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APRIL 2022, ₹50

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Thoko Elphick-Pooley
Director,
Uniting to Combat NTDs

Dr Harish Pillai
CEO,
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Dr Harish Pillai
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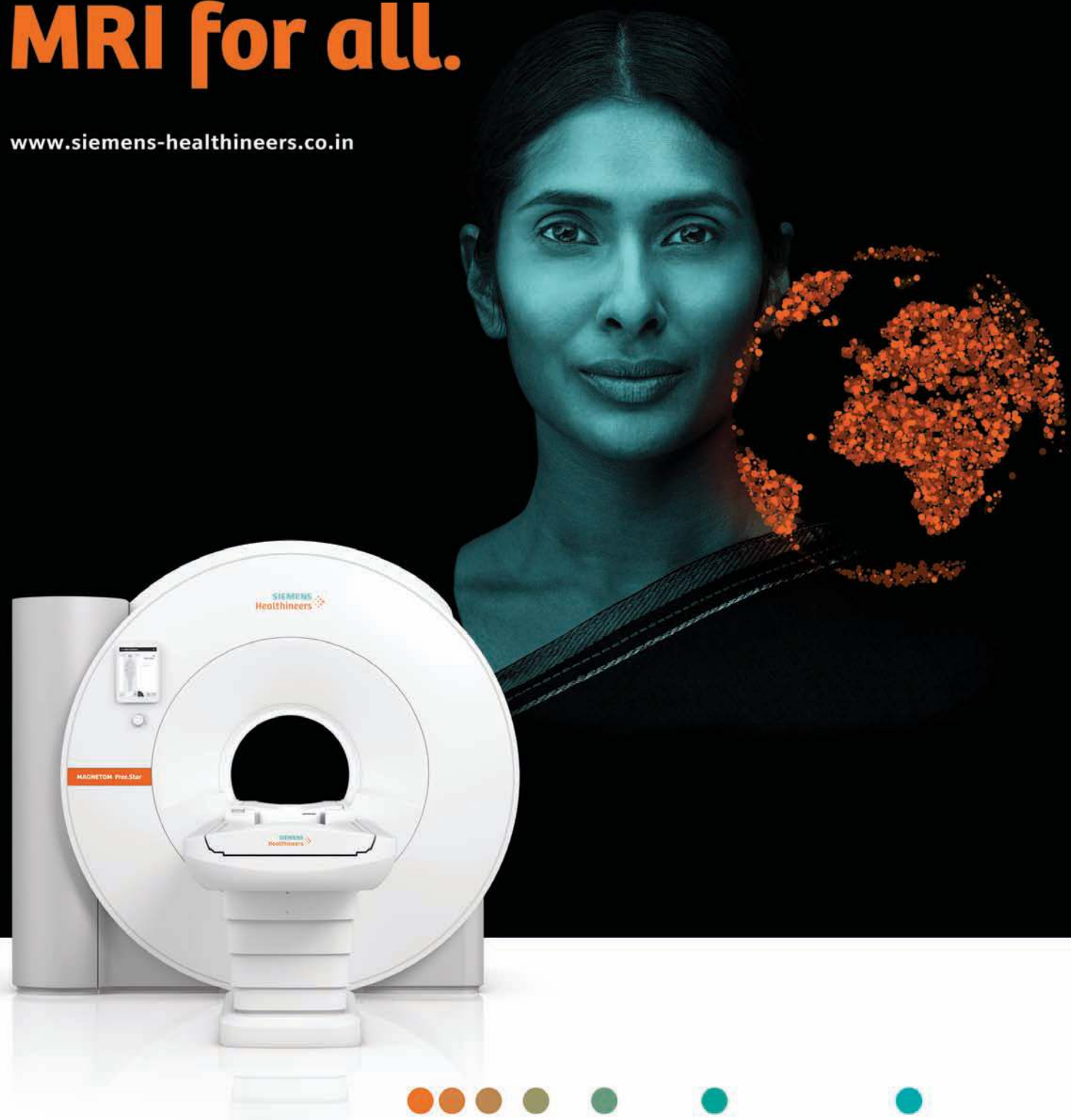

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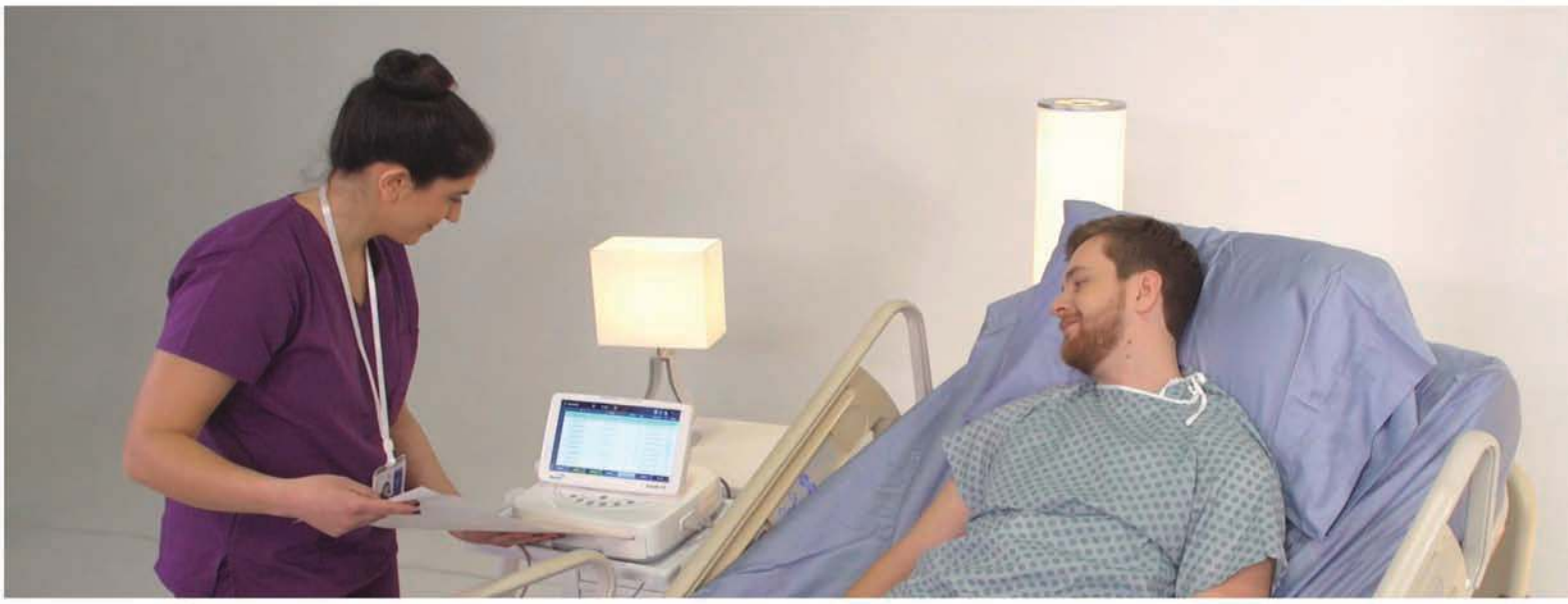

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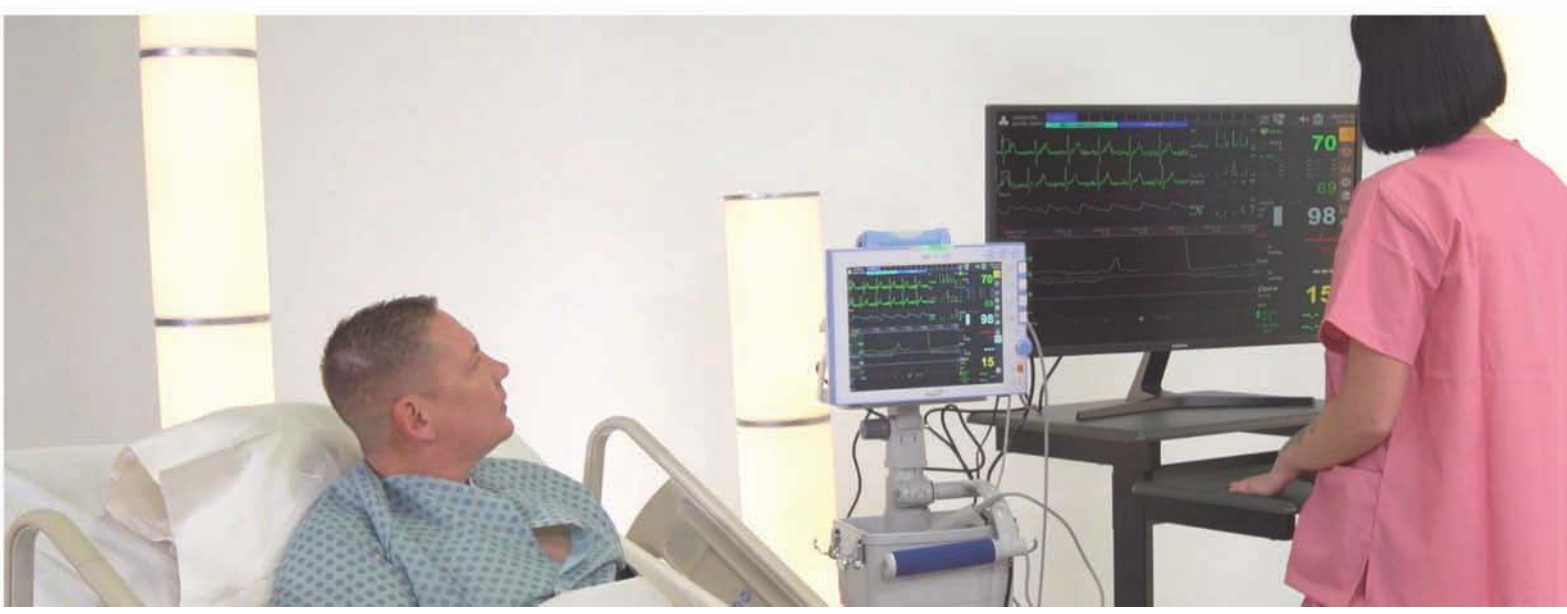

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Editor: Viveka Roychowdhury.* (Editorial & Administrative Offices: Mafatlal Centre, 7th floor, Ramnath Goenka Marg, Nariman Point, Mumbai 400021)

Applying COVID learnings to tame TB

This year's World Tuberculosis Day, on March 24, was yet another grim reminder of the depth of COVID-19's collateral damage on non-COVID health issues like TB. But some learnings from the pandemic, if appropriately applied, could also help us get back on track faster.

The stats are daunting. TB was the world's leading infectious killer until it was displaced by COVID-19. After years of hard-won progress, 2020 saw the first increase in TB deaths since 2005, as well as a 15 percent reduction in the number of people treated for drug-resistant TB.

India bears the highest burden of TB cases, accounting for 26 per cent of global incident TB cases in 2020. And to compound the damage, a HaystackAnalytics report estimates that 65 per cent cases reported are in the most economically productive population segment of 15-45 years.

Tackling TB and wresting back control will have to be a multi-pronged effort. One of the biggest learnings from the COVID-19 pandemic was the key role of early diagnosis, and in that sense, the scaled-up diagnostics infrastructure is already being repurposed for TB diagnosis. Dr Jitendra Singh, Minister of State (Independent Charge) for Ministry of Science and Technology & Earth Sciences, has already referred to the formation of a Genome Sequencing Consortium for Whole Genome Sequencing TB surveillance, which will allow doctors to prescribe the right medication based on the exact strain of TB infecting a patient. This is one of the key steps to preventing and arresting the development of multi drug resistant (MDR) TB, which is already very high in India.

As per the India TB Report 2022 released on World TB Day, in 2020 and 2021, there was a reduction of 14 per cent and 9 per cent in the number of MDR patients put on treatment as compared to the estimated numbers. Similarly, higher reductions were also seen in the number of XDR-TB patients being started on treatment in 2020 and 2021 as compared to the previous years, and also against the estimated numbers.

The report points out that reversals in progress

Learnings from the pandemic, if appropriately applied, could also help us get back on track faster

in the number of people enrolled on MDR/ XDR-TB treatment means that the gaps have widened to reach the targets set at the UN high-level meeting and National Strategic Plan for Elimination of Tuberculosis (NSP 2017-25).

While recommending steps to be explored and implemented for early diagnosis and decentralised delivery of DR-TB services, aimed at reversing this trend, the report lists strategies such as provision of rapid molecular diagnostics of TB to everyone or to high-risk patients upfront (accessibility) and an integrated health-system approach for service delivery with the other components including counselling in the general health system (availability).

Counselling by doctors and paramedical staff is especially crucial to track patients and ensuring they complete taking their medication. And one wonders if they have been given their full due. As with COVID-19, they put their lives on the line each time they treat TB patients. They are at the frontline of this battle too, essaying their duty in the diagnosis, delivery of medication, counselling and monitoring of treatment regimes.

Another learning from COVID-19 is that the private and public sectors need to work seamlessly for optimal results. Thus, key health officials now seem to have accepted that the private sector needs to be an intrinsic part of the national TB control mission. As Union health minister Mansukh Mandaviya's message prefacing the Ministry of Health and Family Welfare's India TB Report 2022 mentions, 'From notifications to diagnostics, leveraging the private sector has been an essential component of all strategies to counter the disease.' The private sector contributed a sizable 31 per cent of the notifications in the year under review.

While Prime Minister Modi's ambitious End TB deadline is less than three years away, one has no choice but to be an optimist and hope that these and other learnings from the pandemic will help us achieve this difficult, but not impossible goal.

