARS



SOME WOMEN NEED A RADICAL HYSTERECTOMY. A RADICAL HYSTERECTOMY IS SURGERY TO REMOVE THE UTERUS, CERVIX, AND PART OF THE VAGINA. WITH EITHER TOTAL OR RADICAL HYSTERECTOMY, THE SURGEON MAY REMOVE BOTH FALLOPIAN TUBES AND OVARIES

18 have been identified in patients with cervical cancer. Other epidemiological risk factors are early age at marriage, multiple sexual partners, multiple pregnancies, poor genital hygiene, malnutrition, use of oral contraceptives, and lack of awareness.

A multipronged approach is necessary which can target areas of high prevalence identified by registries with a combination of behaviour change communication exercises and routine early screening with VIA. Sensitizing the people of the area, including menfolk, is necessary to increase uptake levels.

Vaccination against types 16 and 18 can also be undertaken after taking into confidence all stakeholders, including the parents of adolescent girls. Preventing and treating cervical cancer and reducing the burden are possible by targeting resources to the areas with high prevalence.

Cervical cancer is the commonest cause of death among women in developing countries.Mortality due to cervical cancer is also an indicator of health inequities,as 86% of all deaths due to cervical cancer are in developing, low- and middle-income countries.

One woman dies of cervical cancer every 8 minutes in India. For every 2 women newly diagnosed with breast cancer, one woman dies of it in India. As many as 2,500 persons die every day due to tobacco-related diseases in India. Smoking accounts for 1 in 5 deaths among men and 1 in 20 deaths among women, accounting for an estimated 9,30,000 deaths in 2010.

India has a population of 432.2 million women aged 15 years and older who are at risk of developing cancer. It is the second most common cancer in women aged 15–44 years.

In the absence of a nationwide screening program, there are disparities in screening, treatment, and also survival. Cancer of the cervix has been the most important cancer among women in the past two decades. In India the peak age for cervical cancer incidence is 55–59 years.

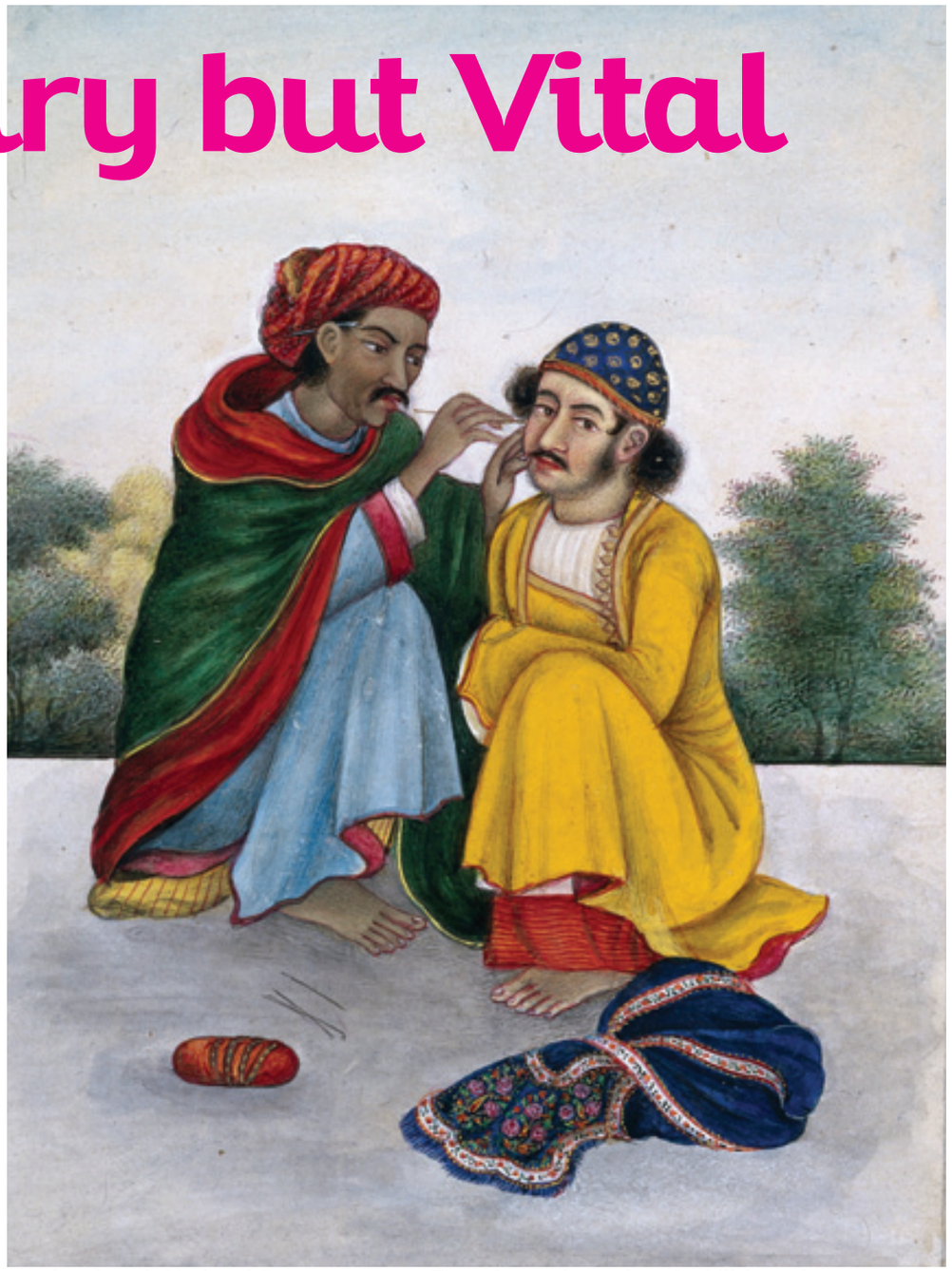
The treatment depends mainly on the size of the tumour and whether the cancer has spread. If a woman is of childbearing age, the treatment choice may also depend on whether she wants to become pregnant someday. Women with cervical cancer may be treated with surgery, radiation therapy, chemotherapy, radiation therapy and chemotherapy, or a combination of all three methods.

At any stage of disease, women with cervical cancer may need treatment to control pain and other symptoms, to relieve the side effects of therapy, and to ease emotional and practical problems. This kind of treatment is called supportive care, symptom management, or palliative care.

Surgery treats the cancer in the cervix and the area close to the tumour. Most women with early cervical cancer have surgery to remove the cervix and uterus. However, for very early (Stage 0) cervical cancer, a hysterectomy may not be needed. Other ways to remove the cancerous tissue include conization, cryosurgery, laser surgery, or LEEP.

Some women need a radical hysterectomy. A radical hysterectomy is surgery to remove the uterus, cervix, and part of the vagina. With either total or radical hysterectomy, the surgeon may remove both fallopian tubes and ovaries. The surgeon may also remove the lymph nodes near the tumor to see if they contain cancer. If cancer cells have reached the lymph nodes, it means the disease may have spread to other parts of the body.

Primary but Vital



There is acute need for skilled primary ear care workers for delivering essential ear and hearing care services, considering skewed doctor population ratio in the country...

BY DR A K AGGARWAL/ DR SUNEELA GARG

In India, the estimated significant auditory impairment reaches up to 6.3% prevalence (moderate to severe hearing loss) out of the total population of 1.25 billion. It is important to note that nearly half of causes of hearing loss are preventable. Lack of awareness regarding importance of ear care is a major challenge in the country. People also have poor knowledge about the resources available for ear care. Myths and Misconceptions worsen the situation.

Also, there is inadequate manpower in the country for addressing ear and hearing care issues. In India, the doctor population ratio is skewed with only 0.7 doctor /1000 population as against WHO's recommended ratio of one doctor per 1000 population. When it comes to ENT specialists, the situation worsens with there being only 6 ENT doctors per one million population.

In view of immense disease burden and scarce manpower, the existing ENT manpower is already overburdened. National Programme for Control of Blindness has a provision of Ophthalmic Assistant at the community health care level who is responsible for screening patients with eye ailments, test vision and prescribe glasses, assist in conducting eye care camps and organizing community education. However, there is no provision for such personnel under National Programme for Prevention & Control of Deafness. Therefore, the role of skill-based primary ear-care worker becomes vital for delivering essential ear and hearing care services. A skilled primary ear care worker can perform certain clinical and administrative duties and thereby play a significant role right from early identification of people with hearing loss to awareness generation, screening of patients to making adequate referrals.

