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Cover Story

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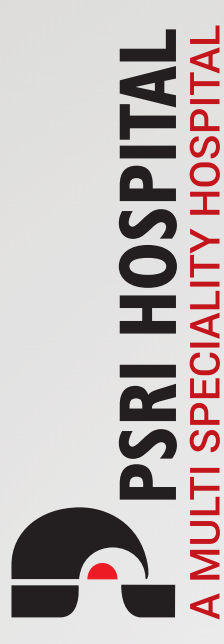
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**Priya Balasubramaniam
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HEALTHCARE 2.0:
STRENGTHENING
VALUES FOR
SUSTAINABLE GROWTH

LARGEST CONGREGATION OF HEALTHCARE LEADERS AND BUSINESS INNOVAORS @HEALTHCARE SENATE 2018

Healthcare Senate's 3rd edition, scheduled from July 12-14, 2018 in Radisson Blu, Delhi Airport, will focus on **Strengthening Values for Sustainable Growth**. The summit will emphasise on inculcating six core values that will lead healthcare business to create value for all.

1st EDITION	90 One-on-One meetings	3 Power Discussion	16 Tracks	TOPICS TO INCLUDE	<ul style="list-style-type: none"> • Creating an inclusive healthcare ecosystem for India • Reviewing NHPS and its way forward • Indian healthcare's leadership in innovation • Access strategies for strengthening India's healthcare sector • Strengthening business values for success • Addressing treasury management challenges in healthcare • Regulatory policies in healthcare • Procurement and supply chain management strategies
2nd EDITION	140 One-on-One meetings	5 Power Discussion	22 Tracks		

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FOR More Information: Harit Mohanty - +919821015167, harit.mohanty@expressindia.com

FOR SPONSORSHIP & EXHIBITION BOOTH:

MUMBAI/AHMEDABAD: Rajesh Bhatkal - +919821313017, rajesh.bhatkal@expressindia.com, Douglas Menezes - +919821580403, douglas.menezes@expressindia.com, Nirav Mistry - +919586424033, nirav.mistry@expressindia.com, **BENGALURU:** Douglas Menezes - +919821580403, douglas.menezes@expressindia.com, **HYDERABAD:** E Mujahid - +919849039936, e.mujahid@expressindia.com

DELHI-NCR: Sunil Kumar - +919810718050, sunil.kumar@expressindia.com, **CHENNAI / KOCHI / COIMBATORE:** Sunil Kumar - +919810718050, sunil.kumar@expressindia.com,

KOLKATA: Debnarayan Dutta - +919051150480, debnarayan.dutta@expressindia.com, Ajanta Sen Gupta - +919831182580, ajanta.sengupta@expressindia.com

FOR DELEGATE REGISTRATION:

Vinita Hassija - +91 9820590053, vinita.hassija@expressindia.com, Madhuri Kudapkar - +91 9664297646, madhuri.kudapkar@expressindia.com

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Express Healthcare®

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For the greater common good

While the Centre is working hard to ensure the smooth roll out of the Modi Government's flagship health-care scheme, Ayushman Bharat-National Health Protection Mission (AB-NHPM), state elections could prove to be speed breakers.

By mid June, 24 states and union territories had signed MoUs to join up, in stark opposition to West Bengal which defied the Centre and opted out. Major states like Maharashtra, Odisha, Rajasthan which have elections in the next 12 months, are also resisting as they would like to project their health schemes as part of their poll promises. For instance, two days before the conclave of state and union territory health ministers met in Delhi in mid June, Naveen Patnaik, Chief Minister, Odisha launched the 'Biju Swasthya Kalyan Yojana', a health coverage scheme named after his father. The initiatives are slated to be implemented by August 15, a date reportedly being considered for the official launch of the AB-NHPM as well.

In other states with existing health schemes, the Centre has made it clear that they will partner with these schemes rather than absorb them into the AB-NHPM. Savvy state governments seem to have realised that if they play their cards right, they could have their cake and eat it too. Meaning that the existing health schemes can continue to operate in their names, and yet get AB-NHPM funding. How this uneasy alliance will actually play out is anyone's guess.

Union Minister of Health and Family Welfare JP Nadda has emphasised that the success of the scheme hinges on the active participation of the states, who need to "own the scheme" while Centre will design the policy framework with all possible flexibility and support. Naddaji's comment reveals a keen appreciation that every cog in the wheel needs to be working in tandem for the true success of AB-NHPM. This could be the single largest masterstroke (or blunder) of the present government. Its implementation could well win or lose the 2019 elections for the BJP and Prime Minister Narendra Modi.

Thus, concerns of all key stakeholders are being addressed. For instance, the Indian Medical Association (IMA), was a vehement critic of the



As more states come on board Ayushman Bharat, a few rebels attempt to derail the initiative

scheme, pulling it up for 'conceptual deficits and operational flaws' related to pricing of treatment packages. But, once assured that NITI Aayog would be steering costing studies to guide the proposed continual adjustment of benefit packages and their rates, IMA's main concerns were addressed. The association has now agreed to collaborate with the centre to create awareness about the scheme.

IMA's support is crucial as healthcare professionals are the foot soldiers of the AB-NHPM, the ones who will actually be treating patients under the scheme. India already has an acute shortage of doctors and given that AB-NHPM involves liaising with the government for pre approvals and reimbursements, how many of them would agree to come on board? Larger hospitals have approached the authorities to revise the treatment package rates as they are unviable. But smaller healthcare facilities have shown more interest as they probably see the AB-NHPM as a way to increase their volumes. The scheme could turn out to be a saviour for many regional doctor/promoter driven healthcare facilities and chains, who are finding it difficult to break even.

It is at this crucial crossroads that *Express Healthcare* is hosting the third edition of Healthcare Senate, from July 12-14 in the national capital. The agenda is packed with panel discussion and presentations on a range of topics. We start with corporate hospital CEOs debating the way forward on AB-NHPM, move on to access strategies in the era of price control, and continue to the need for core values and ethics, the battle for sustained innovation leadership and consolidation in healthcare. The three-day conclave will also host the third edition of the Express Healthcare Excellence Awards, the second edition of the Best Corporate Hospital Pharmacies Citations 2018 and the first ever Express Healthcare Medical Imaging Awards 2018. Catch all the action live on our social media feeds and detailed report in the August issue of *Express Healthcare*.

VIVEKA ROYCHOWDHURY *Editor*
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INTERVIEW

Governments can play an important role in influencing speed and direction of health innovations

With both the private sector increasing their investment share in R&D and innovation as well as the government looking to create a healthy innovation ecosystem, India's healthcare sector is poised to be an innovation hub for the world. **Priya Balasubramaniam-Kakkar**, Senior Public Health Specialist and Scientist, Public Health Foundation of India and co-founder of the Innovations for Universal Health Coverage Initiative, speaks on various opportunities for India, in conversation with **Raelene Kambli**



What is the healthcare innovation scenario in India and how is it shaping?

The healthcare innovation space in India though nascent is both a vibrant and a rapidly growing sector. While larger more established health technology players continue to innovate around higher levels of healthcare, there are also numerous smaller innovators and start-ups that are providing innovations targeting the primary and secondary care sectors. These include innovations in low cost diagnostic tests, ophthalmic (vision) care and prevention of chronic diseases that include cardiac care and diabetes prevention. As this critical sector in healthcare provision develops, it is important to understand the need for innovations from both supply and demand side constraints. It is important, however, to embed thinking and strategy around healthcare innovations in the context of the country's social and economic reform agendas that relate to health system strengthening. This will enable healthcare innovations and innovators to address long-term health outcomes and develop technology-based interventions that are adaptable to changing

dynamics of complex health systems.

India has a huge potential for health innovation, however, sustaining scalable and replicable models is a tall task. Your comments.

Yes, many creative and innovative technologies that have been seeded and incubated often remain as prototypes which are unable to find markets and public health systems to scale and thereby achieve impact. This has led to a search for ways to overcome constraints to scaling up. As discussed in the recently concluded Innovations for UHC Conclave in Bengaluru, experience from diverse stakeholders suggests that it may take time for a combination of innovations and new types of partnership to become established and eventually reach a tipping point. Taking innovations to scale is likely to involve several organisations from within and outside the health sector (tech innovators, mobile phone operators, pharma sector) involving new kinds of partnerships between companies with different business models. The government can play an important role in influencing the speed and direction of

health innovations through its use of resources to support investment, purchase/contract-in services and also by enacting and implementing regulations. New regulatory arrangements in the health, pharma, medical device and telecommunications sectors will also influence capacity to go to scale. Recent analysis of ICT Innovations suggests that single health innovations, on their own, are unlikely to have a major impact on health markets and health-seeking behaviour. People need access to a bundle of services that include low cost diagnostics, advice on treatment and easy access to affordable and good quality medicines. In most health systems, this involves a mix of organisations in terms of their size, their business model and their relationship to the regulatory system.

What are the essentials to encourage health innovation in India?

India and other low-middle-income economies are definitely a natural hub for encouraging a spectrum health innovations. The democratic nature and complexity of India's health system, governance and resource challenges and diversity of consumers have spawned new thoughts and new



Gol is playing an important role in investing and incubating health innovations through various initiatives

ways of improving healthcare quality and making it more accessible and affordable to those who need it the most. First, as mentioned earlier, health innovators often come from non-health backgrounds and need to be exposed to the challenges and opportunities and their place in country health systems where they can get a sense of context and scale and most importantly gauge demand for their interventions and models.

Second, health innovators need investment and the freedom to take risks. Government of India is playing an important role in investing and incubating health innovations through various initiatives like the DBT-BIRAC partnership, the Atal Incubation Mission and the Centre for Cellular And Molecular Platforms (C-CAMP), which is an initiative of Dept of Biotechnology, Ministry of Science and Technology, Government of India amongst others along with private sector investors.

Third, it is crucial for technology-based health innovations and innovators to be given opportunity to interface with key health sector stakeholders who will be using these interventions. These include physicians, allied health workers, community workers, civil society and patient groups. The ability to build trust and acceptance in the use of new models of healthcare access and provision is an important part of sustaining innovations.

Fourth, technology-based innovations and models especially relating to health need constant calibration, monitoring and evaluation on a constant basis, an environment that provides and demands these process ensures quality control and the ability to test the efficacy of innovations at scale beyond prototypes and pilots. Finally, research is the DNA of innovations in the pharma sector and affordable healthcare is inextricably linked with affordable medicines and it is therefore critical to foster an open, transparent and viable environment for drug

innovation and discovery in India.

How can strategic partnerships be utilised to build health innovations for India? What kind of partnerships are essential to do so?

The issues of health innovation and access are inevitably intertwined, cutting across distinct policy areas, in particular, public health, medicine, the private sector, technology, intellectual property (IP) and international partnerships. Strategic

partnerships to build health innovations in India and other LMIC settings will involve convening multiple stakeholders across the health sector, medical professionals, academia, devices, diagnostics, and pharma as well as non-health sectors, investors,

engineering, information technology and design to create interventions that can be integrated and adapted to local health systems with long-term health outcomes in mind. Low-cost health technologies have tremendous potential to be scaled across geographies and



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regions. Identifying and landscaping innovations across regions and helping create multi-stakeholder innovator networks that build on health system reform is an area that the Innovations for Universal Health Coverage Partnership between Amref Health Africa, Institute of Development Studies and the Public Health Foundation of India is focussed on. Central and state/local governments play a key leadership role in the formulation and implementation of strategies for making progress towards healthcare reform. They will need to adapt their approach in order to promote rapid technological innovation. Government regulation of healthcare and its allocation of public funds for basic health services can either aid or hinder innovation. It is important for innovators to understand the extensive network of regulations that may affect a particular innovation and how and by whom those rules are enacted, modified, and applied. It is also important that government officials have access to information and evidence on health system innovations to enable them to make informed

decisions on how to regulate this space as well as consider the type of innovations that can be adopted at scale.

How can governments, innovators, researchers and funders of innovation work together to create a supportive ecosystem for the same?

A supportive health innovation ecosystem is created over time. It involves the ability to incubate and pilot great ideas, the infrastructure to be able to prototype those models and ideas and most importantly the freedom to interface with the multiple stakeholders who inform, implement interventions and utilise healthcare service. For this to happen, there has to be access, communication and support within these multiple actors who are invested in innovating for health systems and good health outcomes especially for vulnerable populations. Digital health has the potential for transforming access to effective and affordable health services, but it also could reinforce existing inequalities. The role of research in supporting innovation and in formulating and implementing strategies for taking the innovation to

scale has to re-thought. Experience of the past few years has demonstrated the need for an iterative, learning approach for translating technological and organisational innovations to health system transformation at scale. This will require a new approach to health systems research and learning that is truly interdisciplinary. A supportive innovation ecosystem will ideally bring together people who are involved in the design, investment and implementation of healthcare innovations, which have the potential to be taken to scale and transferred between regions and countries. The aim is to recognise and encourage healthcare innovators and serve as platform for public and private sectors to explore the potential for new kinds of partnership to take low-cost technology solutions for improving healthcare delivery to scale. It will provide an opportunity for dialogue between public and private sectors, between health and other sectors and between innovators and government officials from to

- Share evidence on early stage and more mature innovations

that can inform decision making and policy formulation

- Discussing ways and means for regulations and regulators to enhance and support innovation in low-cost healthcare
- Public and private sector collaborations that accelerate the adoption of innovations
- Understand pro-innovation business models and how this works for bringing down healthcare costs.

How can these innovations bring in the much needed pill for improved health economics of India?

I do not think technology-based health innovations and new models of healthcare services will be a single pill or silver bullet to reform health systems in India. But they will definitely be part of India's future in creating a stronger more transparent and equitable health system. It is critical therefore, to see how these new technology-based players in healthcare provision can be integrated in the roll-out of UHC mandates within the country. What role can they play? Can they be aggregated to primary and secondary care to provide a much needed care continuum?

What is the best way to establish confidence and trust between these newer actors, the medical profession and the state in terms of improving the quality and bringing down the cost of healthcare. These are important areas of consideration that need to be factored, factors in charting a newer and nimbler path to health system reform where good quality healthcare can be brought to the most vulnerable users without causing financial impoverishment or compromising on quality. Several donor agencies and private investors have become increasingly interested in potential markets for low-cost health services. Experience in other sectors suggests that it may take time for a combination of innovations and new types of partnership to become established and eventually reach a tipping point. Governments can play an important role in influencing the speed and direction of health innovations through its use of resources to support investment, purchase services and also by enacting and implementing regulations.

raelene.kambli@expressindia.com

● PRE EVENT

Best minds to congregate @healthsenate

The event will focus on 'Healthcare 2.0: Strengthening Values for Sustainable Growth'

Express Healthcare invites CXOs of hospital chains, medical directors, owners/ promoters of hospitals and diagnostic centres, consultants, thought leaders, industry stalwarts and domain experts to congregate at India's largest private sector business summit to prepare a blueprint based on values that will make healthcare organisations successful both in terms of profitability and goodwill.

