



Quest of affordable cardiac care with public-private partnership: a way forward to the future!

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Distinguished guests and honorable members,
Greetings and a warm welcome.

As the President of IACTS, it is my privilege to felicitate you at this prestigious event—the 65th Annual Meeting of Indian Association of Cardiovascular and Thoracic Surgeons and 27th Annual Meeting of Asian Society for Cardiovascular and Thoracic Surgery.

Thanks a lot for your esteemed presence at this historic IACTS-ASCVTS collaboration. I also want to express my heartfelt thanks to the honored members of IACTS for electing me as President.

Presented at the 65th Annual Conference of Indian Association of Cardiovascular-Thoracic Surgeons, Chennai, February, 2019.

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My sincere thanks go to the Organizing Chairman of the conference, Dr. Rajan Santhosham, the Organizing Secretary, Dr. Rajan Sethuratnam, and the Treasurer, Dr. Sivakumar Pandian, for their untiring efforts to conduct this academic feast.

On behalf of IACTS, I welcome the esteemed ASCTVS governing council members—honorable President Dr. Shinichi Takamoto, Secretary General Dr. Yuichi Ueda, and other Council Members—who attend this conference as faculty as well as delegates. In recent years, our interaction has increased tremendously and has synergized scientific activity. I also welcome the faculty from the American Association for Thoracic surgery (AATS) and World Society of Cardiovascular and Thoracic Surgery.

They say that “good friends don’t let you do stupid things...alone.”

Dr. Rajan, a much-cherished friend through thick and thin and an efficient Secretary of IACTS, is a bright cardiac surgeon whom I met for the first time in a Minimally Invasive Direct Coronary Artery Bypass (MIDCAB) workshop in Oxford. No wonder our president-secretary nexus works seamlessly and sometimes without words.



Fig 1 Executive Committee of IACTS—2018–2019

Let me introduce our next President of IACTS, Dr. Shiv Nair, an erudite and humble man with great organizational skills. I am sure that he is going to make his mark during his presidential tenure. Welcome, Dr. Nair.

Dr. V.V. Bashi, who is taking over as the Sr. Vice President, needs no introduction. If a cardiac surgeon needs an aortic surgery himself, choice would probably be Dr. Bashi. Congratulations Dr. Bashi for your election.

We had Dr. Jagdish Khandeparkar, an excellent human being, as our joint secretary cum treasurer, who actually had to leave the post for some personal reasons. I am thankful to Dr. Zainulabedin Hamdulay for his kind acceptance of the mid-term post. He has worked in tandem with the team. I also take this opportunity to thank and appreciate the wisdom of all Executive Members for seamless business in the board room (Fig. 1).

We all are proud of our journal, *Indian Journal of Thoracic and Cardiovascular Surgery*. All of you must have noticed the proactive approach of its Editor in Chief, who is remarkably clear and discrete in his mind. He would pick up brilliant topics and become an instigator to investigator—Dr. O.P. Yadava is definitely a wordsmith, with his heart and soul in journal! Thank you Dr. Yadava.

We are happy that in this tenure, IACTS did so well; the legacy was sustained and benchmarks were set in through prolific conferences, workshops, CMEs, and policy statements, in the most apolitical manner, and now, the stage is ready for the next Executive Council.

Friends, I come from a village-based family of landlords who lost their fortune in pre-freedom era. Under the influence of my uncle, an Ayurvedacharya, I got the idea of pursuing Medicine and my medical dream started as early as 13–14 years of age.

My father, Mr. RP Mishra, now a centurion, within his limited means, did whatever he could to keep my dreams afloat. I thank my late grandmother, Mrs. Payasuni Devi, who adopted and secured my childhood with love and strict discipline, after my

mother left me for her heavenly abode at 6 months of my age. The journey from a small village, Jariyari, to a small city, Rewa, in the state of Madhya Pradesh, was much of a trial and tribulation, for a teen with dreamy eyes.