Firstly, the primary ear care worker

can obtain and record the history of patient having ear morbidities including history of patient's past ear diseases, family history of diseases affecting ear, social history including occupation and details of exposure to industrial or occupational hazards and patient's current and past general health and trauma, including any surgical procedures.

The primary ear care worker would carry out basic examination to screen and recognize patients with common ear diseases (wax, simple foreign body removal, discharging ear etc.) and counsel & refer patients requiring further medical/surgical care. He/she would also be responsible for promotion of ear and hearing health by creating awareness through community-based actions including promoting and teaching healthy ear and hearing habits, creating awareness of avoidable causes of hearing loss and ear disease, identifying the need for and means of early detection of hearing loss, recognizing signs of hearing loss in infants, children and adults, facilitate in providing and maintaining hearing aids, cochlear implants and other listening and signaling devices and offering support services for hearing aids users.

The primary ear care worker would also be responsible for carrying out hearing assessment and counseling of patients which could be done through an audiometer (a machine for testing hearing) or using voice tests.

The worker's responsibility would encompass carrying out public health actions through promotion and implementation of immunization, maternal and perinatal health care and child health care. He/she would also undertake advocacy for appropriate ear and hearing services, including ontological and audiological services at health centres and hospitals as close to the community as possible. He would also facilitate in training all teachers in the community in aspects of primary ear and hearing care, the impact of hearing loss and provision of an effective learning environment for children with hearing loss.

Regarding the rehabilitative aspect, he/she would be responsible for informing children and adults with hearing loss, family members and the general public of available options for the inclusion and integration of people with hearing loss in the community. He/she would advocate for promoting the use of hearing aids and provide support services explaining the benefits and limitations of these devices. The worker would facilitate in sensitizing families of children with hearing loss understand the local policies relating to the education of such children.

He/she would facilitate to educate teachers about the special needs of students with hearing loss, including deaf students. He/she would try and explore educational opportunities for children and students with hearing loss at preprimary, primary, secondary and higher levels of education and availability of non-formal and vocational training opportunities for people with hearing loss. He/she would take initiative for developing and encouraging training for speech and language development for persons with hearing loss. He/she would try and engage the local deaf community in the implementation of these activities.

A teleotology model conducted in certain parts of the country has demonstrated that trained community health workers who are equipped with an ear screening handheld device can be deployed in low income urban communities and rural areas. The customized application enables the health workers to gather patient's details, complaints and other details including an image of the tympanic membrane which could be transferred to an ENT surgeon. Patients with positive conditions are counseled for further treatment. The skilled primary ear care workers could also be trained to implement the teleotology model.

Additionally, his administrative roles and responsibilities would include scheduling appointments, maintaining medical records, recording vital signs and medical histories and preparing patients for further examination and surgeries. To conclude, creation of a cadre of skilled primary ear care workers would go a long way in not only reducing the burden on the existing scare ENT manpower but also address the problem of avoidable hearing loss in the country.

A skilled primary ear care worker can perform certain clinical and administrative duties and thereby play a significant role right from early identification of people with hearing loss

The primary ear care worker would carry out basic examination to screen and recognize patients with common ear diseases (wax, simple foreign body removal, discharging ear etc.) and counsel & refer patients requiring further medical/ surgical care.

PROMOTING SAFE ABORTIONS

BY DR SUNEELA GARG, DR PRIYANKA YADAV

Abortion is the termination of pregnancy before the foetus becomes viable. The World Health Organization (WHO) defines the period of viability after 20 weeks of gestation or a fetus that weighs more than 500 gms.

Abortions can be either spontaneous or induced. Spontaneous abortions also known as miscarriages occur on their own because of internal factors like autoimmune diseases, thyroid disorders, malformations etc. or due to any external factors like trauma. Induced abortions are induced owing to several reasons like unintended pregnancy, threat to the health of the mother etc. Abortions can be induced either medically or surgically. Induced abortions are safe if carried out by a person who has the necessary skill and in an environment that conforms to minimal medical standards.

PROBLEM STATEMENT:

According to the Guttmacher Institute, 25% of all pregnancies between 2010 and 2014 ended in abortions worldwide. A global meta-analysis report suggests that approximately 15% of all maternal deaths occur due to abortions.

The data from Ministry of Health and Family Welfare shows that despite a decline in the abortion rates (number of abortions per 1000 females in 15-44 years of age) in India from 2007-2012, in the recent years, the abortion rates have been increasing. Even after legalization of abortion (Medical Termination of Pregnancy Act, 1971),

India has the highest number of unsafe abortions (two-thirds of all abortions performed are illegal). While the number of facilities have increased in India after the amendment of MTP Act, in 2002, the access to safe abortion services is limited in rural areas. Even where approved facilities exist, the services in public sector are rarely or erratically provided due to lack of trained manpower or equipment, or both. A very less proportion of women in India are aware that abortion has been legalized which results in a high rate of unsafe abortions. In addition, social stigma attached to abortions further result in a high rate of unsafe abortions.

SUGGESTIONS:

- Increased facility: Out of 1.75 lakh facilities in India, only 20,000 are equipped and fully functional in terms of providing comprehensive care for maternal health. Despite legalization of abortions, the facilities are not readily available to majority of the women. It is essential that facilities and equipments for carrying safe abortions be made available in every area.
- Training of healthcare providers: More and more healthcare providers at primary care level need to be trained for performing safe abortions.
- Spreading awareness: Only 7% of women in India are aware that abortions are legal. They are also unaware of the serious complications of unsafe abortions. Women, especially in the rural areas, present with serious complications like bleeding and sepsis. There is also high mortality associated with unsafe abortions. It is important that health education be imparted to the women at every level possible, by the means of counseling by the healthcare providers and ASHA workers, through media etc.
- Stringent rules: Many women have reported a relatively easy access to medications for inducing abortions. This results in an increased rate of unsafe abortions most of which even go unreported unless the patients present with serious complications. The existing laws need to be strictly enforced ensuring that these medications are not available without prescription by a qualified healthcare provider.
- Addressing unmet needs of contraception: Prevention is always better than cure. Unintended pregnancy is the most common cause for induced abortions. With appropriate knowledge about the importance of use of contraceptives and easy availability of contraceptives, unsafe abortions can be largely prevented.

(The authors are Department of Community , Maulana Azad medical College, new Delhi)

Oral Problems That Only Females Experience

When woman experiences puberty, goes through her menstrual cycle every month or when she gets pregnant, she has special health needs that directly affects her oral health...

BY DR DEEPTI SHARMA

Oral health education can be gender-specific because there are oral conditions that only women experience. While it is important for both men and women to brush and floss daily as well as have a diet that will benefit their oral health, women go through physiological conditions that can affect their oral health.

When woman experiences puberty, goes through her menstrual cycle every month or when she gets pregnant, she has special health needs that directly affects her oral health. During these times, the body goes through hormonal changes, and these changes in hormones affects the gum tissues in the mouth. This results in gum sensitivity as well as an increased susceptibility to gum disease.

GUM DISEASE

Gum disease is called periodontal disease, and it is caused by a build-up of dental plaque around the teeth and gums. This plaque contains bacteria, which release toxins that can affect the gums. There are several symptoms of gum disease, such as redness, swelling and bleeding, but during the early stages, it is possible for the gums not to feel pain. It is more problematic when the gum disease is located in areas that cannot be cleaned easily, and regular brushing or flossing will not be able to help. We offer procedures for deep teeth and gum cleaning to help prevent the onset of gum disease.

PUBERTY

When a woman goes through puberty, there is an increase in the level of estrogen and progesterone in the body. The increased level of hormones results in an increase of blood flow through the body, including the gums. The increased blood flow can result in tenderness of the gums, which can result in bleeding during tooth brushing. When there are exposed surfaces in the gums, this can lead to bacterial infection.

PREGNANCY

There is a condition called "pregnancy gingivitis", because it is common in pregnant women. During pregnancy, there is a significant increase of progesterone in the body, which leads to gingivitis. Indeed, pregnant women are so sensitive to gingivitis that they can experience this condition even when they have very little plaque buildup in their mouth.If left untreated, pregnancy gingivitis can have long-lasting or permanent negative effects on your oral health. Your gums, teeth and tongue can be affected and can result in tissue or bone loss. If you are expecting, it is important to have good oral health before and during your pregnancy. We have experience treating and helping pregnant women with gum disease problems.