The first two editions of Healthcare Senate held in Hyderabad served an excellent platform for thought leaders, key decision makers, investors and budget holders to share and exchange strategies that are relevant to the fast changing healthcare environment as well as helpful in running sustainable, responsible and profitable businesses in India.

All stakeholders therefore, came together to share their

insights on business models that will work for India. The first edition focussed on 'Value-based healthcare delivery', while the second edition was 'Building a future ready healthcare sector for India'.

Taking these discussions further and in keeping with the rapidly changing healthcare business environment, Healthcare Senate's 3rd edition, to be held in New Delhi from July 12-14, 2018, will focus on 'Strengthening Values

for Sustainable Growth'.

The summit and its discussion will emphasise on inculcating the below mentioned core values that will lead healthcare business to create value for all.

Ingredients for a successful organisations:

- **Integrity:** There are no moral shortcuts in the game of business or life. It is the true mark of leadership and so healthcare organisations

who wish for sustainable growth will have to instill this principle in all their business dealings; be it patients, employees or partners. Healthcare organisations which operate with integrity and honesty earn immense brand value. At Healthcare Senate 2018

industry stalwarts will share their stories of success which speak of goodwill and profitability earned through integrity and honesty in

business.

► **Accountability:** This is a virtue that healthcare organisations cannot overlook. Accountability entails the procedures and processes by which healthcare providers justify and take responsibility for their activities. Lack of accountability in healthcare therefore, can cause significant damage to organisations. It can erode quality of care, ruin an organisation's reputation, and increase the risk of lawsuits. Experts, in their discussion, will deliberate on ways and means to improve accountability of care.

► **Quality:** Quality in healthcare should be more than making the best product or providing the best service. It should extend to every aspect of the business function. A company that recognises quality and strives for it daily has a profound sense of self-respect, pride in accomplishment, and attentiveness that positively affects every aspect of its business. At the conference, healthcare quality experts will share insights on how striving for quality facilitates organisations to improve efficiency and achieve profitable in the long run.

► **Innovation driven:** Industry leaders will explain how innovative companies deliver a consistent stream of market successes via successful businesses and products/services or improved processes that continuously translate market success into economic value. These companies enjoy a competitive advantage and achieve sustained growth.

► **Adaptability:** With changing business dynamics the challenge that healthcare organisations face is keeping pace with these changes. Organisations which can roll with change and still perform well are prime time players and will enjoy sustainable growth. The event will bring forth case studies of such companies which have gracefully accepted change and gained better outcomes.

► **Strategic Partner Relationships:** No business is successful if it is not built on values forged and strengthened by strategic partnerships.

Here, experts will highlight the essentiality of striking sustainable partnerships which can help companies gain competitive advantage and credibility.

Topics to be covered during the event are:

► Healthcare 2.0: Creating

value for all

► Creating an inclusive healthcare ecosystem for India

► NHPS: Building the right synergies

► Growth Agenda: The battle for sustained innovation leadership in healthcare

► Access strategies in a era of

price control

► CEO Round table: Business culture: Why core values matter?

► Healthcare's unique treasury management challenge

► Regulating trade margins the do's and don'ts

On the side lines of Healthcare Senate 2018,

Express Healthcare will also be hosting Radiology and Imaging conclave and the the Healthcare IT Senate. Both these knowledge platforms will gathers experts from the field of radiology and It to share in depth knowledge on the Future of radiology and the healthcare IT.



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THE GROWTH



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Growth is a priority for most healthcare businesses, but one that's elusive and difficult to achieve. Some healthcare players do it really well, delivering sustainable growth year after year. What makes those companies so special? And what can we learn from them?

By Raelene Kambli

India's healthcare sector is at crossroads. It must address the significant health needs of its domestic population, while positioning itself to take advantage of the more profitable global markets.

According to India Brand Equity Foundation report, healthcare has become one of India's largest sectors both in terms of revenue and employment. During 2008-22, the market is expected to record a CAGR of 16.28 per cent. The total industry size is expected to touch \$372 billion by 2022. Indian companies are entering into merger and acquisitions with domestic and foreign companies to drive growth and gain new markets. The hospital industry in India stood at ₹ 4 trillion (\$61.79 billion) in 2017 and is expected to increase at a Compound Annual Growth Rate (CAGR) of 16-17 per cent to reach ₹ 8.6 trillion (\$132.84 billion) by 2023.

Concurrently, India's dream for Universal Health Coverage (UHC) still seems far from being achieved. The nation is still battling to solve many complex healthcare issues. India spends about 1.3 per cent of their GDP on healthcare. Moreover, government's population report indicates that India over 25 years has added 450 million people by 2016. During this period, the proportion of people living in poverty fell by half. This period of rising prosperity has been marked by a dual disease burden, a continuing rise in communicable diseases and a spurt in non-communicable diseases, which accounted for half of all deaths in 2015, up from 42 per cent in 2001-03. Although, the government is working towards adding more funds to healthcare budgets, collaborate with the private sector, bring in policies to foster innovation, facilitate quality and price control and more, the path to progress seems arduous.

At a recent healthcare conference in Bengaluru, Professor Vinod Paul, Member NITI Aayog addressed the gathering of healthcare industry saying, "The Government of India's Ayushman Bharat is committed to the well being of our citizens. The focus of the health and wellness centres is to ensure disease is prevented and detected early, care that is accessible and closer to home, better health outcomes at lower costs and a platform for health, nutrition, wellness and sanitation. Under the Ayushman Bharat, there will be opportunities for health innovators under various areas to contribute to building stronger health systems for the country."

Similarly, Professor K Srinath Reddy, President, PHFI said, "The Sustainable Development Goals have positioned UHC as a target to be delivered by 2030. For India, encouraging and supporting healthcare innovations that enable health services to reduce the burden of diseases at different lev-

els of the health system and prevent disease at the population level are a high priority. These innovations must have relevance, affordability and scalability for impact. Building partnerships in health is also essential so that research explores, science discovers, technology develops, and the health system delivers. India can become the creative crucible of frugal, functional innovations that can transform healthcare."

Well, an exact sentiment run through the minds of several healthcare organisations large and small. Industry experts believe that the sector has a huge potential to add economic value to the nation and heal its health economics, if every healthcare organisation maps a clear growth path.

In this special issue, we identified some key elements such as innovation, partnerships, culture, business models and more that can drive success for healthcare organisations in India. We spoke to some healthcare companies such as Microsoft, Medtronic, Dr Mohan's Diabetes Specialities Centre, Philips Healthcare and POC Medical Systems who have achieved immense success. These healthcare players have excelled in many ways and have achieved sustainable growth year after year.

What makes these organisations so special and what can we learn from them? Moreover, when organisations grow so does the sector prosper. How can this success heal the country's health economics?

While many share some common traits, they all take different paths to grow using different formulas to achieve it. Dr V Mohan looks at excellence in quality as a key indicator for the growth of his company. This has helped them establish 41 branches across the country and they also aim to reach the 100 mark in the next few years. Medtronic is driven by growth strategies that promote therapy innovation, globalisation, and economic value. With this prime focus, Medtronic has 50 research and innovation centres globally, and has made an investment of \$2.2 billion in R&D as of FY17. For Microsoft, India is a strategic market and their plans are anchored in the country's development and growth. They believe in creating an environment of shared value for all. Philips on the other hand focusses on innovation that can make healthcare more accessible and affordable. Moreover, POC Medical Systems aims to solve complex healthcare issues in diagnosing cancers.

At the end, these companies share their learnings and explain how they go about formulating and executing strategies, motivating and engaging people, building a growth culture that will facilitate them to develop distinctive competencies to stay ahead of the pack.

Dr V Mohan's eye for quality par excellence

Dr Mohan, your centres are known to be driven by specialised research and innovation in diabetes care. Tell us what sets you apart and what lessons young entrepreneurs can learn for Dr Mohan Diabetes centres as a brand?

While the primary aim of our institution is to provide world class healthcare at affordable cost to the community, this is the work done by our clinical unit, which is known as 'Dr Mohan's Diabetes Specialities Centre'. The Madras Diabetes Research Foundation, our sister concern, undertakes research on diabetes on a wide range of subjects ranging from clinical diabetology, epidemiology, complications of diabetes, genomics (genetics), prevention of diabetes, discovery and innovation in producing newer treatments, and healthier food products for diabetes. From the beginning, research has been a passion for us because I firmly believe that today's research can translate to tomorrow's practice. We also believe in giving back to the society and hence, we do a significant amount of charity, which is mostly done in collaboration with the Sri Sathya Sai Seva Organisation. We have also conducted thousands of free diabetes camps to help the poor and needy. Finally, our Education Academy conducts various courses for physicians, ophthalmologists, dieticians, educators, lab technicians etc. and this has helped in capacity building to tackle the diabetes epidemic in India.

What are the core values that initiate your company's growth?

We strongly believe that quality should be the most important driver of our growth. We therefore, spend a considerable amount of time and money trying to establish high quality systems and try to ensure that this quality is maintained as we grow. We also try to be as ethical as possible and keep the



DR V MOHAN
Diabetes Specialities Centre, The Madras Diabetes Research Foundation

patient at the centre of whatever we are doing. Finally, we teach all our staff the basic principles taught by Bhagawan Sri Sathya Sai Baba namely 'Love All, Serve All', 'Help Ever, Hurt Never'. All these help to create a culture of love and compassion within the organisation which we would like to retain as we grow.

Tell us about the company's major achievements-measurable results in the last 3-5 years?

Our achievements can be

classified under different heads. In healthcare, we have now become the largest diabetes healthcare provider in the world. Currently, we have 41 branches and over 420,000 patients are registered across these branches. The entire patient medical records are electronic which helps to collect data on the diabetes care outcomes and streamline processes. In our research, we have been trying to do cutting edge research on diabetes. We have recently developed a department of Precision Diabetes. We are thus, able to

accurately identify the exact type of diabetes that every patient has. The treatment is then tailor made according to the type of diabetes the patient has. We have also trained a large number of healthcare professionals - over 15,000 doctors and over 7500 diabetes educators.

Finally, we have also been able to provide free or subsidised treatment to a large number of poor and needy patients with diabetes.

Tell us about your expansion plans and their value addition to the rural healthcare sector?

Last year, we received our first round of private equity funding. At that time, we had around 20 branches of our centre. Today, we have 41 branches and we are poised to reach 100 branches in the next few years. We have our presence in all the five Southern states of India and also in Orissa, Uttar Pradesh and Delhi. We are shortly expanding to the Eastern part of the country and have plans to establish centres in West Bengal and later in the North Eastern states of the country. We are also now establishing our presence in the tier II and tier III towns. We have a unique Chunampet Rural Diabetes project at Chunampet in Kancheepuram district which has been running successfully for the last 10 years. We want to expand on that model to reach more rural areas in India.

What are the strategies adopted by the company to achieve these goals?

We have been slowly expanding the bandwidth of our organisation by developing teams to look after each of the activities of the organisation. We have also invested heavily in IT. We are now developing a new app which will help to connect with patients better. Extensive training and inculcating the principles and ethics of the organisation across the whole organisation is one of our most important strategies.

Company fact file

1. Number of years in India	27 years
2. Number of employees	Over 1500
3. Number of hospitals	41 branches
4. USP	Pioneer, innovation and high quality, diabetes care

Medtronic's continuous commitment to innovation

Why is it important to plan a proper growth strategy for a company?

We believe medical technology has a key role to play in delivering better patient outcomes while improving efficiency for healthcare systems. However, around the world and in India, healthcare systems are marred by rising costs, ageing population, burden of chronic disease and the barriers of accessibility, affordability and awareness. In such a scenario, having a robust strategy that not only addresses the barriers but creates leapfrogging opportunities, becomes critical for the organisation to advance from its current situation to its desired situation. Also, changing customer behaviours, policy changes, price control and other regulatory changes are forcing companies to evolve newer business models and rethink existing models of operation.

At Medtronic, our performance continues to be driven by our growth strategies of therapy innovation, globalisation, and economic value. To do our part, we need to adapt our company and offerings, commit to continuous innovation to stay ahead of our competition, inventing new therapies and markets, and disrupting existing markets. We also need to aggressively develop other unique, value-based innovations to achieve more integrated and efficient care.

What are the core values that initiate growth for the company?

"To strive without reserve for the greatest possible reliability and quality in our products; to be the unsurpassed standard of comparison and to be recognised as a company of dedication, honesty, integrity, and service"- Tenet 3 of Medtronic's mission defines our core values. Written in 1960, our mission dictates that our first and foremost priority



MADAN KRISHNAN
Vice President, India Medtronic

is to contribute to human welfare. Over a half-century later, the mission continues to serve as our ethical framework and inspirational goal for our employees. It guides our day-to-day work and reminds us that our efforts are transforming the lives of millions of people each year. If a company takes the time to be clear about its core values, making strategic decisions about growth can be much clearer. It can also be of significant value in terms of deciding what not to do, which in some cases is just as important as deciding what to do.

How does Medtronic look at growth in India?

The Indian healthcare sector is evolving rapidly and is expected to be \$280 billion in size by 2020. Growing health awareness and changing attitude towards preventive healthcare is expected to boost healthcare services demand in future. The growth opportunity for Medtronic in India is vast, but to seize it, we must focus clearly on making our innovative devices accessible to a larger section of Indian society. To do this, we are partnering with stakeholders across the healthcare ecosystem as well as outside the sector as well, to reduce or remove the key barriers to healthcare, improve outcomes, reduce total costs of

care and improve healthcare practitioner skills. Medtronic continuously works towards driving Meaningful Innovation i.e. Product Innovation – Bringing iterative innovations in the market, procedure innovation – Developing newer methods of surgically or with minimally invasive approach, delivering technology to patients and Health System Innovation – Working on the 3A's of healthcare i.e. Awareness, Access and Affordability.

Tell us about the company's major achievements, measurable results in the last 3-5 years.

Medtronic began its operations

in India in 1979. The journey has been both gratifying and riddled with learnings for us in terms of understanding the market, needs of patients and filling the gaps in the care pathway. We've developed some meaningful innovations tailor made for Indian patients that have added real value in improving patient outcomes. I'd like to share some examples of our innovation and skill building efforts in India.

