

Mindray India Annual Edition, 2019

# mindfocus

Healthcare technology for a better tomorrow

## DC-80 with X-Insight

The game changer in ultrasound imaging

## CAL 8000

The new intelligent workstation for cellular analysis

## Interview

Dr. Rajendra Patankar,  
COO, Nanavati Super Speciality Hospital

## Mindray Milestones

Growing ultrasound market in India

## Patient Monitoring

On a fast track growth

## Healthcare Transformation by Digitization

Dr. Devi Prasad Shetty,  
Chairman and Executive Director, Narayana Health  
opines technology will disrupt everything what we do in healthcare.

**mindray**  
healthcare within reach





# mindray



**CAL 8000**  
New Generation Cellular  
Analysis Line



**ePM Series**  
Compact Patient Monitor

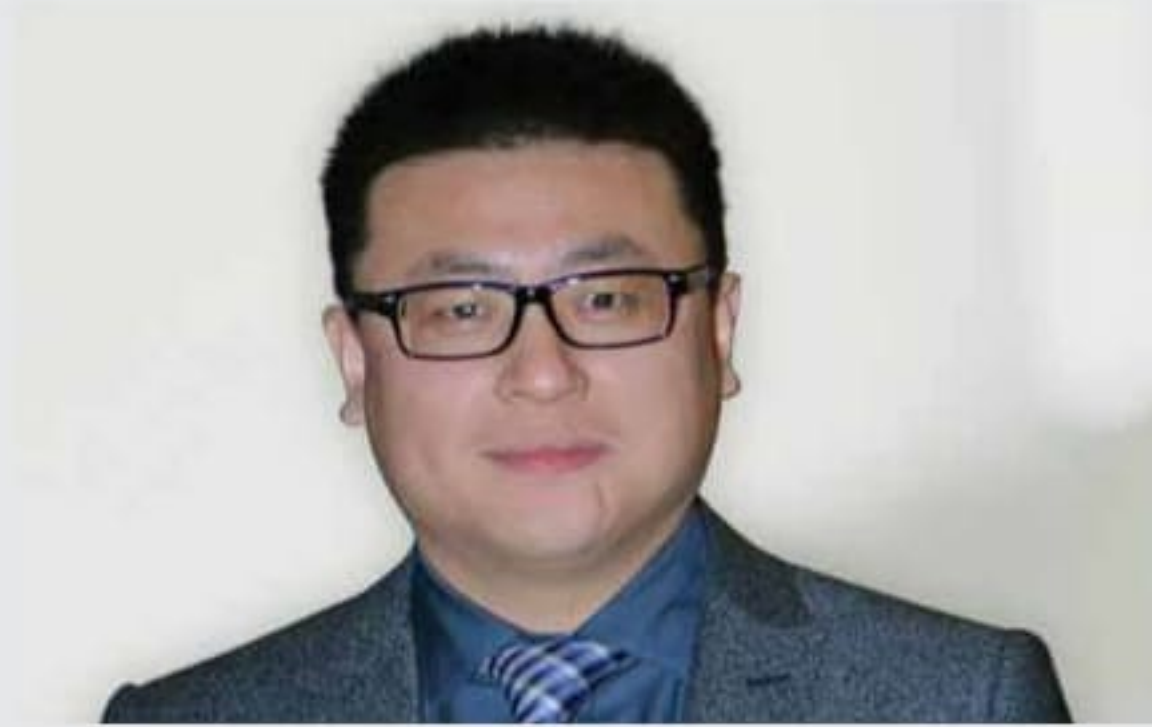


**Resona 7**  
Diagnostic Ultrasound  
System

## Trusted partner for healthier Bharat

Mindray is a leading global designer, developer, and manufacturer of medical devices and solutions, dedicated to making better healthcare more accessible to humanity. Since its foundation in 1991, Mindray has been exclusively focused on the medical industry in the fields of Patient Monitoring & Life Support, In-Vitro Diagnostics, and Medical Imaging. Headquartered in Shenzhen China, Mindray is a multinational corporation with subsidiaries in over 30 countries. Its products and services are available in over 190 countries.





**From the MD's Desk**

## **The future is bright**

**Dean Zhang**

Managing Director,  
Mindray Medical India Pvt. Ltd

We are exuberant about Mindray Medical India's growth in the country and the overall response received from the Indian market has been phenomenal, we have been growing at a very healthy rate.

Most of our products have performed very well in their own categories. Mindrays' technologies are evolving and designed as per the customer's needs. We are setting a pace for ourselves in the coming years and expect to see exponential growth in meeting market expectations. India is a very promising healthcare market, modernization, and advanced treatments are making a huge impact on the healthcare system. But at the same time, the growing disease burden is adding strain. Mindray understands it's the duty in addressing the system challenges and realizes its role in improving the overall system efficiency.

In the healthcare industry, the dependence on medical technology cannot be overstated, and as a result of the development of these brilliant innovations, healthcare practitioners can continue to find ways to improve their practice.

Being a leading developer, manufacturer, and marketer of medical devices worldwide, inspired by the needs of our customers, we adopt advanced technologies and transform them into accessible innovation, bringing healthcare within reach. Mindrays' research and development team back are constantly developing new technologies that will change the definition of healthcare worldwide. Our mission is to save lives and improve the quality of life over time.

Today Mindray has cemented its position as a leading global medical technology provider. The year 2020 ahead will be path-breaking for us. The Indian market will witness a spree of new innovations in the coming year that will put the power of care giving in the hands of the medical professional. The entire Mindray team is putting their best and striving together to build a healthier Bharat. Our strong distribution channels and fully integrated service networks ensure that Mindray products reach to the remotest corner of the country.

It is about the success we have met, the synergy we have found, the barriers we have knocked down and the opportunities we have built-up, Mindray has added to a long line of achievements. The future is bright. Mindray is stronger than ever before and ready to push the limits. The year 2019 presented us with so many memorable moments to record. The past has been great and the future is more bright.

Stay tuned with Mindray and envision more. All of us in Mindray are doing our best to make customers satisfied. At the end of the day, it is satisfied customers that create long term value for us.

**Trusted Partner in building healthier Bharat**



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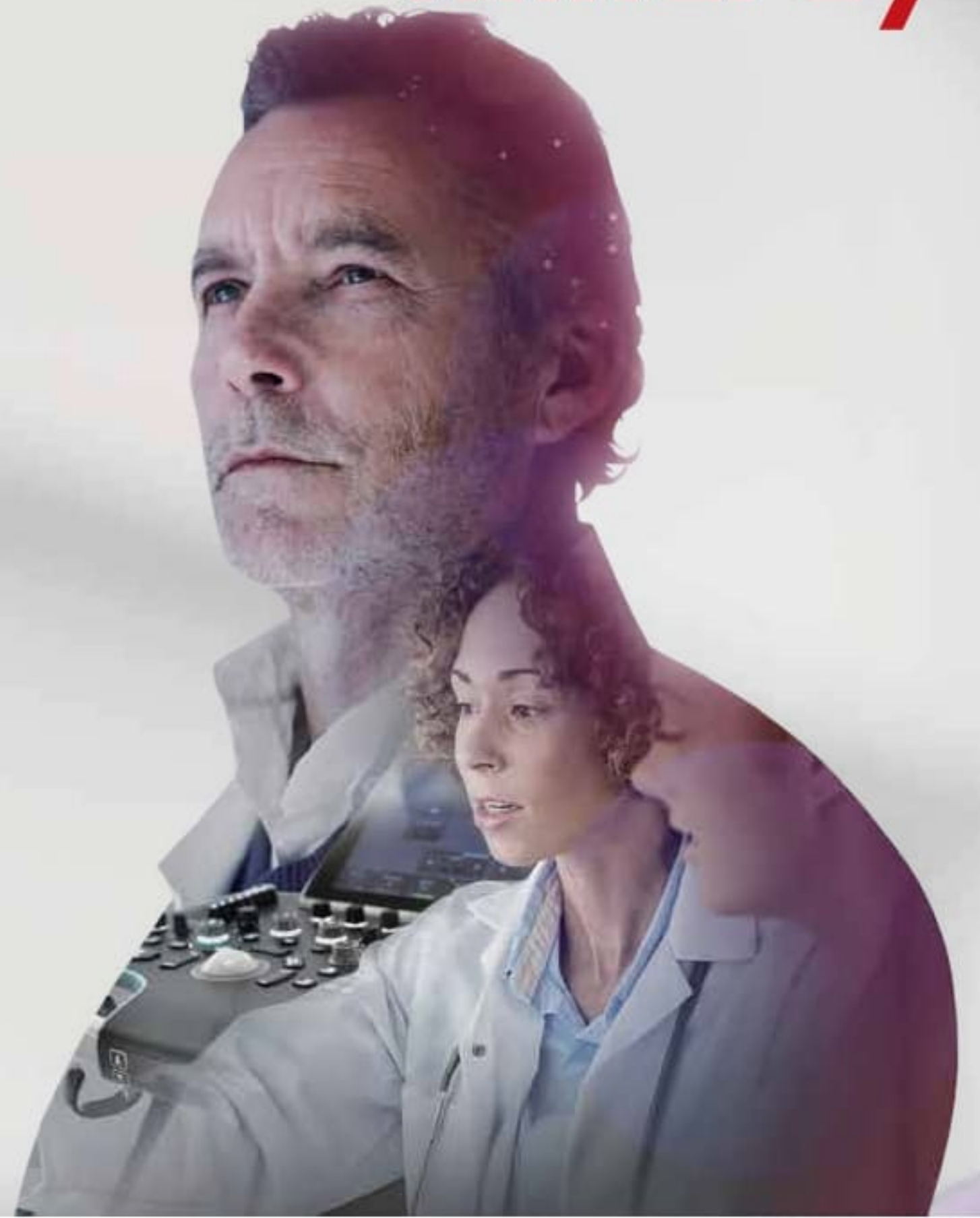
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# Envision More Relevancy