MENSTRUATION

Before her menstrual cycle, a woman's body experiences an increase in progesterone, which again increases the blood flow to the gums. During this time, it is not uncommon for women to experience gingivitis as well have sores on the tongue. To reduce the pain and discomfort during this time, good oral hygiene can lessen the bacterial buildup in the mouth.

GOOD ORAL HEALTH FOR ALL STAGES OF LIFE

It is important to always make sure that you have good oral health, no matter how old you are. As a woman, taking care of your oral health will help you take care of your overall health.

(The author is BDS,P.G.D.F,CERT (WMD) at Dr. Sharma's Dental Care,CMPDI Road, Shobhalok Building Jaripatka, Nagpur and Chairwomen of SSD Seva Mission and SNA Social Welfare Foundation Medical Branch, Nagpur.)

AYUSHMAN BHARAT: A GAME CHANGER

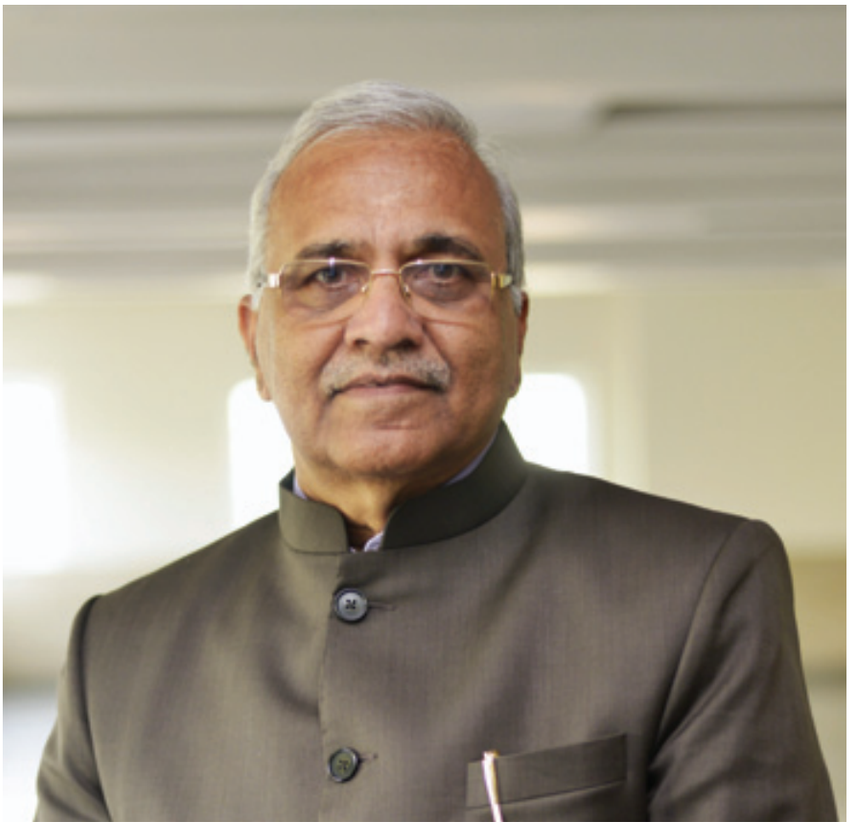
It is unfortunate that no scientific study has been done till date to compute actual costing of delivering variety of medical procedures under different settings. It will be appropriate that Ministry of Health and Family Welfare (MOHFW) should endeavor on urgent basis to ascertain the actual costs to private hospitals in rendering services to beneficiaries under NHPS. Government may institute an independent agency with representatives from IIM, cost accountants from professional consulting companies, major hospitals and insurance companies to carry out a costing study…..

BY DR GIRDHAR J GYANI

Preamble: Government of India in its budget proposals for year 2018-19 has come out with some of the land mark initiatives. These include National Health Protection Scheme (NHPS) and opening up of 1.5 lakh health and wellness centres. Looking at sheer size and quantum of work load, it would be imperative that resources available with public and private sector are pooled, utilized and managed to achieve the desired goals; under the overall gambit of universal health coverage (UHC).

Health and Wellness Centre: The government has announced to launch 1.5 lakh Health & Wellness Centres (HWC) to bring promotional, preventive and primary health care system closer to the homes of people. These centres will provide comprehensive health care, including for non-communicable diseases and maternal and child health services. These centres will also provide free essential drugs and diagnostic services. The Budget allocation for this flagship programme is Rs 1200 crore. Contribution of private sector through CSR and philanthropic institutions in adopting these centres is also envisaged.

Considering that we have about 1.5 lakh sub-centres available, it will be in fitness of things that these sub-centres are upgraded into HWCs which are closest to the community. The first point of referral for such HWCs in normal course would be nearby existing PHC/ CHC to provide the package of comprehensive primary health care. It will have further linkages with the district hospitals and tertiary care teaching hospitals. For sub-center to be an effective in the new role of HWC, re-engineering of existing structure and resources will be required to enable it to provide comprehensive primary care including; Maternal Health Care Services, Neonatal and Infant Health Care Services, Management of Communicable and Non-Communicable Diseases along with necessary diagnostic services etc.



Reference to the Health & Wellness Centers was made in the the national health policy released on 15th March 2017. Few states including Haryana, Punjab and J&K are known to have initiated converting some of their sub-centers in to HWCs. Haryana & Punjab governments have planned to train community health officers, who would manage these centers, with specialist doctor from nearby PHC or CHC visiting HWCs on regular basis.

Role of Private Sector: Private sector has huge opportunity by adopting few sub-centers as HWCs. AHPI has proposed to the government that its member hospitals will be willing to manage some of the HWCs within the same budget, which government provide for existing sub-center. The manpower would be fully deployed by the private sector provider, with provision of specialist doctor visiting on need basis from main hospital or consulting through telemedicine as appropriate. Entry of private sector in a way will also generate healthy competition as well as cooperation between public and private sector. Some of the additional suggestions for effective functioning of proposed HWCs are appended below:

1- Maintenance of electronic family file for every house in the community should become integral part of proposed HWCs, so that community statistics is adequately monitored and whenever required corrective steps could be taken. There should be a separate division/agency to conduct community surveys to keep track of life style diseases, infections, immunization and other illnesses and advice people on life style changes which are required.

2- Maternity and child welfare schemes are very important. Birth and death registers and wedding registers are important. Support will be required for early diagnosis of pregnancy and managing the expectant mothers throughout their difficult times.

3- Creating specialty clinics in some of the most underserved areas of the country as per local requirements for specific disease/epidemic control,

wheredoctors could visit these centres on a periodic basis engaging in both treatment andpreventive care.

4- There is a requirement for leveraging technology. Telemedicine services can be effectively utilized to connect remote areas withTaluk& District Hospitals, in view of the scarcity of qualified doctors. With good penetration of mobiles in the country, this should be easily possible. There is a requirement for having paramedical staff to provide primary care in rural areas as there is a huge gap in the availability of doctors/nursing staff. More healthcare workers should be given training and certification to treat minor illnesses.

5- Use Technology to drive positive healthcare outcomes – App based Remote Monitoring Technologies for creating awareness and improving treatment/management of chronic conditions (home health care)wherever frontline healthcare workers are involved, use digital connect to transform them into "knowledge supervisors". This, by way of imparting "Skill training" through an innovate combination of smart phones and web based technologies to train the healthcare workers in areas. We can bring the entire radio imaging (besides ultrasound) on to an electronic/cloud based platform.

6- It will need emphasis on clean model environment in a health & wellness centre in line with Prime Minister's 'Clean India Campaign'. Supply of clean water, 24X7 electricity, clean linen and good clean examination room for patients should be basic elements. It will also require all round maintenance of facility along with un-interrupted Wi-Fi connection.

7- Government should progressively aim at adequate space around HWC (10-acre campus) so that staff could be provided with living quarters to look after emergencies.

National Health Protection Scheme: This is flagship programme under AYUSHMAN BHARAT, which will cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) providing coverage upto Rs5 lakh per family per year for secondary and tertiary care hospitalization. This will be the world's largest government funded health care programme. Adequate funds will be provided for smooth implementation of this programme.