Health system innovation

► **Shruti:** Medtronic launched 'Shruti' in July 2013 with a philosophy to create sustainable programme of low-cost otology care including awareness, screening, diagnosis, and low-cost treatment to the underserved, particularly in densely populated, low-income urban settlements and rural areas by leveraging medical technology, telecommunication, and frugal innovation. With an ENT doctor as the central point of care, the programme is operationalised through trained community health workers (CHW), working for the ENT doctor and equipped with an 'Ear Screening Kit.' Patients with a positive provisional diagnosis are routed to the doctor for receiving low-cost treatment, including advanced diagnosis, medicines, audiometric tests, surgical interventions and hearing aids. It is a hallmark example of Business Model Innovation, serving dual objects of social impact and business viability simultaneously.

In December 2017, a case study on the patient impact of the Shruti programme was published by BCtA (Business Call to Action) - a United Nations Development Program (UNDP) initiative.

Shruti is currently operational in 25 hospitals/clinics across country and has reached out to more than 390,000 people in India. Approximately 8,000 people

have received life-improving treatment at a significantly reduced cost through the Shruti programme.

► **Saartham:** Trauma patients in India face numerous challenges in accessing quality care which impact recovery time, outcomes, and quality of life. There is a need to improve patient follow-up, training and education of trauma specialists and the affordability of care. Saartham was an initiative launched by Medtronic in partnership with a hospital in Amritsar to provide integrated care for orthopaedic trauma patients tailored to their individual needs, including counselling and patient management.

Product and procedure innovation

Medtronic has been leveraging the unique strength of India beyond providing therapies to the patients in India. To take advantage of India's strength with a large pool of qualified engineers, doctors with a wide ranging patient pool experience and hospitals providing quality care, Medtronic established two Research & Development (R&D) centres, in Bengaluru and Hyderabad respectively. The Medtronic India Development Centre in Bengaluru develops the key aspects of Medtronic's renal care solutions business. Medtronic Engineering and Innovation Centre in Hyderabad provides advanced engineering R&D support to the Global Business Units in the areas of design, analysis, hardware, software development and testing, while developing a footprint for future product development for the region and country.

Skill building

India Medtronic also has a therapy and procedure training centre in Dhaka, Bangladesh and a Medtronic Innovation Centre in Mumbai. These centres conduct a wide range of clinical education and training programmes for healthcare professionals to address capacity and awareness barriers and increase patient access to

Medtronic already has a track record of investment in addressing the barriers to healthcare and new technology development in India, that are being designed for use within the country and worldwide

various therapies. For training and education on Medtronic products and therapies, customised curriculum is developed to address the educational needs of interventional cardiologists, radiologists, vascular, general surgeons, gynaecologists, oncologists, spine surgeons, MD physicians, diabetologists, and endocrinologists, nurses and technicians. Programmes are also designed for non-clinical stakeholders. Another initiative in improving physician education and training them on our therapies is the platform MedEX. We have created a web-based electronic portal that offers the flexibility of being accessible to all cardiac experts at anytime from anywhere and from any device. It enables interventional cardiologists with knowledge, skill set and guidance to perform complex interventions. The treating cardiologist uploads the patient details including the angiogram report on the portal and other complex case details and queries. Intimation is triggered to one of the members of the panel of experts who have registered themselves on MEDEX portal. These experts can be from different parts of India. On the portal, experts reviews the case and provides a structured report alongwith their recommendations and answers within 48 hours.

Global IT Center – Established in 2014, the centre in Bengaluru is part of the company's global strategy that will directly contribute to the IT goals of optimising costs, enabling growth and providing operational excellence to all its stakeholders through a culture of innovation.

What strategies have been

adopted by the company that makes it stand out?

Medtronic products are different from its competitors in terms of the breadth and depth of clinical evidence it generates through various clinical trials and registries to establish the safety and efficacy of its product. The depth of our commitment and the breadth of resources uniquely position us to help solve the greatest health challenges of our time. To do our part, we need to adapt our company and offerings to achieve more integrated and efficient care. Our business strategy helps us do just that, built on three key elements:

► **Therapy innovation:** Providing a spectrum of offerings aimed at improving both economic and patient outcomes.

► **Globalisation:** Adapting our thinking to address access challenges in both developed and developing countries.

► **Economic value:** Thinking more holistically about the care continuum, and how we can lead the creation of value-based healthcare solutions.

Give us five areas that the company has focussed to achieve its goals in India?

We have been present in the India market for 39 years. With our immense experience and understanding of the market, we have focussed our approach towards the following key areas-

► **Increasing patient awareness** – Through our direct to patient engagement efforts in the media and our marketing efforts at caregiver and patient levels, we've been consistently involved in improving patient awareness for most of our therapies.

► **Improving physician education and devising custom**

training programmes – TPTC and MIC information shared earlier.

► **Tailor-made solutions for Indian patients** – Shruti and Saartham examples shared earlier.

Talent management - The medical devices sector is undergoing a major transformation, both in terms of changing customer profile and evolving new business models. For a complex and under-resourced market like India, it's important to build capabilities that drive innovation and value creation in all the aspects of a company's operations for a successful resolution of the the barriers around healthcare. Our experience of taking a sector agnostic approach has helped. Our expertise lies in identifying people who can apply learnings through experiences and skill-sets to our new situations successfully. For example, we hired a few middle management talent from industrial and FMCG sectors for our distributor management and sales operations roles. They brought in unique capabilities in this area by driving stronger systems and processes. Apart from this, Medtronic is also focussed on gender diversity and we have various programmes to encourage and develop female talent and groom them to take up leadership positions in the organisation. A lot of emphasis is laid on career development programmes.

Innovation is a big differentiator in most cases. Tell us how much Medtronic invests in innovation in terms of funds, employees and research?

Meaningful innovation in medical technology improves peoples' lives and brings the

benefits of treatment to individuals whose conditions may previously have been difficult or impossible to treat. Meaningful innovation can come in many forms like a new feature to make a product more useful or a unique way to apply an evolving technology to a real-world problem. As a global leader in medical technology, Medtronic aspires to drive progress in innovation and devise powerful solutions with proven clinical and economic value as the basis of our offerings and value proposition. For us, our customers and patients remain at the centre of our relentless pursuit to transform healthcare.

Whether it's our innovative models like Shruti and Healthy Heart for All or the R&D facilities, Medtronic already has a track record of investment in addressing the barriers to healthcare and new technology development in India, that are being designed for use within the country and worldwide. Medtronic may be prepared to do more in research and manufacturing in India if we can achieve patient volumes to support such investment.

Globally, Medtronic has 50 research and innovation centres and made an investment of \$2.2 billion in R&D as of FY17.

Which innovations have been more profitable and successful for the company?

► **Transcatheter Aortic Valve Replacement** - There are approximately 14.5 lakh patients who suffer with severe aortic stenosis in India, of this, 30-40 per cent or 4.5 lakh patients are deemed unsuitable for open heart surgery due to age and other conditions. TAVR is an example of meaningful innovation from Medtronic where the procedure technique has been innovated and the product also has gone through a transformative change to create better patient outcomes. Traditionally, aortic valve replacement was done by surgically removing the diseased valve. In surgical aortic valve replacement (SAVR) the

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Microsoft's digital India vision

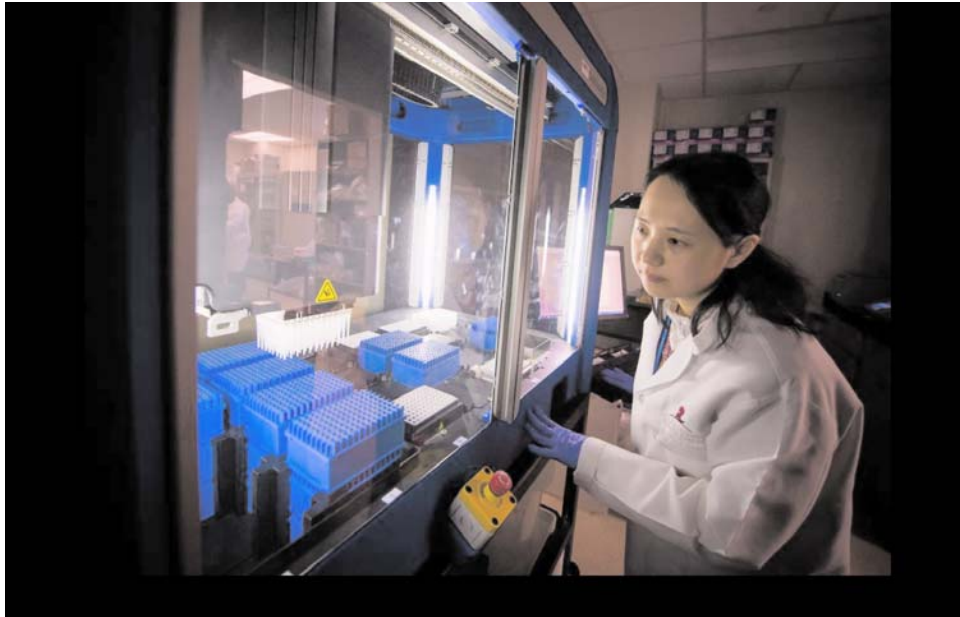
Microsoft's culture strongly reflects the growth mindset when it comes to technological developments. So, tell me how important is it to plan a proper growth strategy for a company this huge? How does this help Microsoft to keep growth pace and how does this foster innovation within the organisation?

Microsoft's mission is to empower every person and every organisation on the planet to achieve more. We are committed to accelerating healthcare innovation through the power of cloud computing Artificial Intelligence (AI) and. By working side-by-side with the healthcare industry's most pioneering players, we are bringing Microsoft's capabilities in groundbreaking research and product development to help healthcare providers, biotech companies and organisations around the world use technology to innovate.

How does Microsoft look at growth in Indian healthcare?

While it has made great progress, India's healthcare sector still faces many challenges to effectively serve its population. Due to advancements in the medical field, there is an increase in life expectancies which results in the rise of aging population and there is a dramatic increase in Non-Communicable Diseases (Chronic Diseases). Hence, new models of care are required, largely to address the increased number of chronic diseases in our modern society. There is a need to innovate newer models of preventive care rather than curative. Online appointments, patient portals, mobile apps, tele-health - existing open data and social analytics can hugely transform the digital experience of a patient. There should be an increased focus on clinical excellence and health outcomes, and having digitised data can hugely help achieve that.

Microsoft is helping



A scientist works in a Microsoft-led project on Genome sequencing at St Jude Children's Research Hospital. Courtesy: St Jude Children's Research Hospital

healthcare organisations (both public and private providers) in India adopt technologies like the cloud, IoT, advanced analytics, mixed reality, and AI, as the industry seeks to counter increasing costs of delivering services and meet the growing demand for better experience from patients.

■ **Cloud** - Through the cloud, Microsoft aims to transform the investment model and move capex costs to opex, allowing hospitals and governments to use the upfront investments in healthcare.

■ **Fortis Healthcare** have been leveraging Azure Infrastructure as a service to manage its infrastructure and services in order to make the systems more agile. In a span of eight months, with support from Microsoft, Fortis moved all their applications, ranging from Hospital Information System (HIS) to Oracle Financials, Oracle Supply Chain, application servers, intranet, and more to Azure. Today, Fortis hospitals are on Microsoft Azure.

■ **Max Healthcare** is transforming patient care by leveraging Microsoft CRM Dynamics CRM

online, a comprehensive solution which helped them manage leads and contact center engagement, and enhance customer engagement.

■ **Finecure Pharmaceuticals** has adopted Microsoft Office 365 which helped it streamline key business processes, improve productivity and enhance collaboration. Protection of IP, insights from data analytics, and deeper customer engagement have helped it grow revenues 30 per cent every year in the last three years.

■ **Analytics** - Healthcare, more than any other industry, throws up huge amounts of data - both structured and unstructured data. Microsoft is trying to help organisations transform this data using AI and machine learning into information that can be consumed easily and which can facilitate better decision-making.

■ **Narayana Health** is leveraging Microsoft BI to unify data across all units, enabling faster decision making. Its dashboards provide a complete view for business users involving the most important metrics in real time, at one place, and across all

devices. Narayana Health is currently working on leveraging Microsoft BI's predictive intelligence capabilities, which will be a key component in their analytics vertical.

■ Microsoft has partnered with Apollo Hospitals to use AI for early detection of cardiac diseases. The partnership between Microsoft and Apollo will enable to develop and deploy new machine learning models to predict patient risk for heart disease and assists doctors on treatment plans.

■ **Microsoft Intelligent Network for Eyecare (MINE)** - The Government of Telangana for its Rashtriya Bal Swasthya Karyakram adopted the Microsoft Intelligent Network for Eye care (MINE), an AI platform to reduce avoidable blindness. Microsoft India, in collaboration with LV Prasad Eye Institute, launched MINE in December 2016.

■ **Remote healthcare** - Microsoft is trying to create solutions that involve providing geographical freedom to healthcare delivery which in turn can facilitate new models that we have only dreamt of.

This will revolutionise healthcare and address important issues like accessibility and preventive care\ wellness.

■ **Apollo Hospitals** with its tele-health division and powered by technology from HealthNet Global had setup tele-clinics across India. The tele-clinics support a range of services including outpatient (OP) consultation, basic lab diagnosis, drug /contraceptive dispensing, distribution of health education material and counselling for all communicable and non-communicable diseases. For this purpose, Apollo had used Microsoft Kaizala to source operational data from its remote clinics and to analyse it in real time. As a result, Apollo has gained visibility and control over its remote clinics and the management is able to make faster administrative decisions.

■ **99Dots** is a technology-enabled project that focusses on medication adherence for anti-tuberculosis drugs. 99Dots enables patients receive a series of daily reminders (via SMS and automated calls). Missed doses trigger SMS notifications to care providers, who follow up with personal, phone-based counselling.

■ **IoT** - This industry also deals with a variety of medical equipment, devices, homecare equipment, wearables, etc. Because of which Microsoft is using IOT to help improve efficiency, enable innovation and drive transformation.

■ **Forus Health** in partnership with Microsoft is integrating AI-based retinal imaging APIs into Forus Health's 3Nethra devices using Microsoft Azure IoT Suite and Azure IOT Edge, which delivers the cloud intelligence locally and closer to the eye.

■ **Mixed reality** - We believe that everyone, regardless of device or application, can realise the promise of mixed reality. Through our vision and contributions from our partners, we are making this possible with cutting-edge devices and

technologies that can engage users and help them reach new dimensions of understanding.