VIVEKA ROYCHOWDHURY *Editor*
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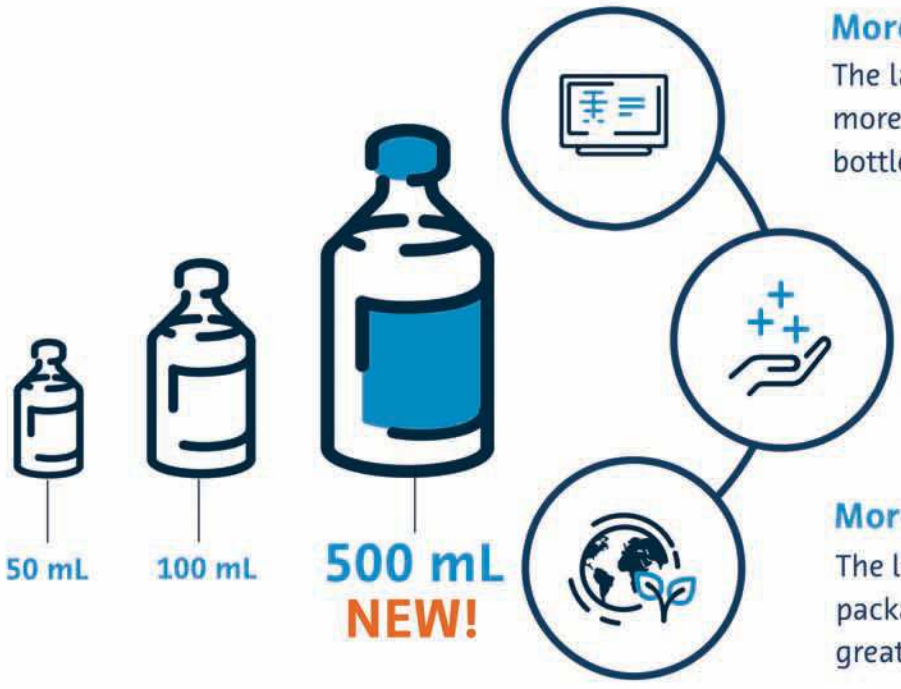

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INTERVIEW

COVID highlighted the importance of strengthening health systems particularly at the community level

Thoko Elphick-Pooley, Director, Uniting to Combat NTDs in an interaction with **Kalyani Sharma** talks about the journey of Kigali Declaration in combating Neglected Tropical Diseases (NTDs) and explains the role of global partnerships in its management

Can you walk us through the journey and significance of the Kigali Declaration in combating Neglected Tropical Diseases (NTDs)?
Over the past decade, incredible progress has been made against NTDs – 20 diseases and disease groups that debilitate, disfigure and can kill. Forty-four countries have eliminated at least one NTD, 600 million people no longer require treatment for NTDs, and cases of some diseases that have plagued humanity for centuries, such as sleeping sickness and Guinea worm disease, are at an all-time low. This proves ending NTDs is possible.

However, these diseases continue to affect 1.7 billion people around the world, and we are not on track to achieve the NTD Sustainable Development Goal target. COVID-19 further exacerbated the issue, impacting the ability to reach, detect or treat individuals at risk, as programmes and surgeries were put on hold.

To ensure, the successes to date are not lost and to accelerate progress we need political leadership and global commitments. The Kigali Declaration on NTDs, sponsored by the Government of Rwanda, will be the successor to the ground-breaking London Declaration on NTDs that expired in 2020. The Kigali Declaration puts country ownership of NTD programmes, integration within and beyond health, and cross-sectoral collaboration front and centre to ensure that these programmes are sustainable in the long term. It will mobilise the political will, community commitment, and resources needed to end the unnecessary suffering from NTDs.

What will be the road ahead for the Kigali Declaration in terms of policies and other aspects?
We are now welcoming commitments and endorsements towards the Kigali Declaration. Commitments will be made by either a country, organisation, company or institution. These will be aligned to financial, health products, policy, or In Kind commitments that will set the narrative to 2030 to deliver the ambitious targets in the WHO's roadmap and the SDGs.

Key to this success is country leadership and ownership, integration within broader health systems, and cross-sectoral collaboration. The commitments will see the integration of NTDs within national health systems, and increased cross-sectoral collaboration such as with water, sanitation, education and housing that will truly accelerate progress and deliver for those that are affected by these diseases of poverty.

The Declaration, and the commitments behind it, will be unveiled at a malaria and NTD summit on June 23rd 2022, on the margins of the commonwealth heads of government meeting in Kigali, Rwanda. We are hoping that India will be able to join us and the global community can celebrate India's hugely successful school deworming programmes.

How critical will it be in the elimination of NTDs in the future?
The Kigali Declaration on NTDs is a high-level, political declaration which aims to mobilise political will and secure commitments to achieve the Sustainable Development Goal 3 (SDG3) target on NTDs and to deliver the targets set out in the WHO's Neglected Tropical Disease Roadmap (2021-2030).

It is therefore critical to the success of ending NTDs. It will provide the financial support accompanied by the required policy commitments and donated medicines that will ensure the delivery of programmes across the globe.

Embedded within the declaration is country ownership which is paramount to securing long-term sustainability of programmes.

Its predecessor The London Declaration - which recently expired - helped to accelerate progress over the last decade, and shows what can be achieved by bringing all stakeholders together in partnership for a common goal. The Kigali Declaration is even more apstrational and if all stakeholder groups included in the Declaration commit to its spirit, then our goals and targets will be realised by 2030. This includes the eradication of two NTDs, the elimination of one NTD in 100 countries and the overall reduction in people requiring an intervention against NTDs by 90 per cent - freeing over 1.5 billion people from being at risk of these diseases.

Furthermore, the commitments laid out in the Kigali Declaration by their very nature capture emerging issues - such as climate change, conflict, emerging zoonotic and environmental threats to health - in the fight against NTDs and the people impacted by them. If we want to end NTDs then we must all remain 100 per cent committed and endorse the declaration.

How has COVID-19 impacted the various programs on NTDs? In light of the nexus between COVID-19 and other diseases like NTDs, do you think global collaboration and support has shown diverted attention & resources? What is the need of the hour in this direction?
COVID-19 hugely impacted NTD programmes across the globe. It halted disability saving surgeries such as sight-saving operations for the chronic stages of trachoma, the leading infectious cause of blindness worldwide. It halted mass treatment programmes, reducing the number of treatments to levels not seen since 2012. It significantly

reduced case detection for diseases like sleeping sickness, where quick accurate detection is paramount to successful treatment. It will have impacted countries reaching elimination, requiring a concerted effort to scale up programmes to recover from these impacts. WHO analysis1 indicates that NTD programmes have been among the health services most frequently affected by the pandemic.

However, the economic shocks resulted in over a third of direct donor funding towards NTDs programmes being removed with little to no warning. This meant millions of donated medicines risked expiring in warehouses across Africa and has seriously impacted the ability of NTD programmes to recover from the pandemic.

COVID highlighted the importance of strengthening health systems particularly at the community level, and its impacts exacerbated inequalities, impacting the kind of communities currently fighting NTDs more than others. Concerted action is needed to strengthen health systems and resilience within these communities. Donors need to fully fund SDG 3 in all its parts, including NTDs, proving that health is a priority area.

How crucial is the role of global partnerships in the management of NTDs?

The movement to end NTDs has been defined by partnerships and collaboration among a wide range of stakeholders. This includes the world's biggest public-private partnership. In 2012, industry partners, donor countries, private philanthropy, research institutions and civil society organisations came together to endorse the London Declaration on NTDs in support of the delivery of the first World Health Organization NTD roadmap. This partnership must be continued and expanded, with affected countries and communities at the centre. It is only through coordinated and collaborative action, with each partner playing its part, that we can meet the UN's Sustainable Development Goals (SDGs) and achieve the targets of the WHO's NTD road map for 2030.

Recognising the importance of partnerships and using a multisectoral, multidisciplinary and integrated approach to tackling NTDs, we are partnering with others across health - such as malaria for our Malaria and NTD summit - and beyond health such as with water and sanitation partners.

By working together, adopting people-centered approaches, and working across sectors in an integrated manner, we can end NTDs and achieve the targets in the WHO 2030 NTD road map.

Reference:

Second round of the national pulse survey on continuity of essential health services during the COVID-19 pandemic: January-March 2021: Interim report. Geneva: World Health Organization;

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Last mile reach: Leveraging commercial sector's distribution mechanisms for contraceptive supply

Dr Sudhir Maknikar, Director-Family Health, PATH; **Dr Abhijeet Arun Pathak**, Senior Program Officer, India Country Office, Bill and Melinda Gates Foundation, and **Poonam Muttreja**, Executive Director, Population Foundation of India explains that apart from protecting the health of mothers and children, family planning can significantly reduce out-of-pocket expenditure and increase household savings

Dr Sudhir Maknikar

Dr Abhijeet Arun Pathak

Poonam Muttreja

Universal access to family planning services is essential to improve reproductive health and the general wellbeing of all women and men. It protects women and couples from unintended pregnancies and unsafe abortions. Family planning is a cross-sectoral investment that directly or indirectly impacts all 17 goals of the Sustainable Development Goals. A study commissioned by Population Foundation of India, 'Cost of Inaction in Family Planning in India: An Analysis of Health and Economic Implications', shows that apart from protecting the health of mothers and children, family planning can significantly reduce out-of-pocket expenditure and increase household savings.

Despite global evidence on the benefits of investing in family planning to improve the health outcomes of populations, service delivery in India continues to be marred by structural barriers and challenges. Common factors include: prevailing gender and social norms that place the burden of contraception on women, lack of awareness about methods and their availability, and poor quality of care issues, particularly counselling. Factors related to the healthcare system include sub-optimal information systems, shortage of trained personnel, and disruption of supplies, among others. It is, therefore, not surprising that 9.4 per cent of currently married women of reproductive age (15 to 49 years) in India are unable to use any modern contraceptive method despite their desire to avoid pregnancy (NFHS-5, 2019-21).

> Systematic engagement of the private sector in national health priorities such as family planning can play an important role towards realisation of goals envisioned in national policies

It is crucial that a wide range of choices is available to ensure improved and universal reproductive health service coverage. The Indian Public Health Standards mandate that healthcare facilities at all levels provide at least four contraceptive methods – intrauterine contraceptive devices, condoms, emergency and oral contraceptive pills, as well as pregnancy kits. The public health supply chain should ensure that all facilities have all the recommended contraceptives at all times. This is called "contraceptive security."1

However, there are gaps in the supply chain due to which contraceptives do not reach facilities timely way in the desired quantities. Stock-outs of family planning commodities across facilities are a regular feature, especially in remote areas or where health facilities are located a distance from the district headquarters. Furthermore, COVID-19 has further exacerbated the supply chain challenges and is likely to have adverse consequences in the long run.

A major reason for stock-outs in the public health system is the lack of supply chain management skills within the system related to transportation and sub-optimal use of existing systems of monitoring and decision-making. Addressing these issues across diverse geographies is resource- and labor-intensive - a task the government may not be able to shoulder alone. This is where best practices of the private and commercial sectors could be leveraged to strengthen the supply of contraceptives.

The Evidence Brief – "Ensuring contraceptive security through effective supply chains2" published by the World Health Organization provides two evidence-based recommendations to ensure contraceptive security. First, increase the visibility of product flows and user demand by improving logistics information for inventory management; using mobile technology to improve reporting between supply chain levels, and considering different supply chain models and indenting systems to address inefficient operations. Second, leverage expertise of the private and public sectors to ensure a total market approach to supply chain management. It also suggests strengthening the capacities of public and private sector family planning providers and managers and creating opportunities for collaboration.

Thus, the unique supply chain knowledge, expertise, and networks of the private sector can support the strengthening of supply chains for family planning products in the public healthcare system. This will require technical training of public health sector staff, developing forecasting capabilities using accurate Family Planning Logistics Management Information System (FP-LMIS) data, and improving inventory management and judicious indenting.

The private sector deploys several models for improving supply chain management. One such model is called the Informed Push Model (IPM), where access to products in remote areas is eased by bringing in a third-party logistics (3PL) provider for centralized

transportation and inventory management. This model was used by the nongovernmental organization, PATH, to successfully demonstrate the delivery of contraceptives in Gonda Division of Uttar Pradesh. Scaling up this model has the potential to revolutionize availability of contraceptives and family planning access.

Another model used by the private sector engages third-party operators such as courier services to deliver products from a state warehouse to district warehouses. This model was successful in Odisha, where collaboration with India Post allowed for timely delivery of contraceptives. Delivery by a third-party and timely restocking by district warehouses helped reduce stock-outs and ensured continued access to family planning services.

An example from Africa is Project Last Mile, a public-private partnership between the Ministry of Health of several African countries and The Coca-Cola Company. The basic premise of the project was that if Coca-Cola products are available almost everywhere on the continent, so can life-saving drugs. The project was successful in improving the delivery of life-saving medicines to?the 'last mile' to benefit communities in ten countries in Africa. Project Last Mile leveraged the logistical, supply chain, and marketing expertise of Coca-Cola's distribution system to improve the reach and uptake of life-saving medicines. It leveraged the talent resource management to design a last-mile delivery model that was effective in reducing out-of-stocks of essential commodities at peripheral health units.

Systematic engagement of the private sector in national health priorities such as family planning can play an important role towards realisation of goals envisioned in national policies viz. National Health Policy, 2017 and the National Population Policy, 2000. Cutting-edge collaborative projects between governments and for-profit enterprises may be the way to innovate, establish, and sustain an efficient supply chain for India's family planning program. This would allow couples to choose contraceptive methods that best suit them and instill confidence in using these methods consistently, thereby, benefitting millions.

A major reason for stock-outs in the public health system is the lack of supply chain management skills within the system related to transportation and sub-optimal use of existing systems of monitoring and decision-making

MAKING RADIOLOGY SAFER

A balanced strategy recognising the pros and cons is the need of the hour

By **Kalyani Sharma**

The medical use of ionising radiation is expanding worldwide. A rise in advanced technology has opened new horizons to diagnostics and interventional radiology, nuclear medicine and radiotherapy, improving the patient care but this comes with an extra responsibility of implementing and handling the safety aspects associated with this field. Radiation safety is important in all aspects of radiology, not only because of regulatory requirements but also because of personnel and patient considerations. While, majority of healthcare organisations implement it rigorously, some still need more standardisation of guidelines and other aspects given by authorities like Atomic Energy Regulatory Board (AERB).

Explaining about the rigorous licensing process by the Atomic Energy Regulatory Board, Dr Mohnish P, Consultant-Interventional Radiologist, Gleneagles Global Health City, Chennai said, "Hospitals and clinics go through a rigorous licensing process by the Atomic Energy Regulatory Board to procure and commissioning these equipments. In all these places, Radiation Safety Officers (RSO) or Radiologists (Doctors) are licensed to procure and install the machines. They operate these equipments with the help of technicians (Radiographers), who guide the patients, position the patients, do the investigation and get the imaging for interpretation. Every RSO, radiologist and radiographer has to make sure about radiation safety to the patient and for themselves."

Talking about modern day radiology, Dr Bhaskar M V, Lead of Radiology Department and Interventional Radiologist, SPARSH Hospital highlights, "Most of the modern day radiology tools such as CT scans, X-rays, mammography, interventional treatments using fluoroscopy, PET CTs, radiotherapy units all of these use ionising radiations. In modern medicine, the usage of these diagnostic tests has significantly increased because all treatments that are evidence-based need diagnosis and specific treatment. While there has been an increase in the usage of ionising radiation, we should also be cognisant of some of the effects that these invisible harmful X-rays can cause on cellular tissues."

In modern medicine, the usage of these diagnostic tests has significantly increased because all treatments that are evidence-based need diagnosis and specific treatment. While there has been an increase in the usage of ionising radiation, we should also be cognisant of some of the effects that these invisible harmful X-rays can cause on cellular tissues

Dr Bhaskar M V
Lead of Radiology Department and Interventional Radiologist,
SPARSH Hospital

There is a need for standardisation of availability and use of protective accessories, preventive maintenance, periodic quality assurance and a need for constant education and updating with current regulatory requirements

Dr Vijay Jayakrishnan
Senior Consultant,
Neuroradiology & Interventional Radiology,
Lead Consultant,
Clinical Imaging and Interventional Radiology Aster Medical Imaging

Current challenges in the safety aspects of radiology and imaging involve inadequate training of radiation workers; strict implementations of regulatory norms in busy radiology departments, and lack of communication with patients

Dr Mahesh Kothari
Consultant Radiologist,
Reliance Hospital

Radiation protection: The challenges and long-term goals

As per markets and markets "The global radiation detection, monitoring, and safety market is expected to grow at a CAGR of 6.9 per cent to reach USD 3.1 billion by 2026 from an estimated USD 2.2 billion in 2021. The key factors propelling the growth of this market are growing security threats, the growing prevalence of cancer worldwide, increasing radiation safety awareness, growth in the number of PET/CT scans, and the increasing usage of nuclear medicine and radiation therapy for diagnosis and treatment."