## Resona 7 New Waves in Ultrasound Innovation



Powered by the most revolutionary ZST+ platform, Resona 7 brings the ultrasound image quality to a higher level by zone acquisition and channel data processing. It also provides clinical research capabilities with state-of-the-art tools for imaging and analysis. Combining the most intuitive gesture-based operation and all essential clinical features, Resona 7 is truly leading new waves in ultrasound innovation.





## Mindray Global Technology News

### Mindray China receives MDR certificate

Mindray Medical announced that its Resona 7 (Ultrasound Diagnostic System) has received CE certificate, which makes Mindray the first China medical device manufacturer that received European Medical Device Regulation (MDR (EU) 2017/745) certificate, issued by TÜV SÜD.



The MDR (Medical Device Regulation) will replace current MDD (Medical Device Directive), with the aim to establish a modernized and more robust EU legislative framework to ensure better protection of public health and patient safety.

The regulation will be fully applicable by May 2020. "The MDR brings a significant change to the regulatory framework for medical devices in Europe that emphasizes quality and safety," said He Xujin, General Manager of Medical Imaging Business Unit at Mindray Medical. "Mindray has been providing world-class medical devices to European Market more than 20 years, and Europe is our second largest overseas market. Our QA&RA team have been preparing for the transition since the MDR became effective, and now, we are very proud to be the first China company to receive the certificate." Obtaining the first MDR certificate for Ultrasound Diagnostic System is just the first step amid a series of important steps towards MDR certification of Mindray's entire product portfolio.

### Mindray's new HyLED X Series surgical lights

Mindray's newly launched HyLED X Series surgical lights, are aimed at optimizing surgical illumination and protecting the eyes of the surgeons during surgery. The HyLED X Series integrates various innovative lighting technologies and customer-centric designs to enhance the efficiency in the operating theatre, and allow doctors to focus more on their patients. A homogeneous light field is an important benchmark for the quality of a surgical light. Based on the study of hundreds of operations from over 50 hospitals, the HyLED X Series adopts the Multi-Patch Superposition Technology (MPST) to create a clear and homogeneous light field, even when it's obstructed by up to 80%.



The iRelax feature of the HyLED X Series offers eye-relaxing light and smooth brightness adjustments to effectively reduce doctors' sensitivity to the illumination and relieve their eye strain.

The development of the new HyLED X Series surgical lights embodies a smooth integration of Mindray's advanced medical innovations and clinical insights to the operating theatre. It creates a safer and more efficient surgical environment where doctors and nurses can always stay focused on their patients during surgery.



## Mindray announces new A-Series Advantage anesthesia delivery platform

Mindray, introduced the new A-Series Advantage Anesthesia Delivery platform, providing a modular, state-of-the-art family of anesthesia solutions. The new series includes the A4, A5 and A7 Advantage systems, enabling Mindray to continue its unwavering commitment to perioperative care.

The A-Series Advantage Series provides customer-focused flexibility to meet clinical and financial requirements as they change over time. Advanced ventilation modes for the most challenging patients, from neonatal to bariatrics, include airway pressure release ventilation (APRV) mode, Synchronized Intermittent Mandatory Ventilation (SIMV-VG), Lung Recruitment support, as well as the Optimizer™ low flow decision support tool.

Additionally, the enhanced connectivity and integration capabilities of the Advantage platform allow healthcare facilities to build a standardized network throughout an individual facility or across a large hospital network.

As a single source of anesthesia delivery systems, patient monitors, and point-of-care ultrasound systems, Mindray continues to support evolving equipment needs for its customers.



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## BeneHeart C Series, Mindray's new AED.

The new AED can deliver the first shock in less than 8 seconds – making it the fastest AED in the market. Integrated with the unique ResQNavi technology, the BeneHeart C Series can guide users through the rescue process with adaptive animation coaching and voice prompts step by step. This will give more confidence to rescuers to save a life. The public, be it in the campus, metro stations, airports, shopping malls or workplaces, are able to enjoy the reliable medical technologies provided by Mindray.







## Mindray sets milestones in Indian ultrasound market

**Ashwani Raina**

Deputy Director - Ultrasound Business  
Mindray Medical India

Over the years, diagnostic imaging capabilities of Ultrasound imaging have spread over numerous clinical applications. The pace of innovation in UIS continues to benefit clinicians and patients. Buoyed by Government efforts to make healthcare within reach along with health insurance benefit for people with low-income levels is fueling further growth.

An increase in middle-class income levels and medical tourism is also encouraging corporate hospitals to increase their footprint. The ultrasound market is expected to grow at 8-10% in the next three years as forecasted. Ultrasound finds its users in imaging centers, private hospitals, state & government hospitals and as individual doctors in clinics.

### Technology and Clinical Trends :

Advanced application tools in fetal medicine market dominate OB/GYN market. STE , STQ, NTE Elastography is gaining momentum in Liver and breast imaging. Artificial Intelligence (AI) & deep learning is the new buzz word.

Selective usage of MSK Ultrasound for MRI scans can result in significant cost savings; moreover this would augment the diagnoses obtained from MRI. High-frequency transducers are used to evaluate rotator cuff which allows visualization of tendon infrastructure and individual peripheral nerve fascicles. Detection of Cancer at early stages, differentiate benign and malignant structures pushes manufacturers to further develop on the technology front. However issues related to the accuracy, resolution, education, and competence still remain a challenge.



### Mindray's Position and Journey :

We have achieved a significant position in India in the last ten years from a beginner in Ultrasound market clearly eyeing for number 2 position. Strong product portfolio, experienced team of distribution pan India combined with an inspired direct team are some of the key factors which have enabled Mindray to achieve this feat. Acquiring Zonare, USA in 2013 allowed us to develop innovative Ultrasound platforms based on Zone Sonography.

Our systems are installed across the country from small clinic to a large corporate hospitals and diagnostic centers. We have a strong install base in Radiology and OB/GYN market which includes some of the top KOLs.



**mindray**

**Version  
2.0**



**Introduces**

**NEW**

**DC-80 with X-Insight**

Diagnostic Ultrasound system

**With 5 active transducer ports\***

\* Terms and conditions apply





### **Challenges :**

Number of trained doctors versus patient needs remains the biggest challenge in Indian market. Training is one more key requirement for users to make the best use of Ultrasound systems.

Existing users who regularly keep on upgrading system , expectations on commercial aspect / life cycle cost is quite challenging, given a significant buying of new machines come from existing users. Also different regional dynamics are not same so one need to plan region specific and customer specific planning.

