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A COMPLETE HEALTH JOURNAL

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Dr Girdhar Gyani

Dr A K Agarwal

COPING WITH TWIN CHALLENGES

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A COMPLETE HEALTH MAGAZINE

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December, 2019

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Editorial Team
Abhigyan, Abhinav, Dr. Manisha Yadav

Advertisements & Marketing
Abhinav Kumar, Vikas
Email:**sales**@doublehelical.com

Designer
Aparna Thomas

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Tel: 0120-4165606 / 9953604965.

Contact us :
contact@doublehelical.com
doublehelicaldesign@gmail.com,
editorial@doublehelical.com
Website: www.**doublehelical**.com, www.**doublehelical**.in

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Double Helical Award Season is here again!

Dear Readers,

As you are aware, Double Helical has been making a difference in the lives of people by raising awareness, rewarding excellence as well making voluntary contributions in the areas of education, health, human rights and social services. You will be happy to know that your favourite magazine is going to organize National Health Conclave and Awards on 23rd December 2019 at Hotel Lalit, New Delhi to honour medical fraternity and institutions working in the field of healthcare and social work.

The event will witness one-day conclave on Geriatric/Elderly care with the support of Association of Healthcare Providers, India (AHPI) and the Consortium of Accredited Healthcare Organisations (CAHO). India has close to 115 million elderly people with multiple physical, social, psychological and economic problems. By 2050, India is going to have 20% of population as geriatric population. Geriatric/ elderly care has not been on formal agenda by healthcare providers. As per statistics, 3.7 million suffer from dementia, 1.6 million stroke cases, 1 in 3 suffering from arthritis, 1 in 3 has hypertension, 1 in 4 suffer from depression and 1 in 5 elderly persons has diabetes.

On one hand, there has been growing realization that people in the age-group of 70-80 and even beyond have a wealth of knowledge and wisdom and can contribute a lot to the country's progress. On the other hand, their physical, social, psychological and spiritual healthcare needs remain unmet.

The conclave besides identifying these problems, will present a roadmap, case studies, showcasing the work done in this area, to address elderly care in holistic way. Finally, the conclave will recognize by way of awards to the deserving individuals and institutions.

In the current issue, we focus on Patient Safety and Cost of Healthcare. Healthcare delivery today has become very complex. Earlier it was considered to be safe and inexpensive, less invasive and under the comforting personal care of a family physician; while in present times it is viewed as potentially dangerous, expensive and driven primarily by technology & medical consultants.

One of the milestones to highlight that medical errors were not anecdotal but a regular feature even in the best of the hospitals was the famous article " To Err is Human" published by Institute of Medicine (IoM) in the year 2000. The study estimated that as many as 98,000 people die in any given year from medical errors that occur in hospitals (USA alone) - more than the number of deaths from motor vehicle accidents, breast cancer, or AIDS - three causes that receive far more public attention.

Both the community and the healthcare providers are inadequately prepared to deal with unforeseen outcomes including medical errors and rising cost. We need to look at the journey of increasing reporting of medical errors, medicine becoming hi-tech and expensive and how the medical community can cope with these challenges.

Another story highlights how diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetic individuals currently diagnosed with the disease. In 2000, India (31.7 million) topped the world with the highest number of people with diabetes mellitus followed by China (20.8 million) and the United States (17.7 million) in second and third place respectively.

According to Federation of Diabetes International, the prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with maximum increase in India. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India, while China (42.3 million) and the United States (30.3 million) will also see significant increases in those affected by the disease.

India currently faces an uncertain future in relation to the potential burden that diabetes may impose upon the country. Many influences affect the prevalence of disease throughout a country, and identification of those factors is necessary to facilitate change when facing health challenges. So, what are the factors currently affecting diabetes in India that are making this problem so extreme?

The challenges of estimating the global impact of diabetes are considerable and relate to two main issues: available data are not homogenous nor are they comprehensive.

There is more such interesting and thought-provoking stuff to savour in this issue. So, happy reading!

Thanks and regards

Amresh K Tiwary,
Editor-in-Chief

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HEALTH NEWS

Dr Harsh Vardhan commends partner communities for their contribution to AIDS elimination

Let us shun any kind of discrimination in our thoughts, actions and behaviour in our interaction with those who have HIV and AIDS. Let us do away with nomenclatures such as "AIDS/HIV communities". Let us not bracket people who suffer from and have survived various diseases".

This was stated by Dr. Harsh Vardhan, Union Minister of Health & Family Welfare as he inaugurated the event celebrating the World AIDS Day, organised by the National AIDS Control Organization (NACO) "While we have travelled a long distance in our fight against AIDS and HIV, there are still some significant milestones that need to be achieved for making the country free of HIV AIDS by 2030, such as the lingering pockets

of stigma and discrimination against those who have or have had AIDS", he added.

Dr Harsh Vardhan commended the immense contribution of the partner communities who have played a yeoman role in spreading information about the disease, to dispel misinformation, fear and apprehensions, and helped people to access testing and treating services of NACO. "You are our pillars of strength who have built bridges with the underserved, un-served and marginalised communities", he stated. The global theme of this year's World AIDS Day is 'Communities Make A Difference'. At the event, he awarded the various Red Ribbon Clubs which have mobilised the youth and communities across the country. More than 1200 Red Ribbon Clubs have contributed to this collective effort, he stated.

Speaking at the event, Dr. Harsh Vardhan said that during 2018-19, around 79% of people living with HIV knew their HIV status, 82% diagnosed with HIV infection are receiving free antiretroviral therapy and 79% are virally suppressed. This means we are on the right track and our continued efforts coupled with calibrated momentum shall make this target achievable. "One of the unique quests is adaptability and customization of strategies according to the need of the hour. NACO has revived and revamped its conventional prevention strategies to achieve the new targets. NACO is focusing on the combination of prevention tools and methods that are needed to end the AIDS epidemic." Dr. Harsh Vardhan added that the programme has also given focused attention to elimination of mother to child transmission of HIV.

The Union Minister emphasized upon the newer steps which are being taken by Government of India to achieve Sustainable Development Goal of ending the epidemic of AIDS as a public health threat by 2030, "The basic target remains that of 'Three Zeros' - i.e. zero new infections, zero AIDS-related deaths and zero discrimination" he said. Dr. Harsh Vardhan further said that in sync with the Ministry's 'Digital India' campaign, NACO has strengthened its monitoring mechanism with more than 35,000 reporting units providing information on completely IT enabled system. Stressing on the need for multi-faceted and multi-sectoral response, Dr. Harsh Vardhan stated that NACO has not only signed Memorandum of Understanding (MoU) with 18 key Ministries/Departments to augment a comprehensive AIDS response but also with more than 650 industries of public and private sectors to mobilize their support. He also commended the contribution of the pharma industry of the country which has supported other countries too in their fight against AIDS through affordable drugs.

The event also saw launch of the NACO Mobile Application, new IEC Material for TI NGOs, Calendar-2020, Comprehensive Module for Private Practitioners on Management of HIV/AIDS, 2019 by Dr. Harsh Vardhan. Two PLHIV members shared their experience of having survived the disease and the support they have received from NACO, and other support organisations for overcoming the stigma.

Also present at the event were Dr. Arun Kumar Panda, Secretary (MSME) & Secretary (in-charge), Health & Family Welfare, Sanjeeva Kumar, Special Secretary (NACO), Alok Saxena, JS (NACO), Dr. Bilali Camara, Country Coordinator, UNAIDS, Dr. Henk Bekedam, WHO Representative (India), Dr Naresh Goel, DDG (NACO) and more than 1200 members of partners and various CSOs, NGOs and BSF, CISF.

India to host 2020 World Conference on Access to Medical Products

Ashwini Kumar Choubey, Union Minister of State for Health & Family Welfare chaired the closing ceremony of 2019 World Conference on Access to Medical Products, along with Mr. Zahid Maleque, Minister of Health and Family Welfare, Government of the People's Republic of Bangladesh, Ms. Lyonpo Dechen Wangmo, Minister for Health, Royal Government of Bhutan, Dr. Arun Panda, Secretary, Ministry of Health and Family Welfare, Vaidya Rajesh Kotecha, Secretary, AYUSH, Shubra Singh, Chairperson, National Pharmaceutical Pricing Authority (NPPA), Dr. Henk Bekedam, WHO representative to India and Ms. Kiran Mazumdar Shaw, Chairperson and MD, Biocon Ltd.

Ashwini K Choubey said that India has always been a health aware country as we have always believed in the 'panchtatva' (agni, jal vaayu, prithvi and aakash) that make up the universal space around us all. "India has played a leadership role regarding health issues, and now under leadership of our Prime Minister, Narendra Modi ji, we are leading global efforts in addressing challenges of the public health sector", he added. Choubey also stated that India is the leader of the global pharmaceutical industry and generic medicines. He highlighted the ambitious program in public health, "Ayushman Bharat rolled out across the country with its two pillars i.e. Health & Wellness Centres (HWCs) & Pradhan Mantri Jan Aarogya Yojna (PMJAY), is contributing towards reducing catastrophic out of pocket expenditure and expanding Universal Health Coverage (UHC)". He further stated that with NHP 2017 India has given priority to preventive, promotive and affordable healthcare.

Dr. Arun Panda addressed the gathering by saying that innovation, research and gains in information technology lead to more affordable and accessible healthcare. He said, "I would like to define ACCESS as – Awareness, Civilians, Control (regulatory), Entrepreneurs (manufacturers), Standards, Sustainability". He appreciated the important issues that were discussed through the platform of this conference and reiterated MoHFWs commitment to host it next year from 23rd to 25th September, 2020.

Also present at the closing ceremony, Mr. Vaidya Rajesh Kotecha, appreciated MoHFW efforts for organizing the world conference to discuss pertinent and contemporary issues surrounding accessibility, affordability and viability of medical products.

Dr. Henk Bekedam, WHO Representative to India, called India the pharmacy of the world, not just for vaccines and generic drugs but now also for medical devices. "I appreciate the regulatory framework that is followed in India and I applaud the fact that now India has launched the biggest hepatitis B program in the under-developed world". Dr. Bekedam also highlighted how the Ayushman Bharat – Pradhan Mantri Jan Arogya Yojna (AB-PMJAY) is reducing the out of pocket expenditure of the people and providing cashless tertiary care.

Also present at the event were other senior officers from MoHFW, State Health Secretaries and NHM MDs, Development Partners; Civil Society representatives, other healthcare organizations, UN agencies and international experts/participants from several countries.

PGIMER employee wins National Award in the Divyang category

Still basking in the glory of winning two prestigious awards as Best Regional Organ and Tissue Transplant Organization (ROTTO) and Best Hospital in the field of deceased organ donation category, it was another momentous occasion for ROTTO PGIMER Chandigarh to celebrate as Alka Chaudhary, Programme Assistant-cum-Data Entry Operator was bestowed with the "National Award for Empowerment of Persons with Disabilities (Divyangjan)-2019".

The Vice President of India M. Venkaiah Naidu conferred the national award to Alka Chaudhary in recognition of her outstanding performance as the Best Employee/ Self Employed Person in the category of disability caused due to blood disorder at a recent function to celebrate "International Day of Persons with Disabilities" organized by the Department of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice and Empowerment at Vigyan Bhawan, New Delhi. The award comprises a certificate, a gold medal and an amount of Rs fifty thousand. .

PGIMER organizes training programme on air pollution

Department of Community Medicine and School of Public Health, PGIMER Chandigarh in collaboration with Department of Environment Studies, Panjab University (PU) successfully organized a three-day residential training programme on the "Indoor & Outdoor Air Pollution, Standards & Impacts on Human Health: Case Studies". The training programme was sponsored by Central Pollution Control Board, Delhi in partnership with Health Care Without Harm and National Centre for Disease Control, New Delhi.

The training programme brought together over 50 participants from central and state pollution control boards including public health practitioners, medical professionals, environmentalists and researchers representing over 15 states. The programme was coordinated by Dr Ravindra Khaiwal, Additional Professor of Environment Health, Department of Community Medicine & School of Public Health, PGIMER and Dr Suman Mor Head - Department of Environment Studies, Panjab University, Chandigarh.

S Narayan, IFS, Member Secretary, Haryana Pollution Control Board and TC Nautiyal, IFS, Member Secretary-Chandigarh Pollution Control Committee graced the occasion as the Chief Guest and the Guest of Honour of the valedictory session, respectively.

The technical session included the lectures by Prof Arun Sharma, University College of Medical Sciences and GTB Hospital, Delhi; Dr S.K Jindal, Emeritus-Professor, PGIMER-Chandigarh; Dr Harshal Salve, AIIMS, New Delhi; Bijay Padhi, PGIMER, Chandigarh and Dr Sreekanth, from CSTEP, Bengaluru.

Prof Arun Sharma said that indoor and outdoor air pollutants may exacerbate lung diseases. He also shared that COPD cases reported increase in highly polluted industrial areas of Ludhiana as compared to their non-industrial counterparts. Prof S.K Jindal chaired the panel discussion on 'Evidence to Action: Bridging the Gap in Existing Health Studies & Air Pollution Control' and said that air pollution is now fully acknowledged to be a significant public health problem, responsible for a number of ill-effects that are well documented from the results of an extensive research conducted in many regions of the world.

Sparsh felicitated Amresh Tiwary, Editor & Publisher of Double Helical Magazine, for generating widespread awareness about the significance of health and holistic living

Sparsh organises walkathon **to spread the message of health and fitness**

A walkathon was organized by the Sparsh Society (Society for Promoting Awareness Regarding School and Health), a selfless, voluntary organization dedicated to the education and health of people especially children, on Sunday 24 November 2019 to generate the need to remain fit among the people at Cloud 9 Towers, Sector 1, Vaishali, Ghaziabad.