Dr Bhasker while stressing on the principles of radiation protection added, "The main principle of radiation protection include Justification of practice and optimisation of radiation usage. It's very important to really understand the appropriateness and need for a scan involving radiation. For example, when a CT scan is recommended, it's important to evaluate if the scan is really necessary or not, or if other possible alternatives of non-radiation scan like ultrasound or MRI can be used.

The appropriateness of the radiation test should be evaluated in each and every case, especially for children and for women in the reproductive age group."

Explaining about the ways to minimise the risk of radiation, Dinesh K Baghel, Sr Medical Physicist cum Radiation Safety officer, Department of Radiation Oncology, Asian Institute of Medical Sciences says, "The most powerful tool for minimising the risk is appropriate performance of the test and optimisation of radiological protection of the patient. These are the responsibility of the Radiation Safety Officer (RSO) or Medical Physicist. The basic principle of patients' protection in radiological X-ray investigations is that necessary diagnostic information of clinically satisfactory quality should be obtained at the expense of a dose as low as reasonably achievable (ALARA), taking into account social and financial factors. It should be emphasised, that radiological interventional procedures lead to higher doses to patients than normal diagnostic investigations. However, indications for such procedures in most cases result from a high risk from conventional surgery. Appropriate modern equipment and training of personnel allow the patients' exposure to be limited to an acceptable level, securing a very high benefit/risk ratio."

Talking about the challenges, Dr Vijay Jayakrishnan; Senior Consultant, Neuroradiology & Interventional Radiology, Lead Consultant, Clinical Imaging and Interventional Radiology Aster Medical Imaging said, "One of the foremost challenges to ensure ongoing robust operational safety in healthcare is in making sure that equipments are handled by qualified persons. There is a need for standardisation of availability and use of protective accessories, preventive maintenance, periodic quality assurance and a need for constant education and updating with current regulatory requirements.

The need of the hour is to create a FELT NEED among policy-makers for achieving a safe radiology environment for both patients and personnel by educating, training, and focusing on the ALARA principle.

Dr Govindarajan MJ
Senior consultant and head of oncoimaging,
Apollo Hospitals Bangalore

Communication gap is lethal, not just to patient care but also to the organisational performance of healthcare institutions. By automating mundane tasks, radiologists can focus more on the clinical aspects of the case. On the other hand, automating mundane tasks using AI can help healthcare providers save a significant amount of administrative costs.

Meenakshi Singh
CEO and Co-Founder,
Synapsica

Dr Mahesh Kothari, Consultant Radiologist, Reliance Hospital, Navi Mumbai added, "While an increase in radiological tests has been shown to improve overall outcome in patient care, it also increases risk of exposure to ionising radiation not only to patients but healthcare personnel as well. Though it has not yet been conclusively proven that exposure to low-dose ionising radiation due to radiology and imaging tests results in a direct increase in risk of hazardous effects, especially malignancy, indiscriminate and unnecessary use of radiation must be avoided. Current challenges in the safety aspects of radiology and imaging involve inadequate training of radiation workers; strict implementations of regulatory norms in busy radiology departments, and lack of communication with patients."

Dr Rahul Vakharia, Consultant Radiologist, Wockhardt Hospital says, "The challenges are many folds, starting from implementing and maintaining facilities especially in smaller cities and towns. The standalone clinic in small town is the grey zone where the safety of health care worker is compromised due to lack of surveillance."

Radiation safety: Adopting different approach for patients and personnel

Patient and personnel both are exposed to and are at risk of getting impacted with radiations but ways of approaching their safety is different which is due to various factors like stay in the vicinity, frequency of radiations etc.

Sharing his views on this, Dr Govindarajan MJ, Senior consultant and head of oncoimaging, Apollo Hospitals Bangalore explains, "Safety aspects are different for patients and personnel; while the patient and the attendant can potentially be exposed to radiation during a short stay in the vicinity, personnel spend significantly more time in the department and are more prone to radiation exposure by the nature of work and accidental exposure. Strict guidelines in the form of protective shields like lead aprons, periodic monitoring of exposure by TLD badges, and educating about possible accidental exposures are highly recommended and are being practiced in many places. Patient safety is also important requiring different methods, particularly optimising each study, in the form of avoiding unnecessary investigations, extracting maximum information possible from each study, considering alternative non-radiation imaging methods, providing protective shields to thyroid, gonads etc, assessing the risk-benefit ratio of any radiological investigation, avoiding exposure of pregnant women to radiation by sign displays and appropriate counseling, and most importantly optimising dose for each body part/size using advanced software, particularly in children."

Dr Kothari added, "Ionising radiation due to diagnostic imaging carries different potential risks for patient and radiation worker as patient is exposed only for that particular procedure while personnel are exposed frequently. Since the effects of cumulative doses of radiation are more harmful, radiation workers must be protected with robust safety measures. Radiation safety measures need to ad-

dress these separately."

"For patient safety, technicians must be trained to use as low doses of radiation as possible for diagnostic tests without compromising image quality. Appropriate communication with the radiologist and patient is essential. Use of dedicated ultra-low dose protocols in CT scans with minimum possible scan time; use of radio protective lead aprons and shields, especially for children and young adults, and display of appropriate signage to avoid accidental exposure are necessary. Radiation personnel safety is of paramount importance as workers are susceptible to much more cumulative radiation doses than patients. Appropriate construction of radiology labs to prevent leak of radiation from the tests as per norms by AERB, use of cumulative radiation dose detectors for radiation workers, rigorous radiation safety training at regular intervals and isolation and cooling off of workers who have been exposed to larger cumulative dose than prescribed are some of the measures", he added", he added.

Preventing the direct harm: Need of the hour

Research and development, ensuring lesser effects of radiation along with maintaining the robustness of radiation safety programmes, education and training of the personnel handling the lab and also the technology are some of the aspects in handling and preventing the direct harm to the patient as well as the healthcare worker.

Dr Bhaskar suggest, "Research and development play an important role in ensuring lesser effects of radiation. Designing detectors that use low radiation but have high sensitivity and provide good quality outputs is one of the ways to protect against radiation. Strict legal enforcement of AERB guidelines (Atomic Energy Regulatory Board) regulates radiation tools and its usage. Additionally, regular monitoring of dosages must be done. Strict hospital regulation for annual check up in monitoring leakage in radiations and maintenance of personal protection devices must be conducted. Education to public and health care workers to avoid erratic usage of ionising radiation must be undertaken."

> The challenges are many folds, starting from implementing and maintaining facilities especially in smaller cities and towns. The standalone clinic in small town is the grey zone where the safety of health care worker is compromised due to lack of surveillance
>
> **Dr Rahul Vakharia**
> Consultant Radiologist, Wockhardt Hospital

"The need of the hour is to educate the facility owner and heath care worker about the radiation hazards and its short and long term implication. The owner should provide adequate protective devices, maintain the machines and radiation area to prevent unto ward radiation exposure. Another important pillar in the radiation protection programme lies on the shoulder of clinician. Most of the clinician are not clear about the type of investigation require in the particular clinical scenario. A healthy communication between the clinician and radiologist can significantly reduce the unwanted radiation burden on patients. A conscious effect has to be made to reach to a diagnostic using non ionising modality as far as possible and perform x-ray / CT / PET CT / nuclear study only if its require", added Dr Vakharia

Giving a slightly different perspective on radiation safety, Dr Geetha Manjunath the Founder, CEO and CTO of NIRAMAI Health Analytix suggest, "I think hospitals, diagnostic centres and even the government should encourage using radiation-free tests wherever possible. For example, for breast cancer screening our radiologists, gynaecologists and oncologists should consider using and prescribing radiation-free Imaging solutions like thermal imaging and ultrasound imaging systems as they are safe. Ultrasound imaging is effective when the lesion is localised or there is a symptom (lump). Thermal imaging is an excellent test for localising an abnormality which can then be sent for detailed diagnostic workup. This way, only fraction of people who have a likely abnormality will be subjected to radiation-based tests as opposed to everyone – keeping patient safety as the topmost criterion."

Angeli Misra, Founder & Director, Lifeline Laboratory explains that, "Instilling core values of health and safety must be practiced and implemented in any organisation. This must be accompanied by stringent and rigorous radioactive substances handling processes and regular audits for compliance which must be routinely reviewed, updated and implemented in all healthcare organisations, to maintain minimum exposure. Imparting comprehensive education and training in advance to personnel on occupational hazard, safe handling, emergency response, radioactive decontamination procedures and disposal process is of utmost importance. Lab technicians must strictly wear protective gear like TLD badges (loaded with cassettes to measure radiation), lead aprons, stand behind protective barriers and use other protective devices like lead curtains, etc. for safe operations and procedures. Patients too must be forewarned of the potential dangers of exposure to radiation. Additionally, regular mock drills for risk assessment must be carried out. Adequate investment in carrying out comprehensive accident investigations, improved technology and infrastructure as well as education and training must be made"

Long interventional procedures carry increased risk of radiation both to the patient and to the staff. Continuous education and awareness in limiting exposure, reducing the number of subtracted runs, use of shielding accessories etc. are crucial in interventional rooms. The patient should also be counselled for radiation risks and followed up for any visible radiation induced changes in the body.

Stressing on the ways to strengthen the robustness of radiation safety programmes, Dr Jayakrishnan added, "Ongoing safety and quality mechanisms through bodies like NABH also helps to ensure robustness of the radiation safety program. A good radiation safety program has to give equal importance for the patients, radiation workers and general public. It should include periodic audits, education and continuous refinement."

Dr Govindarajan also suggest that, "AERB is the parent body, looking after the radiation safety aspects in India. Its regulations for health care centers are towards achieving adequate safety of both patients and personnel. Currently, the majority are compelled to follow the guidelines due to statutory requirements. Radiation safety is one of the many quality indicators in many corporate hospitals in India for the purpose of accreditation by different agencies like JCI, NABH, etc. Frequent surprise inspections by AERB personnel have an impact as well. However, the need of the hour is to create a FELT NEED among policymakers for achieving a safe radiology environment for both patients and personnel by educating, training, and focusing on the ALARA principle."

Indirect harm: Preventing diagnostic errors

Indirect harm in the form of medical or diagnostic error is much more dangerous, common and risky as compared to direct harm. Experts believes that artificial intelligence is the best possible solution to this problem.

Sharing her views on this, Meenakshi Singh, CEO and Co-Founder, Synapsica said, "Just like cancer, diagnostic errors and communication gaps are spreading rapidly throughout the healthcare system. And despite the advancements in technology, the healthcare sector is still struggling to find an absolute solution. Almost all people are likely to experience a diagnostic error in their lifetime. Diagnostic errors are more common in primary care and low- and middle-income countries like India due to limited record-keeping systems and limited access to diagnostic facilities. The other key causes of diagnostic errors include increased workload and burnout, limited access to medical record data, limited follow-ups and cognitive issues. Nearly 7 per cent of abnormal test results are not

properly communicated to patients, leading to diagnostic errors and delays. Communication gap is lethal, not just to patient care but also to the organisational performance of healthcare institutions."

Singh believes technology to be the best solution for preventing diagnostic error. "Healthcare experts believe that artificial intelligence will be of great assistance in reducing diagnostic errors and clinical AI is already becoming an integral part of the healthcare industry. Nearly 94 per cent of Indian healthcare leaders plan to invest in AI innovations as they believe the cutting-edge technology will augment the quality of their services and patient care decision-making as it can mimic human intelligence when trained with proper datasets."

She also added, "Numerous repetitive mundane tasks like data entry, prioritising critical studies, image sorting, allocating cases to appropriate physicians, generating reports, etc, are done manually by physicians, to be precise, radiologists. Medical imaging has become an integral part of diagnosis today, meaning, the more manual work done by radiologists, the more the delay in patient care. Also, radiologists can experience mental/visual fatigue, when they are pushed to do the same mundane tasks continuously throughout the day, resulting in missing out or overlooking minute details in images. By automating mundane tasks, like the ones mentioned above, radiologists can focus more on the clinical aspects of the case. On the other hand, automating mundane tasks using AI can help healthcare providers save a significant amount of administrative costs."

Dr Gauri Agarwal, Co-Founder and Director of Seeds of Innocence also suggest the same. She said, "Healthcare systems can safeguard patients, enhance standards of care, and save costs by aiming to prevent common medical errors through the use of technology. To combat errors, hospitals are increasingly relying on technology and automation to relieve stress on an already strained system. Clinical mobility enables hospitals all over the world to replace manual, error-prone operations with digital solutions that improve patient identification accuracy, expedite processes, improve the quality of patient care, and improve overall visibility. Data can be delivered in real-time to healthcare staff by digitally recording information, decreasing or even eliminating errors and offering significant time savings. Clinical mobility solutions are being adopted by a growing variety of medical disciplines, including emergency department nurses, pharmacists, and lab technicians."

"Errors in Medicine, whether diagnostic, treatment related or due to lack of communication are not uncommon. While they may not be completely avoidable, every effort has to be made to reduce the occurrence of such errors and to minimise their effect. Diagnostic Radiology Departments should undertake periodic audit of errors and understand the reason why they happen and analyse the effect. This forms an important learning exercise and quality control measure. Minimising patient damage is crucial and effective communication both to the patient and to the clinical team has to be ensured. Reasons behind committing an error need to be analysed and factors that can be corrected must be attended to. Structured reporting, automated reporting of critical findings, appropriate use of machine learning etc. help to reduce number and seriousness of errors", added Dr Jayakrishnan.

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Radiation safety play a key aspect in maintaining the safety of medical professionals and patients

Satyaki Banerjee, Group Chief Operating Officer, Trivitron Healthcare explains that the fundamental principles of radiation protection are optimisation, application doses, and use of material for protection and the principal aim is to do as much good as possible, with as little harm, as possible to ensure patient safety

The harm caused by human error is a difficult challenge in healthcare, especially in radiology and medical imaging. The modern approaches to patient safety are now shifted from a focus on reducing errors of development and optimum use of radiation protection accessories that create safety in healthcare settings. The goal of such strategies is to prevent, identify, and mitigate errors and reduce their effects before any harm is caused by their outcomes.

Not only the safety of the radiographers and radiologists is primarily important but the safety and well-being of the patient are also of utmost importance. Safety issues come under a variety of headings ranging from protection from exposure to radiation and use of contrast. To ensure the safety of the healthcare workers and patients, Trivitron Healthcare offers high-level reliable products and solutions to improve their safety in radiology settings.