Our constant endeavor is to increase our direct connect with end customer, reach every sub district.

### **Future Strategy :**

We would sustain & further strengthen our value range business and deliver consistent growth through distribution, pricing strategy and launching of newer models. Our X-Insight platform combined with strong team both in sales and application will allow us to register strong growth in mid-range segment in radiology and Ob/Gyn.

Promoting our high end products is also a key step in getting to the premium segment where we are gaining good attention. Good number of KOLs have started procuring from us and we see this trend further growing. Our marketing efforts

for each segment will have special focus in terms of training, usage of advanced technologies and global experience sharing.

We will continue to grow our channel network and make them more competent, at the same time build strong organizational structure to provide one Mindray Solution and support to end customer. Integrity and value system remains the core of everything we do and we would like to see Mindray one of the top employers in the world.

### **Future Mission :**

Mindray's future vision is to provide value to its customers in terms of product and solution. This can be achieved by applying right strategies and setting priorities to meet market demand. Our customers are our brand ambassadors who will give a new direction and meaning to Mindray business in India. Our entire company is passionate about what each contributes to the health-care system so as to envision a great future for the country.







**mindray**

All labs matter

## CL-900i

Chemiluminescence Immunoassay System



## The right size for your lab

The CL-900i is one of the smallest, fully automated chemiluminescence immunoassay analyzers in the world. It provides a throughput of up to 180t/h and 15 reagent positions, with easy operation of one-key start and zero user maintenance, an ideal immunoassay testing solution for your lab.





## Interview

# Healthcare will be transformed by digitization

**Dr. Devi Prasad Shetty**

Chairman and Executive Director  
Narayana Health

Dr. Devi Prasad Shetty is the Chairman and Executive Director of Narayana Health with 34 years of illustrious experience as a cardiac surgeon.

Being recipient of 'Padma Shri' and 'Padma Bhushan' Award in 2003 and 2012 respectively, he was also involved in coining the term "Micro Health Insurance" and spearheaded the launch of Yeshaswini, a health insurance for the farmers of Karnataka in association with the State Government which has revolutionised health insurance in the state. In this interview, he discusses digitization, cardiac care landscape in India, latest advancements and infrastructural challenges related to cardiac care in the country.

### ■ **How is Narayana Hrudayalaya looking at changing the cardiac care landscape in India?**

We believe health care will be transformed by digitization. Technology will disrupt everything what we do in healthcare. Hence, we have made huge investments in developing tools like electronic medical records, hospital management system and predictability in terms of re-scoring all these technologies. We are building these technologies in-house because we believe all these tools are going to transform the way patient is taken care of. Healthcare will become safer with all these technologies.

### ■ **What is your perspective on making cardiac care accessible in India considering the fact India today has the world's largest healthcare insurance scheme - Ayushman Bharat.**

We started this journey around 17 years ago. We launched a micro health insurance in state of Karnataka with the premium of 11 cents per month per patient. Initially we had 1.7 million farmers, subsequently we had 4 million farmers now paying just 11 cents and they are covered

for all types of operations. Under the scheme about 1.4 or 1.5 million people had surgeries and 150,000 farmers had a heart operation. Recently our Government launched a health insurance across the country called Ayushman Bharat with the idea of covering nearly half the country's population for major operations. We are excited and we believe it will be a game changer.

### ■ **What are the infrastructural challenges that need to be addressed in cardiac care in the country?**

The biggest bottleneck in offering health care in India is not exactly the cardiac care alone, it is the shortage of medical specialists. We need good number of doctors, specialists, nurses and technicians. This is the biggest handicap our government facing in terms of medical education. They have replaced the older Medical Council with the National Medical Commission (NMC) with the idea of increasing the number of medical Specialists. When that happens, we believe we will have adequate number of skilled workforce and once you have adequate number of doctors working in tier 2 tier 3 cities, the quality of cardiac care they receive will be much better



- **What limitations is hospital setup like yours facing to provide quality health-care to such a large population demand of medical requirements and also to patients who need financial assistance?**

There are only two limitations that we have - one is the skilled manpower and the other is the capital required to offer the healthcare. Today, healthcare is expensive. For the poor people, Government has launched the Ayushman Bharat. For the rich people, there are regular health insurance programs. We believe there is a need for someone to come up with the financial intermediary for middle-class and upper middle-class people. Today they are paying money from the pocket which is unsustainable.

When that happens we believe that India will become the first country in the world to dissociate health care from affluence. India will prove to the world that wealth of the nation has nothing to do with the quality of health care its citizens can enjoy.

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*India will prove to the world that wealth of the nation has nothing to do with the quality of health care its citizens can enjoy.*

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- **In 10 years down the line, what percentage of beds according to you will be in ICU considering a general hospital setup?**

Today in a general hospital setup, 10 to 12% beds are ICU beds. 10 years from now 90% of the hospital beds will be ICU beds, doesn't matter what specialty, 90 percent of the beds will be critical care beds. Ward and room are going to disappear. Whatever you are doing in the ward you will do it at home online. So, the way nurses are trained has to be changed. When we train our nursing students, we don't train them in the ward we train them in the ICU from second year. When you have that many ICU beds intensivists cannot do the night duty they will be at home

The biggest bottleneck in offering health care in India is not exactly cardiac care alone, it is the shortage of medical specialists. We need a lot more doctors, specialists, nurses & technicians.

managing the ICU from home. There will only be say 200 bed ICU. There may be around 10 or 20 doctors in the hospital at night. Within five years, smart software will make smarter diagnosis than doctors. And within 10 years it will become legally mandatory for the doctors to get the second opinion from the software before starting the treatment

- **What is your opinion about indigenous medical device and Mindray in particular?**

Both the countries have lot of strengths and lot of weaknesses as well. So, for example we have been using some of the devices made in your country for many years and they're of good quality. Unfortunately, we couldn't produce those products in India. Our industry is waking up now and we are getting lot of these products manufactured in India. Similarly, in software this country has tremendous strengths. I am sure with this cooperation we will be able to help each other. We don't differentiate whether the product is made in China or US or India. If it is good if we can afford it we will buy it. Your product is here only because of the merit.

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*Within 10 years it will become legally mandatory for the doctors to get the second opinion from the software before starting the treatment*

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## Latest innovations in Immunoassay Testing

**Dharampal Sharma**  
Product Manager - Immunoassay  
Mindray Medical India

The global immunoassay analyzer market is majorly driven by an increasing prevalence of different infectious, immunological or metabolic diseases. Increasing demand of advanced diagnostic devices, recent trends of automation and integration have together led to the introduction of innovative products in this market.