The program, started in association with Double Helical magazine, started with a march on foot at 7:00 am after which people were imparted tips on health awareness and physical fitness by medical experts. The participants were also informed about Yoga, Aerobics Exercise Zumba, what precautions should be taken about food and how to adopt a lifestyle to get the benefit of good health by staying away from diseases.

Magazine Sparshdeep, brought out by the philanthropic institution Sparsh, was released on this

occasion by 20 young children, in which the details of more than 40 institutions working in the field of health were published.

The programme also saw Sparsh felicitating organisation working in the field of social welfare, notable among them were Sneh Society; Samvedna; Jaya Prayas Help Foundation; Jan Shiksha and Sanskar Samiti; Gayatri family; Pandit Deendayal Upadhyay Charitable Dispensary; Rotary Club; Grace Care; Gyan Kiran Foundation; Indian Medical Association; Samarpan Foundation; Anand Ashram Socio-Cultural Organization; Aangan Aur Aanchal; Parivartan Sandesh Foundation; Safai Muhim; Tapovan Education Foundation and Nanhe Kadam.

The programme was graced by the presence of Dr. Sachin Bhargava; Dr. Namit Varshney; Dr Tejbir Singh; Dr. Mohit; Mrs. Preeti Goyal; Mr. Hariom Gupta; Mr. Manoj Goyal, and Dr. Deepa Gautam, among others.

DOUBLE HELICAL

INDIA - SWEDEN
BUSINESS SUMMIT
A PLATFORM TO UNDERSTAND, CONNECT AND ACCELERATE
3 DECEMBER 2019

Launch of an India-Sweden
Healthcare Innovation Centre

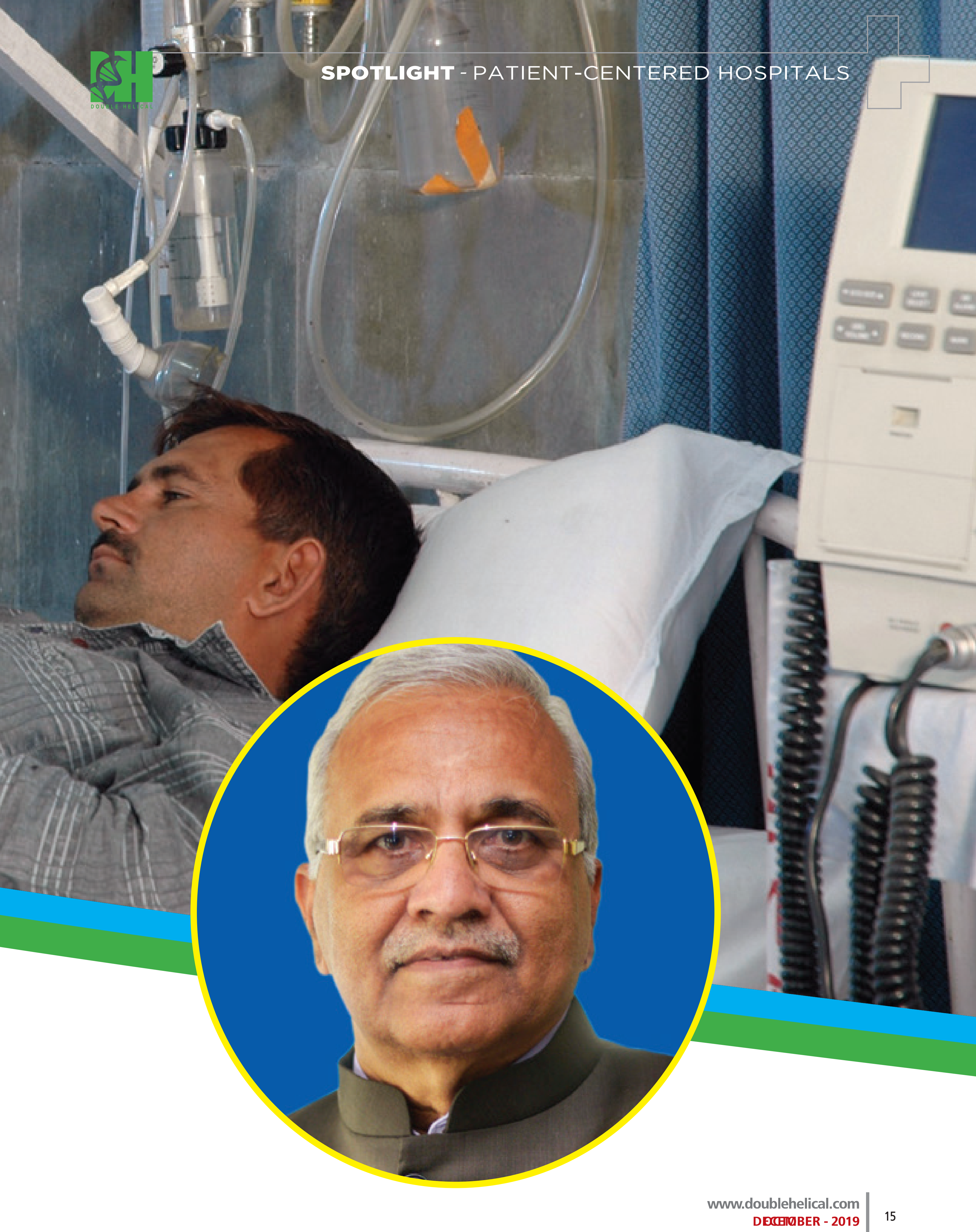
India, Sweden sign MoU for **Healthcare Innovation Centre**

Dr. Harsh Vardhan, Union Minister for Health & Family Welfare presided over the signing of the Memorandum of Intent for the India Sweden Healthcare Innovation Centre at the event to celebrate ten years of successful implementation of the Memorandum of Understanding (MoU) with Sweden, in the presence of Shri Ashwini Kumar Choubey, MOS (HFW) and Ms. Maja Fjaestad, State Secretary to the Minister for Health and Social Affairs, Sweden, Ms. Preeti Sudan, Secretary (HFW), and Dr Balram Bharagav, DG, ICMR.

PARADIGM SHIFT IN PATIENT CARE

In patient-centred hospitals, the patient is not only at the centre of care, but needs to be informed and made part of the decision-making. Care plan is organised around his/her medical condition over full cycle of care encompassing outpatient, inpatient and rehabilitative care as well as supporting services such as nutrition, social work, and behavioral health ...

BY DR GIRDHAR GYANI



A patient-friendly hospital would mean that all its staff, aided by formal structure, processes and practices, work towards providing a warm and personal human touch to the care being given to their patients, their relatives and other visitors to the hospital.

In patient registration & admission, obtaining general consent, quick turn-around of beds, quick transfer of admitted patients to their wards and personal care, patients will have the right to receive treatment irrespective of their type of primary and associated illnesses, socio-economic status, age, gender, sexual orientation, religion, caste, cultural preferences, linguistic and geographical origins or political affiliations.

Right to personal dignity and to receive care without any form of stigma and discrimination is ensured. Privacy during examination and treatment, protection from physical abuse and neglect are built within the hospital's documented system. Respect of special needs such as spiritual and cultural preferences, right to confidentiality of sensitive personal information are practised in letter and spirit. Patients are educated on risks, benefits, expected treatment outcomes and possible complications, to enable them to make informed decisions, and involve them in the care planning and delivery process.

These days we even talk of patient-driven hospitals which are step ahead of patient-centric hospitals. While patient-centric necessarily implies that clinicians are in charge, even if the patient is at the centre but in patient-driven hospitals, the patient is not only at the centre but is empowered in selecting the care plan and making decisions as well. In current incentive structure, providers get paid for the number of services they provide such as number of patient visits, number of surgeries, etc. However, in a consumer-driven marketplace, they will be paid for reducing hospital stays, improving safety and quality, and providing tools for consumers to manage their own health. Care is organized around patient's medical condition over full cycle of care encompassing outpatient, inpatient and rehabilitative care as well as supporting services (i.e. nutrition, social work, behavioral health etc) as against, in most cases, care gets delivered in a sequential & un-coordinated way, with focus on caring for specific set of medical conditions.

FEATURES OF PATIENT CENTERED HOSPITALS:

1. **All staff are considered caregivers.** Under this principle,

everyone in the workforce, from housekeeping staff to the CEO, is part of patients' care experience. Regardless of one's role, each person is expected to put the patient first.

2. **Care is based on full cycle.** The focus is on the continuum of care for patients rather than episodes of care.
3. **Care is customized and reflects patient needs, values and choices.** Customizing care recognizes that each patient is different and may have different needs and preferences, including making environment comfortable to individual patients.
4. **Sharing of Information.** In a patient-centered environment, all members of the care team — including the patient — need to be aware of the patient's status and care plan. "If the patient is going to be the centre of care, patient needs to be informed and made part of the decision-making,"
5. **Patient safety is priority.** Making patient safety a visible priority demonstrates the organization's commitment to patient care.
6. **Transparency is hall mark.** True patient-centered care requires transparency between providers and patients and among providers. Providers should be "upfront and honest with information so that patients and their associates can make informed decisions with their care plans.
7. **Shared decision making.** The hospital need to imbibe principle of shared decision making among all clinicians and associate staff. All processes should be performed from a "patient-value" perspective
8. **The patient is in control for their care.** As mentioned above, the patient needs to be fully involved in knowing and decision making about the care plan, the possible complications and outcomes including the cost.

INSTITUTIONALIZING: It is important that hospital has the formal documented system, incorporating all the points mentioned above. All hospital staff take ownership of their work processes. Outcomes are monitored and measured and made available in public domain. Some of the key considerations may include the following;

1. **Making sure that staff members understand their roles:** One of the biggest obstacles in achieving patient-centered care in the workplace is that we are unable to define the roles of employees at different levels. The front desk

In changing time, when healthcare has become political/ election agenda, the patient centered care is no more an option but a necessary aspect for any hospital. Hospital is unique organization in the sense that many look at it as charitable/social service whereas for all practical purposes, it is like any other industry, yet as complex if not more than an aerospace industry.

staff thinks it's the responsibility of the floor nurses; the floor nurses think it's the responsibility of the physicians etc. However, for patient-centered care to be successful, everyone must take full ownership of their respective roles from treating patients with courtesy and respect to making sure that all needs are met prior to discharge.

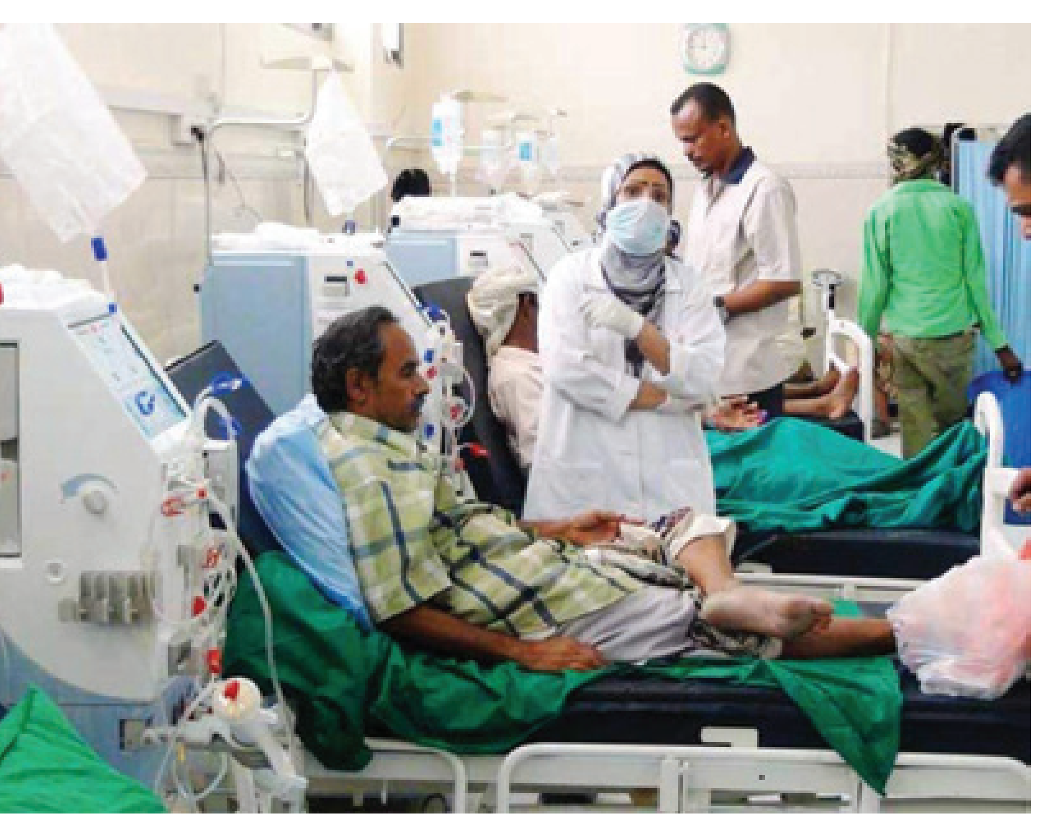
2. **Setting Goals:** It is important that the hospital sets measurable goals at each level like, goals for each specialty department, goals for each support function and goals for key individual functionaries. These goals need to be derivatives of organisational goals under monitoring by top management.
3. **Reward and Recognitions:** In addition to setting of goals, rewards are a powerful motivator. When an employee sees others receiving recognition, he feels compelled to work harder and achieve his own recognition. If an employee is consistently meeting goals, earning accolades from patients and their families, offering genuine emotional support, focusing on patients and ensuring patients are fully educated before leaving the hospital, he/she needs to be made an example for others.
4. **Establish SOPs:** The best way to make sure your hospital staff follows procedures is to make them easy to digest through user friendly SOPs. Document processes, and include specific examples on how to accomplish the pillars of patient-centered care, such as involving patient's family in case decisions, making physical comfort a top priority and educating the patient. Most importantly, though, ensure everyone has the opportunity to ask questions so you can quickly clear up all possible ifs and buts.
5. **Establish relation with patient advocates/ associations:** Patient advocates live in patient-centered care. Their entire purpose is to ensure patients get the care they need, and so they spend plenty of time listening to patient concerns. Cooperating with these professionals will allow hospitals to have insight into opinions and sentiments we may not otherwise come to know. By taking this feedback, and applying it to procedural changes, can help make a real impact.