Since December 1895, the discovery of X-rays and associated radiology techniques has become increasingly popular in medical diagnosis, prognosis, and management. With increasing growth in medical technology and the usefulness of imaging, several other non-radiation-based techniques, ultrasounds, magnetic resonance imaging (MRI) are now becoming popular. These methods of investigation and treatments offer immeasurable benefits. Radiographers and radiologists are specifically trained to conduct these imaging techniques and modalities involved, and they must have undergone paramount training to offer optimum benefit to the patients, follow proper guidelines to reduce the occurrence of potential risk from the use of ionising radiation and minimise the likelihood of harm caused by excessive or inappropriate use of the medical radiation.

Radiation protection is the key aspect in both the safety of doctors and patients

Radiation safety is one of the major factors that play a key aspect in maintaining the safety of medical professionals and patients in diagnostic and interventional radiology. The fundamental principles of radiation protection are optimisation, application doses, and use of material for protection and the principal aim is to do as much good as possible, with as little harm, as possible to ensure patient safety.

There is increasing attention being focused on radiology and imaging techniques and safety because of recent patient safety incidents of harm, burns, and other health issues.

The procedure has provided tremendous benefits in medical diagnosis, but with negligence, there is a great potential of occurrence of medical errors and harm to the patient and healthcare provider.

It is very important that the healthcare professionals ensure a balanced approach to the safe use of imaging and radiology services to minimise the risk to patients, public health and medical professionals,

Following the SOPs, guidelines, sample policies, and proper safety initiatives can help enhance the safety of patients and healthcare professionals and protect them from harm.

Overexposure to radiation for the long term can lead to cause multiple health issues in medical professionals that can range from burns, permanent damage to the skin, hair loss, cell mutation, and even cancer. Exposure to a high dose of radiation can produce acute effects and proper use of radiation protection aprons and gears is important to ensure healthy health. Hence, every staff member of the radiographic rooms needs to wear proper and clean protective gear to ensure that their protection level is not hampered.

Radiation protection apparel must be used to protect medical professionals and patients, from secondary radiation during diagnostic imaging in hospitals, general clinics, and dental clinics. The radiation protection devices and radiation protection apparel should be used by everyone who is exposed to ionising radiation. Some beam-restricting devices can be used for radiation protection. If dense tissue are being examined then it is essential to minimise the scatter radiation to improve overall image quality.

Trivitron Healthcare is one of the global manufacturers of the best range of radiation protection apparel and devices that can help to reduce the risk of unnecessary and fatal harm to the patients and the staff involved in radiation procedures.

Different set of philosophies govern the radiation protection of personnel and patients

Dr Avinash U. Sonawane, Head, Directorate of Regulatory Affairs & Communications and Secretary to the Board, Atomic Energy Regulatory Board and **Anuradha V**, Senior Scientific Officer, Atomic Energy Regulatory Board explains why patient and personnel must be considered separately as far as radiation safety is concerned

Ionising radiation sources in the form of X-rays and radionuclides are used extensively for treatment and diagnosis of disease in the health care set-up. The benefits in the use of ionising radiation for treatment and diagnosis to patients, generally outweigh the health risks that it poses, and hence is generally considered a preferred mode of diagnosis/treatment. Apart from the patients, the personnel, termed as "radiation workers" (as per safety regulations), who directly handle the radiation sources, i.e., radiation generating equipment or radionuclides may also get exposed to ionising radiation as part of their work profile and in the course of their routine duties.

Dr Avinash U. Sonawane

The biggest difference between the two types of exposures termed as 'Medical Exposures' for exposure to patients and 'Occupational Exposures' to personnel is that the patients receive higher exposures as "Medical Exposures" but are generally occasional, while occupational personnel (i.e., radiation workers) may receive small amount of exposures as part of their occupation every day. Hence, different set of philosophies govern the radiation protection of personnel and patients.

For the personnel, the tenets of radiation protection are Justification, Optimisation and Dose limits. This means, the use of radiation sources, as a "practice", which will eventually find in-roads into society, has first to be "justified". This implies there should be a suitable justification as to why a "practice" should be allowed with an ionising radiation source. The justification could be better results, better availability etc; Once a "practice" using ionising radiation is justified, because of its overall benefits to society, the possible exposures to personnel operating the equipment can be considered as to be within the premise of "occupational risks". The second tenet then comes in- "Optimisation". By this, the radiation exposure to personnel (and public) should be such that it is "As Low as Reasonably Achievable" (ALARA) with the caveat that social and economic factors are taken into account for achieving ALARA. That means all design and operational aspects of handling radiation sources should be in such a way that dose received by the radiation workers is ALARA. The final tenet is "Dose limits". While ALARA is the philosophical approach, the regulatory limit for exposures to personnel are the "Dose limits" that are specified by the regulatory body that oversees ionising radiation protection in the country i.e., Atomic Energy Regulatory Board (AERB). Exceeding the limits will call for appropriate investigations, under the Atomic Energy (Radiation Protection) Rules, 2004.

In a healthcare set up, in general, the risk to personnel during normal operation are quite minimal, as the radiation sources are operated from adequately shielded rooms, with proper barriers in place.

Radiation exposure to patients is a totally different paradigm. A medical practitioner prescribes an examination/ treatment involving radiation exposure (i.e., radiological clinical procedure), for either diagnosis or treatment. Now, the decision to subject the patient to radiation exposure is governed by the clinical requirements. Hence, no dose limits will apply to patient(s), in the case of medical exposures. The clinical requirements overrule whatever risks are posed by the ionising radiation.

However, the other two principles of Justification and Optimisation apply to patient,

Anuradha V

albeit in a different form. In simple terms, Justification in the context of patients is about the exposure itself. Take for e.g., a diagnostic examination. The practitioner should introspect in the backdrop of the clinical requirements, "Can the same result be obtained for e.g., through sonography/ MRI rather than through CT scan or X-ray? "If NO, the exposure is "justified" for the patient at that point. The exposure has to now be optimised. Optimisation in the case of patient is not explicitly about "ALARA". It is about giving the patient as much exposure as needed to get the desired clinical result. Having said this, there are means to reduce the unnecessary exposures, which comes under the gamut of optimisation for patient. Continuing the example for diagnostic examination, correct exposure protocols, using proper filters, not looking for best quality images, proper quality assessment of the equipment etc; will ensure that the dose delivered is optimised.

Another difference is the age factor. While there is a minimum age for the personnel to work as radiation workers i.e., 18 years, (16-18 are considered as trainees with a truncated dose limit) patients can be as young as infants. Biological effects of radiation are much more severe in foetus and children. Hence, care has to be taken for paediatric patients. In the diagnostic X-ray context, not using adult protocols for children is an important optimisation tool.

Interestingly, there are some "practices", like nuclear medicine, that have implications to radiation personnel (and general public) because of exposure from patients. That is patients who underwent radio-pharmaceutical injection/ radioactive source implants. Hence, along with design and operational considerations, administrative procedures also play an important role.

To conclude, for both medical exposures and occupational exposures, it is incumbent on the persons-in-charge to ensure that no undue amount of radiation is received by either workers or patients. That means, every medical practitioner, for his patients, and every health care institution employer, towards the personnel should be aware of their responsibilities to ensure radiation safety in the society.

> Every medical practitioner, for his patients, and every health care institution employer, towards the personnel should be aware of their responsibilities to ensure radiation safety in the society

Rigorous implementation of radiation safety programme in Indian healthcare system

Dr Mubasheer Ali, Senior Consultant, Apollo telehealth highlights that though a regulatory infrastructure is in existence to make sure radiation safety in various applications, a more integrated and grounded approach must also be adopted through the utilisation of public-private enterprises

The widespread use of radioactive materials along with radiation generating equipment in the field of medicine, research and agriculture in India gave rise to the establishment of an efficient regulatory framework and consequently the Atomic Energy Regulatory Board (AERB). AERB was formed to ensure regulatory control over the safe use of radioactive materials and radiation generating equipment.

Right now, to the extent that the medical use of the radiation sources in the nation is concerned, as of now over 1300 medical organisations utilise radioisotopes for teletherapy, atomic medication, brachytherapy and so on including caesium teletherapy units, telecobalt treatment units, remote subsequent to stacking brachytherapy units and Co60/Cs-137 cylinder needles for the intracavitary and the interstitial radiotherapy. Apart from that, above 850 atomic medications including the radioimmunoassay (RIA) research facilities, medical accelerators and over 50,000 X-beam and CT clinical analytic units are working.

Current scenario

The regulatory framework for enforcing radiation safety provisions has existed in India since the start of the atomic energy programme and is being constantly worked upon over the years. This is being done to exercise effective regulatory control over the safe usage of the radioactive materials/radiation generating equipment. The Atomic Energy Act was established in 1962 to provide for the development, control, and utilisation of atomic energy for the welfare of people and various peaceful applications. It forms the primary basis of the regulatory framework. The effective regulatory control over the radiation installations is made sure mainly by using a system of issuing Regulatory Consent in the form of licence, authorisation, registration and approval depending upon the hazard. The mission of AERB has been to ensure the use of ionising radiation & nuclear energy in the country safely without causing unnecessary risk to health and the environment.

Radiation safety involves a combination of precautionary measures and safe practices for working with or near radiation. However, it wasn't long ago that people were not aware of the dangers that could result from radiation exposure, until Marie Curie discovered the radioactive element, Radium. She later died of aplastic anaemia, a disease that can be linked to high radiation exposure. To the present day, her body and belongings are still radioactive and expected to remain as such over the next 1,500 years.

Challenges

Radiation can lead to DNA damage within the cells. Cells are capable of repairing the damage however, in a few cases the damage progresses to cause translocations, mutations or cell death. There are two ways by which radiation damages the DNA:

Direct damage: Ionising radiation directly affects DNA structure in the cells by inducing DNA breaks. It occurs mostly when exposed to alpha particles, protons, neutrons etc.

Indirect damage: Radiation can ionise water molecules, producing free radicals that react with and damage DNA molecules. It occurs primarily in the case of X-rays and gamma rays.

Many radiological modalities are known to cause dose-related and non-dose related side effects on the human body. Vulnerable groups like pregnant females and children are especially prone to radiation side-effects. The amount of radiation exposure in radiology is usually within the safe range. However, it is of utmost importance for everyone working with radiation to be well aware of the safety precautions including the working personnel, patients and general public.

When it comes to issues in radiation protection of patients, not only the collective dose to the global population from medical exposure is rapidly increasing, but also a substantial percentage of diagnostic imaging examinations are not required and the cumulative dose to individuals from medical exposure is growing. Lack of optimisation actions and insufficient diagnostic reference levels (DRLs) are some of the other major challenges. Certain other challenges include development of biological indicators of radiation dose, a system for tracking of radiation exposure history of a patient, the transition from dose to a representative phantom to dose to an individual patient, avoidance of radiation-induced skin injury in patients and radiation cataract in healthcare staff, cutting down unnecessary referrals for radiological examinations, confidence building in patients and patient safety in radiotherapy.

Need of the hour

Solutions to the above-mentioned challenges may include the adoption and adaptation of referral guidelines and the utilisation of new technology for their implementation at the point of care as clinical decision support tools. Other ways to address these challenges include developing or adapting quality control (QC) manuals, protocols for certain procedures (e.g. paediatrics, screening, pregnancy, dental, etc.), use of dose management tools, the establishment of DRLs and planning to implement new technology. The coverage of "awareness camps" and workshops also needs to be expanded, in terms of the number of both the states and stakeholders. Integration of awareness and education at the medical and dental schools is crucial along with other health professionals (for example, technicians). Such education and training (initial and continuous) must also be implemented at a more advanced level during the clinical residency.

Way forward

Radiation Protection Programme has been in existence since the start of the nuclear programme in the country. Today, though a regulatory infrastructure is in existence to make sure radiation safety in various applications, a more integrated and grounded approach must also be adopted through the utilisation of public-private enterprises to ensure the safety of patients and the general public Regulatory programmes should be constantly reviewed taking into account experience, newer international/national standards etc. and every effort should be aimed towards the implementation of safety measures in a more effective way.

Enhancing radiation safety in healthcare can prevent risks & accidents

Dr Meinal Chaudhry, Director, Radiodiagnosis and Intervention Radiology, Aakash Healthcare highlights that while advancements in current health technology make new applications safer, their improper usage may expose people to unneeded and preventable radiation dangers

As per World Health Organization, over 3,600 million diagnostic radiological examinations are performed every year worldwide. Furthermore, 37 million nuclear medicine operations and 7.5 million radiotherapy treatments are conducted globally. Millions of people around the world benefit from these radiation therapies, which aid in diagnosis and therapy. Radiation therapy in medicine allows for early diagnosis and, in many cases, less invasive treatment of human diseases. In diagnostic and interventional radiology, nuclear medicine, and radiotherapy, advanced radiation technology has opened up new vistas.

While advancements in current health technology make new applications safer, their improper usage may expose people to unneeded and preventable radiation dangers. Medical radiation services have seen major growth in demand during the last two decades. A balanced strategy is required, one that recognises the numerous health benefits while also ensuring that hazards are kept to a minimum.

Risks involved

Patients' and workers' health can be jeopardised if these technologies are used incorrectly or incompetently. Ionising radiation is extensively employed in medical diagnostics, and advances in diagnostic imaging and interventional radiology have generated concerns about the risk that these technologies may present to healthcare personnel who use them.

Radiation can cause a variety of health problems, including cancer. Cancer is caused due to the damage of DNA caused by radiations, which leads to chromosome instability and carcinogenesis. Other aspects, such as non-targeted impacts, inflammation, and continual immune system activation, must not be overlooked when it comes to radiation-induced carcinogenesis.

Radiation exposure can cause cataracts (clouding of the lens of the eye) or permanent eye damage. In men, it can cause sterility while foetal death in pregnant mothers. High radiation doses received 3 to 7 weeks after conception can cause cataracts, deformities, and mental and developmental retardation in the unborn child. High doses of radiation increase the likelihood of genetic changes in the foetus.

Risk management

Controlling and minimising these health dangers, as well as maximising the benefits of radiation in medicine, are both necessary. There is a pressing need to reduce unnecessary radiation exposures in order to achieve this. Workers may be exposed to either man-made or naturally occurring radioactive substances. Some real precautions can be taken to safeguard them from such exposure. Regular monitoring, protective equipment, and countermeasures such as using protective lead shields and clothing can protect the workers from radiation. An effective occupational radiation safety policy should be in place through regular training, information exchange, and constant health surveillance. All the safety measures should be briefed and told to the workers, contractors or employer, or the facility's operator.

Accidental and unintended exposures should be avoided, and a strong radiation safety culture should be promoted, as well as reporting and learning mechanisms. More health workforce awareness programmes should be held. Workers should be encouraged to wear occupational radiation protection gear all the time. Another step toward guaranteeing minimal risk from radiation is to foster cooperation between health authorities and radiation protection regulatory agencies. Communication strategy for health care personnel, patients, and carers should be developed by healthcare facilities by incorporating radiation safety into the ideals of good medical practice and high-quality healthcare services.