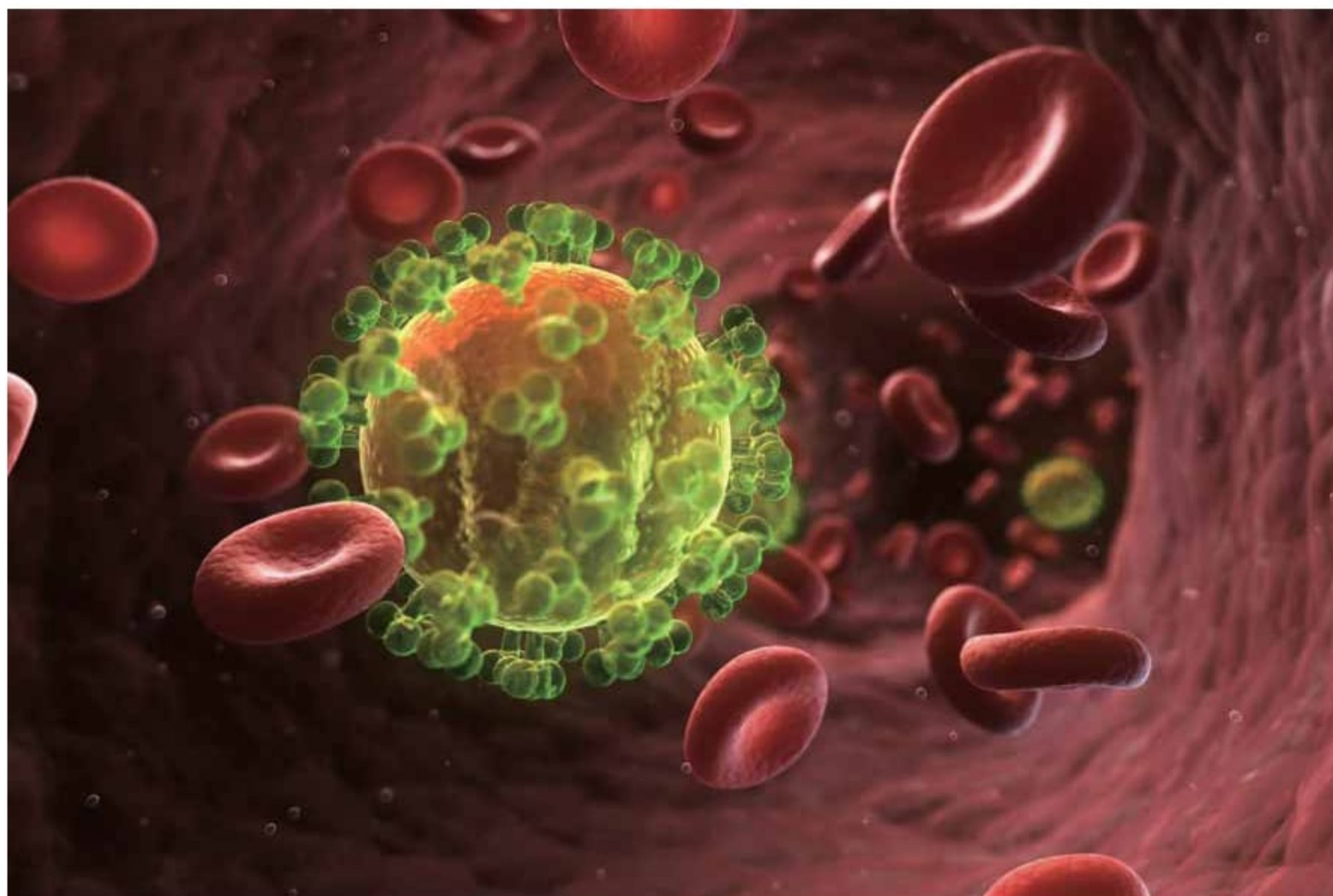
The global immunoassay analyzers market is estimated to grow at CAGR of 15.6% by 2030.

Chemiluminescent immunoassay (CLIA) technology permits analytical procedures with lower analyte detection limits than other immunoassay methods. In other words, CLIA is able to determine the presence of antibodies at extremely low concentrations.

### **Mindray is having wide range of CLIA Analyzers.**

Mindray has recently launched CL-900i one of the world's smallest, fully automated Chemiluminescence immunoassay analyzers and integrates a large capacity and fast assay speed into a compact model. It achieves a perfect balance between size and immunoassay testing performance. With enhanced enzymatic Chemiluminescence, patented technology and Mindray quality heritage, the system guarantees robust consistence with higher end analyzer.

CL-900i is a simple to use Chemiluminescence analyzer with a throughput of 180 tests per hour. Though in a small benchtop package, it has a large onboard capacity of 15 reagents







and 50 samples, and supports non-stop refill of samples, reagents and consumables during testing.

By integrating the reliable CLIA technology with latest electrical and software improvement, CL-900i enables easy operation and brings confident diagnosis faster than ever.

The system combines continuous-access, random-access, and STAT processing with a broad testing menu, allowing medium and low volume clinical laboratories to process a variety of immunodiagnostic tests.

CL-900i is designed for both quantitative and qualitative in vitro assay determinations for a broad range of applications.

CL-900i is designed for both quantitative and qualitative in vitro assay determinations for a broad range of applications. The test menu includes Tumour markers, Cardiac markers, Fertility panel, Diabetes Panel, Anaemia panel, Bone Metabolism parameters and thyroid markers.

Other unique features of the system includes precise 3 phase magnetic separation with consistent performance, environmental friendly solid-liquid waste separation, continuous loading of samples, reagents and consumables with intelligent inventory management, non-touch vortexer mixing, enhanced washing for sensitive assays, auto dilution facility and flexible positions for STAT and priority.

With intelligent sample workflow and high system reliability CL-900i/CL-960i is a robust and compact immunoassay analyzers which highly suits for medium and low volume clinical laboratories.







## An Insight about Malaria diagnosis and prevention

**Dr Nirupama M**

Associate Professor, Pathology,  
Kasturba Medical College,  
Mangalore, MAHE

Malaria is one of the preventable communicable disease and is gaining importance in disease control programme. Once called "King of Disease" is caused by protozoan parasite of the genus Plasmodium. Most serious and sometimes fatal of these is falciparum. Less common are vivax, ovale, malariae, knowlesi. Malaria is the most important infectious disease in tropical and subtropical regions, and continues to be a major global health problem.

Vector control programme in malaria eradication plays an important role bringing awareness among them including changes in legislation, as described in detail by WHO

According to the report, an estimated 6,737,000 malaria cases and 9,620 deaths due to it were reported in India in 2018. It was 9,348,000 cases and 16,310 deaths in 2017 in India. There are various methods of detection of malaria which include simple peripheral smear examination of thin and thick smear, specially when flagged by automated coulter or presenting with thrombocytopenia, quantitative buffy coat examination, RDT test, FISH and PCR methods. Malaria diagnosis involves identifying either parasites or their antigens/products in patient's blood.



Use of automated blood cell counters, conventional thin and thick smears made from peripheral blood smears, Quantitative buffy coat method, and antigen based rapid diagnostic test kits are used.

With introduction of automation, advanced 5 part haematology analysers can now provide dedicated malaria flagging, which plays an important role in screening and diagnosis of malaria.

Mangalore being endemic for malaria, Kasturba Medical college hospital, Mangalore has been providing health care facilities for all strata of people. Malaria screening and identification of species is done free of cost for underprivileged and nominally charged for others.

In our experience at Kasturba Medical College, Mangalore, we found many cases deviating from routine and classical clinical presentations. Few cases presented with respiratory illness like respiratory distress with pneumonia in a newborn, few with congenital malaria and one case with parasitic sequestration in marrow. Yet another two cases though presented with classical malaria proceeded to Acute lymphoblastic and myeloid leukemia. Mangalore and adjacent regions alone constitute 60-70% of the total detected malaria cases from the state. To conclude malaria is a preventable disease, when early diagnosis is obtained, treatment plays an important role in cure as well as prevent spread within the region.





## Mindray's solution for Malaria screening

Mindray understand serious threat to public health across the globe caused by Malaria parasite. There's no vaccine for malaria yet, but we're making significant progress towards treating and preventing the deadly disease, supported by the advances in science and technology, as well as the malaria-control efforts worldwide. From the discovery of the anti-malarial drug artemisin, to the unwavering, collective commitments of the world health community, the alliance is getting stronger and more adept at this war against malaria. The enemy is formidable enough, but we are ready to fight and defeat it!

Microscopy, rapid diagnostic tests (RDT) and polymerase chain reaction (PCR) are three common diagnostic methods for detecting malaria. However, these methods are either time-consuming or costly. Mindray offers a preferable solution for malaria screening in routine CBC+DIFF.

Mindray's BC-6000 Series, including BC-6000, BC-6200, BC-6800 and BC-6800Plus, as

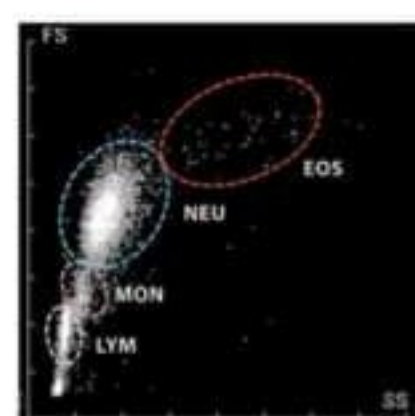
well as CAL 6000 and CAL 8000 Cellular Analysis Lines, are high-end Auto Hematology Analyzers for CBC and WBC differentials. By utilizing the advanced SF Cube 3D Cellular Analysis Technology, the systems can effectively flag the presence of abnormal cells in the samples.