CONCLUSION:

In changing time, when healthcare

has become political/ election agenda, the patient-centered care is no more an option but a necessary aspect for any hospital. Hospital is a unique organisation in the sense that many look at it as charitable/social service whereas for all practical purposes, it is like any other industry, yet as complex if not more than an aerospace industry. The stakes are high as it involves lives of human beings. High ended technology on one hand is making care much safer but along with increases the cost. With increased awareness about the healthcare needs, the demand and expectations from patients are increasing on continuous basis.

The principles of modern management which were earlier not considered as part of healthcare set up are now required to be integral part of any hospital setup. Hospital setups are required to adopt the principles of inverted pyramid, bringing focus on empowerment of front desk staff and keeping patients at the top of pyramid. Care for full cycle including bundled payment is going to be future norm. The compensation will be linked with clinical outcomes and patient feedback taken from third party. These are going to be big challenges for hospitals. Adopting SMART technology is going to help in becoming patient centric, besides that it would also help in improving patient safety and operational efficiency. All in all, it is going to be challenging time but for sure the hospitals which are truly patient centric/ driven will only survive.



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

DOUBLE HELICAL

COPING WITH TWIN CHALLENGES

Medical professionals need to adhere to patient safety guidelines, improve on communication with patients and adopt efficient work processes. Equally important is to work towards reducing the spiralling cost of hi-tech medical care in a developing country like India....

BY DR VIJAY AGARWAL

With the passage of time, healthcare as component of overall wellbeing is seen as basic obligation to be met by the governments. In order to meet such an obligation, governments need to raise spending on healthcare as percentage of GDP which again is not an easy task for developing economies like India, which have other basic priorities including education, environment, infrastructure, electricity, roads etc. The only way out is to incentivize private health sector to invest in healthcare infrastructure and regulate the same for quality and patient safety. Equally important is to apply management tools to help in improving of operational efficiency and cutting down of wasteful work processes and thereby reducing the operational cost. These measures will surely help hospitals in achieving high patient safety at low cost.

Healthcare delivery today has become very complex. Earlier it was considered to be safe and inexpensive, less invasive and under the comforting personal care of a family physician; while in present times it is viewed as potentially dangerous, expensive and driven primarily by technology & medical consultants.

Rationale behind this change has been ill understood both by the community and the healthcare providers and therefore they are inadequately prepared to deal with unforeseen outcomes including medical errors and cost. We need to look at the journey of

SCALING HEIGHTS OF GLORY

Dr Vijay Agarwal, President, Consortium of Accredited Healthcare Organizations, was awarded the "QIMPRO PLATINUM STANDARD" Award 2019 for HEALTHCARE by Qimpro Foundation on 13th November, 2019 at Mumbai. Qimpro Awards was conceptualized in 1989 by Dr J. M. Juran, the Quality Guru, to recognize individual excellence in quality management. The awards were commenced by recognizing leaders and facilitators in business with the Qimpro Gold Standard and Qimpro Silver Standard respectively in four categories – Education, Healthcare, Business, and Environment.

A Qimpro Platinum Standard awardee is the one who is a national statesman for quality & excellence, with global footprints. Dr Vijay, a national crusader for continual Quality Improvement in Healthcare, has a vision to raise the bar of Indian healthcare organizations to match global standards, through CAHO which is a platform created for NABH/ NABL/JCI accredited HCOs to share best practices, create benchmarks and training programs. Apart from facilitating continual quality improvement in these HCOs, CAHO encourages these organizations to handhold and mentor other hospitals to join quality journey and accreditation.

Dr Agarwal believes that 'People Make Quality.' Driven by this passionate belief, he has established a series of CAHO Certified Professional Courses to equip and train every healthcare professional to pursue the quality journey. Dr Agarwal is a post-graduate in paediatrics from the Maulana Azad Medical College, New Delhi.

He commenced his professional career in 1973 and has over the decades earned a sterling reputation as a Paediatrician. He will be remembered for his role in bringing Pulse Polio strategy to the country and for his strategic skills demonstrated while driving the National Pulse Polio Program. Dr Agarwal was a Member of the ISRO Health Quest Project, a unique collaboration between space scientists and healthcare professionals to take the country closer to the goal of "error-free" healthcare.

increasing reporting of medical errors, medicine becoming hi-tech and expensive and how the medical community can cope with this change.

HISTORY OF MEDICAL ERRORS

The fact that medical errors have become the 3rd leading cause of death in a developed country like USA is a pointer to the possible scenarios around the world especially in developing countries including India. Hippocrates recognized that harm could arise from the well-intentioned actions of healers. Thus, the Hippocratic Oath makes physicians pledge to "prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone." Since then, primum non nocere ("FIRST DO NO HARM") has become a central tenet for contemporary medicine.

Till the late 19th Century, data on adverse outcomes were hard to come by and were mostly anecdotal, making most physicians and hospital administrators ignore medical errors as aberrations and they were being noticed only when law suits were filed. It is with the advent of news channels and other communication media that medical services started coming under a scanner of the common people who realized that the delivery of medical services were not without real risk. The health reporter for the Boston Globe, Betsy Lehman, died from an overdose during chemotherapy. Famous film star Sri Devi's mother Rajeshwari was operated on the wrong side of brain with disastrous consequences. Josie King was an 18-month old baby when she died due to medical negligence in one of the best hospitals in USA. Since then, her mother Sorrel King went on to become a champion to promote patient safety. In April 1982, the public and the medical fraternity was shocked by the ABC television program 20/20 entitled The Deep Sleep; the producers stated that, every year, 6,000 Americans die or suffer brain damage related to

anesthetic mishaps.

One of the milestones to highlight that medical errors were not anecdotal but a regular feature even in the best of the hospitals was the famous article " To Err is Human" published by Institute of Medicine (IoM) in the year 2000. The study estimated that as many as 98,000 people die in any given year from medical errors that occur in hospitals (USA alone) - more than the number of deaths from motor vehicle accidents, breast cancer, or AIDS - three causes that receive far more public attention. A 2006 follow-up to the IoM study found that medication errors were among the most common medical mistakes, harming at least 1.5 million people every year.

Since then medical errors have come under greater scrutiny. A study in 2016 declared medical errors to be the 3rd leading cause of death in USA. Recognizing that healthcare errors impact 1 in every 10 patients around the world, the World Health Organization (WHO) recognized patient safety as an endemic issue of concern.

> NABH has been able to sensitize hospitals in India about the need for accreditation. Many government health insurance schemes have begun empanelment of hospitals on the basis of NABH accreditation. This has increased push for more and more hospitals going for accreditation

Although we have poor structured documentation of medical errors in India, the incidence of medical errors in India will be manifold higher. Example of surveillance data of Hospital Associated Infections (HAI) published by Dr Victor Rosenthal and Indian co-authors from 20 cities of India, collected from 2004 to 2013, from 236,700 ICU patients for 970,713 bed-days can be an eye opener. Authors found 5.1 central line-associated bloodstream infections (CLABSIs) per 1,000 central line-days (5 times above USA), 9.4 cases of ventilator-associated pneumonia (VAPs) per 1,000 mechanical ventilator-days (9 times above USA), and 2.1 catheter-associated urinary

tract infections per 1,000 urinary catheter-days (2 times above USA). Furthermore, the burden of HAI was also reflected in higher mortality rates, hospital costs, because of prolonged length of stay (LOS), use of extra beds, and higher antimicrobial resistance.

MEDICAL ERRORS AND INCREASING COST

Medical errors and resulting complications have surely increased the cost of providing medical care. However, to quantify the degree to which the medical errors contribute to the increasing cost is not easy. The Society of Actuaries Health Section sponsored a study to measure the annual frequency of medical errors in the United States and the total measurable cost to the United States economy of these errors. This effort was based upon an analysis of an extensive claim database, and it therefore relied upon medical events, which had been submitted for payment by medical providers.

KEY FINDINGS FROM THE STUDY INCLUDED:

There were 6.3 million measurable medical injuries in the U.S. in 2008; of the 6.3 million injuries, the authors estimate that 1.5 million were associated with a medical error.

- The average total cost per error was approximately $13,000.
- In an inpatient setting, seven percent of admissions are estimated to result in some type of medical injury.

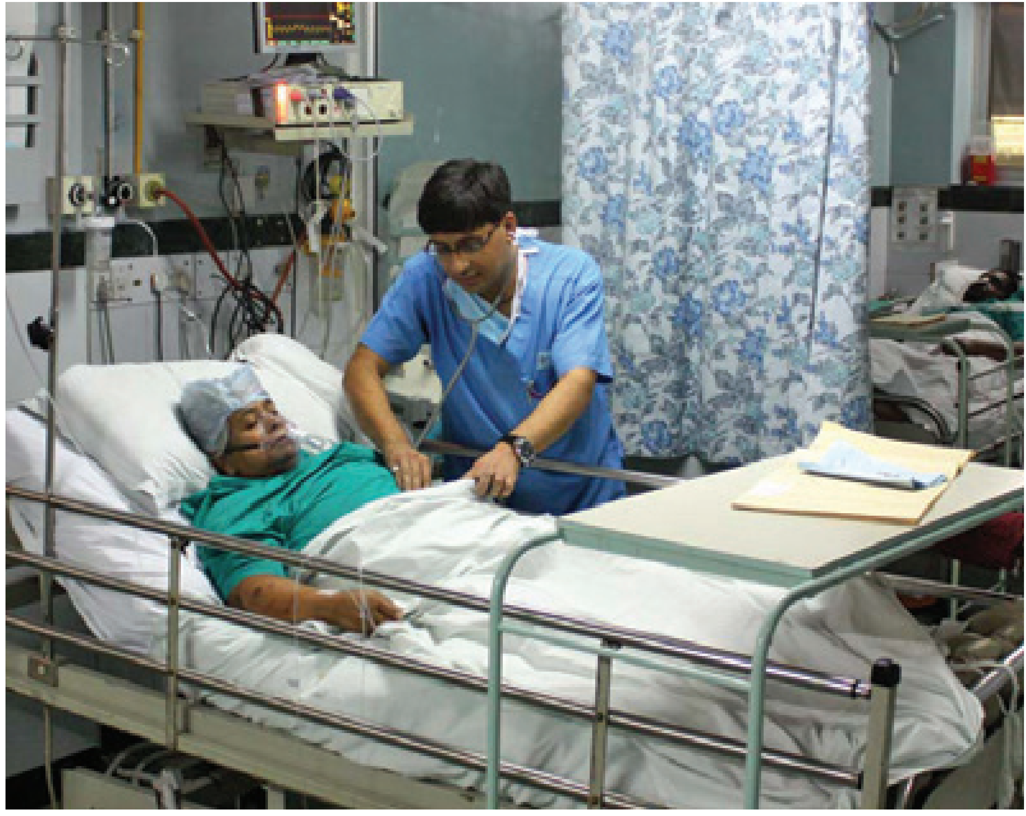
The measurable medical errors resulted in more than 2,500 avoidable deaths and more than 10 million excess days missed from work due to short-term disability. This number includes only the errors that researchers could identify through claims data, so the total economic impact of medical errors was in fact greater than what was reported.

The relationship of the medical errors to the cost was taken to another level when medical profession came under attack for the fee-for-service system. It has been alleged that doctors and hospitals fared better financially when patients needed follow-up care after an error occurred. The viewpoint is that for every complication arising out of an error, doctors and hospitals perform some additional services, for which they will receive additional payments. While a hospital's leadership consciously will not hurt patients to make more money, but the system does not encourage and reward better and more efficient care.

Despite best efforts, the results of patient safety initiatives have been far from satisfactory. It is suggested that professional bodies work on twin challenges i.e. patient safety and affordability by organizing research and dissemination through workshops and seminars

Some of the steps taken in a country like USA are an indication of things to change. Recent national health reform legislation (the Patient Protection and Accountable Care Act or PPACA) has several quality improvement provisions including restructuring the way healthcare is delivered in the United States through accountable care organizations (ACOs) and value-based purchasing. The Centers for Medicare & Medicaid Services (CMS) has for the first time said it will stop reimbursing hospitals for two major problems that cost the government and by extension taxpayers, billions of dollars; (1) preventable readmissions and (2) healthcare facility–acquired conditions, such as infections.

A big causality of this emerging scenario even in India has been the



erosion of the trust that medicos enjoyed in the community. It has been a drastic change for a country where doctors were worshipped; people have begun to believe that doctors have become greedy and the hospitals have become commercial.

Private healthcare is the dominant healthcare provider in India now as Government spending on health has been less than 1% of GDP for years leading to the consequential growth of private healthcare. The huge demand created by the increasing middle class and development in the medical sector paved the way for for-profit hospitals in the 1990s. This helped in augmenting the availability of super-specialty services across the country.

The advent of these super-specialty corporate hospitals exposed the community to effective but expensive, yet error prone healthcare delivery. A study done by IIMA (Indian Institute of Management Ahmedabad) based on financial statement data of private hospitals for the years 1999 to 2004 concluded that the financial risk in this sector is high because of lower profitability and lower operating efficiencies. Medical establishments are hugely capital intensive with very poor ROI. Many hospitals are running in losses. Although, international patients find hospitals in India to be good and inexpensive, yet they are considered very expensive by the local population in India. Reasons for this could be:

Most people have not planned expenditure on healthcare. Low penetration of health insurance needs to be addressed to meet the high unexpected expense for high-end medical care.