INTERVIEW

PMJAY is crowding out money from equally vital programmes that decrease disease burden

Even though Ayushman Bharat is a much-needed programme that enhances equity in society and promotes stability, there has been mixed experiences of various states during its implementation. **Dr Harish Pillai**, CEO, Metro Pacific Hospitals, Philippines explains to **Viveka Roychowdhury** how in the Asian context, some pointers can be taken from the model prevalent in Singapore and the ones envisaged to be rolled out in the Philippines

Dr Pillai, given your deep engagement with India's healthcare system, what is your analysis of the effectiveness of India's universal health coverage schemes so far?
The basic genesis of creating PMJAY- Ayushman Bharat as a flagship universal health insurance program was to encourage higher accessibility, improve affordability and provide a minimum level of assurance (quality) to all consumers. It was also modelled to be a safety net that protects the vulnerable masses from shifting towards acute poverty due to episodic encounters with private healthcare providers. Thus far the experiences of various states in rolling out the scheme tweaked to suit local models of existing care delivery services has been mixed.

Unfortunately, the reimbursement rates envisaged in the programmes in several cases are below the threshold cost of care even though the guaranteed model of sustained case volumes is supposed to dilute the existing fixed cost burden. This reality has prevented large scale participation by major private chains thus impacting the overall success of the scheme.

Another bug-bear is the lack of adequate healthcare infrastructure in the rural areas and the existing bias of concentration in urban areas is continuing. More needs to be done for viability gap funding to encourage private entrepreneurs to enter rural and semi-rural areas to create the required delivery mechanisms to close out the existing gaps.

There is another wholesome debate that states that the primary role of the state is to invest in good health policy, provide adequate funding, create infrastructure and promote wellness and preventive care. Due to constraints in the fiscal space, PMJAY is crowding out money from these equally vital programs that facilitate a decrease in the disease burden. However, in the overall context of India, Ayushman Bharat is a much-needed program that enhances equity in society and promotes stability.

What are the strengths which can be leveraged to tackle the gaps?
◆ The tremendous data generated from the IT backbone should be leveraged for targeted district level interventions in tackling the burden of non-communicable diseases
◆ The PPP ecosystems should be encouraged at state levels by guaranteeing a predictable regulatory framework that will sustain interests and investments by private players
◆ Hybrid health integrated care provider networks can be encouraged based on models of prospective and capitated funds similar to a health maintenance organisation
◆ Marketplace competition and leveraging technology stacks can be used to augment

current scare resources

Have schemes like Ayushman Bharat, PM-JAY addressed the existing inequities in India's health care delivery model, like the lack of access to testing facilities, hospitals in rural areas, lack of funding, etc?
These central schemes have just made a tiny dent in the prevailing infrastructure landscape and more active and targeted fiscal interventions will be needed at state and district levels to address the existing inequities due to decades of non-action in this space.

The COVID-19 pandemic has disrupted and diverted funding and attention from many infectious diseases like TB as well as from routine immunisations. How are other countries with similar demographic and disease profiles addressing this problem?
Well for one, countries world over has realised the inadequacies of funding for the overall development of sustainable healthcare practices; we can also see an increasing trend in improving budgetary allocations towards healthcare. While management of the COVID-19 pandemic has severely stretched several economies, it is expected that a decrease in the COVID related burden due to the development of herd immunities will herald a shift towards proper funding of existing disease surveillance and intervention programs

What are the learnings from other countries' UHC systems you would suggest to India's policymakers?
From an Asian context, two models worth studying are the ones prevalent in Singapore and the ones envisaged to be rolled out in the Philippines; both these nations seek to address the fundamental aspect of accessibility, affordability and assurance while the respective architecture and execution differs. It is also true that the actual challenge is the size and complexity of India alongside the constitutional deference to the various states of the Union to develop their respective Visions. From the Philippines, the aspects of the model that could be considered are:
Creation of geography centric 'Healthcare Provider Networks' - HCPN in both the public and private space. Here the primary care network will act as a gatekeeper for the management of the health of its designated population and forms the basis of primary access for the required care. The referrals to higher centres of care based on case acuity models are based on the adoption of trigger points within the clinical practice guidelines. The acute care curative component is delivered by the different types of designated hospitals within the system all linked with an intelligent electronic medical record system. The highest complexity of care within a HCPN is provided by an 'Apex' hospital which is also responsible for the overall governance and management of the entire local network. It is envisaged that Primary care should be managed through a capitated fees model, the entire amount of which is prospectively given to the management team to handle. While the reimbursement for the curative component for hospitals within HCPNs will be based on pre-determined 'Diagnosis-related groups-DRGs. This movement away from case-based reimbursement towards DRG will bring about a lot of operational and cost efficiencies within the system.

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Fundamentals of designing a birthing center

Sujayanti Dasgupta, Co-Founder & Director-Healthcare, W-Ard Four and **Siddharth Puri**, Co-Founder & Director-Design, W-Ard Four talks about the several design strategies that can lead to an environment that is patient centric

Sujayanti Dasgupta

Siddharth Puri

An alternatively designed delivery room was established in the regional hospital in Herning, Denmark, inspired by the principles of healing architecture and Snoezelen. These principles revealed how architecture and interior design influence users' senses, including pain and stress levels

Very rarely does a visit to the hospital conjure up a sense of comfort, excitement and healthy anticipation – except in the case of families that are visiting the hospital primarily for childbirth. The concepts revolving around childbirth stand at a very interesting cusp today – on one hand there is modern medicine to counter any adverse events during the experience. Modern medicine also encourages the participation of the father in the process of childbirth as an equal partner and caregiver that, unlike in the past, has provided a platform for childbirth to be an occasion for the family as a unit. At the same time there is a global leaning towards going back to the roots of natural childbirth and the benefits of it to the mother post-partum. There are ample reasons in support of both schools of thought. Luckily for parents-to-be, birthing centers have come a long way and are now able to provide a healthy amalgamation of the two.

This life altering event in a woman's life in particular, that involves interconnected psychological and physiological processes are influenced by social, organisational, and environmental factors. The quality of a woman's overall birth experience is a significant outcome of labour; the quality of this experience thus influences the woman's and baby's future well-being and health and her relationship with her partner. A positive birth experience is a long term benefit for a woman, such as increased self-esteem and empowerment, which are essential in her role as a new mother. On the other hand, a challenging birth experience, can lead to long-term psychological problems like PTSD, exacerbated post-partum depression, increased fear of childbirth, and possible effects on breastfeeding.

An alternatively designed delivery room was established in the regional hospital in Herning, Denmark, inspired by the principles of healing architecture and Snoezelen. These principles revealed how architecture and interior design influence users' senses, including pain and stress levels. According BMC Pregnancy and Childbirth research, none of the women reported experiencing stressful elements or limitations that govern the room using healing architecture and Snoezelen.

"Feeling welcome, safe and empowered" appeared to be linked to the women's feelings of emotional support, comfort, directly resulting in a reduction in the stress and anxiety they might otherwise experience. Furthermore, a calm and supportive environment also helped the women transition smoothly from home to the hospital. to hospital.

Modern hospitals around the world have factored in several design strategies that can lead to an environment that is patient centric:

- Rooms that are large enough to provide ample area for the mother-to-be to walk around during labour.
- Room should also be large enough to accommodate any apparatus that is being put to use to aid with natural birthing.
- Rooms are provided with an option for a birthing tub that provided enough room for both parents and other support staff and family members.
- Providing flooring that is safe and appropriate like vinyl.
- Avoid bath tubs in bathrooms that may be earmarked or used for post-surgical patients.
- Rooms that have a high sound attenuation, so a patient is not disturbed by events in the neighboring room and privacy is always maintained.
- Having the choice to black out daylight with dimmable lights and sound systems within the room can add to a sense of calm and spa-like environment.
- Support elements for the entire family that makes it easier for the spouse to participate in the process for that duration as well as for any older children like, a refrigerator in the room, desk space, storage space, ample number of electrical points.

Apart from infrastructural elements, operational engagements that address the many challenges and facets of life before and after the baby goes a long way in creating an overall sense of confidence. Some of these strategies have been:

- Minimising the movement of the patient to minimise chances of falls and accidents.
- Addressing concerns and helping mitigate revolving around ante-partum and post-partum depression.
- Addressing concerns about breast-feeding and new-born care.
- Providing classes for basic car safety information as well as infant CPR.
- Addressing proactively about facilities available within the hospital for major medical intervention like the presence of surgical suite, perinatologist, neonatologist, etc. as well as a well-equipped NICU.
- Helping the family create a birthing plan which games out possible scenarios during childbirth

Designing for birthing centers is an interesting challenge for both designers and operators. This, more than any other department in a hospital, aims to mimic the home environment as closely as possible to elicit a sense of comfort and familiarity and in turn alleviate environmental stressors that may have an adverse effect on the entirety of the birthing experience for the family and especially the mother. This, all the while remembering that the environment will still require a higher level of safety, infection control and easy connectivity to medical interventions should the need arise. The use of healing architecture principles and Snoezelen in birth environments adds to the evidence on how the physical design of hospital environments affects patients' social and physical well-being in the context of birthing centers.

27th edition of Medical Fair India to be held from 20th-22nd May 2022

Medical Fair India is India's leading exhibition and conference for clinics, hospitals and health centers

The 27th edition of Medical Fair India will be held from 20th – 22nd May 2022 at Jio world Convention Centre (JWCC), Bandra – Kurla Complex (BKC), Mumbai. The show is being organised by Messe Dusseldorf India Pvt. Ltd., a 100 per cent subsidiary of Messe Dusseldorf GmbH.

Medical Fair India is India's leading exhibition and conference for clinics, hospitals and health centers, would welcome over 400 exhibiting companies across the various segments from medical and healthcare vertical.

Segments / co-located events at Medical Fair India 2022;

- Clin Lab India Expo (CLI): In-vitro diagnostics/clinical laboratory
- Reha India Expo: Rehabilitation/orthopaedics & physiotherapy
- Future for Health (FTR4H): Digital healthcare/healthcare technology/IT solutions
- 'MAKE IN INDIA' Pavilion is being formed by Association of India Manufacturers of Medical Devices (AIMED) at Medical Fair India 2022. Make In India pavilion has always been a centre of attraction at MFI exhibition. In 2022, this would be the 5th consecutive year for 'Make In India' pavilion with a bigger space and representation at the prominent location. AIMED will invite all its members to participate at Medical Fair India under the umbrella of 'Make In India' , to have more visibility and exposure for Indian OEM's.

Website: https://www.medical-fair-india.com/

For Special Features, please visit; https://www.medicalfair-india.com/en/Special_Shows/Overview

How insurance cover influence hospital charges

Satish Gidugu, CEO and Whole Time Director, Medi Assist explains that it is easy to assume that medical expenses only include treatments and surgical procedures, and everything associated with it. Customers miss out on considering that a hospitalisation process also includes non-medical expenses

Healthcare and emergent or planned hospitalisation can be an expensive affair. Due to this, an increasing population is opting for health insurance plans, expecting not to pay large sums of money out of their pockets. While insurers, hospitals, and TPA mostly have customers covered with their impending expenses, there are reasons why their hospital expenses might come out more than they expected.

Insurance policies may have some exclusions

A health insurance policy comprises many inclusions, including critical illnesses, general surgeries, room rent, etc. Aside from them, they also have exclusions that could range from ambulance expense, pre & post-hospitalisation expense, etc. This could increase the overall hospitalisation expense by a significant number.

While customers might assume that these are invariably included in the insurance policy, they are stated in the insurance policy in the exclusions section. These days, plans are coming up that might cover these unforeseen expenses. Still, to expect the right cost from your choice of hospitals, it is essential that customers go through their policy terms and conditions carefully before purchasing.

Package vs open billing

Every TPA and/or insurance company has a network of hospitals that they have partnered with to ensure cashless facility to the customer. Moreover, that also means that the hospitals have agreed on specific rates that they want to conduct the procedures in, room rent tariff, among other things. This becomes a part of the package deal that is offered to the customers, and any hospital in the provider network sticks to that package amount. The hospital mostly discounted these rates as a part of the package.

Suppose any other non-conforming expenses might have occurred during the due course of hospitalisation, the hospital bills it separately at original, non-discounted rates. This is called open billing, and this could include room rent tariff for more days than originally decided in the package, doctor consultations that were not part of the policy, or costs towards any extra procedure/treatment that was provided to the patient, among other such, increasing expenses by a significant much.

Non-medical expenses

It is easy to assume that medical expenses only include treatments and surgical procedures, and everything associated with it. Customers miss out on considering that a hospitalisation process also includes non-medical expenses, such as food, surgical equipment, OPD charges, and whatnot, increasing the costs manifold.

Retail vs corporate insurance policies

There are broadly two types of policies in the insurance sector: retail policy and corporate policy. Corporate policies cater to the specific requirements of companies for their employees and their families, while retail policies are purchased directly from the insurer by an individual. Since the fundamental needs of both these policies are separate, they are designed accordingly.

Many of what a corporate policy covers are not covered by retail policies as customers

for both show different buyer personas. An example of commonly excluded coverages in retail policies includes maternity procedures and hospitalisation around it, among other ailments or conditions. Therefore, increasing hospitalisation costs overall.

Cashless in network hospitals vs no cashless in non-network hospitals

Availing cashless allows customers to avoid pocket expenses after a hospitalisation, whereas reimbursement claims require paying the money upfront and claiming the amount later. Since cashless can only be availed at network hospitals, chances are that customers might choose a more convenient hospital for themselves depending on their needs.

While customers can seek reimbursement claims after all hospitalisation bills are paid, the tariffs that a customer pays may or may not be included in their package, increasing out-of-pocket expenses significantly. Customers might pay more than they expect since the TPA or the insurer doesn't have any agreed-upon prices with a non-network hospital.

Tendency to get admission and avail cashless in high-end network hospitals

More often than not, if a customer is presented with ten options where they can avail cashless, they choose a hospital on the higher end. One that provides multi-specialty treatments with a mindset that their family member should get the best services and their insurance cover the expenses.

Customers might not notice that their overall medical expenses only increase if they choose such a hospital, as the charges implying on their other hospital costs increase, raising their overall expense.

Negotiated vs non-negotiated charges

TPAs and insurers bring hospitals under their network so that customers get better tariffs through package deals that they have negotiated with hospitals. But, more often than not, hospitals have doctors coming from different places to perform procedures on their patients and demand rates that are non-negotiated from the hospitals. The non-negotiated rates don't come under the policy's purview in these cases. Even so, the costs will still be borne by the insurer, but the amount will depend on demanded rates. Due to this reason, a customer might have to pay more than they expected.

Difficult to ascertain coverage in some instances

At times, insurance policies may not mention coverages explicitly. These could be about items such as isolation during the pandemic or new and advanced procedures, and so on. As more contemporary, more technologically advanced techniques come to play, it becomes difficult to ascertain policy coverages if a patient chooses these treatment methods, increasing the total hospital bill.