► **Holo Eye Anatomy**, a collaborative project by LV Prasad Eye Institute, Cyient and Microsoft India, is world's first application of mixed reality in eye care education. The app was developed for Microsoft HoloLens to create an immersive experience where users can visualise the eye and its anatomical breakdown as 3D holograms in space. The perspective of the 3D models and the interaction from the user lends a rich learning experience and creates a whole new approach to teaching medicine.

Tell us how much Microsoft invests in innovation in terms of funds, employees and research? Which technologies in healthcare is Microsoft betting on and why?

At Microsoft, researchers are harnessing the explosion of digital data and computational power with advanced algorithms to enable collaborative and natural interactions between people and machines. Researchers are applying

computer science expertise to enable data-driven healthcare, enhance wellness and accelerate progress in life sciences. Technologies like AI and machine learning are letting us take exponential leaps in research to understand biology at molecular and cellular levels. In its work to deploy AI everywhere, Microsoft is taking a thoughtful and trusted approach – designing AI innovations that extend and empower human capabilities in all aspects of life, while keeping people in control.

As mentioned above, Technologies like advanced analytics, machine learning, robotics, holographic computing, and bots are re-designing every aspect of how people live, communicate, work, and learn.

What are the strategies adopted by the company that makes it stand out? Give us areas that the company has focussed to achieve its goals in India?

India is a strategic market for Microsoft and our plans are anchored in India's development and growth. We have been func-

tioning as a key contributor towards a truly Digital India for nearly three decades, focussing on digital economy, digital inclusion, cybersecurity, healthcare and skilling and education, among others.

Today, challenges for health organisations in trying to improve patient experiences and outcomes include manpower shortages, rising costs, and increased patient needs. Clinicians and care teams are yearning to swivel their chairs from the computer and pay more attention to the patient, yet they spend two-thirds of their time interacting with burdensome IT systems. We believe with better tools for information sharing and coordination, health organisations can be more efficient, effective, and productive.

Microsoft's approach is to use our platforms and services that lay the trusted foundation for solutions that improve patient and employee experiences, empower researchers, and enhance products and services. These fall in the areas of:

1. Health payors – Solutions built using operational analytics

capabilities can identify trends and patterns that identify areas of high performance, helping Payors determine best practices to increase efficiency, minimise waste, and optimise resource allocation.

2. Health providers – The Microsoft Cloud empowers organisations of all sizes to re-envision the way they bring together people, data, and processes that better engage patients and customers, empower care teams and employees, optimise clinical and operational effectiveness, and digitally transform health.

3. Pharmaceutical companies – By providing customer and product analytics solutions, Microsoft is helping these companies gain a deep understanding of their customers to help ensure brand loyalty.

4. Public Health & Human/Social Services – Microsoft platforms and services help agencies tackle public health issues, so they can better communicate and collaborate with constituents, monitor and address health trends, and enable care that improves overall population wellness.

What are the learning lessons?

Though the industry is on a verge of transformation there are still some challenges which need to be addressed. Health organisations need to remove guesswork and inefficiencies from operations, such as resource allocation and fraud detection. As customers across the healthcare system want lower costs, pharmaceuticals need ways to present convincing evidence that new treatments are worth the premium necessary to sustain profitability. Lastly, educate the public, improve health infrastructure, and increase efficiencies to provide broader access to care and reduce preventable illness in the communities they serve. This situation can be improved by partnering with academia, industry, organisations, foundations, hospitals and government agencies to achieve profound and lasting impacts on human health. Additionally, digital transformation using emerging technologies will be the catalyst for the industry to step into the future.

Medtronic's continuous commitment ...

Continued from Page 18

chest is opened which provides the surgeon with necessary access to the heart and chest cavity, in order to replace the aortic valve. The valve gets replaced during 2-4 hour procedure (typical) and requires typically 12 day hospital stay. In TAVR, doctors replace diseased aortic valves by implanting artificial heart valves through femoral artery route (through the leg). It requires a minimally invasive approach without an open heart surgery. Further, innovation in TAVR has made these valves recapturable so that physicians can make sure the device is implanted in exactly the right spot. TAVR is recommended for patients who are inoperable or at high risk for open heart surgery. Post TAVR procedure, patients typically can be up and walking

within 24-48 hours after their procedure and the typical hospital stay is approximately five to six days.

► **Deep Brain Stimulation Therapy** - Parkinson's disease is a progressive, degenerative neurological movement disorder. It is considerably more common in people over 60. As Parkinson's disease progresses, it becomes increasingly disabling, making daily activities like bathing or dressing difficult or impossible. Medtronic believes in meaningful innovations that result in powerful and positive patient outcomes led to the invention of Deep Brain Stimulation Therapy (DBS). DBS helps control movement symptoms when medications aren't working as well as they used to. For many people with Parkinson's, DBS

makes a difference when even small tasks have become challenging. DBS has helped some people stay as independent as possible and keep doing the activities they love.

► **Insulin pump therapy** – Typically diagnosed in childhood, people with type 1 diabetes have a pancreas that is unable to produce insulin, a hormone that regulates blood sugar, or glucose. Unfortunately, there is no cure for type 1 diabetes, so treatment aims to keep blood glucose levels as normal as possible to minimise the risk of developing complications. An insulin pump is a small device (about the size of a cell phone) worn externally that delivers insulin through a tiny plastic tube inserted underneath the skin. Medtronic devised an insulin pump with

built-in Continuous Glucose Monitoring (CGM) that both automatically suspends insulin delivery when sensor glucose levels are predicted to approach a low limit and resumes insulin delivery once sensor glucose levels recover.

Going forward what are the growth plans of Medtronic?

Medical technology has revolutionised the way healthcare is delivered worldwide. As India is on its way to become a global super power, the government is now focussing on providing affordable and quality healthcare for all. More patients can benefit from the innovative technologies only if the barriers like awareness, access and affordability are addressed together. However, no one entity can address the challenges of health-

care of this magnitude alone. In a diverse country like India where healthcare is complex, we need collaboration from all the stakeholders, across levels. India has been emerging as a country where companies combine the advantages of local production and India's talent pool to help drive innovations in product technology, service delivery and operating models. A combination of western technology with Indian knowledge and skills in engineering can help bring down cost and drive innovation in affordable healthcare. We are partnering with various stakeholders in new and different ways and expanding our expertise. We not just believe in creating innovative devices and therapies, but in employing all our skills and assets to help drive more value into healthcare.

Philips Healthcare's betting on digital technologies

How important is it to plan a proper growth strategy for your company?

Growth strategy provides an overall direction to organisations for developing policies and plans designed to achieve their objectives. It helps companies in allocating resources to maximise gains while minimising risk and untoward consequences. Organisations should be conscious of their key value propositions, customers and market share in order to outlay a robust growth strategy plan.

At Philips, our focus is to cater to all our customers' needs and introduce feasible solutions that offer greater value. The solid growth strategy has helped us in transforming Philips from being a product-driven company into a focused leader in health technology, delivering innovation to help people manage their own health and support care providers in delivering care effectively and efficiently. With our understanding of many long-term challenges our world faces, we see major opportunities to apply our innovative competencies in the areas of personal health, diagnosis, treatment, connected care and health informatics.

What are the core values that initiate growth?

At Philips, innovation has been one of many core values that has helped us in reaching out to a wider audience and support them in making affordable quality choices. Our aim is to further build on our deep clinical expertise and consumer insights to expand our solutions capabilities and deliver on the promise of personalisation, industrialisation and accessibility of care.

We have always been driven by innovation to introduce meaningful solutions that enable access to afford-



ROHIT SATHE
President – Philips India Healthcare

Our aim is to further build on our deep clinical expertise and consumer insights to expand our solutions capabilities and deliver on the promise of personalisation, industrialisation and accessibility of care

able healthcare. In keeping with our global mission to improve lives of three billion people a year by 2025, we remain committed to address healthcare challenges the country faces.

Given that Philips has an Innovation Centre in Bangalore. What is the vision for this Centre and how is it helping the company to create a culture of innovation? PIC focusses on digital tech-

nology to make healthcare accessible for all. Various connected care solutions offered by us across the world have successfully empowered the patients to manage their health. These solutions are

also helping the care givers to manage efficiently patient outcomes. Engineers and domain experts work on end-to-end products and solutions across the health continuum, from healthy living, to prevention, diagnosis and treatment. PIC is harnessing the power of technologies such as mobile, digital, cloud and Big Data analytics to improve patient outcomes through care coordination and patient empowerment. PIC takes pride in developing solutions to make healthcare affordable and accessible in India and other growth geographies like Africa and Indonesia at the centre.

Technology offerings by Philips that are transforming healthcare

Philips has several technologies and solutions that are pushing the envelope in terms of providing this connected care, like ICCA, Tasy HIS, e-ICU and Solutions in General Care. These have been developed with strategic insights from luminaries of Indian and global markets that are already paving the way for seamless care experience.

The Philips ICCA and eICU programme is a transformational critical care digital programme that combines A/V technology, predictive analytics, data visualisation and advanced reporting capabilities with Philips' expertise and over 15 years of proven success. The eICU programme delivers need-to-know information to caregivers, empowering them to care for the patients who need it most in the moments that matter most. It is a supplement—not a replacement—to the bedside team, offering support to increasingly scarce clinical resources, while reducing mortality, lengths of stay and cost of care.

POC Medical Systems' looking to disrupt diagnostics

How much does team work contribute to the success of your company?

No one person can run a show. The team has to operate as one and only then can you achieve incredible things. It's with the tireless efforts of our assay development scientist, chemists, microfluidics engineers, electrical engineers and the software team, we have been able to come up with a technology platform that can redefine how medical science is practiced. Our efforts are dedicated to all those who have believed in us and supported us, our investors, our well wishers and finally for the million of women around the globe in rural and urban settings alike, who had no fighting chance earlier but will have that through this ground breaking technology. Finally this is a testament to the great research which is happening in various government institutions worldwide on basic science. The discoveries taking place are like a diamond in the rough, waiting for someone to pick them up and polish and make them into a Kohinoor diamond.

Tell us about the importance of failures in your life, the lessons it has taught and how it has helped you succeed?

"It's fine to celebrate success but it is more important to heed the lessons of failure." I sincerely believe in this quotation by Bill Gates. Failures are an important part of success, in fact there is no such thing as failure if you learn something from the so called failure. Let's truly define failure. I look at failure as follows: You create a hypothesis and set about proving that hypothesis. The hypothesis maybe incorrect in that time continuum but may work at a different time, it maybe in fact incorrect assumptions that you used to prove the hypothesis even



SANJEEV SAXENA
Founder & Chief Executive Officer, POC Medical Systems

though your hypothesis maybe complete etc. So what is important is learning. This is where some of the greatest discoveries have happened. Most people stop short and walk away when they encounter obstacles. Not going after what you believe in and walking away is failure. The same goes for me. A good friend and mentor once told me that you do your best while being true to yourself and your vision and believe in the powers beyond you and things will happen. Isn't this the teaching from the Bhagavad Geeta - The principal/Theory of Karma. Finally if your really believe in something and give

your 200 per cent then all the forces in the universe will align with you and people will come from nowhere to help you realise that vision. So being true to your vision and believing in the almighty the bring all the forces of nature to help you is the single most important thing.

How important is it for you to think innovation, while planning the future of your company?

The company is based on innovation. In today's day and age, technology is changing very rapidly. What was relevant five years back or even two years back is old and obsolete.

While this has been the case for a while in the technology field, it is now becoming very true in the healthcare field as well. With the advent of AI, Deep Learning, Data Analytics, Microfluidics and Nano Technology, 3D Printing and new materials which can be used for grafting, things which seemed impossible are possible today.

We have done exactly that at POC Medical Systems as well. We have used these major advances to create a disruptive technology in the Pandora CDx and the MammoAlert a screening tool which is portable and low cost and accurate to fight an age

old disease like breast cancer. Existing technology allows less than four per cent of the women worldwide (60 million women) to be screened for breast cancer. Of which 2.5 million are found to have cancer and over 0.7 million women succumb to this dreadful disease. Just imagine if you were able to screen all 1.6 billion women, how many women would be found to actually have breast cancer and how many die due to it. These lives could be saved if you could only detect it early. The Pandora CDx and the MammoAlert give these women that hope. Similarly look at ovarian or cervical or colorectal or lung or prostate cancer, how many people have these diseases and how many there maybe with out even knowing and how many maybe dying an unnecessary death. No major breakthrough has come about to address these problems until now.

We are still continuing to innovate and develop screening tests for other types of cancer and various other diseases. As a result, POC has been felicitated by numerous awards, be it the "Game Changer Award", "The East Bay Innovation Award", "The Most Impactful Social Innovator Award", "The Dream Maker Award", The Frost and Sullivan Technology Award of 2018" and so on. We believe that our people need to think outside the box and they should be willing to try something new. We do not hang them for taking risks, on the other hand we endorse taking risks. We always look out for innovation that maybe taking place in the various governments labs that we can license in for us to be one step ahead of the rest.

In your opinion where does India stand in terms of innovation? What scope does our nation have to become the in-

novation hub for the world?

Every one in India is an innovator. The problem is they stop too early. Some see it through but most do not due to family and societal pressures. The Government in India, especially since Modi, has been encouraging innovation. There are many ways the government is supporting Innovation, be it through TDB, DST grants, SIBRI or the BIPPP etc.

Many other initiatives have been launched by the Indian government such as:

- a) **Make In India**
- b) **Startup India**, which promotes entrepreneurship by mentoring, nurturing and facilitating startups
- c) **Atal Innovation Mission incubation centers**, which provide access to sector experts, business planning support, seed capital, industry partners and training to encourage innovative start-ups
- d) **Digital India**: which provides technological solutions to address challenges and improve quality of life in India through the application of science and technology
- e) **Stand-Up India**, which seeks to leverage institutional credit for the benefit of India's underprivileged & F) **National Skill Development Mission**: which is designed to expedite decision-making across sectors to provide skills at scale, without compromising on quality or speed should change the picture for better.

The question, "Will India become an innovation hub?" is yet to be seen. While the entrepreneurs exist and the entrepreneurial mindset exists in India and there are enough problems that need to be solved, the key issue is, "Are the Indian investors willing to take the risk?" This is a question which only time will be able to answer. Hence, if the investors come along and are willing to go after the high reward model, I think India could become an innovation hub.

Your company is going in for

series B funding. How much fund are you raising?

We are planning to raise about \$45 million. This round will be a combination of equity some debt and some non-dilutive funding.

How will you utilise those funds?

The funds will be used for growing the company organically and inorganically. Both by internal innovation and by acquisitions. We expect to ex-

pand our manufacturing footprint and our marketing reach worldwide.