Community has no knowledge of the real expense involved in running a hospital because the Government-run facilities are providing "free" care to them. However, these facilities are not free and are primarily run by taxpayers' money. A costing exercise of the not-for-profit quality institutions needs to be done to make people aware about the actual cots.

Financial burden of healthcare on the family has increased because of increased life expectancy with the elderly in the family requiring more medical attention.

NEED FOR CHANGE:

Highlighting of medical errors by media and violence faced by medical profession, has pushed the case for need for medical professionals to make a sincere attempt to adhere to patient safety guidelines, improve on communication with patients and adopt efficient work processes. Patient safety has emerged as a distinct healthcare discipline supported by a developing scientific framework. There is a significant trans-disciplinary body of theoretical and research literature that informs the science of patient safety.

The resulting patient safety knowledge continually informs improvement efforts such as: applying lessons learned from business and industry, adopting innovative technologies, educating providers and consumers, enhancing error reporting systems, and developing new economic incentives.

Yet despite best efforts, the results of patient safety initiatives have been far from satisfactory. It is suggested that professional bodies work on twin challenges i.e. patient safety and affordability by organizing research and dissemination through workshops and seminars. In 1983, the British Royal Society of Medicine and the Harvard Medical School jointly sponsored a symposium on anesthesia deaths and injuries, resulting in an agreement to share statistics and to conduct studies. By 1984, the American Society of Anesthesiologists (ASA) had established the Anesthesia Patient Safety Foundation (APSF). Anesthesia related deaths have surely decreased significantly over a period of time. A similar effort of AHPI and CAHO to involve ISRO to evolve guidelines for Emergency and Critical Care has been a step in this direction.

Unfortunately, these efforts are too small considering the complexity of

Upholding Safe, Affordable & Quality Healthcare

Dr Vijay Agarwal graduated in 1968 and obtained post-graduation in Paediatrics from the prestigious Maulana Azad Medical College, New Delhi in 1973.

Over the last four decades, besides being a paediatrician of repute, he has played a key role in improving the state of healthcare in India. He made great impact on success of national programmes such as Pulse Polio Programme and Centralized Waste Management Scheme in Delhi. He continues to leverage his expertise as an excellent organizer, strategist & administratorand is presently championing the cause of patient safety and enhancing quality in healthcare delivery.

CURRENT RESPONSIBILITIES:

- President of Consortium of Accredited Healthcare Organizations (CAHO).

KEY ACHIEVEMENTS:

- Under the umbrella of CAHO, conceived the idea of training quality implementers in the country. Already, more than 1000 professionals have been trained in the basic programme approved by NABH/NBQP. The advanced programme has been approved by HSSC (Health Sector Skill Council) and has 200 plus professionals trained till date.
- Key Organiser CAHOCON 2016, 2017, 2018 and 2019 – an event that has become a milestone for NABH and NABL accredited hospitals.
- Co- Chair of Accreditation Committee of NABH (2015 to 2018)
- Director Operations and Administration in Max Healthcare (2003 to 2007): Was responsible for setting up their flagship hospitals at Saket New Delhi.
- Executive Director (2007-2015) of Pushpanjali Crosslay Hospital, Ghaziabad: Was responsible for setting up a world-class institution. He hired visually and hearing handicapped persons and demonstrated that they can work as efficiently as the normal people.
- Advisor to Max Healthcare for Quality & Business Excellence (July 2015 to July 2019)
- Member - Government of Karnataka Committee (2016-2017): Involved in procedural costing of 25 common procedures in collaboration with IIM Bangalore, NABH and other stakeholders
- Chair of Technical Committee of Karnataka Taskforce (2016-2017) for recommending public policy in healthcare.
- Member- Health Quest-a project of ISRO along with AHPI, CAHO, SEMI, ISCC): Developed guidelines for emergency and critical care to minimize adverse events in these high-risk areas.
- Founder Chairman of Nursing Home Forum of Delhi Medical Association from 1992 to 2002. During this period, worked towards giving direction to biomedical waste rules and helped in creating the centralized waste management facilities
- Member of the Immunization Advisory Committee of IAP that was responsible for advocating Pulse Polio Strategy and then was a lead member of the core committee to implement Pulse Polio Program with Dr Harshvardhan (Minister of Health, Govt. of Delhi)
- Assisted Siddharth Aggarwal, Amicus Curiae appointed by High Court Delhi, to suggest steps to tackle violence against doctors.
- Founder President of Society for Child Development: The society works towards vocational training of mentally challenged children all over the country.
- Hony. Professor, College of General Practitioners, Indian Medical Association and author of many books and articles.
- Recipient of Distinguished Alumnus Award of Maulana Azad Medical College
- Lifetime Achievement Award of Indian Medical Association.
- Has been conferred Qimpro's Platinum Award for Healthcare 2019

healthcare delivery setting with multiple types of work, many different professions and varying working conditions across clinical environments. Areas like pharmacy, radiotherapy, nuclear medicine and blood bank require different inputs as these are highly standardized and rely on automation and information technology. They are islands of reliability within the much more chaotic wider hospital environment.

In healthcare we have to adapt our approach to safety according to the nature of the work, the working conditions and use a variety of underlying models of safety.

ACCREDITATION INITIATIVES:

One of the major routes for propelling healthcare providers to become safer was to encourage hospitals to follow standards (SOPs) and other national and international guidelines. A standard is a statement that defines the structures and processes that must be substantially in place in an organization to enhance the quality of care. Accreditation is an external review of quality with four principal components:

Bodies like NABH have been able to sensitize hospitals in India about the need for accreditation. Many government health insurance schemes have begun empanelment of hospitals on the basis of NABH accreditation. This has increased push for more and more hospitals going for accreditation. However, this has also created tendency in obtaining accreditation certificate through short cuts rather than working in spirit of patient safety. Studies are needed to document the impact of accreditation on quality/patient safety. Most hospitals feel that getting accreditation is the final destination of their quality journey while actually it should be the beginning.

One of the reasons for this has been the fact that clinicians have kept themselves away from learning and adopting the rapid development in the field of hospital quality. It is also the inability of the clinician to comprehend that delivery of healthcare service is now teamwork. Clinicians are rather reluctant to learn from quality managers who have emerged as "specialists" in quality having learnt all the Standards and SOPs. Most of the times, the quality managers are much junior in hierarchical set-up of the hospital. They are not able to establish a rapport with the senior clinicians who consider quality documentation to be a roadblock in the clinical work. The senior administrators are focused on the balance-sheet and find quality issues raised by the quality manager as necessary evil. Quality implementation can happen only with the active involvement of all the stakeholders. The SOPs and guidelines have to be owned by all the members of a department/ hospital.

CONCLUSION:

With the passage of time, healthcare as component of overall wellbeing is seen as basic obligation to be met by the governments. In order to meet such an obligation, governments need to raise spending on healthcare as percentage of GDP which again is not an easy task for developing economies like India, which have other basic priorities including education, environment, infrastructure, electricity, roads etc. The only way out is to incentivize private health sector to invest in healthcare infrastructure and regulate the same for quality and patient safety. Equally important is to apply management tools to help in improving of operational efficiency and cutting down of wasteful work processes and thereby reducing the operational cost. These measures will surely help hospitals in achieving high patient safety at low cost.

(The author is President, Consortium of Accredited Healthcare Organizations(CAHO)

DIABETES MELLITUS

A SERIOUS THREAT TO GLOBAL HEALTH

Though a serious threat, with early diagnosis and access to appropriate care, diabetes can be managed and its complications prevented....

BY DR N P SINGH

Diabetes is a serious threat to global health that respects neither socioeconomic status nor national boundaries. People living with diabetes are at risk of developing a number of serious and life-threatening complications, leading to an increased need for medical care, a reduced quality of life, and undue stress on families. Diabetes and its complications, if not well managed, can lead to frequent hospital admissions and premature death. Globally, diabetes is among the top 10 causes of death.

Despite the stark truth the data represent, there is a positive message: with early diagnosis and access to appropriate care, diabetes can be managed and its complications prevented. Furthermore, type 2 diabetes can often be prevented and there is compelling evidence to suggest it can be reversed in some cases.

In recent years, the World Health Organization (WHO) and the United Nations (UN) have set global targets to encourage action to improve care and strengthen healthcare systems. These

actions include reducing premature death from non-communicable diseases (NCDs), including diabetes, by 30% by 2030, establishing national diabetes plans and achieving universal health coverage (UHC) by 2030. These are important steps towards guaranteeing access to affordable high- quality care and alleviating financial catastrophe for the close to 580 million who will then be living with diabetes.

However, many countries still lack a national diabetes plan, and at least half the world's population does not have full coverage for essential health services. Most countries are also falling short of the WHO 2025 target of halting the rise of type 2 diabetes. Urgent national actions are required to improve type 2 diabetes prevention and the management of all types of diabetes. Governments will need to adopt a health-in-all-policies approach to secure the best possible care and quality of life for people living with diabetes.

The challenges of estimating the global impact of diabetes are considerable and relate to two main issues: available data are not homogenous nor are they comprehensive. Data heterogeneity results from many factors. For example, various diagnostic tests are employed for the diagnosis of diabetes and the diagnostic criteria used may be based on those of WHO or of the American Diabetes Association (ADA). These are closely aligned but there are differences.

Diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetic individuals currently diagnosed with the disease. In 2000, India (31.7 million) topped the world with the highest number of people with diabetes mellitus followed by China (20.8 million) with the United States (17.7 million) in second and third place respectively.

According to Federation of Diabetes International, the prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with maximum increase in India. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India, while China (42.3 million) and the United States (30.3 million) will also see significant increases in those affected by the disease.

India currently faces an uncertain future in relation to the potential burden that diabetes may impose upon the country. Many influences affect the prevalence of disease throughout the country, and identification of those factors is necessary to facilitate change when facing health challenges. So, what are the factors currently affecting diabetes in India that are making this problem so extreme?

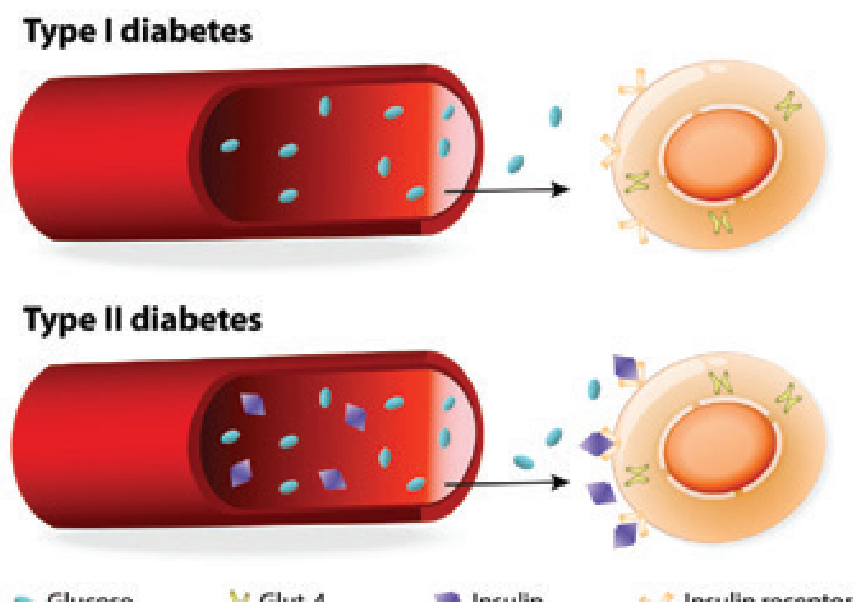
The aetiology of diabetes in India is multifactorial and includes genetic factors coupled with environmental influences such as obesity associated with rising living standards, steady urban migration, and lifestyle changes. Yet despite the incidence of diabetes within India, there are no nationwide and few multi-centric studies conducted on the prevalence of diabetes and its complications. The studies that have been undertaken are also prone to potential error as the heterogeneity of the Indian population

with respect to culture, ethnicity, socio- economic conditions, means that the extrapolation of regional results may give inaccurate estimates for the whole country.

There are, however, patterns of diabetes incidence that are related to the geographical distribution of diabetes in India. Rough estimates show that the prevalence of diabetes in rural populations is one-quarter that of urban population for India and other Indian sub-continent countries such as Bangladesh, Nepal, Bhutan, and Sri Lanka.

Preliminary results from a large community study conducted by the Indian Council of Medical research (ICMR) revealed that a lower proportion of the population is affected in states of Northern India (Chandigarh 0.12 million, Jharkhand 0.96 million) as compared to Maharashtra (9.2 million) and Tamil Nadu (4.8 million).5 The National Urban Survey conducted across the metropolitan cities of India reported similar trend: 11.7 per cent in Kolkata (Eastern India), 6.1 per cent in Kashmir Valley (Northern India), 11.6 per cent in New Delhi (Northern India), and 9.3 per cent in West India (Mumbai) compared with (13.5 per cent in Chennai (South India), 16.6 per cent in Hyderabad (south India), and 12.4 per cent Bangalore (South India).

A suggested explanation for this



difference is that the north Indians are migrant Asian populations and south Indians are the host populations, however this possible cause-and-effect has not been corroborated through further research. Similar ethnographic disparities have been observed in indigenous and non-indigenous populations in countries colonised by the Great Britain: indigenous people from New Zealand and Australia have been shown to suffer from diabetes and cardio-metabolic disorders more than the non-indigenous people. Further studies are required in India to highlight cultural and ethnic trends and provide a more complete understanding of the differences in diabetes aetiology between Indian and other ethnic groups within India.