Need for standardisation

A customer can have more than one insurance policy, depending on their needs. They might assume that availing claim in all cases could require the same documents or procedures in all cases. Since every TPA or insurer works differently, their requirements and procedures regarding policy coverages, mode of communication, and pricing might differ. This delays claim settlements and creates confusion in the consumer's minds. There is a need to standardize policy coverages, present a united front while communicating claim details to the customers, and generalize pricing terms and conditions. Standardizing alone can solve most of the issues discussed earlier.

Insurance covers can influence a customer's hospital charges. Still, if they are more aware of the differences and cost-cutting measures and choose the right hospital, they can avoid extra expenditures. Moreover, they should promptly submit required documents and information to speed up the claim processing. In turn, hospitals should adhere to tariffs and package rates and provide additional information that might be important to settle claims whenever called for. Lastly, insurers and TPAs are already working towards including more hospitals with a set procedure to ensure quality services, from smaller towns, to provide cashless facilities to customers.

Leading innovations in healthcare since 1997

Himanshu Baid, Managing Director, Poly Medicure Ltd highlights that Poly Medicure has been successfully serving the medical community, attributing to its strong commitment to the core values of Integrity, Ownership, Care, Learning & Inclusivity

Over the past decade, the Indian medical device industry has seen tremendous growth. India ranks 4th in Asia and among the top 20 globally for the medical device market. Polymed (Poly Medicure Ltd) through its manufacturing competence is well positioned to address the industry demand. Polymed was founded back in 1997 with a small team & a challenging business environment, but with a well-defined vision to serve people through innovative healthcare solutions & make medical devices more affordable for the healthcare community. For last 25 years, we have led the way with purpose-driven healthcare technology.

While Polymed today touches many more areas of healthcare, our tenacity and passion are driven by the same philosophy to continually strive for more ways to help people live healthier.

The future of medical devices sector looks bright as demand for indigenously manufactured devices continues to grow. Today, Polymed is the largest exporter of consumable medical devices from India for last 8 years in a row. The company's products are present in more than 120 countries and its strong distribution channel stands as a true testament to its position of one of the leading medtech players.

It has been successfully serving the medical community, attributing to its strong commitment to the core values of Integrity, Ownership, Care, Learning & Inclusivity.

As COVID-19 swept the globe, we looked to our mission for guidance and this mission unites our employees worldwide in a common goal.

Started with a very few members, the company has gradually reached to a superlative team of more than 2500 employees working in its eight manufacturing facilities, one R&D centre and offices spread across the globe. Our plants manufacture over 1 billion devices per year confirming to the latest global norms. Recently, we have also commenced operations in US with our fully owned subsidiary, Polyhealth Medical Inc.

While Polymed today touches many more areas of healthcare, our tenacity and passion are driven by the same philosophy to continually strive for more ways to help people live healthier

Through internal development and selective acquisitions, Polymed catapulted from a vascular access company into a diversified, global medical technology leader. We have achieved a unique position for ourselves as an Indian manufacturer to have a comprehensive range of products that are efficiently backed by a patient-centric approach. It made a serious commitment to R&D, investing heavily to future efforts. To address the need of growing healthcare market and changing dynamics, Polymed continues to invest in newer technologies. Company will also focus on fast tracking its new product offerings and strengthening its manufacturing infrastructure to scale up faster. Currently, it holds more than 300 patents for its expansive range of product portfolio in the area of vascular access, renal care, transfusion & diagnostics system, and caters to a vast range of therapeutic segments covering infusion therapy, dialysis, respiratory care, cardiology, oncology, urology, gastroenterology, critical care, blood collection & management, anaesthesia, and surgery & wound drainage. Renal will be a growth driver for Polymed as this segment is growing at 15 per cent CAGR and is expected to double in next 5 years. The high-quality standards of our products continue to make it one of the most preferred brands of healthcare professionals. Also, the wide range of Polymed's offerings enables to enhance our footprint. The company acquired Italy's Plan 1 Health to expand its vascular access and oncology products portfolio. The acquisition made it one of the few companies in the world to offer complete solutions for peripheral and central vein access.

Sustainability is a critical element of Polymed's ideology, and the company has made definitive strides in the same direction. As a technology leader with operations globally, we are focusing on those areas which can make a big impact on the environment & society – enabling a low-carbon society by reducing greenhouse gas emissions, preserving natural resources and promoting social progress.

Polymed has made it to the highly coveted Fortune "The Next 500" companies list for 2021 & 2022 and was also featured in the prestigious Forbes' Asia. Some of our many recognitions include medical device Company Award for the year 2018 by Government of India & Top 25 Innovative Companies in India Award by CII.

Polymed recognises that serving healthcare community requires thinking beyond products. We also look at how we can improve processes, break down barriers, and reduce healthcare costs to continually find more ways to help people live better, longer. Indeed, Polymed's journey from humble beginnings to world domination is a remarkable feat.

Wipro GE Healthcare boosts local manufacturing, new factory under PLI goes live

With an investment of over Rs 100 crores, this greenfield facility is one of 15 medical device manufacturers approved under the government's PLI Scheme towards *Atmanirbhar Bharat*

Wipro GE Healthcare has announced the launch of its new manufacturing facility, under the Indian government's Production Linked Incentive (PLI) Scheme. The new plant, Wipro GE Medical Device Manufacturing factory (MDM), is aligned to the National Agenda of 'Atmanirbhar Bharat' and will further boost local manufacturing of medical devices in India. The plant is a 100 per cent subsidiary of Wipro GE Healthcare and has been setup as a green field legal entity. The company has invested a little over Rs 100 crore in this facility.

A 35000 sq ft facility, the MDM factory is set up for 24/7 operations for manufacturing CT machines, cathlab equipment, ultrasound scanners, patient monitoring solutions, ECG machines and ventilators. It is equipped with automated testers to assess performance of the medical devices. This facility currently has 35 employees in its shopfloor which is expected to increase to 100 in next 2 to 3 years.

Azim Premji, Chairman, Wipro GE Healthcare and Chairman, Wipro Enterprises, said, "India is on an accelerated growth path in gaining global prominence for medical devices manufacturing. Wipro GE Healthcare's new factory, with support from the government's Production Linked Incentive (PLI) Scheme, will aid the health ecosystem in India to realise its true potential in addressing local and global challenges for healthcare providers."

Commenting on the launch, Dr Shravan Subramanyam, Managing Director, Wipro GE Healthcare said, "The new facility is a testament to our continued commitment to an Atmanirbhar Bharat and is a step forward in elevating India's capability as a global manufacturing hub. We applaud the government's initiatives towards making India self-reliant. The new draft of the National Medical Devices Policy 2022 provides further impetus towards empowering India's healthcare ecosystem, and we at Wipro GE Healthcare are very optimistic about the future of medtech in India."

C N Ashwath Narayan, Minister of Information Technology-Biotechnology, Higher Education, Science and Technology of Karnataka in his virtual address said, "We congratulate Wipro GE Healthcare for its contribution towards boosting local manufacturing and generating employment in the local communities. Through our Karnataka Digital Economy Mission, we will provide continued support to the company's efforts towards augmenting the ESDM sector and providing fillip to the region's digital economy."

Wipro GE Healthcare's new facility in Bengaluru promotes the Electronics System Development and Maintenance (ESDM) sector and is in sync with the government's goal to build-up the digital economy for the world through state-of-the-art medical devices made in India.

The emergence of technologies that are reshaping the diagnostic segment in India

Dr Srinivas Neela, Director & CEO, BookMyDiagnostics highlights that the emergence of new-age technologies has been influencing the role that diagnostic continues to play within the healthcare segment in India

Today's medical and healthcare sector has been witnessing an evolution in terms of continual advancements in leveraging artificial intelligence, data processing, smartphone technology, etc. and bringing them under the guided ambit of government-aided agencies to help support and train healthcare professionals. These initiatives are set to establish a transformed diagnostic sector that will soon be a milestone for the future of diagnostics.

The emergence of tools and technologies

The emergence of new-age technologies has been influencing the role that diagnostic continues to play within the healthcare segment in India. Emerging technologies such as gene mapping, rapid screening methods, artificial intelligence, digital screening methods, electronic medical records, telemedicine, among others, are bridging the gap and making medical facilities be made available to an increasing number of patients. These technologies are enabling the diagnostic fraternity to bring quality and improve the interplay between healthcare providers and patients. These advancements ultimately create a safe, effective, and efficient environment for health care solutions to be imparted to the patients.

Reshaping the diagnostic segment

Technologies such as wearable health gadgets and telemedicine are the next step in bringing telehealth possibilities for the patients. These technologies bring in an exchange of medical information and help in offering a faster and more accurate diagnosis. By using such devices, there is a historical medical log that will help fasten the overall time frame in enabling the patient to receive prompt and adequate healthcare solutions. Telemedicine has already been regulated by the Indian government and is currently empowering rapid diagnosis by medical practitioners to reach its patients even in remote areas. Given the travel and time location differences, telemedicine reduces cost as well as increases the access and availability of healthcare professionals to patients in need. Apart from access, availability, and affordability, these technologies bring in a high level of accuracy.

> Emerging technologies such as gene mapping and rapid screening methods among others, are bridging the gap and making medical facilities be made available to an increasing number of patients. These technologies are enabling the diagnostic fraternity to bring quality and improve the interplay between healthcare providers and patients

Apart from pure-play technologies, even services such as home sample collection and rapid screening methods at home or locations other than a medical facility, are some ways to reshape the existing diagnostic sector. These services help build convenience diagnostics and create a smooth transition for patients to undergo the right treatment with the availability of multiple options. Since travel time and logistics are greatly reduced with the advent of technology, patients and practitioners can safely carry out the next steps in the treatment plans and conveniently rule out any complications related to dangerous drug interactions or identify any other potential problems. By utilising real-time measuring devices that allow for diagnostics to be continuous instead of just a particular moment, these tests and results can build a continuous monitoring system with instant feedback on any fluctuations or spikes in the readings. These will eventually increase and improve the costs to the patients since multiple tests and screening will be replaced with affordable continuous tracking of variables and patients' biometrics for signs pertaining to their health parameters.

Need for training in diagnostic management

As healthcare professionals become increasingly digital-oriented, healthcare will move from being traditionally dependent on the location to being virtually available anytime and anywhere. This influx of the Internet of things and artificial intelligence will be incorporated within the diagnostic tools to help empower and upskill practitioners and patients in the usage of these digital tools. Such technologies will also require continuous up-gradation and will involve constant learning and training for the diagnostics practitioners and awareness on the part of patients. It will be vital to understand how these technologies will redefine the way how diagnostics is managed and applied to effortlessly solve complex health issues. By integrating such practices, platforms, tools, and technologies, healthcare professionals will be able to provide relevant diagnostics and result-oriented clinical testing that are tailored to the requirements of the patients.

In conclusion, these systems and technology are a major tool in enhancing the overall diagnostic process which will further augment healthcare solutions to the patients, and provide a much faster response rate to build a robust intelligence system and transform the way deep learning algorithms are being embedded within the evolving diagnostics ecosystem in India.

Chandra Ganjoo appointed as Group CEO of Trivitron Healthcare

She joined Trivitron Healthcare in 1999 and has played several positions in the organisation, has been a foundation of strength and progress

Trivitron Healthcare, a global medical technology company, has announced Chandra Ganjoo as Group Chief Executive Officer (Group CEO) of Trivitron Healthcare with immediate effect. She brings in unique experience and strong skills to lead Trivitron Healthcare into its next phase of profitable growth.

She joined Trivitron Healthcare in 1999 and has played several positions in the organisation, has been a foundation of strength and progress. Since 1999, she has worked in sales, marketing, corporate communication, human resource management, cost controller, and a variety of other areas. She has risen in prominence, particularly in the last five years, when the company transformed from a predominantly trading and distribution company to a global R&D and manufacturing MNC by demonstrating exceptional compassionate people management skills, hard work, process compliance, and commitment.

Talking about the decision, Dr GSK Velu Chairman & Managing Director at Trivitron Group of Companies, said, "As we embark on our journey to become an innovative, research driven medtech Global MNC, it is certainly a right time to put a new organisation structure in place to achieve our long-term goals and objectives. Trivitron will have three different Strategic Business Units viz India, International & Joint Ventures, and this will be further sub-divided as multiple verticals within these SBUs to give focus and individual successes."

"We have a centralised corporate leadership team guiding, supporting and monitoring these verticals and SBUs. I along with Board of Trivitron Healthcare is extremely pleased & proud to have chosen Ms Chandra Ganjoo as Group Chief Executive Officer (Group CEO) of Trivitron Healthcare with immediate effect. I am confident that she will lead our organisation to greater heights of success." he said.

She has risen in prominence, particularly in the last five years, when the company transformed from a predominantly trading and distribution company to a global R&D and manufacturing MNC by demonstrating exceptional compassionate people management skills, hard work, process compliance, and commitment

Ganjoo has been instrumental in extending Trivitron's global footprint through several organic and inorganic growth strategy initiatives, and has been a key driver in implementing the organisation's 3 P's Strategy, which includes People, Process, and Performance.

Ganjoo said, "I thank Dr Velu and the board of Trivitron Healthcare for the trust and confidence reposed in me. It has been my privilege to work at Trivitron Healthcare almost since its inception. I am humbled to have been chosen to lead this organization and it is a moment of pride and honour for me. Trivitron's foundation is based on strong pillars of transparency, equality, trust, customer first attitude and committed people. With this strong foundation and support from all Trivitronians, I will work towards the growth and success of the group companies and all our stakeholders."

Is menstrual cup recommended for UTI patients?

Jyoti Kumavat, Officer-Digital Marketing, Ami Polymer Pvt Ltd talks about UTIs and menstrual cups

Ouch! UTIs can cause such discomfort that no one can forget. They're common, annoying and they can be hard to kill. Many of us have been there. An estimate of 1 in 3 adult experiences UTI annually, while the rest will experience UTI at least once in their lifetime.

What is UTI?

A Urinary Tract Infection (also called a "UTI") can be any infection that occurs along the urinary tract. It happens when bacteria get into the urinary system and overgrow. It results in redness, pain, and swelling in the urinary tract. One can sense burning pain while peeing.

In order to avoid UTI, one must take proper care of their vaginal hygiene. Among all menstrual products, menstrual cups are considered as a safest option. The risks of getting an infection is minimal and mostly they're all preventable.