Are there any new technologies in the pipeline? What impact you wish to create

with them?

We are working on other diagnostics test which will revolutionise they way we test those diseases like we are doing with screening for breast cancer.

raelene.kambli@expressindia.com

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DR ALOK ROY

THE MAN BEHIND MEDICA

Dr Roy's experience of over 25 years has led him to evolve into a reputed hospital management specialist. Being a doctor and an administrator, he brings in the added advantage of an insightful understanding to all the detailed requirements in the running of a hospital

Dr Roy's desire to create a chain of institutions where anyone and everyone could walk in and get the best in healthcare, sowed the seeds of Medica Synergie - to create world-class facilities to provide quality healthcare at a fraction of the normal cost.

Being a doctor and an administrator, he brings in the added advantage of an insightful understanding to all the detailed requirements in the running of a hospital. Fully understanding the need of the country for affordable quality healthcare he formed Medica Synergie, a company based in Kolkata, which provides integrated solutions on the entire spectrum of healthcare delivery, including hospital architectural planning and building, managing hospitals, public health, quality accreditation and retail pharmacy. Medica Synergie today is a key player and reference source in healthcare management and consultancy.

Dr Roy's commitment to society gets reflected in the extensive CSR programmes initiated by Medica. With the strategic collaboration among Kolkata Police (K/P), Medica Superspecialty Hospital and Eastern India Healthcare Foundation (EIHF), was born KARMA -Kolkata Accident Response & Medical Assistance, for providing immediate medical attention (24x7) to the road accident victims and taking them to the nearest hospital, free of cost.

Medica has launched various other welfare programmes - for senior citizens, Caddies, and Project BUDDHA, for providing medical help and treatment at a nominal cost to the people residing in its vicinity. In an attempt to increase accessibility to quality healthcare, Dr Roy has devised a number of schemes like the Medica Flying Doctors - a venture that flies specialists from Med-



ica to remote rural areas in an attempt to reach tertiary healthcare to remote places.

Though Dr Roy specialised in nuclear cardiology from AIIMS, his passion lay in building and managing hospitals. He established numerous healthcare facilities across the country. Fortis Hospital (Noida), BM Birla Heart Institute (Kolkata), Manipal Heart Foundation (Bangalore), Rabindranath Tagore International Institute of Cardiac Sciences (Kolkata) and Narayana Hrudayalaya (Bangalore), to name a few. The Integrated Telemedicine and Tele-health Project (ITTP) and

the Yeshasvini Health Insurance Scheme are some of the ventures led by Dr Roy.

His experience of over 25 years has led him to evolve into a reputed hospital management specialist. For his unsurpassed technical expertise and visionary outlook, he was voted in 2011 as one of The Top 20 Most Influential Healthcare Professionals of India by Indian Express Healthcare Magazine. He has also served as the President (a first ever from the healthcare industry) of the prestigious Bengal Chamber of Commerce and Industry (BCCI) a 150-year-old institution.



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INSIGHT

Caught in the crosshairs, healthcare organisations need to bolster cybersecurity

Gaurav Agarwal, MD, India & SAARC, Symantec, gives insights on what hospitals and healthcare organisations should be doing differently to proactively manage security risks

The delivery of effective and efficient medical services in hospitals and other healthcare facilities depends as much on the information systems and technologies they use, as on the skills of their doctors and nurses they employ. Many of these systems are linked to each other and to the Internet. Moreover, they store and use medical and personal records of patients. It is therefore essential to protect these systems from being compromised in any manner. Unfortunately, the healthcare industry has proven to be a soft target for cybercriminals. These attackers are capable of stealing confidential data, holding hospitals to ransom, disrupting services or even shutting them down. In 2017, ransomware attacks increased by 89 per cent¹ over the previous year, globally. Giving in to such demands is not really an option.

The healthcare industry, as much as any other, needs to be protected by robust cybersecurity systems. And not just because they could face audits or fines; there is much more at stake here. The security teams at hospitals must look beyond bits-and-pieces software solutions and adopt a detailed, uncompromising approach towards cybersecurity, with help from external experts if need be. There's also the fact that healthcare is an industry with an IT infrastructure that's more complex and varied than any other. This diversity leads to an interwoven ecosystem of systems and devices, running on many different platforms and with differing security maturity, thus creating dependencies and limitations that make security and

change management a rather complex task.

Healthcare is also a highly regulated and compliance-driven industry, with unique data protection needs. Complying with medical health insurance requirements and passing an audit doesn't necessarily mean that an organisation is capable of defending itself against a determined hacker. If auditors are scary, cybercriminals are nothing short of terrifying. The rising number and evolving nature of attacks in recent years is a warning that the healthcare industry is well and truly in the cross-hairs and must be aware of the cyber threat landscape that's unfolding in the background.

However, heightened awareness doesn't always translate into effective action. At many times, the industry's approach to cybersecurity has been far too reactive, to the point where it appears to be management-by-headline. By this time, it's too late because the bad guys have already won. So, what should hospitals and healthcare organisations be doing differently to proactively manage security risks? Here are some suggestions from Symantec. And obvious as some of them may sound, they are all too often neglected.

Align cybersecurity with business objectives

Senior leadership must step up to the challenge and include cybersecurity amongst the many strategic components that align with overall business objectives. The leadership must also outline the framework for governance, set measurable goals, and clearly define the levels of risk tolerance.



At the most basic level, organisations need to have the right security solutions for various endpoints – from anti-virus and anti-malware to IoT security

Work around budget constraints with a top-down, risk-based approach.

Every organisation may not necessarily have the resources to secure every widget, monitor every employee, or purchase all the latest security technologies. They can, however, work around their budgets by adopting a top-down, risk-based approach. The focus should be on identifying risk priorities, establishing enterprise-wide security objectives and strategies, and then figuring out the budgets,

and technical requirements needed to address these needs.

Create a culture of security and responsibility

The onus, again, is on the leadership to establish a culture of security throughout the organisation and implement a comprehensive security programme. They must assign adequate budgets to cover the requirements of staffing and of promoting cyber-education among employees to foster this

culture. Security is everyone's responsibility, whether they realise it or not.

And finally, here are some tips that may be useful for healthcare organisations looking to bring about a positive change in their security postures:

- Create a security controls policy, which provides a high-level description of objectives along with a framework for those it impacts.

- Document roles and responsibilities so that each team or department knows who is responsible for what aspect of implementation. Ensure that only authorised users can access clinical and IT systems. This enables a stronger multifactor and risk-based token-less authentication that eliminates up to 80 per cent of breaches.

- Implement and enforce a security policy whereby all sensitive data is encrypted at rest and in transit. Ensure that customer data is encrypted as well. This can help mitigate the damage of potential data leaks from within the organisation.

- It is absolutely essential to have security across endpoints, ranging from desktops to IoT-enabled medical devices. At the most basic level, organisations need to have the right security solutions for various endpoints – from anti-virus and anti-malware to IoT security.

Security must become second nature for every individual in the organisation. And if that seems too irksome, just remember that there are human lives in the balance, and that you would rather leave them in the care of fully equipped staff in a smoothly functioning medical facility than at the mercy of a cybercriminal.

How technology can play a pivotal role in addressing India's healthcare challenges?

If India is to realise its goal of Universal Health Coverage (UHC), it is imperative that technology and healthcare talk to each other seamlessly. An insight by **Manoj Kapoor**, VP – Product Engineering and Data Services, Optum, elaborates

WITH A population of 1.3 billion scattered across urban and rural India, the country poses a unique healthcare challenge. According to a report by the United Nations, 75 per cent of all healthcare infrastructure including medical specialists and doctors are concentrated in urban areas where only 27 per cent of the Indian population live. Added to this is the fact that private hospitals and quality healthcare are limited to urban areas. While on the other hand, around 716 million people that make up the remaining 72 per cent of the population stay in rural areas with a chronic lack of primary health care facilities.

One of the most pressing challenges for India is to offer world-class care at affordable rates to all its citizens. In 2011, (the latest data available) the country's hospital bed density stood at 0.7 per 1,000 people, which is significantly lower than the World Health Organization (WHO) guidelines of 3.5 beds per 1,000. In such a scenario, technology is the only tool which has the potential to bridge this gap.

Is technology the answer?

If India is to realise its goal of Universal Health Coverage (UHC), it is imperative that technology and healthcare talk to each other seamlessly. The good news is that change is here. Technology is all pervasive and is helping address the unique challenges of India in terms of accessibility, affordability and quality. Though at a nascent stage, the rate of adoption is rather fast



and given the size of the healthcare sector, the resultant scale and impact can be immense.

According to the Indian Brand Equity Foundation (IBEF), the Indian healthcare industry will grow from \$160 billion in 2017 to \$280 billion by 2020. And, technology will clearly be the backbone of this growth story. Adoption of Electronic Health Records (EHRs) is key to improve care, reduce errors and bring about cost efficiencies by streamlining the clinical care processes to improve outcomes. New age cloud-based solutions and mobile apps that seamlessly integrate provider and patient interactions will further boost the adoption of EHRs. Needless to say, the data gathered

through EHRs, over a period of time, can help in further refining the analytics models to improve clinical outcomes.

With increasing awareness of health and wellness issues, patients will soon start playing a major role in the overall process of care. Already, consumerism of healthcare is driving many of the new age apps dealing in prevention and continuous monitoring of health. Artificial Intelligence enabled recommendation engines are helping consumers make choices that they never knew they could make. A high degree of personalisation and care has been made possible through the use of technology. This is the need of the hour since chronic diseases are on the rise as is the demand for

personalized care depending on the illness and psychological make-up of the patient.

Changing role of medical insurance

The Insurance Regulatory and Development Authority (IRDA), is now allowing coverage of OPD in some cases, while the National Health Protection Scheme (NHPS), is poised to fundamentally change healthcare for the masses. Cashless will be the new norm in the next five years for many procedures. Digital payments and automated microfinance will fundamentally change the way we pay for care.

As medical Insurance penetration increases in India there will be a need to create a national-level medical transaction clearing house, based on Blockchain and AI, with cascading multi-level payments and settlements, could be a game changer. The clearing house will offer real-time healthcare transaction processing services over the Internet with a highly secured connection and state-of-the-art internet architecture that speeds up deployment and minimises costs associated with claims submission, claims tracking, clinical data exchange, and follow-up.

As per the Ministry of Health and Family Welfare of India, development of 50 technologies had been targeted in the FY16 for the treatment of diseases like cancer and tuberculosis. The government is also emphasising on eHealth initiatives such as Mother and Child Tracking System (MCTS), and Mother and

Child Tracking Facilitation Centre (MCTFC). Indian companies are increasingly engaging in mergers and acquisitions with domestic and foreign companies to drive growth and gain access to new markets.

Technology trends

Technologies like Artificial Intelligence (AI), automation, and the Internet of Things (IoT), have percolated to almost every aspect of healthcare today. For sake of clarity, let's look at some of the potential applications of these two technologies: (i) AI (including automation, machine learning, deep learning), and (ii) IoT.

Applications of AI

The unique power of AI is that it not only complements human skills but significantly expands the scope of human activity. Some of the AI-related technologies include among others, natural language processing, intelligent agents, computer vision, machine learning, expert systems, chatbots and voice recognition.

Data management of health records is one of the most widely used applications of AI and automation. Robots collect, store, re-format and trace data to provide faster and seamless access to it anytime, anywhere. AI is also deployed to perform certain repetitive tasks like analysing laboratory tests, X-Rays, CT scans and data entry. AI-based apps can be used to provide medical consultation based on personal medical history and intelligence

gathered through analytics.

The process of drug creation can also be supported by AI-powered programmes which can significantly lower the costs of developing pharmaceuticals through traditional clinical trials. Precision medicine is another application of AI wherein AI-powered body scans can spot cancer and vascular diseases early and predict the health issues people might face because of their genetics.

Applications of IoT

In healthcare, IoT is all about unleashing the power of connected devices and sensors that are widely used in the sector. In 2008, the number of connected devices exceeded the population on this earth. By 2020, 50 billion connected devices are expected to be present on earth. The IoT revolution will be a result of replacing disconnected objects with connected ones and making these objects more intelligent and context-aware using sensors.

IoT can also be used to derive valuable insights from data derived from foetal monitors, electrocardiograms,

In healthcare surveillance as well IoT can play a major role. It can help in early detection of health problems. IoT devices can provide the required health information remotely and lessen the need for direct patient-physician interaction

temperature monitors or blood glucose levels. Smart IoT devices can provide the required health information remotely and lessen the need for direct patient-physician interaction. In a world of IoT, different distributed devices will gather, analyse and communicate real-time medical information to open, private or hybrid clouds, making it possible to collect, store and analyse big data streams in several new forms, and activate context dependent alarms.

In healthcare surveillance as well IoT can play a major role. It can help in early detection of health problems. It can also help in integrating data collected from tests instantly, monitor the condition of the patient, and then relay that information to the doctors and

staff in real time thereby improving the efficiency of the overall healthcare system.

The future prescription

In the future, India will witness a complete spectrum of the healthcare ecosystem wherein small clinics will co-exist with home healthcare and large sophisticated hospitals. The trend is pointing towards more and more home-care, ambulatory and emergent care services outside of the hospitals. The focus is also shifting towards a preventive approach from a curative approach.

Personal IoT-based health monitoring devices will change the way we track the health of individuals. Technologies like Blockchain will soon redefine how we populate and maintain EHRs, and how we link them to other

services like payments and insurance, among others. AI will increasingly assist physicians, health workers and caregivers in triage, diagnosis and treatment.

Ingestible pill monitors, bio stamps, nutrition sensors, AI doctors, and 3D printing will be common applications in the healthcare sector in due course of time. It is likely that AI doctors will outperform human physicians in diagnostic challenges that require a quick judgment call, such as determining if a lesion is cancerous. 3D printing will impact replacement organs, exoskeletons, casts and beyond. The opportunities are endless.

With technology increasingly becoming an integral part of the healthcare sector, the obvious question that

arises is whether machines will eventually take over the doctor's role? We often hear about the fear of the so-called "technological unemployment." While one school of thought believes automation could spell the end of doctors, the other side argues that the fear psychosis is mere hysteria generated due to several misconceptions, largely based on an overestimation of AI's uses and abilities.

The answer perhaps lies somewhere in between. Machines might never replace physicians entirely but will surely take over much of his/her work including some of the decision-making power. It will not be a matter of AI versus physicians, but one of AI plus physicians. The power lies in working in tandem to derive more value. This is the reason some companies refer to AI as "Augmented Intelligence" which essentially suggests that the main purpose of AI is to enhance products and services, rather than replace the humans that offer them. In an ideal world, machines and humans will co-exist to create a better and healthy tomorrow.