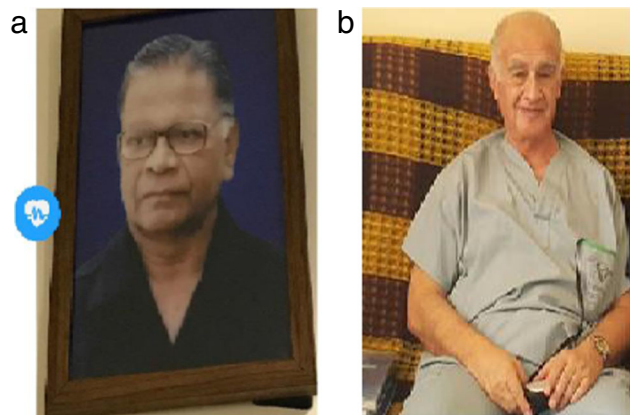
I would like to quote the famous Ethiopian athlete Haile Gebrselassie—“When you run the marathon, you run against the distance, not against the other runners and not against the time.”

I must say, every cardiac surgeon needs to be somewhat a marathon runner spiritually, to power through harsh times, only to imbibe the excellence. I also used to run an actual half marathon once upon a time!

S. S. Medical College, Rewa, M.P. was my alma mater. All my professors were accomplished and distinguished as teachers. When I held a dissected heart in my hand for the first time, it felt like destiny was in my hands!

As luck would have it, my HOD during my postgraduation in surgery was a cardio-vascular thoracic surgeon trained from Vellore—the late Prof. M.H. Kanhere (Fig. 2a). He strengthened my resolution to become a cardiac surgeon. Hence, despite my monetary condition, I moved to Delhi to join the Ram Manohar Lohia Hospital, as registrar. Ironically, I cleared the M.Ch. entrance theory exam for AIIMS with highest rank, but was rejected in the interview due to the absence of some documents. But as they say if you have a strong desire, the Universe conspires! Destiny took me to some other parts of the world so that I could realize my dream and become privy to the greatest political event in contemporary history—Gorbachev arrest, release, and subsequent disintegration of mighty USSR!

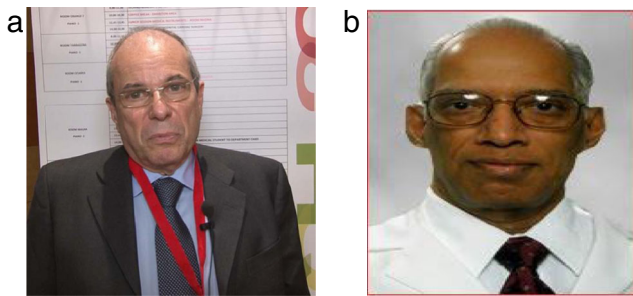
I did my Ph.D. in cardiovascular surgery from the Bakulev Scientific Center of Cardiovascular Surgery, Moscow, which has created a record, by completing hundred thousand open-heart surgery in 2016. It is known for much pioneering work such as Dynamic Cardiomyoplasty for the failing heart. It is time to pay tribute to my teacher and guide Dr. Victor Kertsmann who helped in shaping me as a cardiac surgeon



Late Prof M.H Kanhere

Dr . Victor Kertsmann

Fig. 2 My teachers



Prof. Antonio Maria Calafiore Dr V A Subramanian

Fig. 3 MIDCAB surgeons

with a fine scientific approach. He (Fig. 2b) is now practicing with Rambam Health Care Center, Haifa, Israel. I also acknowledge the presence of the director from the Bakulev Scientific Center, Prof. Leo Bokeria, a famous, accomplished heart surgeon who has done tremendous work on arrhythmia surgery. Welcome, Sir. A team of cardiac surgeons from the Bakulev Institute visited India in 1991 to perform a dynamic cardiomyoplasty at the Escorts Heart Institute in New Delhi. I was part of the team. I saw the institute and fell in love with it, at first sight! I would not outgrow its charm until October 2018 when the Manipal Group of Hospital would enter into Delhi and put faith on me to develop its cardiac program de novo!

The Escorts Heart Institute, started in 1987, was destined to become a premier stand-alone heart institute, and Dr. Naresh Trehan was going to be a star of medical field. I am thankful for the offer he gave me to join him as an attending surgeon in 1991.

I got married to Dr. Smita in the same year. She is a trained Pediatric Cardiologist and an activist for the Rights of cardiac patients. She is fighting for the consensus for the disability status of cardiac patients.