With "infected RBC?" flag and two parameters "InR#" and "InR%", Mindray's BC-6000 series was first-in-its-class to flag and provide the number and ratio of the RBCs infected with malaria parasites in patients' samples. This creates the possibility to not only screen but also identify the severity of malaria infections.

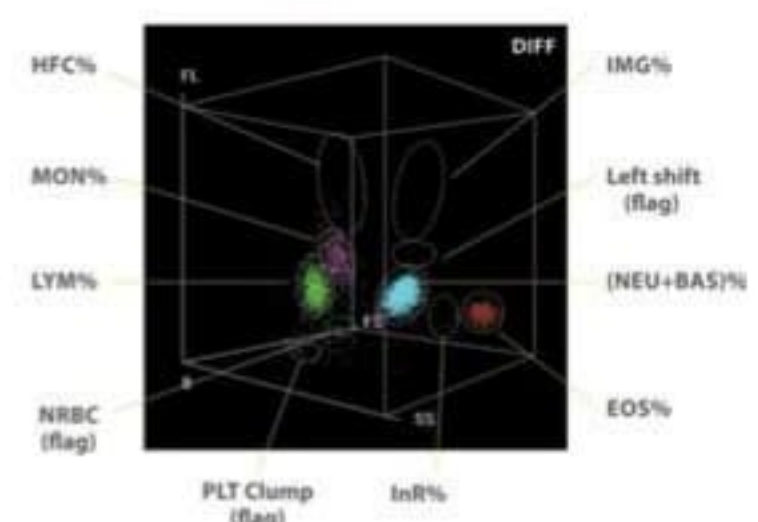
"infected RBC?" flag demonstrates excellent sensitivity and specificity to help doctors screen the presence of malaria parasites. Since the "infected RBC?" is a standard feature, which does not require extra reagents, in resources-limited busy labs, the analyzer could serve as a cost-efficient malaria screening tool and help avoid missed malaria cases in regions relatively free of malaria.



### Why to contend with 2D



### When you have 3D



### Intelligent flagging of abnormal cells with malaria detection





## Interview

# Digitization to change the course of healthcare delivery

**Dr. Rajendra Patankar**  
COO, Nanavati Super Specialty Hospital

Dr Rajendra Patankar, COO, Nanavati Super Specialty Hospital plans to drive new technologies and innovation in healthcare which are key enablers in transforming quality of care, consumer experience with transparency besides the operational efficiency.

In a freewheeling interview with Mindray, as COO of Nanavati Hospital, he pinpoints his focus lies on training and research that has become an integral part of our enormous efforts to cope with the rising disease burden in India.

■ **Considering the training and research aspect, what is your strategy on the same for delivery of care.**

Senior doctors are highly qualified and internationally trained and in turn, they can train their juniors to handle complex cases. Essentially, we need to focus on all critical areas of healthcare delivery and ensure that patients have a seamless experience with compassion without compromising on quality of care.

■ **Considering the current competitive scenario, what strategic improvements keep you ahead of other providers?**

We strongly believe that scaling up health management processes with new technologies and innovations would lead us to the desired level of advancement in terms of better clinical outcomes and patient safety.

Patient care and services, with a 'Passion of Healing', remains our top priority. Advanced technologies play a crucial role in improving healthcare access, outcomes and driving the optimal use of limited resources. Digitization is fundamentally changing the way healthcare is delivered and the overall health consumer experience.

The expectations of healthcare consumers have

also evolved, and they are demanding greater convenience, transparency and quality. We have gone ahead to redefine patient care with technologically advanced innovations, excellent support services for overseas patients, concierge services for ease of travel of patients coming from across borders, in every sphere, there is an uncompromised desire to deliver the highest standards of services for the overall satisfaction of our patients.

We took care of all these critical components which keep us ahead of other providers. Our hospital has undergone a radical transformation and that is helping us in addressing various challenges and help creates new opportunities.

■ **What are your top goals for Nanavati Hospital and plans to achieve them?**

My goal is to bring in efficiency and innovation in every sphere of our operations. People, Processes Procedures, and Price these are 4 Ps which I look at first. Price here refers to the cost of delivery which certainly requires financial restructuring and prudence. Operational excellence leads to better management of all these Ps. People include management teams, consultants and other staff at work.

Over the years, we have constituted a highly



professional management team at Nanavati Hospital. Moreover, we have augmented second-tier management teams across functions. We also revamped the infrastructure from exterior to interior. On the technology front, Hospitals need to adopt four kinds of technologies. Firstly, adopt those newer technologies which are purely for clinical use. Newer X-rays, MRI, Robots, advance radiation therapy or minimal invasive surgeries are technologies which enhance clinical outcomes.

Secondly, we have convenient Tools such as information technology driven process and procedures. Thirdly, there is some productive technology used by the employees to enhance productivity. Finally, technologies such as data analytics and data related tools which support in making hospital management system is robust.

- **After the operational and management alliance with Radiant Life Care, how has Nanavati Hospital adapted to a fast-changing corporate and external environment? How did you achieve your mission of helping the business to innovate and grow?**

Nanavati Hospital, a 350-bed hospital in Mumbai was a stressed asset and it was turned around through a combination of financial, operational and organizational restructuring by Radiant Life Care. Both capital and human resources efficiencies were introduced.

Radiant put in place an efficient operating model to create cost-effective healthcare and an organization supported by sustainable profits. Nanavati Hospital addresses the requirement of the local community and for complex medical issues or elective surgeries in specialities such as oncology, solid organ transplants, cardiac, bone marrow transplant, spine and ortho among others.

With a caring approach, cutting edge technology, and the best clinical talent, we can cater to both global and domestic requirement.

- **As a top-ranked official at your hospital, how concerning is it to get the best output of your primary stakeholders like patients, doctors, administrators and government agencies?**

Doctors, support staff and technology are the fulcrum of our growth. We made all efforts to attract highly qualified, experienced and internationally trained doctors at Nanavati Hospital. A pool of skilled clinicians and workforce is driving our growth. Our constant endeavour is to be keep abreast with the latest technology for the benefit of patients.

Technology plays a major role in attracting talent and doctors as this not only improves their productivity but also ensures significantly better outcomes hence the need to equip the doctor with the latest equipment becomes critical.

We manage our fixed and variable cost both so well that the overall cost of doing business is reduced ensuring the unit is run efficiently. This includes waste optimization, better price negotiations and optimal usage of infrastructure. Systems and processes have been streamlined to check any leakage. Gaps were identified and function-wise action plan was put in place for operational excellence.

We have adopted productive technologies. We have put in a robust business model and are witnessing an increase in occupancy and enhanced average revenue per occupied bed. As far as government agencies are concerned, we strictly follow all regulations and guidelines, applicable to us.

- **Do you feel a strong grasp of improvement techniques, such as Six Sigma, can help you ensure that the hospital stays current and competitive with other medical facilities? Please explain.**

On the technology front, Hospitals need to adopt four kinds of technologies. Firstly, we have adopted those newer technologies which are purely for clinical use. Newer X-rays, MRI (Most Advanced Version adopted), Robots, advance



radiation therapy or Minimal invasive surgeries are technologies which enhance clinical outcomes. Secondly, we have convenient tools such as information technology-driven process and procedures. Thirdly, there is some productive technology used by the employees to enhance productivity. Finally, technologies such as data analytics and data related tools which support in making hospital management system robust. With the adoption of these technologies, we have moved ahead in the competition.

■ **How do you orchestrate and implement new business strategies while maintaining tight budgetary guidelines?**

Our business model is different from most healthcare providers. I also believe that it is necessary to have an appropriate capital structure to attain your vision. Funding and enhancing a healthcare institution are a challenge as it has a long gestation period with significant upfront costs. In the process, we never undermined the importance of human resource as they only drive the institutions with adequate financial and operational support. Data is a guide to decision making.

■ **According to you in a hospital environment, how crucial is it today to be data-driven that translates into profitable operations.**

We are passing through a digital revolution. In healthcare, convenient Tools such as information technology-driven process and procedures play a very critical role in both clinical and operational outcomes. We have adopted IT tools, used by the employees, to enhance productivity. We have also adopted technologies such as data analytics and data related tools which support in making hospital management system robust. We are assessing the possibilities of introducing various

Artificial Intelligence based systems to further improve efficiency and effectiveness. From ICU hospital rooms that automatically manage patient needs, to self-maintaining equipment,

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*Technology plays a major role in attracting talent and doctors as this not only improves their productivity but also ensures significantly better outcomes hence the need to equip the doctor with the latest equipment*

//

more healthcare institutions are developing intelligent environments that include a mix of robotics, extended reality, artificial intelligence and connected devices.