If there were adequate public sector hospitals, then scheme could have been delivered through network of CHCs, District Hospitals and government teaching hospitals. But considering that about 60% IPD beds are with the private sector, it is inevitable that private sector will havean important role in NHPS. The scheme however should ensureself-sustenance of hospitals. We have experience of operating central government insurance schemes like CGHS, ECHS, ESIC, RSBY etc. Similarly there are state government sponsored schemes in states like; AP, TELANGANA, TN, MH, GJ, RAJ, KARNATAKA etc. There are enough success/failure lessons from these schemes, which could be made use of in designing near perfect model to deliver NHPS. Some of the suggestions are appended below;

1-**REFERRAL MECHANISM: NHPS'** success will critically depend on strengthening of 1.5 lakh Health and Wellness Centres, which will not only help in lowering incidence but also serve as a strong Gate Keeper to appropriately channelize referrals for secondary and tertiary procedures. Government may consider putting together a 'negative list' of procedures that should strictly be treated only in the public hospitals

2- **EMPANELMENT OF HOSPITALS**: World over, quality and patient safety in healthcare is driven either through regulation or by PAYERS. NHPS being government run insurance scheme, it should be imperative that Patient Safety must be key consideration while empanelling of hospitals. NHPS as a rule should not empanel any hospital unless it has been verified based on established minimum criteria on quality/patient safety. Some of state run insurance schemes have made Entry Level NABH certificate as minimum criteria for empanelment. We have about 650-hospitals accredited by NABH. Then there are 700-hospitals which are certified under entry level standard by NABH. To begin with this number (650+700) can become critical mass of empaneled hospitals. In case there is need to rope in more hospitals, these can be provisionally empaneled based on defined structural criteria (in terms of number of beds/specialties etc.) as decided by MOHFW, with condition that they will obtain at least entry level certification by NABH within 1-year. In time to come, we may implement 'pay for performance' model where reimbursement is linked to clinical & managerial outcomes.

3- **FIXING OF RATES**: It is unfortunate that no scientific study has been done till date to compute actual costing of delivering variety of medical procedures under different settings. It will be appropriate that MOHFW should endeavor on urgent basis to ascertain the actual costs to private hospitals in rendering services to beneficiaries

under NHPS. Government may institute an independent agency with representatives from IIM, cost accountants from professional consulting companies, major hospitals and insurance companies to carry out a costing study, which may find out the cost of delivering healthcare in a model hospital. By using appropriate factor, these costs could be computed for various settings/categories of hospitals based on geographical location, size, level of specialty, status of accreditation etc. Scheme may also decide what procedures should be referred to which category of hospitals to ensure safety as well as optimum and cost effective utilization of the hospital network. Over and above patients can be given option for co-payment in case they want to upgrade the level of care – for example pay extra out of pocket for private room or extra for FDA implants as required. The rates fixed once, should be subjected to periodic revision. As incentive for quality, the rates for full NABH accreditation could be fixed at 15% higher than rest.

4- **ON-LINE PAYMENT/TRACKING**: The NHPS system should be digitized, where hospitals can submit bills ON-LINE and even the payment should be made ON-LINE. The payment should be reimbursed in time bound manner. For example, 50% money could be transferred within 10-days of submission of bills. Balance 50% could be transferred within next 20-days. In case of delay, there should be provision to pay interest; this aspect is important as present schemes have failed largely on this account that payments are delayed for months. State government schemes like in TN, TELANGANA and AP have transparent and efficient system of digital tracking of patients and treatment line, which can be studied and adopted for NHPS. AROGYA MITRA is good concept as has been in practice in TN-CM scheme.

5- **Grievance Redressal**: It is important that NHPS has built-in grievance redressal mechanism, which can listen grievances from beneficiaries as well as from empaneled hospitals. While beneficiaries will have grievances from treating hospitals, the empaneled hospitals will have grievances mainly on account of delay in payment and some time the un-accounted deductions from the submitted bills. Both are important to be addressed for long term success of scheme.

6- **Patient Verification:**The scheme as we know is for those, who are part of SECC (Socio Economic Caste Census) list and has an Aadhaar number, as enrolled. This would eliminate all malpractices/inefficiencies observed on ground during enrolment. Further, the enrolled members should be on a name basis rather than generic family name of 1+4. This would avoid impersonation and frauds on the ground. In case one is part of SECC list but does not have Aadhaar, provide clear guideline for alternative ways of identification to avoid any issues with reimbursements later.

7- **Scheme Regulator**: NHPS may designate an independent Quality regulator, who would lay out clear guidelines with respect to re-use of single use device, use of generic medicines etc. applicable for all empanelled providers under the scheme so as to enable delivery of quality services at an affordable cost. An appropriate medical audit system to be in place

CONCLUSION: It is first time since independence that government has come with bold initiative with focus on healthcare. As mentioned above NHPS is going to be world's largest UHC scheme. All efforts therefore must be channelized to make it happen. Once we succeed, it will revolutionaries the complete health delivery systems in the country. World is keenly awaiting to see how such a mega scheme is rolled and sustained. It is going to be boon for BPL families to mitigate serious illness cases. It will also give boost to healthcare industry, which is passing through anxious moments due to sustainability issues. All in all it should be exciting journey which hopefully will open up road to happy and healthy India.

(The author is Director General, Association of Healthcare Providers India)

Immobile Life

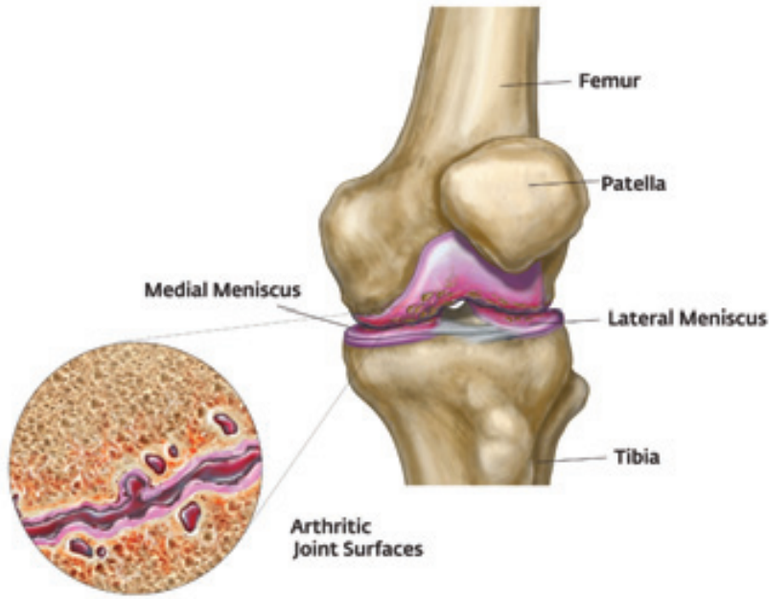
Knee problems crop up after years of wear and tear of the joints that are pivotal to the body's movements and sometimes due to injuries or other causes. Double Helical takes a close look at all aspects of the disease, including treatment options

BY AMRESH KUMAR TIWARY

The knee has the responsibility of supporting the entire weight of the body which makes it particularly prone to stress and strain. People world-wide are affected by knee problems. This problem is commonly found among people over 50 years of age and those who are overweight. Other reasons of knee pain can be health issues like bursitis, arthritis, tears in the ligaments, osteoarthritis of the joints, or infections. Each year, millions of people undergo knee surgery and how quickly they recover depends on many factors such as their age, the severity, location of the injury and pre-existing conditions, such as arthritis.