Dr. Sudhir Srivastava

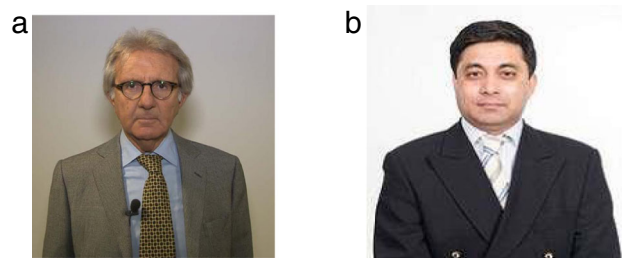
Dr. Randall Wolf



Dr. Gerhard Wimmer Greinecker

Dr. W. Randolph Chitwood

Fig. 4 Robotic surgeons



Dr. Roberto Di Bartolomeo

Dr. Malakh Lal Shrestha

Fig. 5 Aortic surgeons

I have a secret source of youth energy to motivate and inspire me for the last 19 years—my daughter, Paramita, now a young damsel, who bravely made her way to an Ivy League university, the University of Pennsylvania! Thank you for all your patience, even with having two busy doctors as your parents, and all the love you give us every day, even from miles away.

In 1996, we started the MIDCAB program at the Escorts Heart Institute with the technical know-how from Dr. Antonio Maria Calafiore of Italy (Fig 3a). Subsequently, we refined the MIDCAB program with the help of Dr. Subramanian from New York. In 1997, I got an opportunity to attend a meeting on MIDCAB at the John Radcliffe Hospital, University of Oxford.

Subsequently, I attended many more workshops on Minimal Access and Beating Heart CABG at the University Medical Center Utrecht, Netherland, a place known for the origin of Octopus Tissue Stabilizer, pioneered by Professor Cornelius Borst. Those days, the Escorts Heart Institute, under the leadership of Dr. Naresh Trehan, had become a path-breaking institute in bringing “state-of-the-art” surgical technologies to India. He subsequently established and became the Chairman and Managing Director of a multispecialty medical dream—Medanta—the Medicity!

We first started the use of voice-controlled single arm robot in minimal access cardiac surgery in 1998. Eventually, we acquired the “Da Vinci-Robotic-Surgical-System” in the Escorts Heart Institute in 2002 to start robotically assisted cardiac surgery. I acknowledge Dr. Sudhir Srivastava of Texas, USA; Dr. Randall Wolf of the University of Cincinnati Medical Center, Ohio; Prof. Gerhard Wimmer Greinecker of Frankfurt, Germany; and Dr. Randolph Chitwood Jr. of North Carolina, USA, for their support to develop our robotic program (Fig. 4a–d).

I thank Dr. Roberto Bartolomeo of Bologna, Italy, and Dr. Malak Shreshtha of Hannover, Germany, for helping me refine my skills in aortic surgeries (Fig. 5a,b).

For every surgical feat of a surgeon, besides the surgical skill, many hidden hands and committed brains are needed to tirelessly supervise and assist the tardy process of patient’s recovery! No doctor is complete without his team, and I

extend a very special and well deserving thanks to my team in the past and present. Thank you Dr. Sanjay, Dr. Amol Bhoje, Dr. Nitin Gupta, the anesthesia team led by Dr. Naresh Aggarwal, the nurse in charge OT and ICU-Sister Jainamma who is working with me for more than 20 years, coordinators, and the administrative staff of my team—all of them have worked tirelessly with me and contributed to my success. My Sr. Executive Coordinator—Ms. Neeta Jaswani—and office-attendant—Mohit—are part of our team's achievements and success in the Manipal Hospital Delhi.

India has a great history in the field of medicine, and it made a glorious entry, in cardiovascular surgery in 1946, when Dr. J. E. Shah repaired a post-traumatic left ventricular rupture in the KEM Hospital, Mumbai.

Subsequently, cardiac surgery cropped up in many cities like Vellore, Kolkata, Chennai, and Delhi, in the 1970s. India has had its fair share of distinguished cardiac surgeons in those days. Dr. Stanley John, Dr. Gopinath, Dr. K.R. Sethi, Prof. Venugopal, Prof. I. M. Rao, Dr. K.M. Cherian, Prof. I.K. Gujral, and Dr. G.B. Parulkar are few of the names of the architects of cardiac surgery.

It was in the year 1896 that cardiovascular surgery started globally. Ironically, it was a minimal access left thoracotomy approach for the repair of the coronary artery ruptured in a stab wound. Patient survived the surgery. The year 1996 was earmarked as 100th year and was felicitated with the stamp release in India (Fig. 6). On the left part of the design was the first ever successful suturing of a heart wound and on the right was a cardiac transplantation in progress.