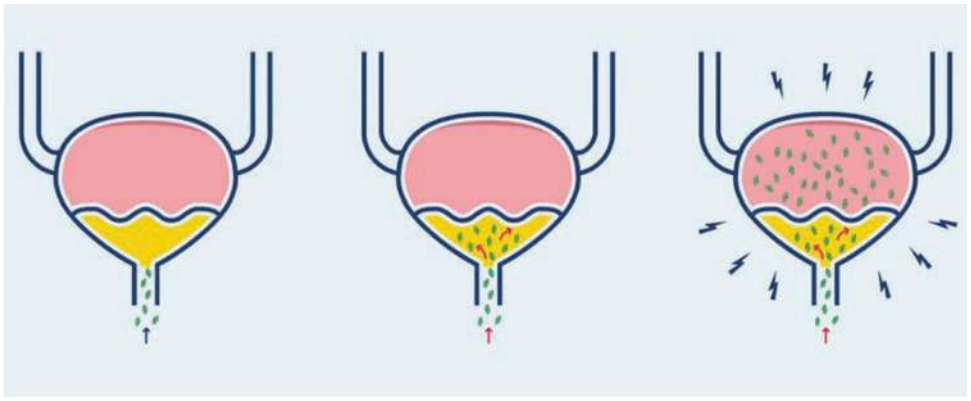
Symptoms of UTI:

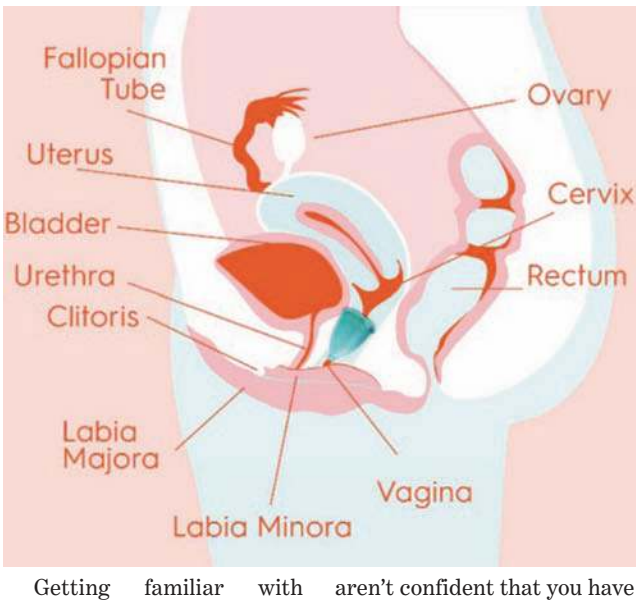
- Cloudy or dark urine.
- Blood in urine.
- Pain in pelvis area.
- Burning sensation while urinating.
- Urine has strong odour
- Increased urgency to urinate.

Menstrual cups and female anatomy

Menstrual cups are a growing in demand choice for environmentally conscious period care. They seem to be very different to those who have only used traditional period products.

The vagina and female urinary system are very closely related but are completely separate. A menstrual cup in the vagina cannot interfere with urination, but front wall of the vagina is intimately associated with the bladder. Therefore, a poorly or wrong sized placed menstrual cup can result in bladder pressure symptoms. Try reinserting the cup a little higher or try a smaller size if you experience this.





Getting familiar with anatomy and feeling comfortable inserting the cup is key. After inserting the cup if you aren't confident that you have it fully sealed, try again. With practice, one will gain confidence and feel like and expert in no time.

Can menstrual cup cause UTI?

No, a menstrual cup does not cause UTI. If it happens, it's probably because it hasn't been inserted properly or that the hands were unclean while inserting. It is important that you sterilise the cup before and after use.

If the menstrual cup is not sterilised it can cause UTI. So, you must boil the cup for 3-5 minutes, before using it and repeat the same after your periods are over. One must take utmost care of your lower part as well as the cup, to avoid not only UTI but any other disease. One must avoid using a menstrual cup if you are allergic to silicone/TPE.

In order to avoid UTI, one must take proper care of their vaginal hygiene. Among all menstrual products, menstrual cups are considered as a safest option. The risks of getting an infection is minimal and mostly they're all preventable

Does Imasafe™ recommends using a menstrual cup during UTI?

UTIs are very common. But no, it is not advisable to use a menstrual cup during UTI. But once the infection is tackled, one can use the menstrual cup with proper guidelines.

If there are recurrent UTIs, we advise to head straight to doctor and consult him on using a menstrual cup.

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Ami Polymer Pvt Ltd.

LC-MS medical devices for laboratory developed tests

Compared to traditional immunoassays, LC-MS enables superior specificity, selectivity, sensitivity, and offers cost savings and increased productivity

The comprehensive portfolio of Thermo Scientific LC-MS Medical Devices for laboratory developed tests (LDTs) offers the clinical diagnostic laboratory unique choices to address sensitivity needs. This portfolio consists of a High-Pressure Liquid Chromatography (HPLC) system and two Mass Spectrometers (MS) differentiated by sensitivity. It is powered by a complete software suite to ensure confident results and data integrity. Compared to traditional immunoassays, LC-MS enables superior specificity, selectivity, sensitivity, and offers cost savings and increased productivity.

Vanquish MD HPLC System

Vanquish MD HPLC System

The Thermo Scientific™ Vanquish™ MD HPLC system is the ideal chromatographic separations system for laboratories whose analyte resolution is critical. The small, powerful single channel Vanquish MD HPLC system meets analytical needs, as well as space and budget limitations. The system chromatographically separates analytes such as drugs or compounds in human specimens and introduces them into an MS detector for quantitation.

Better separations are achieved from advanced thermostatting, optimised volumes, and greater sensitivity delivering the highest confidence in peak identification and quantification for LDTs. Improved workflow productivity is accomplished with higher throughput, greater speed, and larger sample capacity. An ultra-precise piston drives deliver superior flow accuracy. The Vanquish MD HPLC system simplifies user interactions through intuitive operation and automated features. The outstanding overall robustness of the system helps achieve high up-time and low total cost of ownership.

TSQ Quantis MD

TSQ Quantis and TSQ Altis MD mass spectrometers

Thermo Scientific™ TSQ Quantis™ MD and Thermo Scientific™ TSQ Altis™ MD mass spectrometers can be used by clinical diagnostic laboratories to meet their requirements for LDTs. They provide IVD compliance with sensitivity, remarkable speed, and robustness for quantitative analysis. Active Ion Management (AIM+) technology maximises ion transmission from inception to detection, along with novel hardware designs that precisely manage electrical fields and remove sources of noise to achieve unprecedented levels of quantitative performance. TSQ Quantis MD and TSQ Altis MD mass spectrometers are powered by Thermo Scientific™ TraceFinder™ LDT software, which provides a workflow-oriented approach to high-throughput quantitation via an administrator console to access user-based permissions, data repositories, and auditing configuration. Advanced triple quadrupole technology consistently and reproducibly delivers best-in-class sensitivity. Ultra-rapid selected-reaction monitoring enables robust quantitation of more compounds faster. Automated compound optimisation and intuitive instrument interface increases productivity. Choose TSQ Quantis MD series mass spectrometers for sensitivity needed for routine, everyday quantitative analyses. The TSQ Altis MD series mass spectrometers offer enhanced sensitivity for demanding quantitative analyses.

Optional Bi-Directional LIS Connection

B-Link™ is a universal LIS/LIMS connector validated for TraceFinder LDT software. The B-Link LIS/LIMS connector is comprised of a downloadable software package of "middleware" capable of providing bidirectional communication between TraceFinder LDT software and the Laboratory Information System (LIS). The B-Link LIS/LIMS Connector software comes installed on the TSQ Altis MD Series data system or TSQ Quantis MD Series data system

Why select MD devices?

Thermo Scientific's Class I LC-MS MD portfolio (including TSQ Vanquish MD HPLC system, TSQ Quantis MD and TSQ Altis MD mass spectrometers) is suitable across high flow clinical applications with flexible options to achieve your sensitivity and throughput needs. As a component of an LDT method or IVD workflow, they can be used for both research and IVD purposes. And importantly, these devices support any quality / audit requirements your laboratory may face in the future.

In summary:

- ◆ Hardware manufactured following ISO 13485 and FDA 21 CFR 820; dedicated MD instrument control software and B-LINK LIMS connectivity for clinical workflow and auditing capability.
- ◆ LC front end versatility of 2x3 LC solvent channels using binary pumps
- ◆ Increase confidence by maximising the number of data points across your peak with fast scan rates (600 SRM/s per second)
- ◆ Scan modes simplified for IVD's
- ◆ Optimisable spray position in Atmospheric Pressure Chemical Ionization (APCI) or Heated Electrospray Ionization (HESI) modes
- ◆ Full Scan Mode (Q1), SIM Scan Mode (Q1), SRM Mode
- ◆ Dry Pump-no ballasting, no maintenance required in 5 years
- ◆ Thorough validation and verification process - medical device-certified engineers for service; quality tracking in place to ensure the highest instrument performance

IVD: In Vitro Diagnostic Medical Device

INTERVIEW

Digital healthcare is 360 degrees tool for integration and not limited to messaging or other basic platforms of communication

Dr Raajiv Singhal, Founding Member, MD and CEO, Marengo Healthcare Asia explains the importance of establishing Centres of Excellence across medical specialities and how it can help transform health outcomes

What is 'patient first approach for you 'How does it impact patient journey and care outcome?
"Patient First" approach with patient centricity is the ethos and vision with which Marengo Healthcare Asia is instituted. Every decision taken by us is aimed towards benefitting the patient, be it clinical excellence, planning treatment solutions or service deliveries. In our journey towards health and wellness, we aim to be the reliable and the preferred healthcare provider. This approach helps to bring coordinated treatment and planning with clinicians and specialists. It strengthens clinical communication and allows informed decision making for patients.

What are clinical centres of excellence (CoE) and which medical specialities would be their focus?
At Marengo Asia Healthcare, Centres of Excellence (CoEs) are defined as a combination of people, process, and infrastructure. We follow a methodology in which the balance of people, process, and technology drives healthcare to streamline and improve patient outcomes. Centres of Excellences is further augmented in the chosen areas of specialties where vision is to have all therapies up to sub-specialty levels. This will be backed by technology academics and research & training. In this matrix, not only as facilities that are equipped with advanced technology, clinical and global expertise to treat patients but also is the most integrated healthcare provider which ensures that no patient goes untreated. And for that, Marengo Asia will go an extra mile. Our goal is to emerge as one of the undisputed leaders in Centres of Excellence. We are already recognised as one of the centres in the country where organ transplants procedures have crossed significant numbers and therefore, our goal is to be recognised as providers of clinical centres of Excellence.

How important is integrated medical care in a country like India? In what ways will hospitals like QRG and CIMS impact patient care?
India probably has the largest healthcare system globally, given the population that we have and the quality clinicians that India brings out every year. With the exceptional quality of clinical excellence, advanced technology infrastructure and the affordability that defines healthcare in India, we are a preferred destination for medical tourism among the top five in the world. We will further strengthen this aspect as we have QRG and CIMS hospitals that are strategically located for best connectivity to deliver the best results to patients.

Integrated care is inclusive of seamless, effective, and efficient care that will entail the entire gamut of a patients' health needs. Our intent is, with a large network no patient should go untreated. We believe that if the patient cannot be treated at a particular hospital, we will ensure that the patient is relocated to the unit or the clinician travels to the hospital based on the facilities where the patient gets the best of clinical excellence and expertise. To achieve this, we

have created a clinical corridor. This is a bi-directional corridor where clinical excellence meets patient-centricity, and the quality of outcome is not compromised.

A special mention about our foundation through the services of which we treat people who cannot afford treatment. The foundation is stepping towards treatment of cancer, especially in women; paediatric cardiology for children born with anomalies in the heart; and organ transplants. We ensure that they are treated for the heath challenges they are undergoing without having to worry about the financial aspects of the treatment. This is where QRG and CIMS jointly offer best treatment solutions through the collaborated clinical expertise and excellence in deliveries.

How are you going to use technology as key differentiator to patient care? What is the potential role of med-tech companies?
The benefits of technology in healthcare are many. They facilitate better care coordination; paves way for better health management and helps in better patient education. The explosion on the technology front has impacted healthcare by leaps and bounds.

The technological advancements are best when we work on partnership models where both can collaborate for best clinical outcomes in the interest of the patient. Medical device entities, through cutting-edge technology solutions, facilitate easier relationship management of the healthcare providers and doctors with their patients. The companies develop newer technologies at regular points in time as an answer to medical needs that crop up across both, the established and developing & emerging healthcare canvas.

Whichever technology is focused on best clinical outcomes, Marengo Asia Healthcare will continue to support such technological excellence. We are poised to grow into the most integrated healthcare system in India in the next three years. With cutting edge technology solutions to facilitate easier relationships with patients, we will equip ourselves to take care of every patient's needs, whatever they may be.

Will access to trained workforce be a challenge? What do you think is the toughest test healthcare sector faces today?
Healthcare workforce density has remained a challenge to meet the healthcare demands, despite the fact that health system reforms have yielded significant education opportunities for medical and nursing verticals over the past decade or so. There are underserved areas where trained workforce is necessary. However, with the health policies being adapted to address the fundamental requirement in the health system, we will be able to overcome these barriers to good health solutions.

This also brings focus to the need for collaborations and partnerships that can be harnessed to alleviate this problem to an extent, which we are ourselves directed towards. Our job is to continue training people and our efforts to overcome this shortage will be a contribution in alleviating the paucity.

We hear a lot around digital healthcare; will digital health be one of your emphasis?
Digital healthcare is a 360 degrees tool for integration and not limited to messaging or other basic platforms of communication. Digital health transformation has seen an unprecedented growth globally and has been leveraged to predict, prevent and manage health crisis in the future.

The current times have witnessed digital health moving to the forefront rapidly, especially with overwhelming and sometimes, unprecedented patient numbers in the healthcare systems. Collaborations, connected technologies, knowledge sharing are platforms for increased success in delivery systems towards patient focused approach in healthcare. Digital transformation will support healthcare providers to streamline operations, better understanding of patient requirements, and enhanced user experience.

Marengo Asia Hospital is committed to bring the most advanced patient centric digital platform soon.

Versana Premier Expert by GE Healthcare provides robust set of advanced features

Doctors share their experience with the new Versana Premier Expert which is the 1st AI-powered equipment in the Versana Series

Ultrasonography has changed and transformed diagnostics and treatment over the last decade. The continuous iterations in equipment, treatment interventions, a combination of AI and IoT, are making machines efficient and reliable.

In parallel, lifestyle diseases have been on a steady rise. While hypertension, diabetes, and cardiac ailments are obvious, there's obesity – a progressive condition that isn't so. Traditional imaging techniques require repetition and are cost-intensive, but ultrasonography has shown significant progress with non-invasive methods, helping radiologists make quick decisions with precision and purpose. The new Versana Premier Expert, the 1st AI-powered equipment in the Versana Series is a machine that provides a robust set of advanced features. It is intuitive, gives better image clarity, has data at the fingertips and helps in diagnosing deep tissue diseases and perform a wide range of examinations on organs, including that of liver, cardiac, OBG, vascular, breast, thyroid, musculoskeletal, urologic, and paediatric studies. The proof of the machine's efficacy lies in the hands of radiologists, and this is what they have to say about it.