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START UP CORNER

INTERVIEW

‘We need to completely democratise and demonetise healthcare. Innov4sight is trying to achieve the same’

Started in 2014, Innov4Sight (I4S) is a start up with a vision and mission to create a ‘technology agnostic integrated healthcare ecosystem’ that will improve clinical outcomes in fertility and cancer care. **Vijayagopal R**, Founder and CEO of INNOV4SIGHT Health and Biomedical Systems, divulges the growth plans of the company and its strategy to achieve them, in an exclusive interview with **Lakshmipriya Nair**



ParSight’s model is aggregated from various silos, linked and transformed into a standard dataset model that supports a multi-disciplinary team review of the patient population

Which are the major areas of healthcare influenced by technology? How has it empowered the stakeholders of healthcare to be more empowered?

Areas like biotechnology, pharma, information technology, the development of medical devices and equipment, Medical Nanobots, Genetics and more have all made significant contributions to improving the health of people all around the world. In the healthcare industry, the dependence on medical technology cannot be overstated. It is the result of these development and brilliant innovations that the healthcare practitioners can continue to find ways to improve their practice – from better diagnosis, surgical procedures, and improved patient care. Some of the latest examples are:

► EMR (Electronic Medical Record) & HER (Electronic Health Records) on mobile devices on the job, physicians can now have access to any type of information they need – from drug information, research and studies, patient history or records, and more – within mere seconds.

► Medical technologies like minimally-invasive surgeries, better monitoring systems, and more comfortable scanning equipment are

allowing patients to spend less time in recovery and more time enjoying a healthy life.

► The integration of medical equipment technology and telehealth has also created robotic surgeries, where in some cases, physicians do not even need to be in the operating room with a patient when the surgery is performed.

► Medical scientists and physicians are constantly conducting research and testing new procedures to help prevent, diagnose, and cure diseases as well as developing new drugs and medicines that can lessen symptoms or treat ailments.

There are several technology start-ups coming up in the healthcare space. How does Innov4Sight Health and Biomedical Systems intend to become a differentiator? The ecosystem –

Instead of having one solution for the problem and depending on others for the results Innov4sight is targeting to solve the problems from multiple direction. Example for infertility we are coming up with a medical simulator that will be complimented by Training courses for the doctors to get more proficient in the infertility techniques. Also, we are

START UP CORNER

working on regenerative medicine based growth factor therapy for female and male infertility. Also a data analytics based telemedicine platform for patients.

The Team – To attack a problem from multiple fronts we require a diverse team. We have professionals with 240+ man-years of experience in healthcare, IT, analytics, marketing, and technology and backed by industry veterans and research institutions like IIT-M, Team Innov4Sight has 75+ member dedicated team that powers the vision.

Digital therapeutics is a nascent, if growing trend in India. How are you going to be a pathfinder in this space?

At the service provider side, the main focus in India in healthcare IT is on digitisation. Which means automation of the entire process, paperless transitions, prescription and diagnostics and then there is scanning to older documents to adhere to government norms. On the patient side, focus is aggregation of services and telemedicine. These can take us to a certain point. We need to go beyond these and start thinking of an automated system which can take care of all the healthcare issues without dropping even a single case. We need to completely democratise and

demonetise healthcare. Innov4sight is trying to achieve the same.

Elaborate on your offerings and its advantages. How can it change cancer care in the country?

ParSight – Parsight is a data analytics platform. We are currently developing this for oncology. Parsight links to disparate information on cancer patients who significantly affect cancer research in many areas, including quality improvement, outcomes, comparative effectiveness research, practice standards, research methods, and epidemiology. The linkages made between secondary, observational datasets enable research on key and increasingly important populations not represented in clinical trials data standalone. ParSight's model is aggregated from various silos, linked and transformed into a standard dataset model that supports a multi-disciplinary team review of the patient population and the cancer pathway that will unlock insights which facilitates better informed decisions improving patient outcomes. Parsight combines discrete data from patient chart, including unstructured clinical notes, pathology reports, prescription notes etc. to assemble a complete view of each patient's diagnosis, treatment, and

outcomes. Parsight has built web-based search tools to support rapid query and exploration of these data.

eHAT - eHAT Oncology package is built with attention to details and inputs from practicing oncologists. Implementable on cloud, in premise or on a hybrid platform makes it easy to access from anywhere and any device.

- ▶ Oncology EHR
- ▶ TNM & Group Staging
- ▶ Practice Management
- ▶ e - RX, CPOE & Order Management
- ▶ H&P templates
- ▶ Care plans
- ▶ Chemotherapy regimes
- ▶ ICD 10 & ICD 10 O'
- ▶ Alerts & Allergies
- ▶ Patient dashboards
- ▶ Automatic drug dosage calculation
- ▶ Advanced reporting
- ▶ Nursing documentations

Tell us about your tie-ups with healthcare providers in the country.

- ▶ We are working with Tata Memorial Centre on ParSight and few other major oncology centres.
- ▶ For Fertility Simulator our SME is Singapore general hospital. For the Growth Factor Therapy for infertility, we have MoUs with many IVF centres in Bengaluru, Chennai and Coimbatore.
- ▶ Apart from these, we have also partnered with academia for multifaceted research projects.

You have implemented a pilot project at Tata Memorial Hospital. Elaborate on the experience and its learnings.

The first versions of the Parsight was deployed in one of the departments of TMC in Jan 2016 with 17000 reports, which was used by the doctors and interns in the TMC. The next version was deployed with the suggested changes and with the 117000 reports. This experience gave us a good base to test our product and further improve. TMC, being one of the largest cancer hospital in world, working there gave us the minute details of working of the system. This helped us to come up with the functional follow of ParSight along with the base reports to test the system.

Plus, working at any hospital brings the entire company very close to reality emotionally. We could see the difference our product is making and can make in future. This is not only enriching and fulfilling but also gave us a sense of responsibility to bring in the necessary changes in system to make it better. As senior management we saw the change in the junior staff post the completion of project, they were more enthusiastic and energetic to take on cancer head-on.

What are your growth plans and strategies for the

next three years? How would you raise funds for expansion, especially in a scenario where businesses are finding it difficult to find investors?

In the next three years the goals are:

Company – To have a global present.

Parsight – To become largest data source on cancer cases with over two million records.

Therostics – To have our off-the-shelf growth factor concentrate for infertility therapies. To come up with a regenerative medicine therapy for cancer.

Simulators – To complete the ecosystem and have around major seven simulators – fertility, laparoscopy, brain surgery etc.

HITA (Health IT Academy) – To have a total of five million healthcare professionals on the HITA Platform.

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In our experience, we have not found that raising money is difficult. With proper products, sales and profit plan companies don't have any difficulty in raising money. The problem we see right now is to properly time all the steps and raise an adequate amount as required.

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Treading the M&A route

Maresh Singhi, Founder & MD, Singhi Advisors speaks on the trends ruling the healthcare sector and finds that M&As are a favoured route to growth these days



The Indian healthcare sector is expected to grow at an exponential pace and is widely anticipated to clock revenues of around \$280 billion by 2020. However, key companies in the sector, which are traversing a higher growth curve, still need to build their pipelines and deliver topline growth. Continuing expansion initiatives by the companies will remain the chief driver for M&A activities for pipelines and marketed products in 2018. Apart from drug makers, augmented activity has also been witnessed from health insurance players and healthcare service providers. In a move indicating broader consolidation between health insurers and companies overseeing drug benefits of patients, Global health insurance service company Cigna Corp agreed to buy pharmacy benefit management organisation Express Scripts Holding Co in a cash and stock transaction valued at \$ 54 billion.

The fundamentals are in place to steer M&A activities on a higher trajectory. The sector is currently riding a wave of confidence, debt is freely



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STRATEGY

available to fund ambitious M&A programmes and sector players are overwhelmingly conducive to leveraging a positive sentiment. Regulatory pressure is largely building in terms of development and approval as well as on the pricing and cost containment fronts. While big pharma companies have the capabilities to access large funds for combating these forces, smaller firms and the biotech sector remain largely restrained in their abilities to arrange funds with the situation highly exacerbated by significantly constricted credit lines. In this backdrop, pharma companies and biotech companies are treading the mergers and acquisitions route as an effective alternative to bolster their pipelines and improve efficiencies.

Global healthcare markets

were roiled in January 2018 when Amazon announced a partnership with JP Morgan Chase and Berkshire Hathaway to form a company to deliver advanced healthcare facilities to their employees. Amazon is also reportedly in plans to widely expand its medical supplies business and become a major vendor for healthcare service providers. While the recent developments were indicative of Amazon's intentions to disrupt conventional healthcare paradigms, the company has not displayed a proven capability to transform its aims into reality. Other technology companies around the world have already begun to expand their presence into the healthcare space.

Alibaba and Tencent of China have invested in tools that make use of artificial intel-

ligence (AI) to aid in diagnostics. In early 2018, Apple announced the integration of electronic health records (EHR) into its health app and have launched a pilot involving medical institutions. Samsung BioLogics has developed pharma contract manufacturing facilities. Present sector trends allude to the fact that as compared to other industries, healthcare has been slow to embrace digitalisation. However, conventional trends are fast changing as market participants have recognised the enormous potential of empowering techniques and tools such as advanced analytics, machine learning, smart devices and autonomous robotics.

The healthcare consumer of today is aware of the changes in the sector. Technological innovations and ad-

vanced clinical practices in the sector mean that the modern healthcare consumer has access to multifold choices. Following years of contending with restricted healthcare delivery mechanisms and the limitations associated with them, consumers today can pick among a variety of delivery models such as telemedicine, home-health, concierge care and online self-help.

Companies and investors are also changing their asset evaluation methods when it comes to valuing healthcare-heavy assets such as hospitals. There is a greater understanding and recognition among hospitals about the overwhelming need to revamp their delivery models to meet the evolving demands of the consumer. Healthcare players are also aware of the need to trim costs to sustain

profitability in the face of new competition.

Healthcare investors are looking into the investment potential of biopharma and medical companies that are developing personalised treatments to face new competition.

Given the inordinate length of the current global economic expansion, healthcare companies and investors will continue to recognise the healthcare industry as countercyclical and recession resistant. Investor focus is strongly expected to be concentrated on areas that have historically generated strong returns which chiefly include contract services and retail health. Valuations are likely to traverse a higher trajectory to sustain competition from corporate acquirers given the ongoing demand for quality healthcare assets.



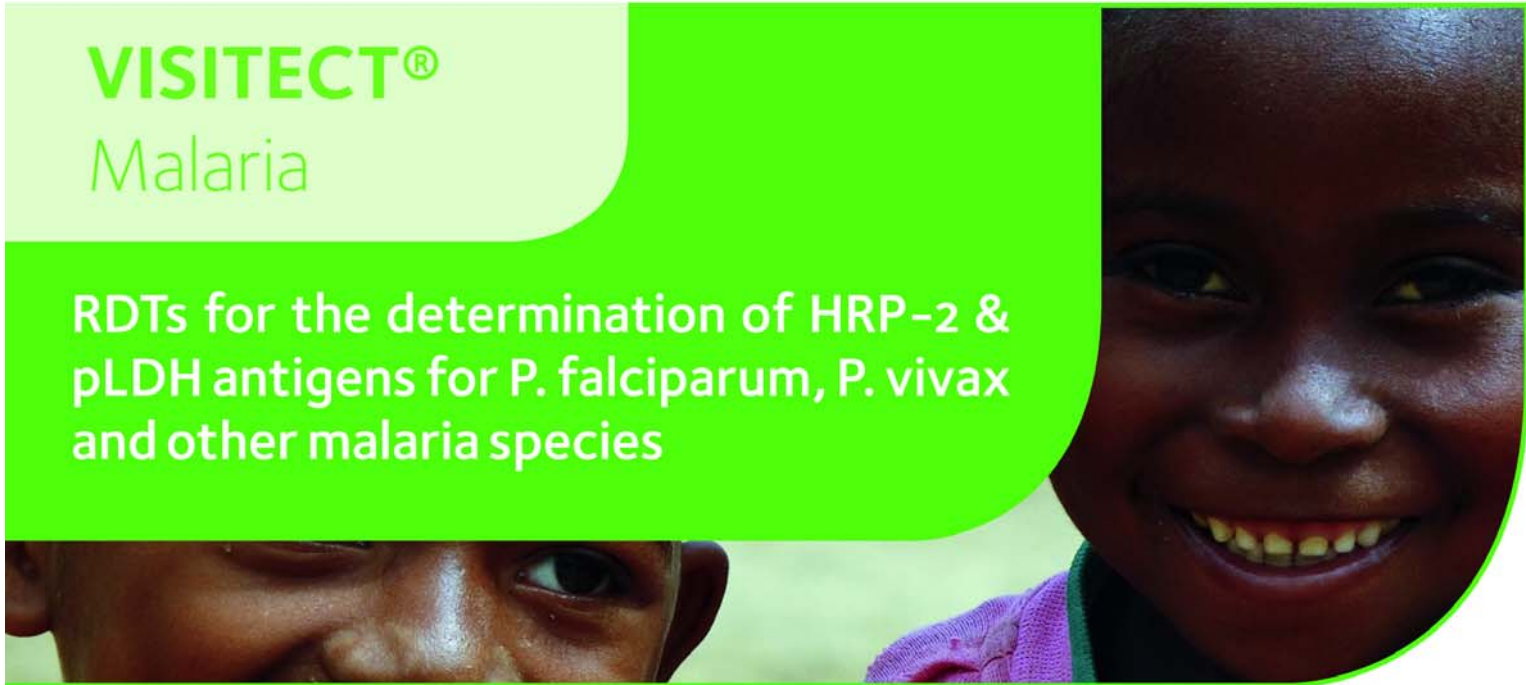
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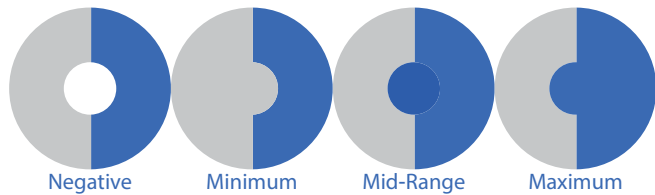
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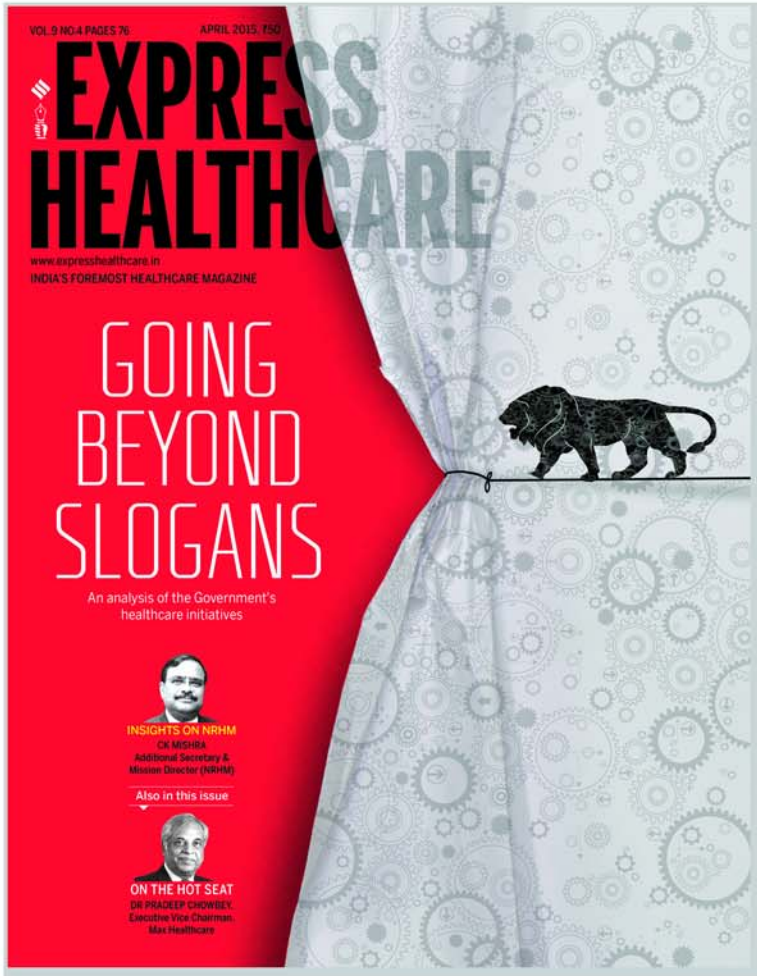