India now has robust cardiac transplant and mechanical circulatory support programs like VAD and ECMO. Artificial mechanical heart is yet to arrive in our country. Stem cell-based cardiac cell regeneration methods, like cardiac patch, are yet to be adopted.

Epidemiological shift in diseases in India: rise of NCD/CVD amongst the aging population There is a dramatic change in the epidemiology, where ailments like infectious diseases and malnutrition are coming down by 50%. Life expectancy at birth is up from 58.3 to 65.2 years, leading to a rising proportion of aging population and cardiovascular diseases. We also have our share of congenital, rheumatic, and degenerative valvular heart diseases as well as myocardial and pericardial problems.

CTVS surgery: vanishing charm? We can be proud of our “state-of-the-art” surgical and interventional programs for all kind of cardiac diseases. However, the dream of “Health for All at An Affordable Cost” is eluding us. It may be attributable to the gross heterogeneity in the level of income and literacy and a few and far between centers which can provide equal class of skills. The patient-doctor ratio is far from ideal in India. Lately, 104 seats of CTVS, out of 552 super-specialty

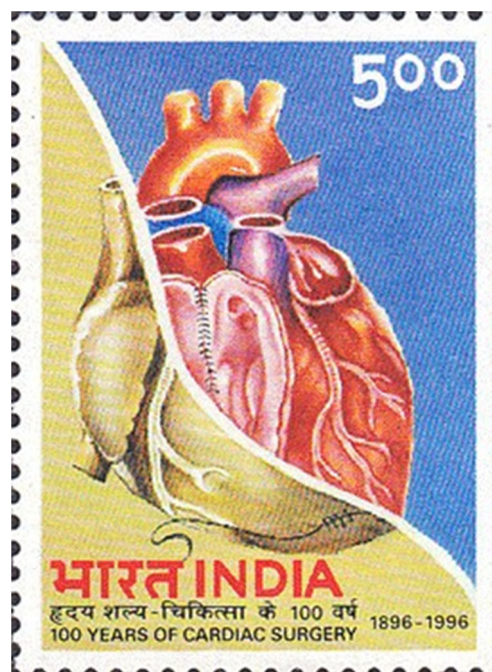


Fig. 6 One Hundred Years of Cardiac Surgery: 5-Rupee postal stamp released on 25 February 1996

seats, went vacant. Declining interest for CTVS amongst youngsters may be due to the prolonged training period, prolonged working hours, and need for a larger team and more investment in infrastructure. Some corrective measures to improve the situation have been taken in form of modification of the curriculum and introduction of a 6-year integrated residency program for CTVS.

The introduction of new operative skills, like intervention with stent graft and percutaneous valve therapies in hybrid lab, may bring in enthusiasm amongst the young cardiac surgeons.

Technology assimilation

IACTS needs to support advanced teaching programs so that we can get skilled doctors working in a congenial environment. Instead of being a cloning program, the teaching programs must be nurturing grounds for new ideas and innovations. We need to cater to the needs of a heterogeneous mass of patients likewise! Modern technology using digitalization, video-conferencing, telemedicine, and artificial intelligence are the only options to work on both accounts—grooming skills and caring for the patients.

Few modulations in the approach could be:

1. Robotic surgeries and endoscopic surgeries becoming norms rather than exceptions.
2. Avoiding on-pump surgeries and minimizing the use of blood products and shortening hospital stay.

3. Re-emphasizing lifestyle management with dietary variation and yoga.
4. Preventive health check-up to pick up cases early. A timely intervention is in itself a guarantee of less morbidity, mortality, and cost containment.

Friends, use of technical advancements to bridge the rich-poor and urban-rural divide can only be cost-effective, if they can be utilized by masses, like mobile and internet. Today, almost all lectures and live telecasts are available on Youtube for a prolonged period of time, which would benefit not only the new surgeons, but also the old surgeons, yet to hone new skills.

Need of database

There have been successful efforts to create a global database for the cardiac surgeries like STS database. We know the epidemiology of CVD, thanks to the data created by “Global Burden of Diseases” studies. We are working toward the national data banks, and I am hopeful that the coming years will be much fruitful. There may be concerns about privacy and the misuse of data, which need to be addressed.