WHAT IS DIABETES?

Diabetes is a disease that occurs when blood glucose, also called blood sugar, is too high. Blood glucose is the main source of energy and comes from the food. Insulin, a hormone made by the pancreas, helps glucose from food get into cells to be used for energy. Sometimes body does not make enough or any insulin or does not use insulin well. Glucose then stays in blood and does not reach cells.

Over time, having too much glucose in blood can cause health problems. Although diabetes has no cure, one can take steps to manage his/her diabetes and stay healthy. Sometimes people call diabetes "a touch of sugar" or "borderline diabetes." These terms suggest that someone does not really have diabetes or has a less serious case, but every case of diabetes is serious.

The most common types of diabetes are type 1, type 2, and gestational diabetes.

TYPE 1 DIABETES

In type 1 diabetes, the body does not make insulin. Immune system attacks and destroys the cells in pancreas that make insulin. Type 1 diabetes is usually diagnosed in children and young adults, although it can appear at any age. People with type 1 diabetes need to take insulin every day to stay alive.

TYPE 2 DIABETES

In type 2 diabetes the body does not make or use insulin well. One can develop type 2 diabetes at any age, even during childhood. However, this type of diabetes occurs most often in middle-aged and older people. Type 2 is the most common type of diabetes.

GESTATIONAL DIABETES

Gestational diabetes develops in some women when they are pregnant. Most of the time, this type of diabetes goes away after the baby is born. However, if you have had gestational diabetes, you have a greater chance of developing type 2 diabetes later in life. Sometimes diabetes diagnosed during pregnancy is actually type 2 diabetes.

Other types of diabetes are less common types

include monogenic diabetes, which is an inherited form of diabetes, and cystic fibrosis-related diabetes.

Any one is more likely to develop type 2 diabetes if he/she is age 45 or older, have a family history of diabetes, or is overweight. Physical inactivity, race, and certain health problems such as high blood pressure also affect chance of developing type 2 diabetes. You are also more likely to develop type 2 diabetes if you have prediabetes or had gestational diabetes when you were pregnant.

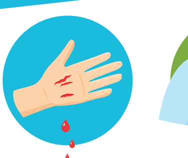
WHAT HEALTH PROBLEMS CAN PEOPLE HAVE WITH DIABETES?

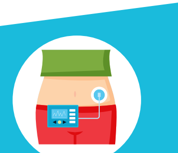
In people living with diabetes over time, high blood glucose leads to problems such as heart disease, stroke, kidney disease, eye problems, dental disease, nerve damage and foot problems. They can take steps to lower their chances of developing these diabetes-related health problems.

Management of type 2 diabetes includes weight loss, healthy eating, regular exercise, possibly, diabetes medication or insulin therapy and blood sugar monitoring. These steps will help keep your blood sugar level closer to normal, which can delay or prevent complications.

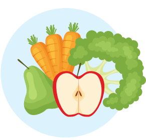
Losing weight can lower blood sugar levels. Losing just 5 to 10 percent of body weight can make a difference, although a sustained weight loss of 7 percent or more of initial weight seems to be ideal. That means someone who weighs 82 kg would need to lose a little less than 5.9 kg to make an impact on blood sugar levels.

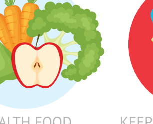
Controlling portions and eating healthy foods are simple ways to start taking weight off. Contrary to popular perception, there's no specific diabetes diet. However, it's important to centre your diet around fewer calories, fewer refined carbohydrates,





Prevention



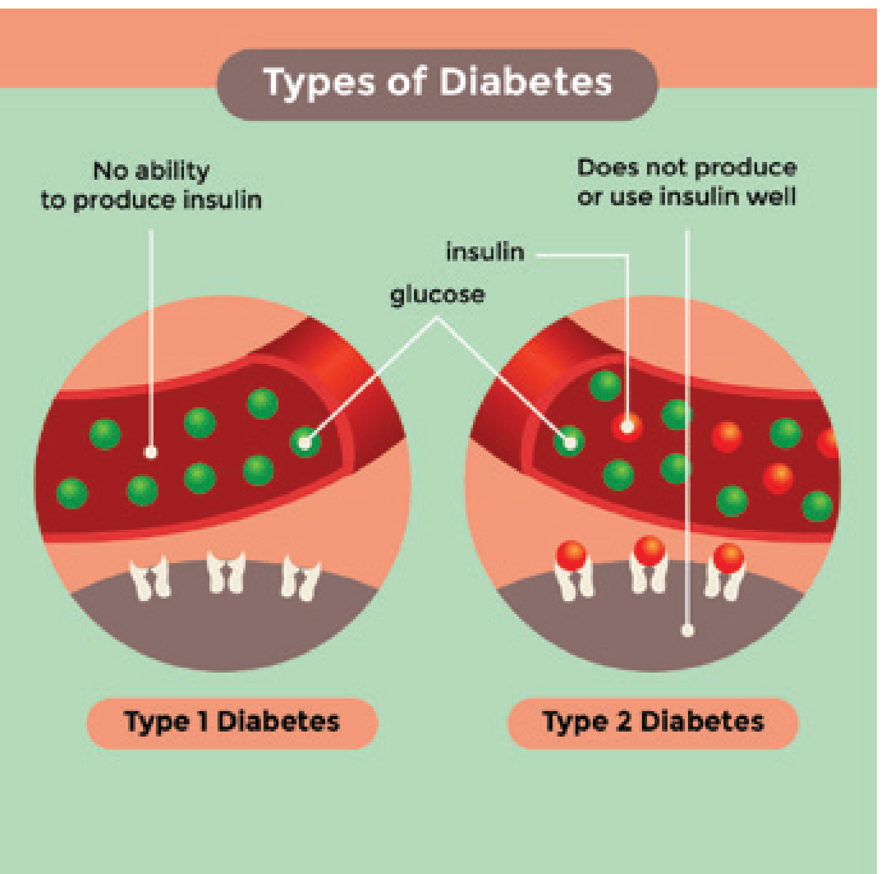


especially sweets, fewer foods containing saturated fats, more vegetables and fruits and more foods with fiber.

PHYSICAL ACTIVITY

Generally physical activity lowers blood sugar. Check your blood sugar level before any activity. You might need to eat a snack before exercising to help prevent low blood sugar if you take diabetes medications that lower your blood sugar. So everyone needs regular aerobic exercise, and people who have type 2 diabetes are no exception. Choose activities you enjoy, such as walking, swimming and biking, so that you can make them part of your daily routine.

Aim for at least 30 to 60 minutes of moderate (or 15 to 30 minutes of vigorous) aerobic exercise most days of the week. A combination of exercises aerobic exercises, such as walking or dancing on most days, combined with resistance training, such as weightlifting or yoga twice a week offers more benefits than either type of exercise alone. It is also important to reduce the amount of time you spend in inactive activities, such as watching TV. Try to move around a bit every 30 minutes.



- **Insulin**
  Insulin is the most common of medication used in two types of diabetes. The type of insulin need depends on how severe the insulin depletion is.
  1. Short-Acting Insulin (regular insulin)
  2. Rapid-Acting Insulins
  3. Intermediate-Acting Insulin
  4. Long-Acting Insulins
  5. Combination Insulins

- **Amylinomimetic Drug**
  Pramlintide is an amylinomimetic drug. Usually injected before meals

- Alpha-Glucosidase Inhibitors
- Biguanides
- Dopamine Agonist
- DPP-4 Inhibitors
- Glucagon-Like Peptides (Incretin Mimetics)
- Meglitinides
- Sodium Glucose Transporter (SGLT) 2 Inhibitors
- Sulfonylureas
- Thiazolidinediones
- Bile Acid Sequestrants

MONITORING BLOOD SUGAR

Depending on your treatment plan, you may need to check and record your blood sugar level every now and then or, if you are on insulin, multiple times a day. Ask your doctor how often he or she wants you to check your blood sugar. Careful monitoring is the only way to make sure that your blood sugar level remains within your target range.

Some people who have type 2 diabetes can achieve their target blood sugar levels with diet and exercise alone, but many also need diabetes medications or insulin therapy. The decision about which medications are best depends on many factors, including your blood sugar level and any other health problems you have.

PREGNANCY

Women with type 2 diabetes may need to alter their treatment during pregnancy. Many women will require insulin therapy during pregnancy. Cholesterol-lowering medications, aspirin and some blood pressure drugs can't be used during pregnancy.

(The author is Senior Director, Medicine and Allied Specialties, Medical Advisor, Max Super Speciality Hospital, Vaishali)

"In India, more than 60 million people have been diagnosed with type 2 diabetes mellitus, which calls for correct formulation of drug'

Metformin-FDCs are not recommended by national or international treatment guidelines. So, FDC formulations for type 2 diabetes require close scrutiny in India....

BY PROF (DR) RAMESH K GOYAL

COMBINE DRUGS WITH CAUTION

FDC (Fixed Dose Combination) BANNED

The Govt. of India vide Gazette Notifications nos. S.O.4379(E) to S.O.4706(E) has prohibited 328 FDCs for manufacture, sale or distribution with immediate effect under Section 26A of Drugs and Cosmetics Act, 1940 based on the recommendation of DTAB as there is no therapeutic justification for the APIs contained in these 328 FDCs or these FDCs may involve risk to human beings In the banned 328 FDCs, total 27 FDCs are with combination of Metformin with their various dose level.This has been a highly debated news that attracted the attention of the public at large. The companies showed displeasure and some of the FDCs were taken back.

Out of over 300 FDCs banned over 70 have been used as pain killers. Some of the pain killers have antacid or anti-gastric acid secretion medicine that may be required but in reality it may not happen. Many of the formulations were used for cold or bronchial asthma. Use of steroids is again very common. It is well known that steroids cannot be used for a long time and may produce serious adverse effects. Some of the FDCs are so irrational that they had the banned drug itself. Those FDCs used as pain killers or for cold may not be used consistently for long time but for hypertension or diabetes or even for bronchial asthma, they are used for years together though the doses needed to be adjusted from time to time. This may pose a serious problem. In this article we present the challenges and problems with antidiabetic FDCs some of which are banned now.

Fixed dose combinations (FDCs), are combinations of two or more active pharmaceutical ingredient/drug in a single dosage form. FDCs are sometimes called “polypills”. A polypill is a medication that is a drug product in pill form (i.e., tablet or capsule) that combines multiple active pharmaceutical ingredients (APIs). Polypills are particularly useful in situations where both the drug combination and the doses needed to treat patients are standardized and stable. Patients who are prescribed several different tablets/formulations to treat a single condition or multiple coexisting conditions often find it hard to take all their drugs correctly. FDCs can also be cheaper to manufacture and easier to distribute than single drug formulations, but they nevertheless have some disadvantages over such formulations. However, owing to potential of drug-drug interaction, FDCs require closer scrutiny with respect to their physical and chemical stability.

To prevent patients being given unsafe or dangerous formulations, many countries regulate the development and marketing of FDCs.FDCs are highly popular in the Indian Pharmaceutical Market and have been particularly flourishing in the last decades.Concerns have been expressed internationally about the regulation of medicinal drugs in India, where thousands of FDCs are available. In response to these concerns, in 2011, an Indian parliamentary standing committee closely examined the Indian national drug regulator- the Central Drugs Standard Control Organization (CDSCO).

In 2005, the WHO adopted its guidelines for registration of fixed-dose medicinal products ‘intended to

provide advice to those countries that do not, as yet, have guidelines for this type of product'.

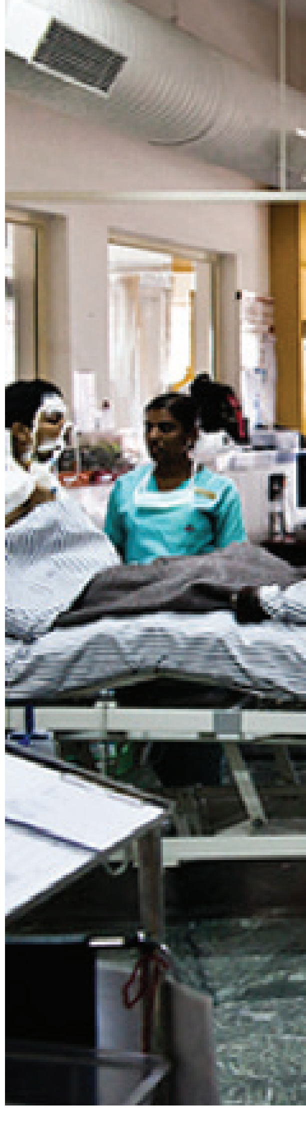
As per the other definition, FDC is a combination of two or more APIs in a fixed ratio of doses. This term is used generically to mean a particular combination of APIs irrespective of the formulation or brand. It may be administered as single entity products given concurrently or as a finished pharmaceutical product. A fixed-dose combination finished pharmaceutical product (FDC-FPP) is a product that contains two or more APIs.

The basic rationale of making "fixed dose combination" medicinal products is either to improve adherence or to benefit from the added effects of the two medicinal products given together. FDCs have shown to be particularly useful in the treatment of infectious diseases like HIV, malaria and tuberculosis where giving multiple antimicrobial agents is the norm. FDCs are also of use in chronic conditions especially when multiple disorders often co-exist.

Thousands of FDCs are available in India. Many are judged safe and effective and are widely used where as many others have been judged unsafe, even dangerous. The rationality of FDCs are generally based on certain aspectssuch as: (a) the drugs in the combination should act by different mechanisms; (b) the pharmacokinetics must not be widely different, and (c) the combination should not have supra-additive toxicity of the ingredients.

Rationale for Fixed Dose Combination: It to be shown that it is rational to combine two or more APIs into a single product. Therefore, the rationality should depend on quality, medical and bioavailability considerations.