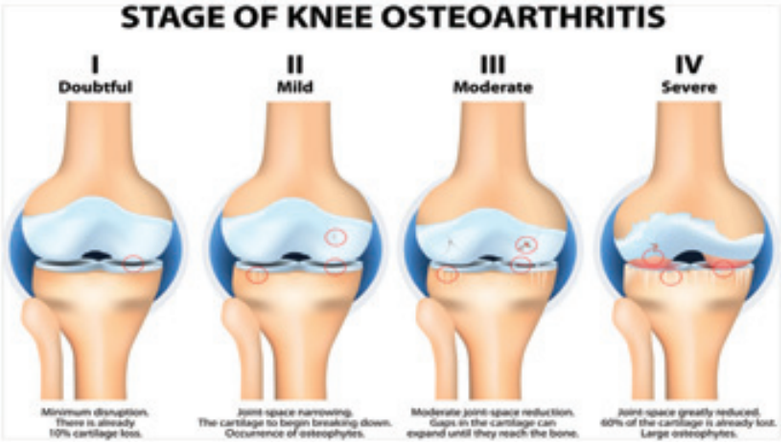
Knee surgery typically refers to total knee replacement, or knee arthroplasty. Knee surgery can be performed arthroscopically or in an open fashion. Special techniques and latest implants ensure restoration of natural movements. It covers major surgeries like total and partial knee replacement surgery and less invasive procedures like knee arthroscopy. The main aim of knee surgery is to increase the mobility and to reduce the pain associated with knee injuries and


In simple terms, knee replacement is a surgical procedure most often performed to relieve the pain and disability and restricted mobility arising out of degenerative arthritis



WHEN TO GO FOR KNEE REPLACEMENT

- Your pain persists or recurs over time
- Your knee aches during and after exercise
- You're no longer as mobile as you'd like to be
- Medication and using a cane aren't delivering enough relief
- Your knee stiffens up from sitting in a car or a movie theatre
- You feel pain in rainy weather
- The pain prevents you from sleeping
- You feel a decrease in knee motion or the degree to which you're able to bend your knee
- Your knees are stiff or swollen
- You have difficulty walking or climbing stairs
- You have difficulty getting in and out of chairs and bathtubs
- You experience morning stiffness that typically lasts less than 30 minutes (as opposed to stiffness lasting longer than 45 minutes, a sign of an inflammatory condition called rheumatoid arthritis)
- You feel a "grating" of your joint
- You've had a previous injury to the anterior cruciate ligament (ACL) of your knee



diseases.

Knee replacement is today one of the most successful operations in medicine and has improved the lives of millions of patients. Patients often ask about the correct time to have a knee replacement. One of the most effective means of treatment is physical therapy. The most effective therapy is called closed-chain quadriceps strengthening. With this therapy, the foot is planted on the floor to strengthen the large thigh muscles. This often improves the way the kneecap moves through the knee joint, decreasing pain and increasing ability to function.

Weight loss is also a very effective means of dealing with knee arthritis. When we speak about weight, we usually speak about the body mass index (BMI), which is a ratio of weight to height that can be calculated using online calculators. People with a body mass index above 30 should consider weight loss to see whether that improves symptoms before embarking on any kind of joint replacement.

In simple terms, knee replacement is a surgical procedure most often performed to relieve the pain and disability and restricted mobility arising out of degenerative arthritis. Major causes of debilitating pain include meniscus tears, osteoarthritis, rheumatoid arthritis, post trauma, ligament tears, and cartilage defects.

Knee replacement may be an option when non-surgical interventions such as medication, physical therapy, and the use of a cane or other walking aids no longer help alleviate the pain. Other possible signs include aching in the joint, followed by periods of relative relief; pain after extensive use; loss of mobility; joint stiffness after periods of inactivity or rest; and/or pain that seems to increase in humid weather.

An orthopedic surgeon helps to determine which type of knee surgery is most appropriate. He may decide that knee replacement surgery is not appropriate if you have an infection, do not have enough bone, or the bone is not strong enough to support an

TOP KNEE SURGEONS IN INDIA

The knee replacement surgeons in India have created a reputation for conducting groundbreaking surgeries. Medical travelers from around the world visit India every year with various knee problems. The quality that sets Indian knee surgeons aside from others is that they are not only good in communicating with the patients but are also good listeners. They provide a beforehand guide about the details and requirements of the procedure, helping the patients to be ready for the surgery both mentally and physically.

Top Indian knee surgeons like Dr Ashok Rajgopal, Dr Vikram Shah, Dr Abhay D Narvekar and Dr Sanjay Desai are highly educated and have huge work experience both in India and abroad, giving them that extra edge over other surgeons in the world.

DR VIKRAM SHAH

Ahmedabad-based Dr Vikram Shah has the experience of carrying out over 16,000 knee replacement surgeries and may be rightly termed as "The Knee Guru". Dr Shah, who performed 3,000 knee surgeries in 2008, has given no leg to stand on to his closest peer in the world, a UK surgeon who carried out 1,000 surgeries in the same year.

A visionary and founder of quality health services establishments like Shalby, Dr Vikram Shah's name is synonymous with knee replacement surgery. Inventor of OS needle used by orthopedic surgeons worldwide, Dr Shah along with his team has performed over 40,000 joint replacements. Presently they perform more than 300 primary joint replacement and 7-8 revision joint replacement surgeries every month. Dr Shah brought laminar air flow and body exhaust systems in the OT to perform joint replacement surgery in India and established the first Indian hospital with a Class 100 operation theatre making knee replacement surgeries much more safe and successful.

DR ABHAY D NARVEKAR

Practicing as an exclusive arthroscopic surgeon for over 20 years, Dr Abhay D Narvekar, MS (Ortho), D. Ortho, Hinduja Hospital, Mumbai, has performed over 8,000 arthroscopic surgeries of the knee, shoulder, ankle and the elbow. He also runs the arthroscopic services for all the municipal hospitals in Mumbai. He has extensive experience in managing ligament injuries of the knee. With over 1,200 arthroscopic ACL reconstructions, he is vastly experienced in PCL reconstructions and articular cartilage transplants using the mosaicplasty technique as well. He has pioneered cadaveric training for arthroscopy in various training workshops.

DR SANJAY DESAI

Dr Sanjay Desai is a founder-member of the Shoulder Society of India and also Consultant, Lilavati and Breach Candy hospitals, Mumbai. He is a pioneer super-specialist in shoulder and knee surgery. Dr Desai operated on Bollywood's superstar Shah Rukh Khan and treated actor Hrithik Roshan. Practicing in the highly specialized field of shoulder and knee surgery since the last 10 years, to him goes the credit of bringing world class arthroscopic shoulder surgery to India. Shoulder surgery is a relatively young speciality. Patients, including our sportsmen and cricketers, have had to travel abroad to undergo advanced shoulder surgery. Thanks to his expertise, this revolutionary surgical treatment is now affordable and available at our doorsteps.

Dr Desai has had a brilliant academic record studded with Gold medals throughout his orthopaedic career, including one from the University of Liverpool, while in the United Kingdom. He is still active academically, presenting his work at international conferences such as the World Shoulder Congress at Cape Town, South Africa, in April 2001. The "Young achievers Award - 2002" conferred by the Indo-American Society is a formal recognition of his contribution. Dr Desai has been invited as a faculty to Barcelona, Spain.

He is acclaimed among the medical fraternity across the globe for developing the 'OS Needle', a breakthrough technology which greatly reduces the time required in joint replacement.

artificial knee.

The doctors generally try to delay total knee replacement for as long as possible in favour of less invasive treatments. With that being said, if you have advanced joint disease, knee replacement may offer the chance for relief from pain and a return to normal activities.

Knee replacement is a routine surgery performed on more than 600,000 people worldwide each year. More than 90% of people who have had total knee replacement experience an improvement in knee pain and function.

Deciding whether or not to get knee replacement surgery is difficult. Discussing your treatment options with your doctor is essential to help you choose whether this is the right option for you.

Top knee surgeons in India are not only highly qualified but also have huge experience of performing thousands of successful knee surgeries. The operations and treatments that knee specialists offer include total and partial knee replacement, arthroscopic knee surgery, and knee ligament reconstruction (including anterior cruciate ligament reconstruction).

Unknown Enemy

It may sound unbelievable but it's true that hypertension, commonly seen in adults, is not uncommon in children, especially those who are obese

BY TEAM DOUBLE HELICAL

Growing habit of sedentary lifestyle, lack of exercise, heavy consumption of fast food and intake of steroid either during pregnancy or from any sources may lead to problem of high blood pressure commonly called hypertension in children,even new-borns too.

The problem may go undetected, because many a times there are no symptoms or signs of this disease. If left untreated hypertension can lead to heart failure, vision problems, kidney failure, paralysis and stroke early in life.

It is a general belief that high blood pressure (hypertension) as a problem affects only adults. Contrary to this belief, hypertension can be present at any age, even in newborns and young children. When the parents learn that their child has hypertension, it is very natural for them to deny the possibility due to their ignorance. It is for the paediatrician and the paediatric nephrologist to clear their doubts and to initiate appropriate management plan.

Blood pressure is the force of the blood against the walls of blood vessels as the heart pumps bloods to various parts of the body. If this pressure becomes too high, the child is said to have high blood pressure or hypertension.