Networking of healthcare facility: role of regional cooperation

I call for more collaboration between ASCVTS and IACTS toward the common goals to provide knowledge and training support, along with financial assistance, infrastructure, equipment, and supplies, and to support increased access to healthcare resources. A virtual university for the region to enable standardized medical, nursing, and paramedical education can prove to be a good solution.

I acknowledge Dr. Van Phan from Vietnam, Dr. Taweesak from Thailand, Dr. Jae-Won Lee from South Korea and Dr. Ozaki from Japan for mentoring the cardiac surgeons across the world in the field of valve repair. (Figure 7 a-d).

India as the medical hub

India has been an ideal place for excellent cost-effective medical treatments, particularly for the patients from SAARC countries, Africa, Middle-east, and Central Asia. India gets a huge number of trainees from these countries, who have the zeal to return back to their homeland and impart services to their respective communities. Professionals from India have visited these countries, performed surgeries, and conducted teaching workshops, whenever asked to. Due to the excellent work done by ISRO in satellite and space technology, India has built up the capacity for providing E-medicine in the

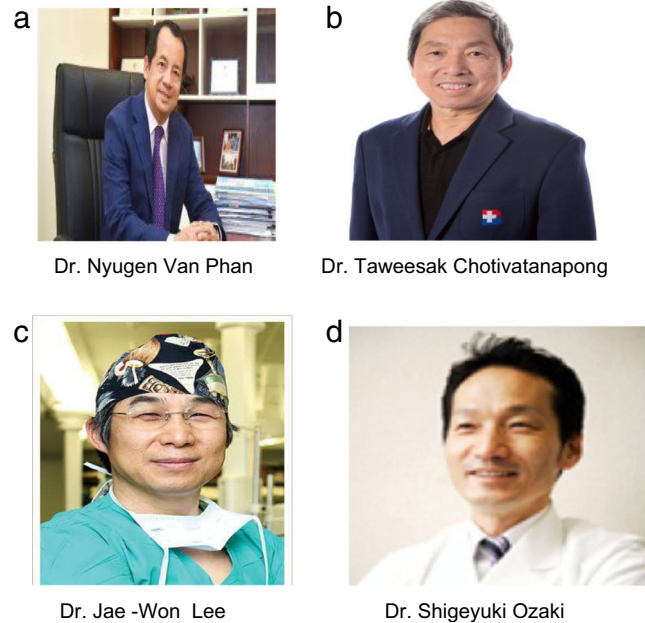


Fig. 7 World leaders in valve repair surgery from Asia

remotest corners of India and neighboring countries. Corporate hospitals like the Manipal, Apollo, Fortis, and Max have their E-medicine, E-ICU, and OPD programs, far and wide.

Private sector and government policies: challenges of partnership

All aspects of quality cardiac care need effort, time, and money

India is a leading developing nation which has participated in achieving the goals laid down under the Millennium Development Goals—2015, Vision—2020 and subsequently under the Sustainable Development Goals—2030. Recently, the Indian government has been appreciated for its effort in bringing down the cost of devices. India has also launched the “Ayushman Bharat” or “Modi Care” which is being hailed as the largest public sector health cover in the world! This claim has come from Lancet a journal having the second highest impact factor!

We need to analyze the situation that in recent times, doctors, particularly those in private hospitals, have been vilified by media, public, and politicians without realizing the fact that a private sector is a business module with a human face where medical facilities are clubbed with lodging and boarding at par with five-star hotels. Private sector has not only upheld quality care, but also imparted modernized training programs to Indian and foreign

trainees. Many of our faculty and delegates have been trained from institutes like the Manipal, Escorts, Apollo, Medanta, Max, and Sir Gangaram hospital. The world responded to the healthcare boom in India, by accepting India as the hub for medical tourism. It is appropriate to say that private sector single handedly has reversed the trend of Brain Drain into Brain Gain.

If a government wants to ride on populism by fixing one-sided pricing, it would compel private hospitals with quality practice to stay away. For example 90% of the high-end hospitals are not accepting patients from ESI and Ayushman Bharat Scheme.