Quality: The same quality standards that apply to single-component products will apply to FDCs. It will be necessary to demonstrate that the quality of the combination is similar to that of the individual ingredients.



Medical: There should be a medical rationale for combining the APIs i.e. increased efficacy in comparison to the individual components given at the same dose; similar pharmacokinetics and similar duration of action; the incidence of adverse reactions in response to treatment with the combination is lower than in that in response to any of the component actives given alone. Apart from these, the FDCs might showed dose reduction; cost reduction; improved adherence and simplified the therapy.

Bioavailability considerations: Interpretation of the results of bioavailability (BA) and bioequivalence (BE) tests involves both quality and medical considerations. For example, it is not acceptable that bioavailability of the FDC is reduced or variable, when compared with that of single entity products, because of poor formulation, but an interaction between two actives that leads to an increased bioavailability may be one of the advantages that is taken into account when balancing advantages and disadvantages.

Irrational Fixed Dose Combination: The most pressing concern with irrational FDCs is that they expose patients to unnecessary risk of adverse drug reactions. Irrational FDCs also impose unnecessary financial burden on consumers.Many irrational FDC medicines have been approved by the state and central regulatory authorities in India and their use is promoted extensively by pharmaceutical firms. There is growing national and international concern about the drug regulatory system in India. Parliamentary reports have highlighted the presence of high numbers of unapproved medicines and irrational combinations of both approved and unapproved drugs in the Indian market-place. FDCs are a peculiar feature of the Indian pharmaceutical landscape.

FDCs and Type 2 Diabetes Mellitus: In India, more than 60 million people have been diagnosed with type 2 diabetes mellitus. The country has been described as 'the diabetes capital of the world'.In a

recent review published elsewhere, authors have mentioned that apart from constant monitoring and rapid adjustment of treatment regimens required to maintain adequate glycaemic control, metformin-FDCs are not recommended by national or international treatment guidelines. Nevertheless, the Central Drugs Standard Control Organization (CDSCO), India's drug regulator, has given approval for 52 FDC formulations for type 2 diabetes, which in turn has given rise to more than 500 marketed brands of metformin FDCs. In contrast, only two metformin FDCs are approved in the USA, one in Australia, and none in either the UK or Canada.

Twenty-seven metformin-FDCs were included in the Indian government's ban of 344 unapproved FDCs in March 2016 as having 'no therapeutic justification' following consideration of nearly 6000 unapproved FDCs by an expert committee.The ban was lifted in December 2016 by the Delhi High Court and was upheld by the Supreme Court in December 2017. The Supreme Court required the Drugs Technical Advisory Board to consider the banned drugs (except those approved before 1988) and to submit a report within 6 months.Recently, based on the recommendation of DTAB, Central Govt. of India vide Gazette Notifications nos. S.O.4379(E) to S.O.4706(E) dated 7th September 2018 has prohibited all the 27 metformin-FDCs for manufacture, sale or distribution with immediate effect under Section 26A of Drugs and Cosmetics Act, 1940.

(The author is Vice Chancellar, Delhi Pharmaceutical Sciences and Research University, New Delhi)

DOUBLE HELICAL

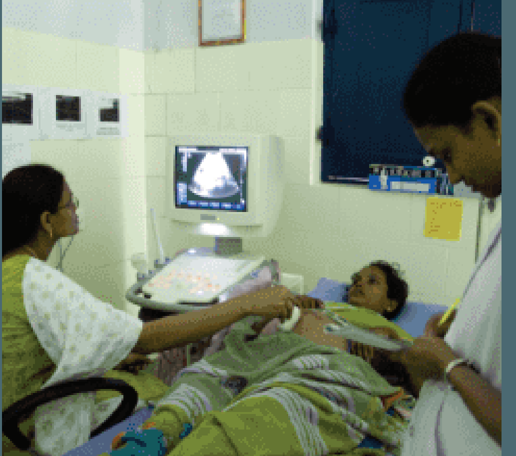
TAKING HEALTH TO THE MASSES

The government needs to provide the requisite policy support and budget allocation to ensure uniform and adequate spread of healthcare services. However, this goal will remain unattainable unless and until the private sector is roped in by policy makers to develop a robust framework for a well-structured and organised healthcare system in the country....

BY DR VINAY AGGARWAL

Healthcare in India has seen sea change since independence.

If we compare the statistics since 1947, the country has achieved considerable progress on the front of healthcare. Tremendous improvement has happened in the average lifespan (From 32 years to 68 years). The infant mortality rate and maternal mortality rate have come down significantly. With only 18 medical colleges and 527 primary healthcare centres in 1947, today we have 497 medical colleges and 25650 primary healthcare centres. Even though such progress deserves applause, the healthcare delivery does not have a homogenous spread across the country. While tier 1 and tier 2 cities have adequate



facilities for healthcare, tier 3 and 4 cities suffer from woeful lack of health services.

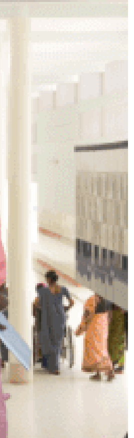
CURRENT INDIAN HEALTHCARE SCENARIO

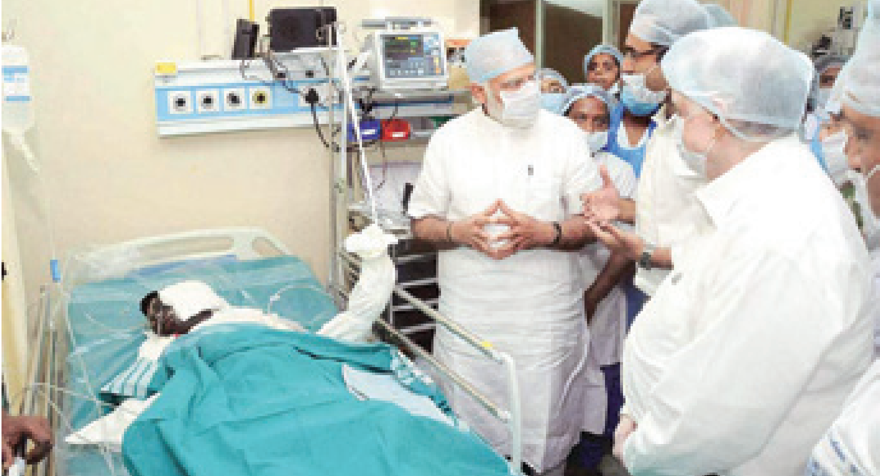
With the emergence of numerous corporate hospitals, the geographical canvas of healthcare has totally changed in tier 1 and 2 cities. Earlier Indian patients had to travel abroad for medical treatment. Now increasing number of patients from foreign countries prefer to avail affordable and qualitative treatment in India, leading to the growth of medical tourism. But the inflow of foreign patients is mostly restricted to tier 1 cities. In tier 2 and tier 3 cities, doctors, in general, have established their nursing homes and small hospitals, but there is lack of standardised services. Situation of tier 4 towns which include villages and rural areas is of great concern as they definitely lack quality healthcare structure.

The healthcare delivery system is organised in 3 tiers – Primary, secondary and tertiary. The infrastructure and human resources in the field of healthcare are optimal in frontline states like Tamil Nadu and Kerala. However, the geographical spread of healthcare is not uniform. Some states like UP, Rajasthan and Jharkhand have a long way to reach up to the standards of healthcare.

Change in pattern of disease - There is a drastic change in the pattern of diseases. Earlier, vector borne, air and water borne diseases attributed to high mortality rate caused by dengue, plague, jaundice and typhoid. The emphasis of the Government and healthcare institutions was on controlling the epidemic, the focus gradually shifted to cure and later prevention of such diseases. The pattern of diseases has changed to more of lifestyle diseases like diabetes, hypertension, and obesity.

Deficit in supply of health services- According to the recent data from the National Health Profile 2018, of the total 10 lakh registered modern medicine doctors, around 80% reside in tier 1 and tier 2 cities. With highly overburdened and understaffed public hospitals, the policies must be amended to increase the number of highly-qualified medical professionals along with the reach of technology for betterment of quality healthcare services in rural areas and villages





which otherwise depend upon the private sector to fill the gap.

THE NEED OF THE HOUR – LEADERSHIP FROM THE PRIVATE SECTOR

Even though Governments have come out with different healthcare programmes, they are not able to ensure their effective implementation across the country. On the other hand, success has followed wherever the society or the community has been involved with such programmes. For instance Pulse Polio and Small Pox eradication programmes have been resounding successes.

The Government or NITI Aayog should implement policies where every health facility can be coordinated in an organised way. Secondly, more attention should be paid to tier 3 & 4 cities.

RAISE BUDGET ALLOCATION - Unfortunately, allocation of funds on healthcare by the government is very low in comparison to other countries. We hardly spend 1.3% of GDP on health and out of that also 75% budget goes to the management of medical colleges and tertiary superspecialty hospitals. The budget allocation by the Government in tier 3 & 4 cities in the primary healthcare sector is woefully low.

DEVELOP SECONDARY CARE IN TIER 3 & 4 CITIES

The Government and health policy-planners need to concentrate on strengthening health services in tier 3 and 4 areas. And, time has come that there should be a policy change in healthcare, meaning that the Government as well as corporate hospitals should also think of developing secondary care hospitals in these areas. These secondary care hospitals can take care of primary as well as secondary health.

The secondary care hospitals should have the facilities of tackling emergencies, accidents, providing minimum diagnostic facilities and taking care of maternity work. If we are able to provide these services with a robust referral system, much better healthcare will be developed in the coming 5-7 years, which is the requirement of the country.

TECHNOLOGICAL ADVANCEMENTS - With advancements in technology, virtual medicine and command centres are a boon not only for the doctors but also for patients. Now diagnostic centres do not necessarily require the presence of specialized doctors but in fact, through its command centres reporting of X-Rays, ECG and all other diagnostic services can be done with ease. All these things can be incorporated in a secondary care hospital, which is to be developed in these cities.

PROACTIVE APPROACH NEEDED FROM THE CORPORATE SECTOR – The corporate sector should come forward openly and allocate budget for the same. Instead of opening one superspecialty, with the same budget, 10 secondary hospitals can be developed in different areas. This will not only increase the geographical coverage but will be highly beneficial for the patients as well.

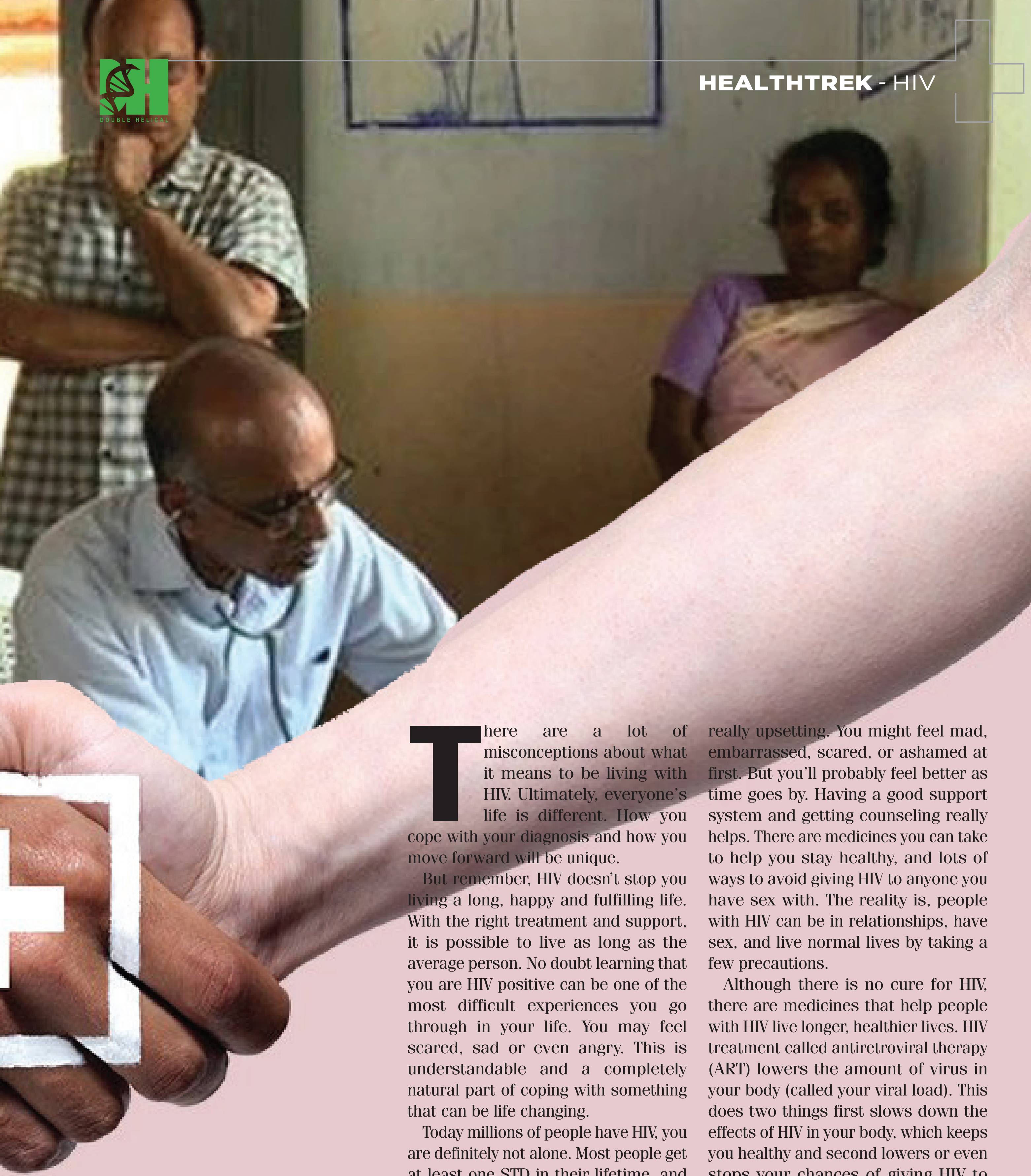
GOVERNMENT SHOULD SUPPORT THE CORPORATE SECTOR – The Government should supplement the efforts of the corporate sector by providing subsidies and concessions, so that corporate secondary hospitals become financially viable. It will considerably improve healthcare in the country.