As in adults, a child's BP is read as two numbers. The first number or systolic BP is the pressure when the heart is pumping blood to various parts of the body. The second number or the diastolic BP is when the heart is resting between the beats.The diastolic BP is less than the systolic

BP.A child is considered to be hypertensive when either the systolic, diastolic or both blood pressures are high.

According to a report, approximately 2-5% of children suffer from hypertension, with the majority unaware that they have this problem. A rise in incidence of hypertension has been linked to concurrent increase in prevalence of obesity. The prevalence of hypertension in obese children is higher and ranges from 10-30%.

The obese children are more prone to hypertension. If hypertension is allowed to continue or become worse over years, the prolonged extra pressure in the blood vessels can lead to heart failure, stroke, damage to eyes and kidney even in children.

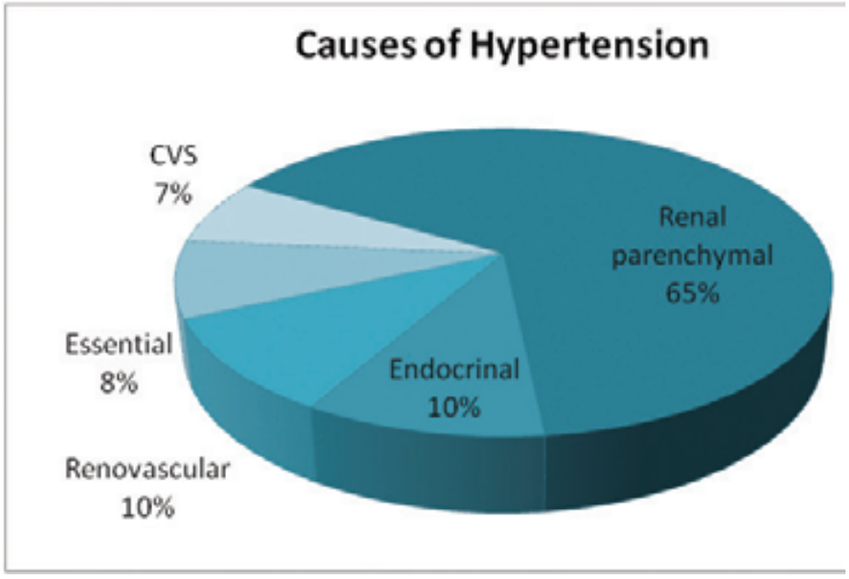
Normal BP is lower in children than in adults. BP increases with age and body size. Normal BP for a child will depend on the child's age, sex and height. We compare your child's BP to readings given on BP charts which lists normal BP or high BP for boys and girls based on their height and age. A child is said to be hypertensive if his average systolic or diastolic BP is more than 95th percentile (according to the standardized charts) for age, genderand height on more than 3 occasions. The doctor is the best person to read and interpret the charts.

To label a child as hypertensive, BP charts have been issued by the fourth US task force report on hypertension .These are charts consulted by doctors to arrive at a conclusion whether the child has hypertension or not. Since these charts are difficult to interpret and not easily available to parents,it is recommended that if your child's BP is beyond the values listed in the table here for the specific age group, you need to consult your doctor(paediatrician/paediatric nephrologist)

Hypertension has been graded according to the B.P readingslike Prehypertension: - Blood pressure is > 90th percentile but <95th percentile (as per BP chart). Children in this

have their blood pressure measured. Children who are less than 3 years should get their BP cheeked if they have:

- History of low birth weight, prematurity or requirement of neonatal intensive care,
- History of heart disease by birth
- History of recurrent urinary tract infection
- History of blood or protein loss in urine
- History of any kidney disease in the past
- Family history of kidney disease
- History of organ transplantation
- History of receiving medicines which can cause high blood pressure/kidney damage.

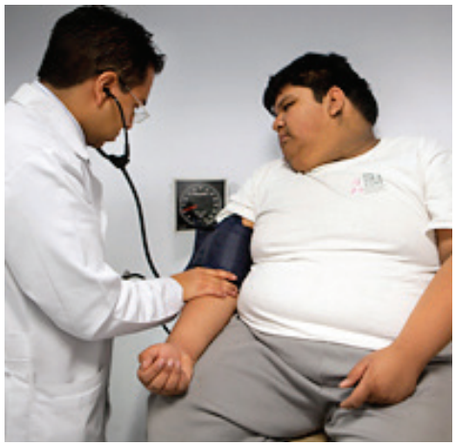


range of BP should be carefully followed up as they grow up. And stage 1 hypertension (Unsafe):- BP exceeds 95th percentile up to 5 mm above 99th percentile. Blood pressure in this range should be rechecked at least twice in the next 1-3 week or even earlier. Stage 2 hypertension (Dangerous):- BP exceeds 5 mm or more above the 99th percentile. Confirmation should be made at the same visit.

Children who are more than 3 years and are seen at health care setting (for example cold, cough or fever) should

The usual symptoms of hypertension are headache (sometimes throbbing in nature), flushing, giddiness, bleeding from nose, vision disturbances, poor school performance, irritability, blood or protein in urine, passing urine more or less frequently and weight loss. In some cases hypertension can be without symptoms and therefore those children who are obese, have history of neonatal intensive care stay, or have kidney/ heart disease or cardiac disease should have their blood pressure checked.

Generally it is preferred to check



Age (years)	BP (mm Hg)
0 – 5 years	100/70
5 – 10 years	120/80
>10years	130/90

the blood pressure when the child is sitting comfortably in a chair with feet on the ground and the arm at the level of the heart. The BP cuff should be of the right size for the child's age. The width of thecuff bladder (rubber inside the outer cloth) should be 40% of the arm circumference midway between the shoulder and elbow joint and the length should be double the width. Another simple way is to get a bladder cuff whose width covers ¾ of the upper arm. If the cuff size is not appropriate the blood pressure readings may come falsely high or low. However if an appropriate cuff size is not available the next bigger size can be used. Cuff sizes with a width of 4 cm, 9cm, 10cm, 13cm, and 20cm are available in the market.

Mercury instruments are the best for checking blood pressure, but as they are being phased out, aneroid devices are being used more commonly and they are fairly accurate, but they require frequent calibration.Automatic BP machines are also being used.If an automatic (digital) blood pressure machine is being used and blood pressure readings come high, then they need to be confirmed with mercury or aneroid device.

Ambulatory Blood Pressure Monitoring (ABPM)means blood pressureis recorded over a 24 hours period by a BP monitor where cuff is tied to the arm and a small digital blood pressure machine is attached to a belt around the waist. The child carries on his/her normal activities in the day and sleep with it, while the machine is on. The machine takes the blood pressure readings at regular intervals usually every 15-30 minutes during the day and night. The monitor should be kept on throughout the night. At the end of 24 hours the cuff and the machine are removed and given to the hospital for analysis of readings.

For the machine to work properly, it is important to make sure that the tube attached to the machine is not twisted or bent. As a parent you are instructed to maintain a diary, to note the timing of going to bed, medication and general activities.There are a number of reasons why a doctor advises 24 hour ABPM, which are to find out if the high BP reading in the clinic is higher than the reading away from clinic e.g. home (called white coat hypertension), to see how well the medicines are working and whether they are controlling the blood pressure all the time and to see whether blood pressure at night is less than the recording during day time.

In majority of young children an underlying cause of hypertension can be identified e.g. kidney, heart, blood vessels, hormone problems, tumour or drugs. Diseases of the kidney are the most common cause of hypertension in children. Primary or essential hypertension, commonly seen in adults, is becoming common in children, who are obese or over weight.

If a cause for hypertension is diagnosed, appropriate treatment can be initiated and the child may have normal blood pressure afterwards. For few reasons, achild may have to remain on anti-hypertensive medicines throughout the life. Once a child is diagnosed to have hypertension, it is very important to evaluate any underlying disease and to find out risk factors for essentialhypertension like obesity, smoking, alcohol,etc. In addition tests are required to find out if any complication (involvement of eye, heart or kidney) hasoccurred or not. The common tests which may be required arekidney function tests, hormone levels, lipid profile, urine examination, ultrasound and doppler test of kidney, kidney scan, echocardiogram, ECG and eye examination.