To deliver intelligence everywhere, we analyze and act on data where it is generated. Overall, we aim to leverage technologies for information gathering, optimal utilization of resources, reduction in inefficiencies or waste and the empowerment of health consumers.

■ **What according to you is the mantra for and turning strategy into operational and financial success?**

My mantra for and turning strategies into success is to focus on patient care and service. Once we touch all the key touch points of the entire patient journey, operational and financial success is assured. With a patient-centric approach, we focus on medical tourism both domestically and internationally for high-end quaternary care. For a successful business model, it is not just financial restructuring that is needed but it incorporates a wide range of factors including adequate funding and operational excellence.

Operational efficiencies are critical to ensure that all specialities and services are optimally manned and inefficiencies in headcount are minimized as people cost is a major financial factor in any institution or organisation.





# mindray

See more. With ease.



## BeneVision N22/19/N17/N15/N12/N1

## BeneVision TM80/CMS

Mindray's BeneVision Patient Monitoring Solution reaches new altitude in ease of use, clinical performance and informatics technology. With eye-opening innovations that integrate seamlessly into a smart monitoring experience for both caregivers and patients, BeneVision N series is set to redefine the future of advanced patient monitoring.





## Mindray takes BLK Hospital Laboratories to the next level of automation

### Dr. Anil Handoo

Senior Consultant – Haematology and Director,  
Laboratory Service and AARCE,  
BLK Super Speciality Hospital



Hospital Based Laboratories (HBL) are evolving – of late, they are switching to automated track systems. Mindfocus profiles the evolution of BLK Hospital’s laboratory services. Nestled in a busy locality of Central and North-West Delhi, BLK Super Speciality Hospital, is a 650-bedded tertiary/quaternary care facility dealing with thousands of patients in a day. Out of the many specialities that the hospital has, Laboratory Medicine is one of the busiest departments. Giving details about the laboratory services of BLK, Dr Anil Handoo, Senior Consultant – Haematology and Director, Laboratory Service and AARCE, said, “The laboratory services in BLK started in 2008; lab operations were developed and designed to be futuristic. Most of the private hospitals are reluctant to invest and usually have a small room for a lab. They eventually try to evolve and expand as the footfall of patients increase. BLK Hospital, on the contrary had a full-fledged lab right from the start, as they considered laboratory services to be pivotal to patient care. As of now, we process about 1,500 patient samples a day, which accounts for at least 4,500 to 6,000 tests, every day in the lab.”

### About Hospital Based Labs (HBL) - Challenges and Advantages

Speaking about the challenges of HBL, Dr Handoo informed that unlike private stand-alone labs, the turnaround time (TAT) in HBL’s is shorter and the laboratory services need to be quick, yet precise. “In HBL, we are not given the liberty of taking a sample in the morning and releasing the results later in the day or the next day. Majority TATs are less than two hours. If we get the sample during evening hours, then the time to release reports is even shorter and the results need to be uploaded on the website as well. With a stringent time limit we have a good number of samples to handle. Specialized investigations are usually not done in the HBL as adequate batching is usually difficult and it is also not commercially viable. This is not just in BLK but any hospital lab across, the country wherein such tests are outsourced to outside private labs — for instance, sequencing, high-end mutation tests and molecular tests.

The advantage of HBL is that we review the case completely and provide holistic



information which is not available in standalone labs. Each test takes place in silos and nobody collects all the information and evaluates it. In HBL, we correlate things which you don't get done in other labs. The other bigger advantage in HBL practice is access to clinical information."

**Automation:  
New buzz word in HBL**

When it comes to medical advances, laboratory technology is usually at the forefront. New advanced testing techniques to diagnose or screen have made testing more efficient and automated. The rapid advancement in Lab Information System (LIS) has revolutionized the lab service and automation. Automated track system is the new buzz word in lab technology.

Few years ago, majority of instruments used in laboratories were smaller and had less throughput. For example, in haematology, we had five-part instrument and three-part instrument and the workloads were less. Technology was relevant but not advanced. Over a period of time, we upgraded our instruments from smaller ones to modular systems, and right now, redesigning the lab is our core concern. By the next financial year, we should put in place an automated track system. There are various reasons why the lab needs this transformation, viz lot of space gets occupied by bench top instruments, also, the instruments have become modular now – they are plug and play type. So, there is space redundancy. We are trying to remove these small cubicles and we will change it into an open lab concept with a track system where everything is automated and we don't want anyone to carry the samples. We need this change primarily because we anticipate increased volumes as BLK Hospital



subsequent to merger of BLK and MAXgroup of Hospitals. With automation in place, we will be able to provide high-quality results at shortest possible turnaround time," he informed.

Adding to it, Dr Handoo said that any HBLs' aim will be imbibing latest technology and constant up-gradation. "BLK Hospital wants to increase the capabilities of the laboratory in terms of infrastructure, hardware and software requirements and make it user-friendly which is easily accessible and available," he added. Touching upon the important aspect – the quality of HBL, Dr Handoo informed that usually (National Accreditation Board for Testing and Calibration Laboratories) NABL-accreditation is taken by private hospitals, as they are able to get Central Government Health Scheme (CGHS) and government business. He pointed out that while business may be one of the driving points for accreditation in BLK Hospital, we are keen on the quality offered by the lab and do not compromise in the quality, this in turn showcases in our lab results. ""We truly believe that there is a patient, a human, behind every evacuated tube/sample, and would like to treat it the same way as we like to be treated ourselves."





## Patient Monitoring – Fast Track Growth

**Mr. C. K. Murugan**

National Sales Manager – Patient Monitoring & Channel Management  
Mindray Medical India

Today the advancements in the patient monitoring Industry is making strides to address clinician needs. For quick decision making they require complete patient data 24 x7 and it should be accessible on the move whether in (or) out of hospital for that matter anywhere in the world. Increased patient load in the Hospitals are being one of the key factors of growth in patient monitoring and dictates faster decisions.

Technological advancements in patient monitoring systems are making it easier & faster to diagnose, decide & treat as appropriate with the help of clinical tools - CAA (Clinical Assistive Applications). Taking the lead from the above, let's discuss on the 3 topics – Product Innovation / Data Accessibility / Clinical Decision based on clinical applications.

Product innovation is one of the key strategies followed by all. Patient monitors are designed in such a way that it's promoted by highlighting compactness, weight of the unit, design etc.

Multi-purpose utilization such as – transport monitor with long battery hours and option of 2nd battery to enhance it further, multi parameter modular monitor with multiple modules and the latest in the innovation of insertable single width modules are rSO<sub>2</sub> (Cerebral Oxygen Measurement), ICG (Non Invasive Cardiac Output) and Multi Parameter Module cum Monitor for seamless data continuity & transport as well. These monitors enters the hospital from ambulance & move with the patient throughout the various care areas to provide uninterrupted data acquisition from patient monitor to central station to Hospital Information System (HIS) operable through Wi-Fi (or) hardwired communications (or) both combinations. Telemetry devices Wi-Fi based patient monitoring system are developed along with Basic ECG, Optionally NIBP & SpO<sub>2</sub> monitoring allows the patient to freely walk in the areas enabled with Wi-Fi within the hospital. This telemetry device works as an independent patient monitor on the network. The device communicates to the central station, so







patients are continuously monitored & the data backup is never compromised too.

Data on the HIS – in the hospital internet, is ready to be accessed on the move from various devices like computers, laptops etc., & the innovation had gone to the level of mobile phones. The complete patient monitoring data including the waveforms & vitals are viewed in the android or apple mobiles, which in turn helps clinicians for a quicker decision remotely. Question rises in the mind? Is it very expensive? Comparing the technological advancement, accessibility of data through your own mobile phone on the move and quick decision to save patient lives – it is definitely not.