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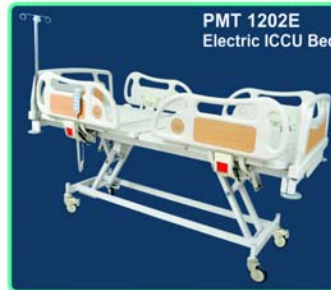
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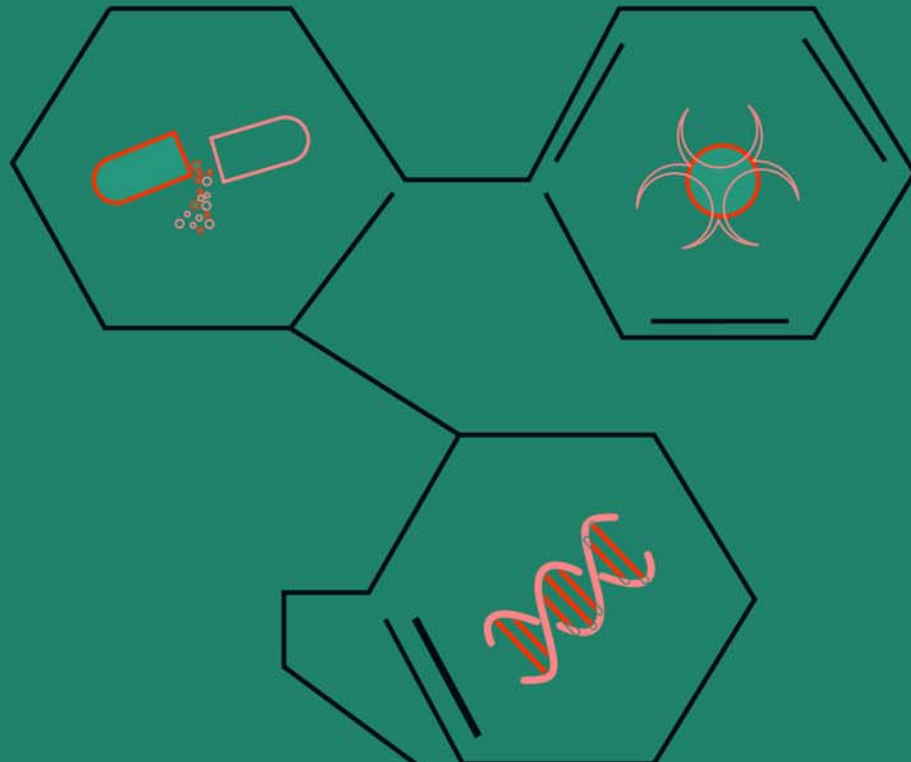
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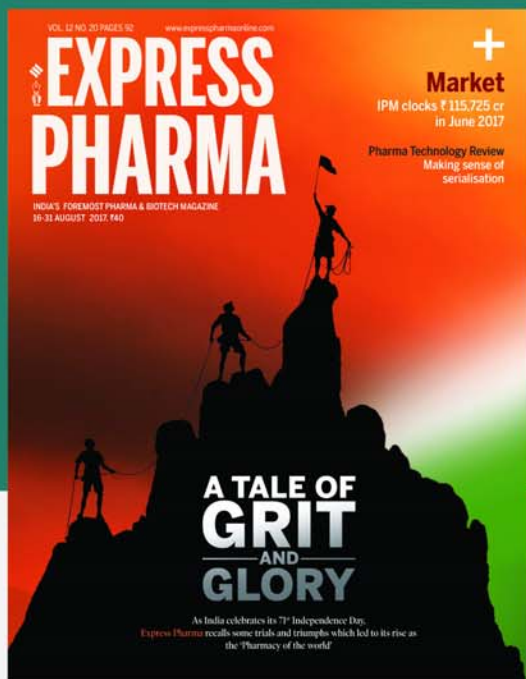
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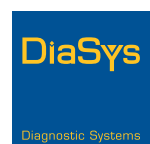


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INDIA-UK COLLABORATION ON HEALTHCARE IS STRONGER THAN EVER

The main principle of NHS that has stood the test of time successfully is delivering healthcare to all based on their clinical need rather than their ability to pay. It is this very principle that drives Prime Minister Narendra Modi's ambitious National Health Policy as well

On July 5, 2018, National Health Service (NHS) of the UK will be celebrating its 70th year of foundation. According to Aneurin Bevan, Founder, NHS, it is largest experiment in social service undertaken anywhere in the world. It is a coincidence that India is celebrating its 70th year of independence as well. Seven decades ago when the legislation establishing the NHS was passed in the UK, the Bhoré Committee in India was setting up the first national plan for health in India. The main principle of NHS that has stood the test of time successfully is delivering healthcare to all based on their clinical need rather than their ability to pay. It is this very principle that drives Prime Minister Narendra Modi's ambitious National Health Policy as well.

According to Sir Malcolm Grant, Chairman, NHS England, "India's National Health Policy is arguably the most ambitious reform programme since Bhoré Committee. When the Prime Minister of India launched the National Health Policy last year, he described it as 'a historic moment in our endeavour to create a healthy India where everyone has access to quality healthcare'. As Britain celebrates its own historic landmark, I look forward to India-UK collaboration on healthcare being stronger than ever."

There are numerous examples of impressive collaboration between the health systems of India and the UK. Indo UK Institute of Health (IUIH) that plans to build world-class medicines is one such example. Besides this, the Health Education England has begun an ambitious new programme to train Indian nurses and doctors in the NHS who will then return to India with enhanced skills.



DR AJAY RAJAN GUPTA
MD and Group CEO, Indo UK Institute of Health (IUIH)



"What's remarkable for over 400 million Indians who'll benefit from IUIH bringing in the UK's NHS standard healthcare is the fact that nothing but the best in the world is coming to them. The NHS has been judged the best, safest and most affordable healthcare system out of 11 countries analysed and ranked by experts from the influential Commonwealth Fund health think tank."

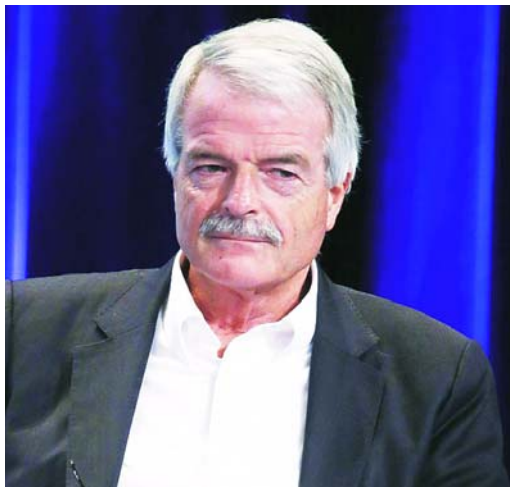


JEREMY HUNT
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SIR MALCOLM GRANT
Chairman, NHS England



“India’s National Health Policy is arguably the most ambitious reform programme since Bhore Committee. When the Prime Minister of India launched the National Health Policy last year, he described it as ‘a historic moment in our endeavour to create a healthy India where everyone has access to quality healthcare.’ As Britain celebrates its own historic landmark, I look forward to India-UK collaboration on healthcare being stronger than ever.”



RICHARD MURRAY
Director of Policy, London-based King’s Fund think tank



“The UK’s ranking is welcome and reflects the strong fundamentals of the NHS. Universal access to health services, a founding principle of the NHS, is rightly recognised by the Commonwealth Fund ranking.”



The UK’s Global Health Alliance is already doing working in rural India and has launched in India a new fellowship in aviation medicine and a diploma in emergency medicine for nurses. Both India and the UK are looking for ways to use telemedicine to help support patients without high cost face-to-face clinical interactions. In India, this has the potential to transform the way healthcare is delivered to the two-thirds of the population living in rural areas

The UK’s Global Health Alliance is already doing working in rural India and has launched in India a new fellowship in aviation medicine and a diploma in emergency medicine for nurses. Both India and the UK are looking for ways to use telemedicine to help support patients without high cost face-to-face clinical interactions. In India, this has the potential to transform the way healthcare is delivered to the two-thirds of the population living in rural areas. Artificial Intelligence (AI) is another area where the NHS has made important progress and is currently testing the deployment of AI for diagnosis of breast cancer, eye disease and kidney disease. India similarly has been conducting trials on the use of AI to diagnose cervical cancers and improve blood test accuracy.

Sir Malcolm Grant is of the view that these examples are only the tip of the iceberg in terms of opportunities that exist. Be it the use of electronic patient records, wearables and self-management

apps, or the accelerating progress in 3D printing, predictive analytics and personalised medicine, there is little doubt that health systems of India and the UK will witness transform radically over the next decade. “We can together embark on this transformative journey, learning from each other’s experiences and innovations,” he adds.

According to Dr Ajay Rajan Gupta, MD & Group CEO, Indo UK Institute of Health (IUIH), “What’s remarkable for over 400 million Indians who’ll benefit from IUIH bringing in the UK’s NHS standard healthcare is the fact that nothing but the best in the world is coming to them. The NHS has been judged the best, safest and most affordable healthcare system out of 11 countries analysed and ranked by experts from the influential Commonwealth Fund health think tank. It is the second time in a row that the study, which is undertaken every three years, has found the UK to have the highest-rated health system.”

Jeremy Hunt, UK’s health secretary, lauding the NHS’s top ranking, said, “These outstanding results are a testament to the dedication of NHS staff who, despite pressure on the frontline are delivering safer, more compassionate care than ever.”

Richard Murray, the director of policy at the London-based King’s Fund think tank, said, “The UK’s ranking is welcome and reflects the strong fundamentals of the NHS. Universal access to health services, a founding principle of the NHS, is rightly recognised by the Commonwealth Fund ranking.”

The NHS of UK has been rated better than health systems of Australia, Netherlands, New Zealand, Norway, Switzerland, Sweden, Germany, Canada, France, and the US. This ranking is even more notable because the think tank found the UK to put the fourth smallest amount of GDP into healthcare among the 11 countries.

Weight-Bearing CT International Study Group to host scientific session at AOFAS Conference

Orthopaedic surgeons will discuss the benefits of Extremity CT Imaging at Carestream Booth #407

The Weight-Bearing CT International Study Group will host a scientific session on the benefits of weight-bearing extremity CT exams on July 12, from 5 pm to 6:30 pm in Room 310 of the Hynes Convention Center in Boston, Mass. This session is being held in conjunction with the American Orthopaedic Foot & Ankle Society (AOFAS) conference and is jointly sponsored by Carestream, Curve-Beam and Planmed. Attendees can register for the scientific session at www.wbctstudy-group.com.

The study group promotes dialogue and collaboration on weight-bearing CT research initiatives. Orthopaedic specialists from five healthcare institutions representing the US, Canada, Italy and France will speak at the session. Group members are working to create standardised protocols for measurements and analysis.

“With weight-bearing CT, the orthopaedic surgeon can feel much more confident with the quality of bone healing in the patients. And, generally speaking, WBCT allows the surgeon to have a much better idea of what to expect during the surgery itself,” according to an article entitled ‘Weight-bearing CT scans: A new era for foot and ankle surgery.’

High-quality, weight-bearing imaging studies have the potential to dramatically improve diagnosis and treatment of a wide range of injuries and conditions of the foot, ankle and other extremities including arthritis, meniscus loss and instability that affect biomechan-



CARESTREAM OnSight 3D Extremity System



CARESTREAM OnSight Extremity Imaging System -1a

ical behaviour.

“Carestream’s OnSight 3D Extremity System is one of the most exciting innovations in extremity imaging in the last 20 years,” according to Dr Lew Schon, an orthopaedic surgeon who is fellowship trained in foot and ankle reconstruction. “This system displays fine detail in the morphology of bone density and alignment, while providing visualisation of soft tissue such as ligaments and tendons. And since the CT scan is weight-bearing, it provides additional details that aid in diagnosis and treatment decisions.”

Dr Schon notes that being able to capture images and conduct a patient consultation in an initial office visit is an important advance in patient care.

“Patients want to know how badly they are injured, what the treatment plan is and how soon they can return to work. This extremity imaging system provides orthopaedic specialists with the data needed to answer these important questions, which helps patients feel comfortable with their treatment and recovery plan,” he said.

Dr Schon will discuss his experience with the OnSight 3D Extremity System as part of an Extremity CT Speaker Series at Carestream’s Booth #407. Presentations will be given on July 12, from 4 pm to 5 pm and July 13, from 1 pm to 2 pm.