Most children with essential hypertension require lifestyle modificationswhich include weight reduction, meditation, yoga, exercise, low salt diet. Other risk factors like smoking, alcohol, steroids, oral contraceptives, sleep apnea should also be controlled. For secondary hypertension, surgery helps in certain cases,e.g. if any tumour is causing hypertension, then it needs to be removed surgically. Timely detection helps in appropriate treatment of hypertension and its cause and helps to prevent end organ damage in adult life.

LIFE STYLE MODIFICATION

Indications for drug treatment in hypertension

a) Stage 1 hypertension persisting even 6 months after lifestyle modifications or those who have any preexisting kidney disease

b) Stage 2 hypertension

c) Damage to eye, kidney, heart, or brain has occurred

d) Pre hypertension in a child with chronic kidney disease, diabetes or lipid abnormalities.

(Conversation with Dr Neha Bhandari, Paediatric Nephrologist, New Delhi)

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Double Helical is owned, printed and Published monthly. It is printed at Polykam offset, Naraina Industrial Area Phase 1, New Delhi-110028, and published from G-1, Antriksh Green, Kaushambi, Ghaziabad-201 010. Tel: 0120-4219575, 9953604965.
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Gift of Life

Transplantation of organs has undergone great advancement but it suffers from an acute shortage of organs as there is inadequate awareness about the importance of organ donation in the country...

BY ABHIGYAN/ABHINAV

Each year, hundreds of people die while waiting for an organ transplant. There is an acute shortage of organs, and the gap between the number of organs donated and the number of people waiting for a transplant is getting larger. Transplants, as an option, have successful outcomes, and the number of people needing a transplant is expected to rise steeply due to an ageing population and an increasing incidence of organ failure.

Transplantation of one organ from one human being to another has always been a rigorous process which needs utmost care. A heart which is donated must be transplanted within four hours after removal from the donor. For a successful transplantation,great team effort is required; if one person in the team is not cooperating, it is very difficult to transplant any organ successfully. The processstarts from the donor;police in making green corridor; driver who drives the ambulance as fast as possible; the hospital where the organ is transplanted, the team of doctors operating upon the patient who receives the heart.

Transplantation over the past few decades has gradually become the accepted treatment for a number of conditions where organs like the kidneys, heart and liver have irreversibly failed. For a patient with kidney failure an alternative such as dialysis is available till an organ becomes available, but for a patient with liver or heart failure; the only hope of living may be to have an immediate transplant. Organ donation is a gracious act; it reaffirms our faith in humanity.

GOVERNMENT INITIATIVES IN ORGAN TRANSPLANT

While noting that donating organs is a gift of life and is an altruistic, egalitarian and essentially moral act, J P Nadda, Union Minister of Health and Family Welfare has urged people to come forward and donate organs to save lives. He stated that organ donation can benefit the recipient largely by improving health, quality and span of his life and even save him from death or other critical conditions. He was speaking at a function organised by Dadhichi Deh Dan Samiti (DDDS) recently. The Samiti organised a dialogue on framing of the protocol to develop respect for donated cadavers and the families of cadaver donors amongst the medical teaching community.

Health Minister urged the participants to list down the solutions that will encourage organ and body donation and assured that the Government will not delay its implementation. He further said that the ministry has started taking concrete steps for harvesting of cadaver organs and tissues and hope that it will be able to optimally utilise this vast national resource.

Elaborating his ideas, the Health Minister said that the benefits of initiatives should reach out to every nook and corner of the country and should not be limited to cities only. He added that the demand for organs continues to increase manifold in future keeping in view the increased incidence of lifestyle diseases. So, there is a need to create a system for improving the rate of safe, effective and ethical donation of cadaver organs for transplantation in those who need them badly.

Government is taking various steps to simplify organ donor law/ rules and procedures. He said that the website of National Organ & Tissue Transplant Organisation (www.notto.nic.in) provides updated information and online facility for registering pledges for organ donation. 13,443 donors have already pledged for organ donation. A 24x7 call centre with toll free helpline number (1800114770) has been established for providing information on organ donation and coordinating matters relating to retrieval and allocation of organs recovered from cadaver donors.

STATE OF ORGAN TRANSPLANT IN INDIA

There have been several news reports about organ trafficking in India, putting the spotlight on the shortage of donors. Take, for example, kidney transplants. Against the global requirement of about 600,000 each year, only 60,000 are done. In India, of the 150, 000 to 200,000 people who need transplantation, only 3,500 get it.This scarcity will grow rapidly in the coming years because of increasing lifespan, rising incidence of end-stage kidney disease, and wrong legislative policies.

Says **Dr Rajesh Agarwal, Nephrologist, Sri Balaji Action Cancer Hospital:** "There should be a uniform legislative policy to augment organ donations and enforce regulatory mechanisms. Organ transplantation is different from other healthcare activities and the law on this subject should be enacted by the Centre. Also needed is a centralised regulatory authority to monitor the transplantation procedures, inspect hospitals, and summon the concerned managerial and medical, paramedical staff involved in the procedure. The authority constituted under the Transplantation of Human Organs Act 1994 doesn't have pan-Indian jurisdiction. It should be mandatory to report all transplantations to the central organ donation authority, with details of the donor and the recipient, members of the authorisation committee and the transplantation team. All transplantations must be registered, which should allot a wait listed number to each registrant''.

DR Ravi Bansal, senior consultant, Nephrologists', PSRI Hospital Delhi Said ''International organ donation policy is well established. More than 80% of transplants are cadaveric. In Netherland, organ donation is included in curriculum of school students. They have option of taking the pledge to donate organ before they exit from school and join higher education. Central Organ Sharing Program is a well established. In India, laws are adequate but awareness is negligible. So, there is a need to make doctors and general public more aware of these laws.

In the last 12 years, there has been great advancement in the field of organ transplantation in India. People are discussing or talking about the problem of donating organ. The Government is organizing awareness programs to encourage people for donating their organs. It promotes awareness programmes for organ donation on both electronic and print media. The Organ Retrieval and Banking Organisation (OROB) promotes organ donation at the table of colleges, societies and other fora. This is steadily leading to changes in urban areas, though not so much in rural areas.

STATISTICS

- In India every year nearly:
- 500,000 people die because of non-availability of organs
- 150,000 people await a kidney transplant but only 5,000 get one
- 1,000,000 lakh people suffer from corneal blindness and await transplant nationally, only 0.08 persons in per million populations (PMP) donate, while the total population is 1.2 billion. This is incredibly small figure with respect to total population.
- According to a report of National Organ and Tissue Transplant Organization (NOTTO), 10750 kidney transplants, 3570 liver

PROMOTING THE CAUSE

Anju Sharma who runs an NGOis engaged in creating awareness about eye donation among the common people. Her main objectives to increase collection of eyes from all over the country and to educate the public about eye donation and prevention of corneal blindness.

Like Anju Sharma many individuals these days are engaged in generating mass awareness aboutorgan donations. In fact, one donor can save eight lives.As per a report, 250 people die every day in the absence of organs for transplant.

Donate Organs Save Lives is an independent online platform to further the cause of cadaver organ donation in India through educating the public about the importance of organ donation. The organization aims to help build a nationally coordinated approach to spread and gather information about organ and tissue donation for transplantation.

Human beings want to be remembered after their death. Still, there is little realization that the way to make a difference is by donating organs. It's a great legacy that one can leave behind.

The Deceased Organ Retrieval Sharing Organization (DORSO) is an autonomous and recognized agency for the Delhi State Deceased Organ Retrieval Transplant Authority. It wants to make a difference and enlighten the Indian Society about the new afterlife with organ donation. It has a specific role to monitor, evaluate, appraise and disseminate to the Delhi State Health Department on the periodic status of implementation of the cadaver programme.

While the deceased donation programme is yet to evolve, the living donation programme has been marred with constant kidney scandals. Although the history of cadaver transplants in India is recent, the first attempts to use a cadaver donor's kidney were undertaken in 1965 in Mumbai. The medical problems included technical difficulties in engrafting, immunological problems, and infection.

In India, despite the THO act, neither has the commerce stopped nor have the number of deceased donors increased to take care of organ shortage. The concept of brain death has not been promoted or widely publicized. Most unrelated transplants currently are being done under the cloak of legal authority from an authorization committee. The few deceased donations that are taking place are due to the efforts of a few non-government organizations (NGO) or hospitals that are highly committed to the cause.

To a large extent, the failure of the THO act has been because of the way it has been interpreted and implemented by authorities and hospitals.