Let's switch back to in hospital environment, where the clinical decisions are made based on the developments in the patient monitoring in different care areas like in operating rooms in which tools to balance anesthesia effectively, in the neonatal care area oxy-crg which is an indicator of breathing efficiency and brain maturity & for the icu / post op newer tools to identify sepsis & management of sepsis effectively, early warnings are scored based on the monitored

data on various patient conditions / deterioration etc., In the cardiology icu, caa like rescue mode & cpr dashboards are developed for patients undergoing resuscitation / cpr. These drastically empower clinicians to make more accurate, faster & proactive clinical care decisions. The industry is beginning to understand the present age needs & with the available huge patient data collated through various technologies which goes through big data analytics to get refined & utilized for developing newer tools. The newer tools in turn facilitates the clinicians to take a faster & accurate decision for better outcomes.

Wayforward - As initially discussed, patient monitoring business is clearly shifting gears from standalone box selling to networked clinical information environment. Enhanced patient loads are the trigger points for the industry to come out with newer technologies understanding the pain points of the clinicians. Very hopeful that in the coming years there will be exciting developments in the patient monitors on innovative products, newer measurements & with introduction of AI backed with big data analytics, the CAA will take a bigger leap for much faster decisions & better treatment outcomes.





## CAL 8000 : The New Generation Cellular Analysis Line



### Smarter workstation, simpler workflow

#### Robust workstation

Mindray CAL 8000 New Generation Cellular Automation Line is intelligent and highly automated workstation for smarter, faster and more accurate cellular analysis.

The workstation can hold up to 4 units of BC-6800Plus Automated Hematology Analyzer which utilizes the advanced SF Cube technology and 3D scattergrams to help doctors better differentiate blood cell populations and reveal abnormal cells undetectable by conventional techniques.

With 200 CBC tests per hour per unit, BC-6800Plus brings the process rate of the workstation to 20% - 30% higher than other similar models, effectively alleviating laboratory's stress during the peak processing hours.

#### One tube solution

On CAL 8000, the hematology analyzer, slide maker & stainer, CRP analyzer and HbA1c analyzer are all integrated into one seamless production line through automated track modules and trolley.

Simply by loading a single tube of blood sample onto the automation system, you can get all the test results you need. This innovative walk away automation functionality has made possible the "CBC+CRP+HbA1c" testing all in one streamlined workstation for the first time in the industry.

#### LabXpert: your pathology assistant

Due to diseases' diversity and uncertainty, there



may be some samples, termed “gray zone” or “suspected” samples, registering low level of abnormalities after initial testing.

Normally laboratory technicians have to pick out all suspected samples manually for blood smear and microscopic review, which puts tremendous pressure on the understaffed laboratories.

For that, Mindray new CAL 8000 offers a smart solution, or rather, a smart expert – the labXpert 2.0. It is a software that can automatically sort out the “suspected” samples for manual validation.

The pathologist then decides if rerun or microscopic review is warranted based on their clinical experience. It avoids wasting slides and reduces extra work. Moreover, the onboard automated “re-exam” functionality also helps enhance work efficiency.

### Flexible layout, optimized space

Frustrated by how to maximize testing output

with limited or complicated space? Maybe you don’t have to be. The new generation CAL 8000 doesn’t need your lab to change anything to fit it, because it “changes” itself to fit your space.

With the extended track, turn module and flexible layout, the automation workstation can be configured into outer and inner L-shaped designs to make the best use of laboratory space. In comparison with our previous model, the new CAL 8000 can save up to 20% of the laboratory space.

### Advanced blood smear solution

For blood smears, the SC-120 slide maker & stainer component can carry out the automated detection of blood consistency and automated adjustment of blood volume, angle & speed of spreader accordingly to ensure a high quality smear. Its staining cassette with automated maintenance, as well as the optimized slide printer also ensures the reliability of the smear system.





## Mindray launches DC-80 with X-Insight for high-risk patients

To identify high-risk patients efficiently, track disease progression quantifiably and make informed clinical decisions, Mindray is rolling out the DC-80 with X-Insight ultrasound system inherited premium technology to screen, further diagnosis and clinical follow-up.

Inspired by insights into such clinical needs, DC-80 with X-Insight not only integrates the X-Engine, but also demonstrates a giant leap in imaging performance. It can process image 3 or 4 times faster than the traditional processing, resulting in fast imaging and superb clarity for multiple applications.



### DC-80 with X-Insight

Moreover, the Glazing Flow indicates a breakthrough of color and power flow imaging which offers a brand new way to demonstrate the 2D color Doppler flow innovatively in a 3D visualization.

It is able to provide intuitive and easy visualization of blood flow structures as well as boundary definition even for very tiny vessels which helps to achieve more clarity with less efforts.

In this way, ultrasound users are able to acquire clear images within seconds even when they are fully zoomed in.

Blessing in disguise for high-risk patients

In terms of high-risk patients, prompt and precise further diagnosis across wide applications and exams need to be performed immediately.



### **STE of liver cirrhosis and STE of thyroid nodule**

To meet such requirements, the DC-80 with X-Insight delivers the leading Sound Touch Elastography (STE) technology with real time 2D shear wave imaging and modulus quantification for easy tissue stiffness assessment in wide applications including liver, breast, thyroid and MSK. With the help of reliability map and motion stability index, STE provides quantifications with more accuracy and reproducibility for better diagnosis.

### **iFusion with CEUS**

Apart from this, to bring the precision imaging to a new level, DC-80 with X-Insight applies iFusion for accurate volume navigation by CT/MRI and combines with CEUS for easy definition of benign or malignant lesions.

It is further supported by a sensitive magnetic motion sensor with millimeter accuracy which can help eliminate the matching distortion and fusion inaccuracy caused by unavoidable patient respiration. As a result, it renders more confidence to ultrasound users on tumor diagnosis and interventional procedure.

### **Clinical Follow-up with iCompare**

Accurate diagnosis should be followed by proper treatment immediately so that ultrasound users still need to evaluate the progression of disease or treatment effects as well as to find the lesions in the end. Nonetheless, maintaining long-term and real-time monitoring can be a real challenge.

### **iCompare of CT and US**

To settle this problem, the iCompare feature of DC-80 with X-Insight came into being. It allows ultrasound users to compare real-time ultrasound imaging to the past DICOM CT/MRI/Mammography/X-Ray/Ultrasound images without external workstation which is extremely helpful to evaluate and follow up the progression of disease as well as to monitor treatment effect. For ultrasound users who are suffered from such challenge, the iCompare solution is indeed a savior.

Coupled with efficient function as well as intelligent, precise, and clear imaging, the system is ready to bring new energy to the ultrasonic medical community in the near future.





## Mindray hosts India China Healthcare Summit



### Mindray hosts healthcare summit in Hyderabad Marriott Hotel and Convention Centre

As part of its ongoing initiative towards healthcare innovation, Mindray India hosted India China Healthcare Summit in Hyderabad Marriott Hotel and brought together medical experts from India and China on one platform on September 18, 2019.

Sri Eatala Rajender, Minister for Health, Medical and Family Welfare of Telangana inaugurated the summit in the gracious presence of healthcare luminaries.

Mindray India hosted this summit primarily to help Chinese and Indian delegates mutually share valuable insights on various initiatives, trends, technologies and modern-day innovative solutions.

It also served as an ideal platform for healthcare experts to discuss on how to develop a better healthcare delivery model for accessible, affordable and quality healthcare services to the masses.

Chen YanGang, Chairman and renowned medical professional at Xinyu Fourth Hospital, China delivered an informative talk on innovative mode of integrated medical care and elderly care.

Reputed medical practitioner in India Dr. Rampapa Rao, Managing Director and, CEO at Prerna Anaesthesia and Critical Care Services, Hyderabad enlightened local as well international delegates about evolution of healthcare in India and future growth opportunities. Dr. Rampapa Rao is also the founder of healthcare startup AI firm, HealthSignz.

Senior medical practitioners from Hyderabad discussed about various improvements in hospital management practices, making quality medicines affordable, role of healthcare management educational institutions among other relevant topics.

Committed to deliver high-quality healthcare products, Mindray India provides solutions in three core businesses- Patient Monitoring and Life Support (PMLS), Medical Imaging and In-Vitro Diagnostics (IVDs).