Versana Premier expert and its augmentation of productivity

Dr Darshan Majumdar: I have been using colour doppler & sonography for the last 30 years. Various models of GE machines have been used for performing different doppler and vasculature imaging. The application of these machines has increased in musculoskeletal sonography, PIP joints, rheumatoid arthritis and erectile dysfunction. We're not just having more patients visit us, but are able to see more of them at the same time and have increased revenues. It is making diagnosis quicker. Patients can avoid repeated MRIs and a whole host of imaging techniques. The machine is simple and user-friendly. All the parameters

Dr Darshan Majmundar
Radiologist, Sal Hospital.
Ahmedabad

including colour, 2D are seamless and it is fast and convenient to use. It eliminates the need for angiography. To summarise, firstly mapping the venous and arterial system in the upper limb is easy. Secondly, we can diagnose erectile dysfunction early (whether vascular or neurogenic incompetence). Thirdly small vessels in rheumatoid arthritis show effusions, muscular thickening, and blockage of flow clearly. The vasculature of the brain is critical and extremities vasculature insights are clear and precise.

Dr Parth Shah: When it comes to fetal medicine, conditions are often treatable if found early. This helps in intervening early, much before the fetus undergoes stress in situ. As an imaging technician, my opinion is also considered especially in

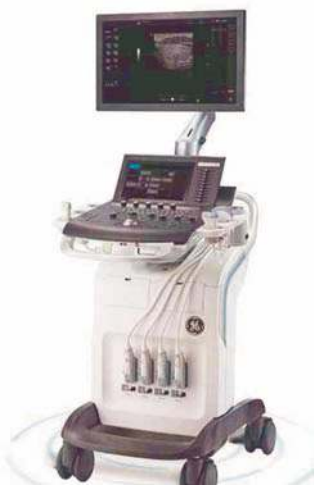
Dr Parth Shah
Laproscopy surgery,
fetal medicine, high risk
Obstetrics at Rajni Hospital,
Ahmedabad

prematurely identified genetic conditions.

Choice between sharp and smooth viewing modes

Dr Darshan Majumdar: I'm using the 2-finger gesture to derive imaging and toggle between the two modes. I use auto-adjusting frequently for viewing mode.

Dr Parth Shah: When contamination of vessels occurs, I can pick up diagnosis quickly and have intervention



done immediately. In the end, the patient finds it very advantageous. This is helping us see more patients, from 140 earlier to 230 patients a month. We are able to find more ectopic pregnancies which weren't picked up previously. High-resolution imaging is helping diagnosis.

Dr Sudhakar Shetty: I have been practicing for three decades and OBG is my specialty. The B-mode is very useful while looking into deep

Dr Sudhakar Shetty
Consultant Radiologist,
Andheri X-Ray & Sonography
Centre, Mumbai

tissue, and the image quality is very good. Whizz gives a good image which I use occasionally.

Greater range of probes available & bridging the diagnostic gap

Dr Darshan Majumdar: With the probe of this machine, tissue penetration is excellent. Even if the patient is overweight, I'm able to see the renal vasculature which was not possible in previous machines. Previously I needed to do CT angiography for this which is now unnecessary.

Dr Parth Shah: The probes in this machine are better, with nearly 180 angles. They are also lighter, with the ability to see more area. The resolution for the spine and heart is very high. I can use different probes for different specific purposes and patients. Eco-texture in obese patients by the high-frequency probe is especially helpful.

Top 3 features/functionalities of Versana Premier Expert

Dr Parth Shah: I have been doing sonography for a decade. I depend a lot on 2D and over time the quality has improved a lot. I can see tissues well and the wall texture and the blood floor clarity help me pick up abnormalities. The visuals are sharp and clear.

Dr Abhishek Singh: One thing I've noticed about this machine is that it doesn't heat up, so it's not needed to store it elsewhere or keep it cool. Penetration in obese patients

Dr Abhishek Singh
Consultant Radiologist,
Charak Diagnostic Centre,
Lucknow

with the curvilinear problem is helpful for a variety of reasons, can definitely say that the machine is superior.

Dr Sudhakar Shetty: My surgeon friends are very impressed by the images, and one of them found the quality comparable with that of MR scans. The 2D quality is high and I'm able to use it across complex gynaec and OBG cases. The machine is quite potable, adjustable and easy to use.

Emerging trends in hematology

Thomas John, Managing Director, Agappe Diagnostics talks about the emerging trends in hematology and highlights that it is imperative that more and more active Indian IVD manufactures should come forward to manufacture hemat analysers for making more Indian made machines to substitute the import dependency

Though, IVD embraces several subdivisions of analytical methods, hematology estimation segment garners a substantial share of business in this fast-growing market scenario, especially during the post-COVID cycle, due to the paradigm shift in patient care approach.

Hematology market trends

Cell counter is an essential medical equipment in diagnosis from common fever to carcinoma. We are well aware of the complexities of advanced stages of dengue fever, leptospirosis, where your platelets level dangerously goes down to fatality.

India hematology analyser market is expected to grow at a substantial CAGR in the coming 4-5 years. Precision, repeatability, and trouble-free service are the key points in the selection of the brands. The increasing rate of blood disorders like leukemia, anemia, automation in blood testing, excess workload, lower TAT, affordability has favoured the hematology industry in a big way.

2019 Hemat Indian market accounted a remarkable figure of Rs 952 crore with 40 per cent equipment business and 60 per cent of reagent business. Total Indian market constituted around 16000 three-part Hemat analysers in 2019, while 5-part systems had accounted for 2000 entry level machines and 400 advanced 5-part models during 2019.

Agappe has been supplying hematology reagents to various own hematology cell counters from 2003. Agappe has one of the largest hematology reagent manufacturing facilities with a capacity of 20,000 litres per batch. This 17 years of experience in manufacture and application of Hemat reagents for various cell counters has paved the way for the first indigenously developed 3-part cell counter in India, namely Mispa CountX. It has been developed jointly with L&T Technology Services (NSE: LTTS), a leading global pure-play engineering services company. Thanks to its strong R&D capabilities, Agappe launched the technologically advanced and totally Made in India hematology analyser in the year 2020, to support patient care with accurate results at affordable cost. This was an additional boon to the hospitals and the patients during the COVID pandemic to perform CBC measurements for the inpatients down with complications of COVID.

When you have cent percent import dependency for hematology segment equipment, spares, consumables, the cost per test will be very much high for the ultimate consumer; besides the equipment cost as well as higher spare costs. Supply chain imbroglios during pandemics and consequent delay in spares and solutions from the mother supplier also pose a threat, when we solely depend on imports for the entire system. In multiple cases, the software system shares innately the patient details to the mother country of the equipment origin, whereby the indigenous health data of our people are also transferred to foreign agencies. This might be a data transfer against our national interest too, in a different perspective.

Based on the above data, it is imperative that more and more active Indian IVD manufactures should come forward to manufacture Hemat analysers for making more Indian made machines to substitute the import dependency. Agappe is the only supplier with inhouse, indigenous manufacturing capability for 3-Part hematology equipment and rest all other suppliers pan India depend on imported equipments to feed the market. Agappe launched inhouse 3-part Hemat analyser from September 2020, namely Mispa CountX and already 2500 CountX are placed in Indian market and more than 1000 are in export market.

Indigenously developed equipment has lots of advantages pertaining to spares, services, affordability & availability of hardware and consumables, early TAT in service-related issues etc. When our major dependability is converged to foreign countries for machines and spares, the risk is beyond our imagination, since any international policy changes in foreign trade, or other border issues can pop up anytime.

Agappe's Mispa Count X's performance is based on smart impedance technology and a unique algorithm. In terms of size and compactness, Mispa Count X is one of the most compact 3 Part cell counters in its class with a minimum requirement of laboratory space. Mispa Count X is having High-tech Laser cut Ruby aperture of 70 micron for RBC - Platelet and 100 Micron for WBC. The system can deliver 60 tests/hour and provides 20 parameters along with 3 histograms that can be viewed on a single screen. To enhance user experience, Mispa Count X has touchscreen interface with onboard real time reagent inventory and 35,000 patient data storage capacity. For robust and precise operations, Mispa Count X has a unique fluidic system using proven PTFE syringes. The fluidic design is conceived in a such way to minimize reagent consumption, making Mispa Count X, the most inexpensive hematology analyser in its segment. Mispa Count X reagents are formulated to deliver accurate results at most affordable cost per test. The Count X can provide advanced continuity of care for clinical laboratories, regardless of their size.

Agappe has achieved one more milestone with introduction of 3-part cell counter in 2020, in its path to march towards patients' healthcare and wellness, with affordability and quality as priority. Agappe continues the journey of Hematology segment with the development of new inhouse 5-part Cell counters within a short span of time, for the first time in India.

This World Health Day, protect patients from urinary incontinence with surgical solutions

Vivek Tiwari, CEO & Founder, Medikabazaar explains about I-Stop from MEDIKABAZAAR which is a cost effective and advanced sling for treatment of female Stress Urinary Incontinence (SUI)

Urinary incontinence is an issue faced by women wherein a person leaks urine by accident. Almost, 25 million adults are suffering some form of urinary incontinence, out of which 75-80 per cent of those are women. Urinary incontinence affects 200 million people worldwide. One in three women over the age of 18 experience episodes of leaking urine involuntarily.

Concerns with the increase in urine leakage due to pregnancy, childbirth, and menopause that are causing problems to the pelvic muscles have increased.

Many people experience occasional, minor leaks of urine. Others may lose small to moderate amounts of urine more frequently.

Population studies show a prevalence of urinary continence in 10 per cent-42 per cent of Indian women. It shows a clear trend towards increase in prevalence. About 1 to 3 women suffer from SUI at some point in their lives.

Urethral support, bladder neck function, and function of the urethral muscles are important determinants of continence. Damage to the connection between this fascia and muscle, loss of nerve supply to the muscle, or direct muscle damage can influence incontinence. In addition, loss of normal bladder neck closure can result in incontinence despite normal urethral support.

Involuntary leakage associated with urgency and also with exertion, effort, sneezing, or coughing leading to overactive bladder or nocturnal enuresis.

Prevention is better than cure. Prevention of stress incontinence includes life style modifications, high fiber diet, quit smoking, losing excess weight, and avoiding over indulgence in caffeinated, carbonated and alcoholic beverages and Kegel exercises to strengthen your pelvic floor muscles and urinary sphincter.

I-STOP has shown the positive impacts during the review in multiple clinical trials. It is designed by group of surgeons, to meet the specific needs of SUI treatment

Women experience stress incontinence twice as common as men; Pelvis & urinary sphincter muscles weaken by child birth & menopause resulting in more episodes of leakage of urine and incontinence.

Urinary complaints are best addressed to a urologist or gynaecologist with previous history and needs. The severity is addressed and evaluated by set or needed investigations namely voiding diary, uroflowmetry, and urodynarnics if needed to take bothersomeness of incontinence towards treatment and cure depending on the state and evidence

According to Dr Sanjay Pandey who is an expert in reconstructive urology, andrology, endo-urology, female urology, incontinence, and gender reassignment surgery, there are treatments available to cure or significantly reduce the effects of stress incontinence from your life.

Surgery can fix stress urinary Incontinence. Sling surgery is the most common surgery we doctor use to treat urinary stress incontinence. In this procedure the surgeon creates a “sling” in this surgery, a small strip of material is placed under your mid urethra to prevent it from moving downward during activities. It acts as a hammock to support the urethra. There are many slings available out of which I-Stop from MEDIKABAZAAR has shown the positive impacts during the review in multiple clinical trials. The weaving pattern has been designed to meet the specific needs of SUI treatment.

I-STOP is cost effective and advanced sling for treatment of female Stress Urinary Incontinence (SUI). It is designed by group of surgeons, to meet the specific needs of SUI treatment.

Sequoia Healthcare launches Precision 32 Slice Spectral CT Scanner with Dual Energy Applications

Precision 32 comes with mega pixel HRCT lung imaging against the conventional HRCT which are of 512 matrix which significantly improves the diagnosis of lungs

Bangalore-headquartered Sequoia Healthcare has launched a 32 Slice CT Scanner with Dual Energy – Low Dose CT Scanner.

The company said that the Precision 32 Dual Energy CT scanner produces good quality diagnostic images with stable performance and high throughput. That can help radiologist to achieve persistent diagnosis. It will redefine the new standards of 32-slice CT imaging.

CT is a critical tool for Covid-19 diagnosis. Precision 32 comes with mega pixel HRCT lung imaging against the conventional HRCT which are of 512 matrix which significantly improves the diagnosis of lungs.

Talking about the CT Scanner With Dual Energy Applications, S Viswanathan, Chief Executive Officer, Sequoia Healthcare said that the dual-energy applications that were available only with high-end CT scanners are now available at entry-level scanners. "Dual-energy applications like urological calculi analysis, fatty liver analysis, metal artifact removal, virtual non-contrast scans, the base of skull beam hardening artifact removal and others to come in future are going to help radiologists in the diagnosis of the diseases," he further explained.

Talking about the feature, Viswanathan, said, "In order to minimise the radiation dose to patients, Precision 32 adopts a unique low dose technique."

We thrive to bring in advanced and affordable international technology, which ultimately serves in Cost-Effective Healthcare. Sequoia believes in delivering radiology equipment accessibility for cost-effective healthcare. "In short, we want to bring diagnostic reach for all. With high-tech services accompanied with new world Artificial Intelligence, Robotics, etc, Sequoia aims to become the #1 Imaging Devices Manufacturer globally," Viswanathan concluded.

FEATURES

- With mega pixel reconstruction for lung imaging to give sharper HRCT images compared to the convention 512 matrix images in other CT scanners
- Full functional couch with up/down (easier biopsy procedures), 205 kg weight bearing capacity and 165cm scan
- Comes with physical gantry tilt against digital tilt to avoid unnecessary radiation to patient doing spiral scans when a simple sequential scan will suffice
- Combination of 42 KW, 350 mA, X Ray generator and 3.5 MHU 735 KHU/min metal tube you can have good images with obese patients as well as higher throughput without waiting for tube cooling
- Fast rotation time of 0.72 sec for quick spiral coverage with lesser breath hold times for patient comfort
- Patented P Axial technology to get acquisition slice of 0.275 mm thickness for crisper inner ear imaging
- Ultra-low dose algorithm from 60KV, dose modulation and dual domain iterative reconstruction technique
- 71.5 cm gantry opening for patient comfort and 50 cm Field of View. Intelligent console with all post processing software's; dual energy applications, Virtual endoscopy, 3D, Auto bone removal and more features

AGFA

- Excellent workflow, connectivity & integration capabilities
- MUSICA image processing software enhances DR image quality
- Floor mounted system for ease of installation & use
- Digital radiography made affordable
- Advanced clinical & dose efficiency tools
- Optional Full Leg / Full Spine

Confident Imaging with Dura-Line Detector Series

Agfa Healthcare India Pvt. Ltd, Unit No. 301 3rd floor, Quantum, Hiranandani Estate, Ghodbunder road, Thane west, Maharashtra, India. Pin Code: - 400607

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