Recently, the government has come under much criticism by the public and media. It has added a few legislations in the form of a Gazette to curb the illegal unrelated donation activities and has tried to plug the loopholes in the THO Act.

The main provisions of the THO Act and the newly passed Gazette by the Government of India include the following:

FOR LIVING DONATION - The relatives who are allowed to donate include mother, father, brothers, sisters, son, daughter, and spouse. Recently, in the new Gazette grandparents have been included in the list of first relatives. The first relatives are required to provide proof of their relationship by genetic testing and/or by legal documents. In the event of there being no first relatives, the recipient and donor are required to seek special permission from the government appointed authorization committee and appear for an interview in front of the committee to prove that the motive of donation is purely out of altruism or affection for the recipient.

BRAIN-DEATH AND ITS DECLARATION - Brain death is defined by the following criteria: two certifications are required 6 hours apart from doctors and two of these have to be doctors nominated by the appropriate authority of the government with one of the two being an expert in the field of neurology.

Regulation of transplant activities by forming an Authorization Committee (AC) and Appropriate Authority (AA.) in each State or Union Territory. Each has a defined role as follows:

ROLE OF AUTHORIZATION COMMITTEE (AC) - The purpose of this body is to regulate the process of authorization to approve or reject transplants between the recipient and donors other than a first relative. The primary duty of the committee is to ensure that the donor is not being exploited for monetary consideration to donate their organ. The joint application made by the recipient and donor is scrutinized and a personal interview is essential to satisfy to the AC the genuine motive of donation and to ensure that the donor understands the potential risks of the surgery. Information about approval or rejection is sent by mail to the concerned hospitals. The decision to accept or reject a donor is governed by Sub Clause (3), Clause 9 of Chapter II of the THO Act.

ROLE OF APPROPRIATE AUTHORITY (AA): The purpose of this body is to regulate the removal, storage, and transplantation of human organs. A hospital is permitted to perform such activities only after being licensed by the authority. The removal of eyes from the dead body of a donor is not governed by such an authority and can be done at other premises and does not require any licensing procedure. The powers of the AA include inspecting and granting registration to the hospitals for transplant surgery, enforcing the required standards for hospitals, conducting regular inspections of the hospitals to examine the quality of transplantation and follow-up medical care of donors and recipients, suspending or cancelling the registrations or erring hospitals, and conducting investigations into complaints for breach of any provisions of the Act. The AA issues a license to a hospital for a period of five years at a time and can renew the license after that period. Each organ requires a separate license.

transplants and only 29 of heart transplants took place in India recently. Among this 14038 transplants were living transplant, while the rest were cadaver ones.

- 90% of people in the waiting list die without getting an organ.

Wholly throughout the world, the trade of human organs is illegal except in Iran. In India before the Transplantation of Human Organ Act in 1994 the trade in organ was legal and it made India a lucrative market for organ trade for the world, but along with it many problems emerged. Due to the lack of awareness, the lower class people were not compensated properly for their donations, on the other hand some cases showed that the patients were actually unaware about the transplantations.

HEART TRANSPLANT:

Heart transplant is the most critical transplantation among all other transplantation of organs. Apart from the relaxation time of transplantation its success depends on many other issues, like the condition of the organ, other circulatory action or even age of the receiver body. For a heart transplant, the diseased heart is removed and replaced with the donated heart. During the surgery, a mechanical pump moves blood through the body.

KIDNEY TRANSPLANT:

Kidney transplant takes place generally at the end stage renal-disease. The donor can either be a living person or a deceased person. As per statistics,kidney transplant is the most frequent organ transplantation. The success rate is very high in this type of transplantation as there are many ways in which a human body can be supported for a while through dialysis in order to purify the blood. Therefore, we can say that the criticality of kidney transplantation is comparatively less.

LIVER TRANSPLANT:

It is also known as hepatic transplantation. The diseased liver is fully or partially replaced by a healthy and donated liver. It is an option for end-stage or acute liver disease. Immunosuppressive drugs are used to lower the chance of rejection of the transplant by the body and this is the case like all other allother graft. Liver transplant is tagged with a controversy where the alcoholic patients get a transplant in order to fight the alcoholic cirrhosis, as other non-alcoholic patients may be considered as more deserving of that transplant.

EYE TRANSPLANT:

In eye transplantation, the cornea part of the eye is transplanted, therefore, it is also called corneal transplantation. Cornea is the transparent part of the eye. The cornea rejection in the patient's eye can occur at any time after the transplantation, even after decades because of several causes.

INTESTINE TRANSPLANT:

It is one of the rarest types of transplantations due to the high rate of rejection by the receiving body. Due to the improvements in immunosuppressive regiments, it is done on a more frequent basis. Though the options for treatment of the intestine are many, but in some critical cases the transplantation is the only options.

PANCREAS TRANSPLANT:

Pancreas is one of the vital organs in our body as it regulates the sugar level in our body. Therefore, generally a diabetic patient goes for pancreas transplantation. It can also be partially replaced as in the case of liver.

Hampering the cause

Organ donation finds few takers in the country due to lack of awareness and understanding about organdonations, religious attitudes, superstitious belief andbureaucratic hurdles

BY DR MANISHA YADAV

In a vastly populated country like India where near about 200,000 people need a new kidney every year and around 100,000 need a new liver, only few percentage of the demand for new organs is met, which amounts to 2% - 3% of the total demand.

Finding a donor match is difficult to begin with. In India, this challenge is compounded by bureaucratic hurdles and lack of awareness. A lot of red-tapism and paperwork involved in getting a transplant done also contributes in worsening the situation.

Under Indian law, for instance, it's relatively easy for close relatives to donate an organ, or part of it, to a family member in need. According to existing rules, if the potential donor is not related to the person who needs the organ, the transplant needs to be approved by a state-level committee or by a hospital committee that includes government officials. This results in unnecessary delay in the donating process.

Most of the Indians, mainly the north Indians carry a superstitious belief that donating organ is an evil practice and an individual's soul will not rest in peace if the body parts are mutilated. This is mainly due to the lack of awareness prevailing over there. The most common myth prevailing in the process of organ donation is that, if the doctor knows that the individual has given his consent for organ donation, he wouldn't work hard to save his life.

Organ transplantation can be lifesaving for patients with organ failure. Thousands of these patients may die because there are not enough donated organs to meet the demand. The main factor limiting organ donation is that less than half of the families of potential donors consent to donation. Many organs can be donated,

including heart, intestines, kidneys, liver, lungs, and pancreas. Tissues that can be donated include corneas, heart valves, and skin. Donations may be used in people who have organ failure, who are blind, or who have severe burns or serious diseases. If you wish, you may specify which organs and tissues you would like to donate. While you are alive, you may donate a kidney or part of your liver to a specific / related matched patient. More than 6,000 transplants from living donors are performed each year. The number can go up and save many more lives if people give consent for donating their organs after death.

Any person can become a donor irrespective of age, caste, religion, community, current or past medical condition. However, patients suffering with active cancer, active HIV and active infection or intravenous drug use cannot do the same, though most cancer patients can donatecornea. There are two ways in which an individual can opt for organ donation: Opt In, where the donor gives consent, or Opt Out, where anyone who has not specifically refused is considered a donor. In India the Opt In system is adopted.

Organ transplant works on two principles, firstly, living donor transplant. Secondly, deceased donor transplant. In living donor transplant, a living person decides to donate his or her organ(s) to someone in need of a transplant. Living donors are usually family members or close friends of the person who requires a transplant. In deceased donor transplant, organs from a brain dead individual are transplanted into the body of a living recipient. The deceased individual in this scenario can only be a victim of brain death. This kind of transplant initially requires the recipient to wait on a list until a suitable organ is available based on the recipient's medical profile. The shortage of organs is virtually a universal problem. Even in developed countries, where rates of deceased organ donation tend to be higher than in other countries, organs from this source fail to meet the increasing demand. The prerequisites for the success of a transplantation programme include awareness, positive attitude of the public towards organ donation and consent by relatives for organ donation in the event of brain death.

Lack of knowledge and understanding about organdonations, religious attitudes, and superstitious beliefs have generated fear and mistrust in the minds of the common man and, especially, the terminally ill patients. To increase the number of donors, initiatives should be taken to ease the entire process by making the people aware about registration for organ donation as this may help the doctors to found the donor more easily.

(The author is associated with Santosh Medical College and Hospital, GZB)

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