(The author is Past National President IMA and Founder Chairman, Max Superspeciality hospital, Vaishali (Ghaziabad)

BEYOND MYTHS & MISCONCEPTIONS

If you are diagnosed with HIV, don't think your existence is doomed. With adequate awareness, safeguards and counseling, you can manage to lead a long, happy and fulfilling life....

BY DR SUNEELA GARG



There are a lot of misconceptions about what it means to be living with HIV. Ultimately, everyone's life is different. How you cope with your diagnosis and how you move forward will be unique.

But remember, HIV doesn't stop you living a long, happy and fulfilling life. With the right treatment and support, it is possible to live as long as the average person. No doubt learning that you are HIV positive can be one of the most difficult experiences you go through in your life. You may feel scared, sad or even angry. This is understandable and a completely natural part of coping with something that can be life changing.

Today millions of people have HIV, you are definitely not alone. Most people get at least one STD in their lifetime, and having HIV or another STD is nothing to feel ashamed of or embarrassed about. It does not mean you are dirty or a bad person.

Finding out that you have HIV can be really upsetting. You might feel mad, embarrassed, scared, or ashamed at first. But you'll probably feel better as time goes by. Having a good support system and getting counseling really helps. There are medicines you can take to help you stay healthy, and lots of ways to avoid giving HIV to anyone you have sex with. The reality is, people with HIV can be in relationships, have sex, and live normal lives by taking a few precautions.

Although there is no cure for HIV, there are medicines that help people with HIV live longer, healthier lives. HIV treatment called antiretroviral therapy (ART) lowers the amount of virus in your body (called your viral load). This does two things first slows down the effects of HIV in your body, which keeps you healthy and second lowers or even stops your chances of giving HIV to sexual partners.

Some people on ART have such a small amount of virus in their body; they cannot transmit HIV to their sexual partners at all. Even if you are feeling

totally fine right now, see a doctor as soon as you can so you can talk about the best ways to stay healthy.

Taking care of emotional health is very important. It is a good idea to see a counselor or therapist who is trained to help people with HIV. There are a lot of online and in-person support groups that can give you a safe place to talk about your feelings with people who understand what you're going through.

It might feel scary to admit that one has HIV, but talking about things can really ease your mind. You could lean on a close, non-judgmental friend or family member whom you trust to keep the conversation private. Counselors and support groups can also be sources of comfort and they can help you figure out how to talk with others about your HIV. Be careful about who you tell your status as people with HIV sometimes deal with unfair discrimination.

Acquired immunodeficiency syndrome (AIDS) is a chronic, potentially life-threatening condition caused by the human immunodeficiency virus (HIV). By damaging your immune system, HIV interferes with your body's ability to fight the organisms that cause disease.

HIV is a sexually transmitted infection (STI) which can also be spread by contact with infected blood or from mother to child during pregnancy, childbirth or breast-feeding. Without medication, it may take years before HIV weakens your immune system to the point that you have AIDS.

There is no cure for HIV/AIDS, but there are medications that can dramatically slow the progression of the disease. These drugs have reduced AIDS deaths in many developed nations.

The symptoms of HIV and AIDS vary, depending on the phase of infection. Most people infected by HIV develop a flu-like illness within a month or two after the virus enters the body. This illness, known as primary or acute HIV infection, may last for a few weeks. As

the virus continues to multiply and destroy your immune cells — the cells in your body that help fight off germs — you may develop mild infections or chronic signs and symptoms such as fever, fatigue, swollen lymph nodes often one of the first signs of HIV infection, diarrhea, weight loss, oral yeast infection (thrush) and shingles (herpes zoster)

When AIDS occurs, your immune system has been severely damaged. You'll be more likely to develop opportunistic infections or opportunistic cancers, diseases that would not usually trouble a person with a healthy immune system.

The signs and symptoms of some of these infections may include soaking night sweats securing fever, chronic diarrhea, persistent white spots or unusual lesions on your tongue or in the mouth, persistent, unexplained fatigue, weight loss and skin rashes or bumps. HIV is caused by a virus. It can spread through sexual contact or blood, or from mother to child during pregnancy, childbirth or breast-feeding.

These symptoms can be so mild that you might not even notice them.

However, the amount of virus in your bloodstream (viral load) is quite high at this time. As a result, the infection spreads more easily during primary infection than during the next stage.

CLINICAL LATENT INFECTION (CHRONIC HIV)

In some people, persistent swelling of lymph nodes occurs during this

stage. Otherwise, there are no specific signs and symptoms. HIV remains in the body and in infected white blood cells.

This stage of HIV infection generally lasts around 10 years if you're not receiving antiretroviral therapy. But sometimes, even with this treatment, it lasts for decades. Some people develop more severe disease much sooner.

HOW DOES HIV BECOME AIDS?

HIV destroys CD4 T cells — white blood cells that play a large role in helping your body fight disease. The fewer CD4 T cells you have, the weaker your immune system becomes. You can have an HIV infection for years before it turns into AIDS. AIDS is diagnosed when the CD4 T cell count falls below 200 or you have an AIDS-defining complication. To become infected with HIV, infected blood, semen or vaginal secretions must enter your body. This can happen in several ways:

You may become infected if you have vaginal, anal or oral sex with an infected partner whose blood, semen or vaginal secretions enter your body.

The virus can enter your body through mouth sores or small tears that sometimes develop in the rectum or vagina during sexual activity.

In some cases, the virus may be transmitted through blood transfusions. Hospitals and blood banks now screen the blood supply for HIV antibodies, so this risk is very small. Sharing contaminated intravenous drug paraphernalia (needles and syringes) puts you at high risk of HIV and other infectious diseases, such as hepatitis. Infected mothers can pass the virus on to their babies. HIV-positive mothers who get treatment for the infection during pregnancy can significantly lower the risk to their babies.

HOW HIV DOES NOT SPREAD

You cannot become infected with HIV through ordinary contact. That means you can't catch HIV or AIDS by hugging, kissing, dancing or shaking hands with someone who has the infection. HIV is not spread through the air, water or insect bites.

RISK FACTORS

When HIV/AIDS first appeared in the United States, it mainly affected men who had sex with men. However, now it's clear that HIV also spreads through heterosexual sex. Anyone of any age, race, sex or sexual orientation can be infected. However, you're at greatest risk of HIV/AIDS if you have unprotected sex. Always use a new latex or polyurethane condom every time while you have sex. Anal sex is more risky than is vaginal sex. If you have multiple sexual partners then there is always risk of HIV increase.

Many STIs produce open sores on your genitals. These sores act as doorways for HIV to enter your body. People who use intravenous drugs often share needles and syringes. This exposes them to droplets of other people's blood. Studies suggest that lack of circumcision increases the risk of heterosexual transmission of HIV. HIV infection weakens your immune system, making you much more likely to develop numerous infections and certain types of cancers.

INFECTIONS COMMON TO HIV/AIDS

In resource-limited nations, TB is the most common opportunistic infection associated with HIV. It's a leading cause of death among people with AIDS. Cytomegalovirus is common herpes virus which is transmitted in body fluids such as saliva, blood, urine, semen and breast milk. A healthy immune system inactivates the virus, and it remains dormant in your body. If your immune system weakens, the virus resurfaces causing damage to your eyes, digestive tract, lungs or other organs. Candidiasis is a common HIV-related infection. It causes inflammation and a thick, white coating on the mucous membranes of your mouth, tongue, esophagus or vagina.

Meningitis is an inflammation of the membranes and fluid surrounding your brain and spinal cord (meninges). Cryptococcal meningitis is a common central nervous system infection associated with HIV, caused by a fungus found in soil. Toxoplasmosis is potentially deadly infection which is caused by Toxoplasma gondii, a parasite spread primarily by cats. Infected cats pass the parasites in their stools, which may then spread to other animals and humans. Seizures occur when it spreads to the brain.

CANCERS COMMON TO HIV/AIDS

A tumor of the blood vessel walls, Kaposi's sarcoma is rare in people not infected with HIV, but common in HIV-positive people. It usually appears as pink, red or purple lesions on the skin and mouth. In people with darker skin, the lesions may look dark brown or black. Kaposi's sarcoma can also affect the internal organs, including the digestive tract and lungs. Lymphoma cancer starts in the white blood cells. The most common early sign is painless swelling of the lymph nodes in the neck, armpit or groin.

There's no vaccine to prevent HIV infection and no cure for AIDS. But you can protect yourself and others from

AIDS IS *NOT* SPREAD THROUGH:

Touching or hugging, coughing or sneezing

Water or food, glasses and plates

Telephones

Mosquito & Insect bites

Toilets

AIDS IS NOT SPREAD THROUGH SOCIAL CONTACT WITH AN HIV INFECTED PERSON OR A PERSON WITH AIDS OR BY DONATING BLOOD

AIDS

infection.

TO HELP PREVENT THE SPREAD OF HIV

Use a new condom every time you have anal or vaginal sex. Women can use a female condom. If using a lubricant, make sure it is water-based. Oil-based lubricants can weaken condoms and cause them to break. During oral sex use a non lubricated, cut-open condom or a dental dam a piece of medical-grade latex.

Consider pre exposure prophylaxis. The combination drugs emtricitabine plus tenofovir (Truvada) and emtricitabine plus tenofovir alafenamide (Descovy) can reduce the risk of sexually transmitted HIV infection in people at very high risk.

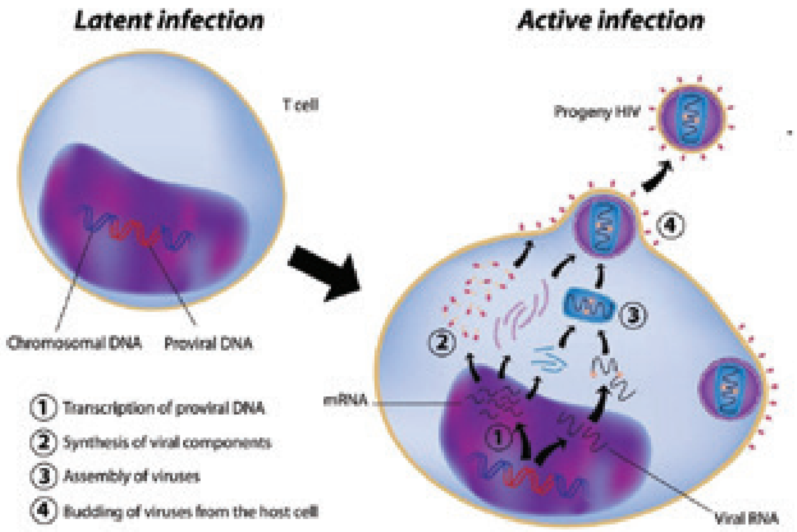
Mostly the doctor prescribes these drugs for HIV prevention only if one does not already have HIV infection. You will need an HIV test before you start taking PrEP and then every three months as long as you're taking it. Your doctor will also test your kidney function before prescribing Truvada and continue to test it every six months. One needs to take the drugs every day. They don't prevent other STIs, so you'll still need to practice safe sex. If you have hepatitis B, you should be evaluated by an infectious disease or liver specialist before beginning therapy.

It is very important to tell all your current and past sexual partners that you're HIV-positive. They'll need to be tested. If you use a needle to inject drugs, make sure it's sterile and don't share it. Take advantage of needle-exchange programs in your community and consider seeking help for your drug use.

If you are pregnant, get medical care right away. If you are HIV-positive, you may pass the infection to your baby. But if you receive treatment during pregnancy, you can cut your baby's risk significantly. There is evidence that male circumcision can help reduce the risk of getting HIV infection.

AIIDS IN INDIA

The government of India estimates that about 2.40 million Indians are living with HIV (1.93 - 3.04 million) with an adult prevalence of 0.31% (2009). Children (<15 yrs) account for 3.5% of all infections, while 83% are the in age group 15-49 years. Of all HIV infections, 39% (930,000) are among women. India's highly heterogeneous epidemic is largely concentrated in only a few states — in



multiplcation of hiv virus inside the cell

the industrialized south and west, and in the north-east. The four high prevalence states of South India (Andhra Pradesh – 500,000, Maharashtra – 420,000, Karnataka – 250,000, Tamil Nadu – 150,000) account for 55% of all HIV infections in the country. West Bengal, Gujarat, Bihar and Uttar Pradesh are estimated to have more than 100,000 PLHA each and together account for another 22% of HIV infections in India.

The Indian epidemic is concentrated among vulnerable populations at high risk for HIV. The concentrated epidemics are driven by unprotected sex between sex workers and their clients and by injecting drug use with contaminated injecting equipment. Several of the most at risk groups have high and still rising HIV prevalence rates. According to India's National AIDS Control Organization (NACO), the bulk of HIV infections in India occur during unprotected heterosexual intercourse. Consequently, and as the epidemic has matured, women account for a growing proportion of people living with HIV, especially in rural areas. The low rate of multiple partner concurrent sexual relationships among the wider community seems to have, so far, protected the larger body of people. However, although overall prevalence remains low, even relatively minor increases in HIV infection rates in a country of more than one billion people translate into large numbers of people becoming infected.