Contact details

Nilesh Dattatray Sanap
Carestream Health India
022- 67248816
nilesh.sanap@carestream.com

INTERVIEW

Providing ethical care

Sunanda Singhanía, Executive Director, PSRI Hospital and Director of JK Tyre & Industries, in an exclusive interaction with **Prathiba Raju**, recounts JK Group's initiative into healthcare and enlarges on its vision to serve humanity



We are a premier multispeciality healthcare centre of our country. Our vision is to achieve excellence in healthcare delivery across multi-specialities we are engaged in

What made JK Group focus more on philanthropic programmes, particularly in healthcare? Why did you decide to set up a hospital?

JK Group is committed to serve the society around it in various fields, including education and healthcare. Healthcare has always been in our core agenda. When we

moved to Delhi in 1996 from Kolkata, while analysing the then prevailing healthcare scenario, we realised that there was a gap in the treatment facilities of digestive disorders. Data showed that about 70 per cent of the population was suffering from gastro related ailments, and yet, there was no specialised

centre to take care of renal and digestive diseases. We envisioned the idea of PSRI - to establish a world class tertiary care centre for Gastroenterology, Nephrology, GI Surgery and Urology - a super speciality centre, first of its kind in South East Asia. Our main motive to establish PSRI was to create a centre of excellence in healthcare domain and provide a quality, ethical and affordable healthcare which created reliability, trust and goodwill among patients.

Can you tell us about your expertise in this field?

Initially it was challenging as we were treating only gastro and renal related ailments. But, a robust team of doctors and quality, ethical care made PSRI popular for gastroenterology and nephrology related issues pan India. It has grown to a 200-bedded hospital with large number of specialities with a NABH and NABL accreditation. The hospital handles over a 1,000 endoscopic procedures and 2500 hemodialysis in a month and now we have experts in the selected super specialities like Gastroenterology, Nephrology, Urology, Critical care, Endocrinology including Diabetology, Cardiology and Cardiac Surgery, Neurology and Neuro Surgery, Orthopaedics including Joint Replacement and state-of-art Organ Transplant Programme comprising Liver, Kidney and Bone Marrow Transplant Surgeries. Our vision is to achieve excellence in healthcare delivery system through hard work and human touch.

How would you describe the

Corporate Social Responsibility (CSR) climate in India? What are JK Group's CSR activities?

Long before CSR became mandatory, we have been pursuing it. JK Organisation, as a responsible corporate group, has always been committed towards uplifting the socio-economic status of rural communities and betterment of surrounding environment. The Group takes this as a moral responsibility to build a better society through focussing on areas such as education, healthcare, skill development, livelihood interventions, water, sanitation, etc., and by contributing towards community services as well as working towards uplifting and empowering the disadvantaged sections of the society. The multi-super speciality PSRI Hospital, JK Lakshmiapat University, JK Stadium, many schools, etc have been promoted by group to serve a large number of people. We are happy that our vision has transformed lakhs of lives, spread infinite smiles through projects like Parivartan, mother and child care programme, and adult literacy initiative, which were aimed to educate the women in villages and towns. We are closely working on prevention of HIV / AIDS among truckers from more than a decade benefiting lakhs of people from truckers community

Do you see certain private hospitals in Delhi and NCR region artificially increasing the cost on medicines and hospitalisation? Do you think a price regulation is needed for the private hospitals?

The hospitals need to be

transparent and ethical in every aspect, particularly when it comes to pricing. There should be a clear communication to the patients on the cost. Clean, clear and transparent system will help both the hospital management and the patients.

I also strongly feel that for cost-effective healthcare delivery private hospitals should not be charged for basic requirements like water, electricity etc. at commercial rates, which are applicable for the industry.

What is JK organisation's healthcare mission? We could see PSRI is catering to other medical specialities, do you have plans to spread out geographically?

Our healthcare mission is, to provide high quality patient care and treatment with personal touch. Our philosophy is not only to treat a patient, but also to encourage preventive healthcare.

Over the years, PSRI has transformed from a limited super speciality to a multi-super speciality hospital and it has undergone tremendous changes. In the next few months, we will have a new pulmonary department. Expanding geographically is not our plan at the moment. I am happy that we already have a very large number of satisfied national and international patients, who volunteer to be our 'Brand Ambassadors.' But, we definitely have plans to further develop the various disciplines that we are engaged in and continue our journey in service of the community at large.

prathibaraju@expressindia.com

Urinalysis solution

DiaSys India has ventured into Urinalysis through its own semi-Automated range “Qdx Urilyzer DS 100” in combination with ACR (Albumin Creatinine ratio). **Karthik Balasubramanian**, Product Manager, DiaSys Diagnostics India, gives an insight

THE MAJOR factor boosting growth of the diagnostic market in India is the cost advantage that Indian laboratories offer over similar laboratories in other countries like the US. The magnitude of target diseases such as UTI, kidney diseases and diabetes, is immense with the occurrence of millions of new cases every year. Urinalysis is used as the primary diagnostic tool for diagnosis and management of these diseases.

Albumin is the most common type of protein found in urine and testing for albumin in urine (known as albuminuria) can act as an early marker of kidney disease. Kidney function deteriora-



tion prevents adequate filtering of the protein. As a result Albumin escapes from the kidneys into the urine. Testing may be used when for screening for kid-

ney function, in attempt to recognise early stages of kidney disease and allow for appropriate treatment. Creatinine is a by-product of muscle metabolism and is released into the urine at a constant rate, the creatinine measurement is used to correct for urine concentration in any urine sample.

ACR levels lower than 30 mg/g (category A1) indicate normal to mild increase in albuminuria levels, normal kidney function. ACR levels between 30-300 mg/g (category A2), indicate moderately increased albuminuria levels, a sign of early kidney disease. ACR levels greater than 300 mg/g (category A3), indicate

severely increased albuminuria levels, a sign of severe kidney disease.

The market is segmented on the basis of products into two segments, instruments, and consumables. Automated and semi-automated biochemical urine analysers, urine sediment analysers, and microscopic urine analysers are the majorly used instruments in the urinalysis market. The rising trend of automation being used in the urine analysis diagnostics is anticipated to provide an ancillary force for the growth of point-of-care and self-testing based urinalysis devices. DiaSys India has ventured into Urinalysis busi-

ness domain by launching “QDx Urilyzer DS 100”. This comes with ACR (Albumin Creatinine ratio). The aim has always been to reach the tier-II and tier-III cities by offering cost effective testing of ACR. QDx Urine DS 11 ACR strips would aid the Diabetologists and Nephrologists for accurate screening of patients by giving quantitative ACR, thus eliminating interference from the proteins

Contact details
DiaSys Diagnostics India
Plot# 821,
TTC Industrial Area,
Mahape MIDC,
Navi Mumbai - 400 710
Mob: +91 9766 832 134



For any queries, call 022-67440002 or email at healthcare@expressindia.com



THE AID FOR THOSE WHO AID THE HEALTHCARE SECTOR.

When it comes to nourishing this sector, experts prescribe a regular diet of Express Healthcare. The magazine has been the source of a healthy dose of expert information, incisive category analysis and remedies for industry ailments since 20 years, thereby earning the trust of industry professionals. It's no wonder then that the finest in the field trust the foremost in the field.

Committed towards a healthier tomorrow

Sunil Khurana, CEO & MD, BPL Medical Technologies, gives insight on BPL Medical Technologies' innovative solutions

HEALTHCARE SECTOR is witnessing a sharp growth in many sectors, one of which is radiology. With emerging technology, it is interesting to see the tremendous scope that this sector can offer. The world of imaging and technology is constantly evolving which will lead to an exciting world of innovations. Radiology gains relevance in the context of diagnosis, the first step towards patients' treatment.

Tapping to this opportunity of advanced diagnostics at affordable cost, radiology industry is witnessing a boost by launching cost-effective imaging equipments in the Indian market.

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RADIOLOGY EXPERTS CONGREGATE AT RADIOLOGY & IMAGING CONCLAVE 2018 TO DELIBERATE ON THE FUTURE OF IMAGING DIAGNOSTIC

India's radiology and imaging industry is at an inflection point; poised for greater growth. Rising demand for healthcare services, increased knowledge about evidence-based diagnosis & advanced technologies, saturation in Tier I markets and access into Tier II and Tier III audiences have been the key factors.

With this in mind, Express Healthcare and Radiology Education Foundation will be organising **Radiology and Imaging Conclave 2018**, an event to be hosted alongside the forthcoming Healthcare Senate this July. The theme for this year is: **Future of Radiology**.

Key Topics

- Artificial Intelligence in radiology
- Adding 'Value' in Radiology
- Key drivers of Radiology in 2023
- Patient first approach

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FOR MORE INFORMATION: Harit Mohanty - +919821015167, harit.mohanty@expressindia.com

FOR SPONSORSHIP & EXHIBITION BOOTH:

MUMBAI/AHMEDABAD: Rajesh Bhatkal - +919821313017, rajesh.bhatkal@expressindia.com, Douglas Menezes - +919821580403, douglas.menezes@expressindia.com, Nirav Mistry - +919586424033, nirav.mistry@expressindia.com, **BENGALURU:** Douglas Menezes - +919821580403, douglas.menezes@expressindia.com, **HYDERABAD:** E Mujahid - +919849039936, e.mujahid@expressindia.com

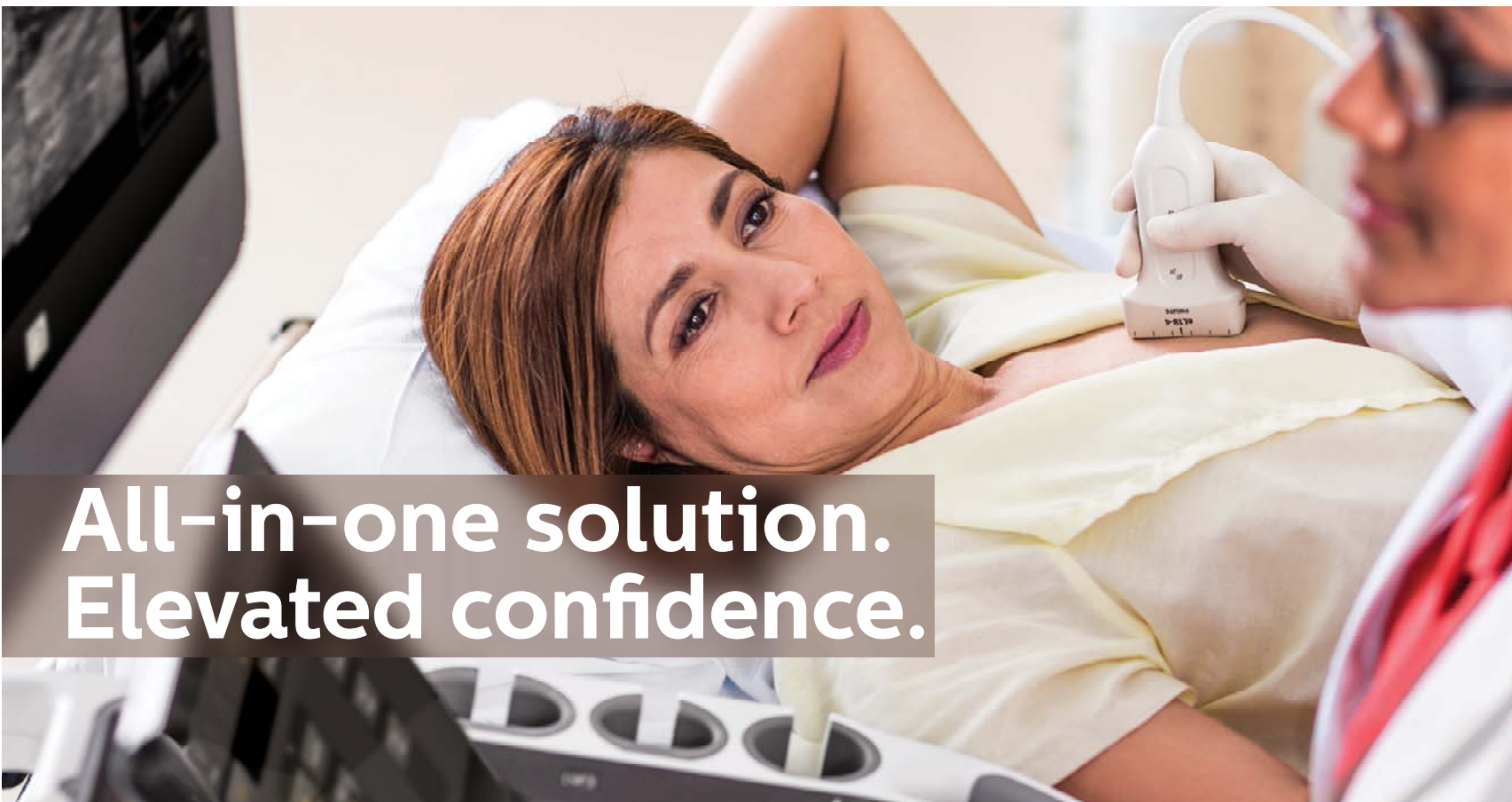
DELHI-NCR: Sunil Kumar - +919810718050, sunil.kumar@expressindia.com, **CHENNAI / KOCHI / COIMBATORE:** Sunil Kumar - +919810718050, sunil.kumar@expressindia.com,

KOLKATA: Debnarayan Dutta - +919051150480, debnarayan.dutta@expressindia.com, Ajanta Sen Gupta - +919831182580, ajanta.sengupta@expressindia.com

FOR DELEGATE REGISTRATION:

Vinita Hassija - +91 9820590053, vinita.hassija@expressindia.com, Madhuri Kudapkar - +91 9664297646, madhuri.kudapkar@expressindia.com

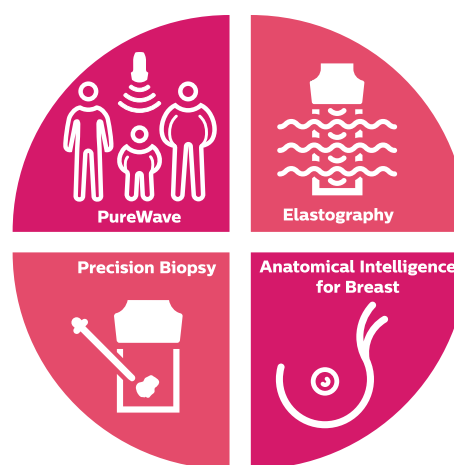
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For Enquiries: sales.medical@bpl.in

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