Mindray India's PMLS division is catering to the Indian healthcare sector with its top of the line products like Patient Monitors, Anesthesia Workstations, Ventilators, Infusion Pumps, Surgical Units and OT equipment among others.



**mindray**



"Smarter workstation, simpler work flow"

## **CAL 6000**

Hematology Workstation



Fully Automated Modular Hematology System with Scalability

Seamless Workload Management, with Single Point Operation

Highest Throughput in the Segment

Integrated Slide Maker and Stainer, with High Throughput

Advanced Clinical Parameters with Intelligent Flagging



Founded in 1991, Mindray is one of the leading global providers of medical devices and solutions. It is committed to deliver advanced medical technologies to make healthcare more accessible.

Headquartered in Shenzhen, China, Mindray has a sound global R&D, marketing and service network with 39 overseas subsidiaries and branch offices in 30+ countries. As of today, Mindray has 10,000+ employees globally.

In a short span of time since it started direct operations in India from 2006 onwards, Mindray has established a network of sales and support team in India across major cities with its 150+ representatives.

The company has achieved the major goal of being close to customers. It has also established regional offices at Gurugram, Mumbai, Kolkata and Chennai and has 4 warehouses in the country.



## GLIMPSES OF THE EVENT





## Mindray launches road show on PMLS (Patient monitors & life support products) in Nagpur



Mindray this year majorly contributed by associating itself with a very important roadshow dedicated to patient monitoring and lab systems. The event was held in Nagpur in Feb 2019 to sensitize doctors, students and the public about its products. Themed as “Kutuhel” the roadshow took place in association with ISA Nagpur City chapter.

After its debut in Vishakhapatnam, the event maximized its outreach in Nagpur through a scientific exhibition with thousands of doctors and resident doctors attending from many government and private hospitals congregating at a common platform.

The event was inaugurated by Union Minister of Road Transport Nitin Gadkari and was publicized in leading daily newspapers for visitor promotion. The 3 days event had received an overwhelming response with more than 2 lakh visitors attending the show.

To encourage visitor response the event was

promoted at a different scale altogether. Banners we put up at local places like temples, markets, schools, colleges, public gardens, parks, science centers to attract visitors. Newspaper flyers were also used to create public awareness. Principals of reputed schools and colleges too were motivated to introduce the programs to their teaching staff and students.

Students from Medical colleges and interns came forward and joined hands in informing about the event through group notification and joint meetings. The medical interns took special efforts in conducting product demonstration in OT and ICUs, doctors too explained visitors in a simplified manner the importance of various ICU modalities and the advantages in saving lives. Overall the event was also well-publicized locally.

Mindray’s specialist applications team had set up an exceptional simulation model of ICU and OT at the venue. Mindray’s leading OR & ICU products were installed in the simulation depicting a real OR and OT setup. The attending physicians





were greatly impressed by the presentation and were involved in the live-action. Biomedical and engineering students were anxious to know more about Mindray's range of anesthesia machines, ECG, patient monitors, and defibs and learn more about their functionality and use.

The event was partnered with a collaborative effort of Mindray's channel partners Anthrometrique and Biomedical Systems. Overall the event received a great response from the audience that led to impressive product sales.

Mindray India has been forthcoming in supporting such industry initiatives that drive for a good cause. A synergistic approach of a technology provider with its stake holders not only builds a strong bond but also exhibits its responsibility to contribute to patient wellbeing. Mindray is an innovation driven company that is inspired by its customers to bring accessible healthcare within reach.







**SV800/SV600**  
Ventilator



**BeneVision Series**  
Patient Monitor & IT Solution



**BeneHeart D6**  
Defibrillator/Monitor

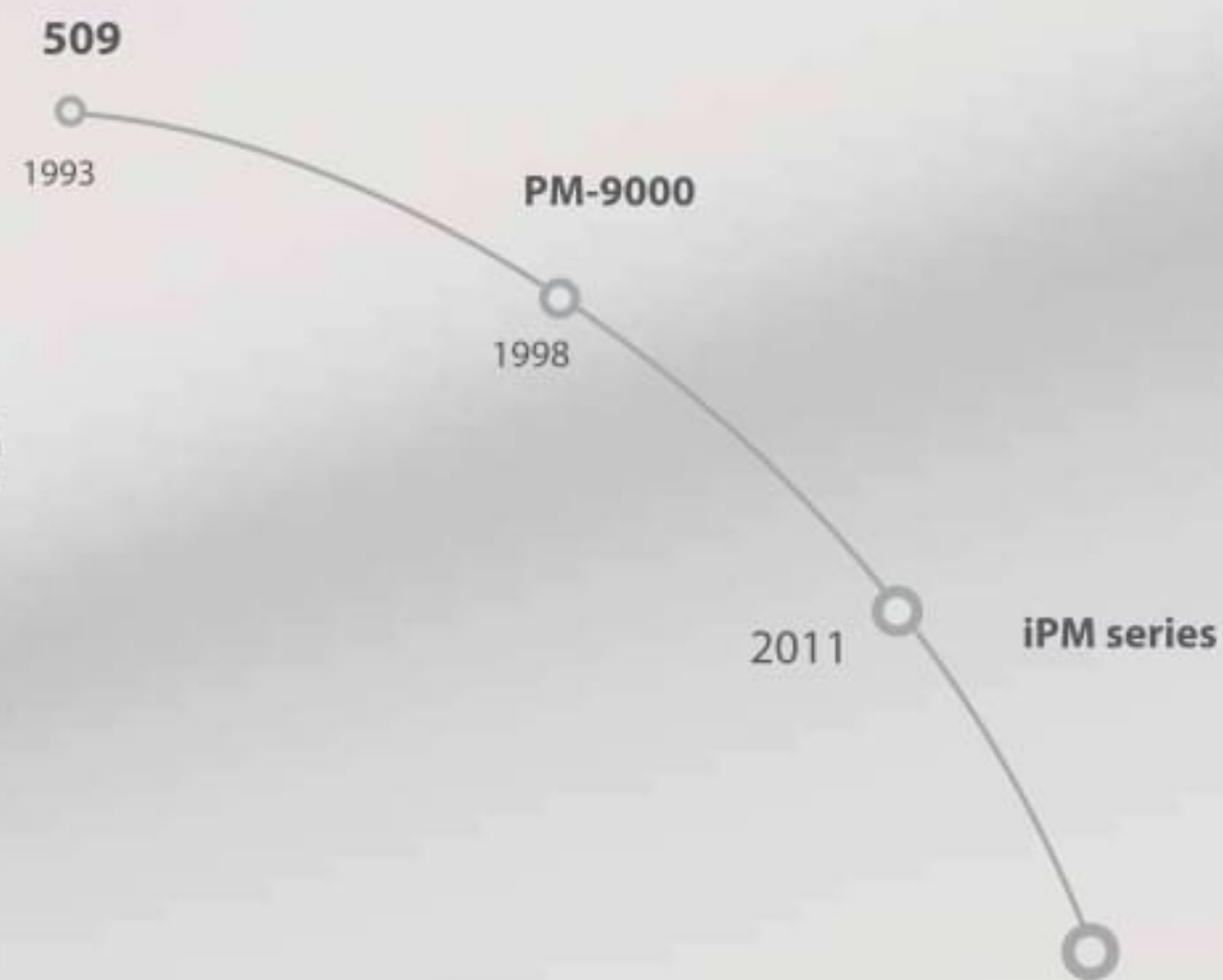


**Syringe & Infusion**  
Pumps with Docking  
Station

We believe that clinical expertise is at the heart of healthcare. It is the knowledge, skills and experience of medical professionals that are key to advancing innovation. Mindray works hand-in-hand with clinicians, to ensure our solutions are truly intelligent, relevant and accessible, so we can always put the patient before the equipment. We share our clinical expertise worldwide, to envision more possibilities in healthcare.



## 26 years of heritage and innovation



### ePM™ series

#### The Evolution of Simplicity

Mindray patient monitors, inspired by the need of customers, adopt advanced technologies and transform them into accessible innovation. The ePM delivers excellent visual experience, intelligent operation experience, accurate physiological measurement, smooth workflow, valuable and accessible IT solutions for various hospital settings.