The World Health Organization (WHO) has issued new recommendations to help countries reach the 8.1 million people living with HIV who are yet to be diagnosed, and who are therefore unable to obtain lifesaving treatment.

WHO is encouraging all countries to adopt a standard HIV testing strategy which uses three consecutive reactive tests to provide an HIV positive diagnosis. Previously, most high burden countries were using two consecutive tests. The new approach can help countries achieve maximum accuracy in HIV testing.

WHO recommends countries use HIV self-testing as a gateway to diagnosis based on new evidence that people who are at higher HIV risk and not testing in clinical settings are more likely to be tested if they can access HIV self-tests.

WHO also recommends social network-based HIV testing to reach key populations, who are at high risk but have less access to services. These include MSM, people who inject drugs, CSW, transgender population and people in prisons. These "key populations" and their partners account for over 50% of new HIV infections. For example, when testing 99 contacts from social networks of 143 HIV-positive people in the Democratic Republic of Congo, 48% tested positive for HIV.

The use of peer-led, innovative digital communications such as short messages and videos can build demand- and increase uptake of HIV testing. Evidence from Vietnam shows that online outreach workers counselled around 6 500 people from at-risk key population groups, of which 80% were referred to HIV testing and 95% took the tests. The majority (75%) of people who received counselling had never been in contact before with peer or outreach services for HIV.

WHO recommends focused community efforts to deliver rapid testing through lay providers for relevant countries in the European, South-East Asian, Western Pacific and Eastern Mediterranean regions where longstanding laboratory-based method called "western blotting" is still in use. Evidence from Kyrgyzstan shows that HIV diagnosis which took 4-6 weeks with the "western blotting" method now takes only 1-2 weeks and is much more affordable resulting from policy change.

Using HIV/syphilis dual rapid tests in antenatal care as the first HIV test can help countries eliminate mother-to-child transmission of both infections. More integrated approaches for HIV, syphilis and hepatitis B testing is also encouraged.

(The author is Director Professor HAG & Ex Head Community Medicine, Maulana Azad Medical College and Associated Hospitals, New Delhi)

CUT OFF FROM THE WORLD

Over exposure to ear phones, headsets, leads, iPod, and Bluetooth can cause impairment, damage or loss of hearing. Among others, children with hearing impairment require to be dealt with great sensitivity....

BY DR A K AGARWAL

DR A K AGARWAL

Today the increasing craze of using electronic gadgets has become a worrisome trend. Technological tools are aimed at making life entertaining but not at the cost of one's own health. Improved technologies have made the mankind get entrapped in the comforts and luxuries, leading to imposition of their many side effects on health.

Ear phones and headsets are one such technology! Forced, improper or over use of ear phones, headsets, leads, iPod, and bluetooth can cause impairment, damage or loss of hearing. Their use not only affects the user but the surroundings too.

Exposing your ears to prolonged & high intensity of noise more than 85 db can lead to permanent hearing loss which can never be recovered back and permanent damage can occur. Cochlea is the main sense organ of hearing and has very delicate hair cells which detect sound frequencies. These hair cells can get damaged if exposed to prolonged duration of sound intensity of around 85- 125 db like from the noise of aero plane or missile or gun firing or listening to head phones at very high volumes.

Once these hair cells are damaged they generally do not recover especially if the high intensity exposure is not controlled & patient may experience hearing loss, continuous ringing or buzzing sensation called tinnitus, headache, irritation, lack of sleep, depression & difficulty in routine day-to-day activities. He may require the support of hearing aids & when profound hearing loss occurs where hearing aids also don't work, he may require a cochlear implant surgery.

Moreover, many people just get lost in the world of music with the use of earphones, headsets, and loud speakers while driving, specially on highways, making the driver unable to hear the sound warnings given by other people or vehicles; thereby causing accidents. People also experience loss of balance owing to messed up air pressure effects.

In addition, these gadgets being constantly exposed to dirt and moisture also increase the risk of infections and other ear diseases. Prolonged ear phone use also irritates the temporomandibular joint near the ear canal causing soreness and pain in the ear. Also, sharing the leads with family and friends is a big unsafe practice. The bacteria from one person's ear can travel to other person. Personal ear plugs are advisable.

People are advised to use ear phones in a subtle timed manner and buy only those products which fit their ear properly. Else, the skin inside the ear may get irritated or torn due to repeated adjustments. This may also cause bacterial infections.

Ear wax drains daily from our ears. Frequent prolonged use of ear leads hampers the movement of ear wax and may lead to conditions such as tinnitus (ringing of ears), pain in ears, infection, or even hearing loss.

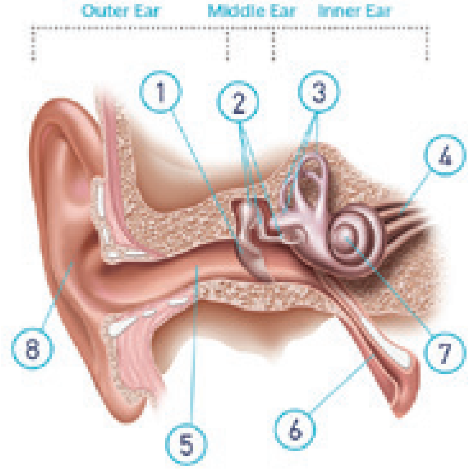
These gadgets produce electromagnetic waves/currents which are proven to be really dangerous for the human brain. The idea of using electric currents to change the brain functions is not new. People using bluetooth daily often experience unexplained headaches.

The World Health Organization (WHO) aims to reduce the hearing loss cases and deafness by almost 50% by 2015, and by 90% over the next 15 years through the right mode of using earphones. Noise pollution is one of the most common causes of hearing impairments in adults.

The gadgets must not be used continuously beyond 15 minutes at one go. Otherwise, there is a hearing loss threat. Giving rest to ears in-between is a must. Some brands are making ear phones that have to be inserted directly into the canal resulting in blockage of air passages leading to infections and hearing loss over a period of time. MP3 players should be used up to 60% of their maximum volume for maximum of 1 hour daily.

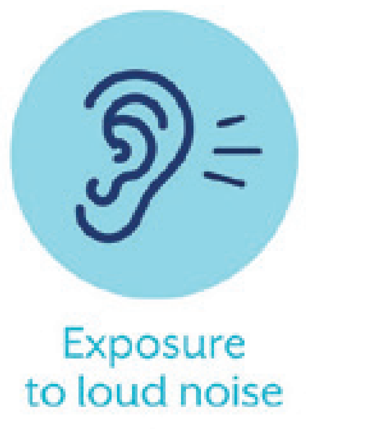
We should ensure regular cleaning of ear gadgets and also the ears. In case of any infection, the use of ear phones must be immediately discontinued and ENT doctor must be approached. Ear phones can be cleansed by immersing them in a bowl of lukewarm water with few drops of anti-bacterial soap; cleansing it thoroughly later and drain excess water and letting the earphones dry completely before reuse. Even hands should be washed thoroughly before using ear leads. In case of rubber or sponge covers, these must be changed at least monthly.

Ear plugs must be fitted in the ear with rotation. Never try to push it too far into the canal. Also, the removal of earphones must not be pulling harshly as it may damage the ear drum. Rather



1 Eardrum (Tympanic Membrane)
2 Auditory Bones
3 Semicircular Canals
4 Auditory Nerve
5 Ear Canal
6 Eustachian Tube
7 Cochlea
8 Pinna

The most frequent causes of hearing loss:



it should be twisted gently out of the ear. Older style, larger headsets that rest over the ear are far better than ear phones. With the right tools, we need the right approach and right attitude, to generate smarter version of ourselves!

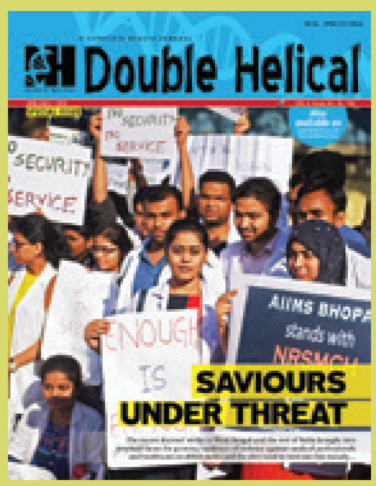
EDUCATION OF CHILDREN

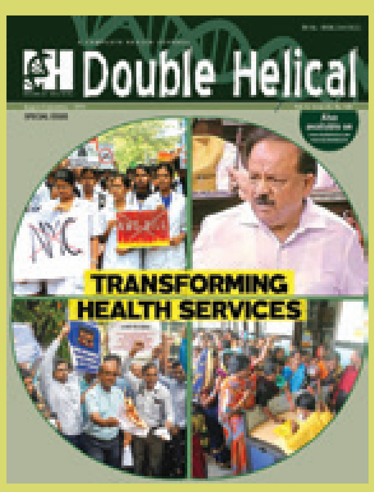
Education of children with hearing impairment in India is just a little over a hundred years old. After Independence, improvements were seen with the establishment of many new schools in the 1950s and many programs based on the new technology came up in the 1960s. The sixties saw the establishment of the All India Institute of Speech and Hearing in Mysore where facilities for diagnosis of hearing impairment in infants and young children were available. At present, over 500 schools for the hearing impaired children are available in the country.

The Government has established and administers some schools whereas NGOs run many others. Most of the schools, still residential, admit children aged 5 years and above who spend the entire school year in the hostels; they go home only during summer vacation. Provision of vocational courses and sheltered workshops facilitates spending almost the entire lifetime of some students in these schools. Two colleges for the Deaf, one in Chennai, Tamil Nadu affiliated to the University of Madras and another in Valakam, Kerala conduct degree courses in Commerce and Art subjects; a third program is under the Indira Gandhi National Open University, New Delhi. Educating children with multiple disabilities is a difficult task. In India training programs to train teachers to help children who are 'deaf-blind' has only recently begun.

Globally, over 5% of world's population (more than 360 million population), has disabling hearing loss, according to new global estimates on prevalence released by the WHO, for International Ear Care Day. Of the total, 91% of these are adults and 9% are children.

Your Guide to Healthy Living





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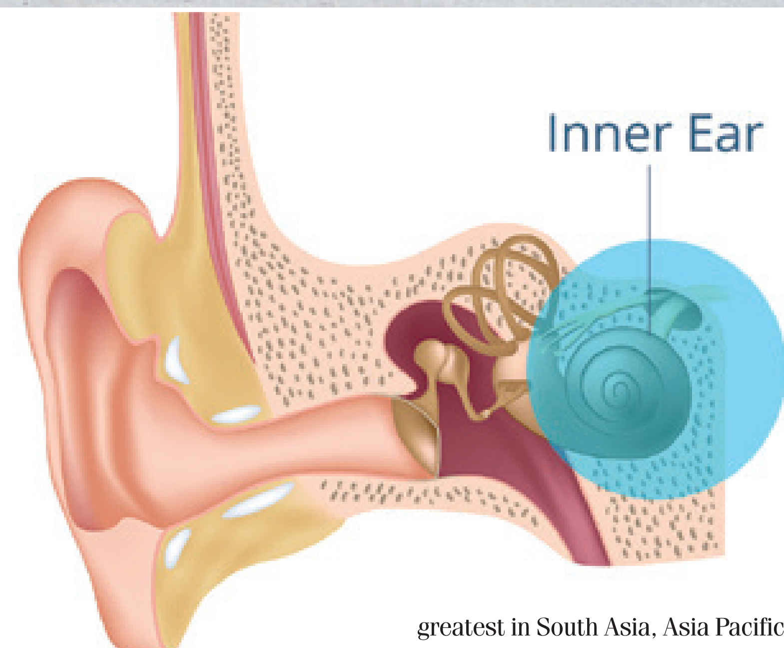

Disabling hearing loss refers to hearing loss greater than 40 decibels (dB) in the better hearing ear in adults and a hearing loss greater than 30 dB in the better hearing ear in children. The majority of people with disabling hearing loss live in low- and middle-income countries. The prevalence of disabling hearing loss in children is greatest in South Asia, Asia Pacific and Sub-Saharan Africa.

Overall prevalence of disabling hearing loss in children all over the world is 1.7%. A person who is not able to hear as well as someone with normal hearing – hearing thresholds of 25 dB or better in both ears – is said to have hearing loss. Prevalence of hearing loss in South Asia in pediatric age group is 2.4%

Prevalence of Disabling Hearing Loss among men and women in South Asia stands at 9.5% and 7%, prevalence in South Asian children is 2.4%. Around 0.5-5 of every 1000 infants are born with or develop disabling hearing loss in early childhood. The prevalence of disabling hearing loss increases with age, i.e. prevalence in children is 1.7%, in adults aged 15 years or more, it is around 7%, rapidly increasing to almost one in three in adults older than 65 years. In most regions, prevalence in children decreases linearly as parent's literacy rate increases. In adults 65 years and older, prevalence decreases exponentially as income increases.

Few projects have been started with the aim of early diagnosis and treatment of hearing disorders. Under the Project of Prevention of Deafness undertaken at All India Institute of Speech and Hearing, Mysore, funded by the Ministry of Health and Family Welfare, Government of India, Yathiraj et al. (2002) reported screening of 28,750 infants over a period of five years.

The earlier the parent/family accept the fact of impairment and follow a well-planned rehabilitation program under professional supervision, the better are the chances for the child and the family to lead a more normal life. Parental attitudes towards disability include inter alia acceptance, rejection, indifference and overprotection. Some parents work towards the development of the child, but feel the need to shelter and protect because of the disability. Overprotection denies the child the opportunity to achieve his potential in various areas of development.

(The author is eminent ENT Specialist, Ex Dean, Maulana Azad Medical College and presently Medical Advisor, Innovation, Education & Clinical Excellence, Apollo Hospitals Group, New Delhi)

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