Public-private partnership model: success

Public-private partnership (PPP) model was a clever policy to utilize the excellence of booming private tertiary care centers in India for the poor people. The government, thus, could have a win-win deal for every one because:

1. The government can avoid the investment and maintenance cost of infrastructure and protecting precious tax payers' money. India has high volume of patients, yet a low budget for health. For example, Maldives expenditure on health went up from the 124 US \$/capita in the year 2000 to 944 US \$/capita in 2015. While in India, in the same period, it increased only from 36 to 63 US \$/capita. With a high volume of patients, cost of logistics for development of infrastructure and maintenance of facilities is bound to be exorbitantly high. Obviously, the government would need to improve the salary of skilled medical professionals in order to retain them.
2. Private tertiary care hospitals get increased demand for facility: PPP increases the demand for the tertiary care medical facility by the addition of government-sponsored patients, though at a skewed profit margin. It also keeps the bed and staff engaged.

Public-private partnership model: failure

The private hospitals need capital to invest heavily on infrastructure, technology installation, manpower hiring, and future upgradation of technology. They are liable to pay high taxes on earning, which is unlikely of government hospitals. A narrow profit margin can be viable only to a certain extent. To begin with, the facility was provided to only government employees, negotiated at half price of contemporary package deals. While the cost of Dollar and equipments, salary of medical staff has been rising by at least 10% per year; no escalation cost was offered on CGHS packages. Besides, there are issues of heavy paper

work, delayed payments, and demand for facilitation money at the government offices to pass a bill.

Lately, the realm of government-sponsored schemes was increased to accommodate BPL patients and children below 17 years of age. However, the government tried to further nibble down on already skewed profits rather than increasing the health budget. There is no provision for cost escalation for comorbidities.

The policymakers need to ponder as to why in the last 10 years, most of the private hospitals known for their quality care are opting out of government schemes like CGHS and ESI. The government did not call for an enquiry committee, though huge number of patients who were beneficiaries of schemes remained unattended!

There is a negative sentiment amongst the private sector, as all the major players like Max/Fortis/BLK/Medanta have sold out their stakes to other multinational investors.

Advocacy of IACTS

In the view of heart diseases being the leading cause of deaths in India, it is recommended that government policies are restructured to extend affordable treatment solutions by:

Improving teaching and training facilities:

1. Facilitating research and development in cardiothoracic surgery and supporting more tertiary care centers.
2. Research guardian ship program—we need to pick up best research from thesis or papers presented by postgraduates in conferences and encourage them with sponsorship so that they can take their project further. We can make certain promising studies multicentric to better the represented sample population.
3. A bank for thesis subjects can be created, and group guidance by IACTS members can be given to facilitate the studies and registries.
4. More replication of workshops on hybrid technologies like wires and catheters.
5. Trainees under fellowship programs may be allowed to go and work in another center, in or out of India, for at least 2 weeks to enhance training experiences.

Technology transfer at regional and global platform

- Transferring effective technology from developed centers to centers of learning.
- Reducing import duties and levies on implantable coronary and other devices and machines imported for treatment processes.

Affordable cardiac care with PPP

- Enhancing insurance with lower premiums for affording health care including cardiac care to all, with global quality
- Adopting corporate policies to insure government employees, rather than under employee empanelment schemes
- Secondary insurance package to contain the escalated cost of extra hospital stay by paying 5–10% extra over the basic package

Cardiac disability document: a new beginning

A document containing criteria to classify functional capacity of patients with cardiac disease has been under consideration of IACTS executive board. This document once accepted, will be proposed to concerned ministry so that disability benefits can be extended to the children, adolescents and adults with low functional capacity.

Conclusion

Friends, public-private partnership is the only mechanism to cope with soaring healthcare costs in a tertiary care health sector, like in cardiac surgery. PPP model allows government to overcome institutional barriers and build the capacity without a huge infrastructural investment by letting private sector

to step in for a modest profit. Private sector in India has been a robust self-sustained system, and it has reversed the trend of medical tourism and in the process has caused “Brain Gain” rather than “Brain Drain.” However, lately, government policies and bureaucratic obstacles have led to negative sentiments amongst the private players.

Therefore, I make a clarion call for inclusion of voices of representatives from recognized and reputed private hospitals in the negotiation process. This will ensure that the essence of synergy is sustained bilaterally, to benefit the health of the society. Furthermore, by broadening the corporate insurance for government employees and BPL patients, huge amount of money can be conserved and cost of package can be optimized to a realistic value.

I see this as the most probable and pragmatic solution moving forward, and it makes me hopeful of seeing the day when surgical decisions would solely be dependent on medical condition, and not the economic status of the patient!

Long live IACTS!

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