Organisation of Pharmaceutical Producers of India

Commemorative Publication

Improving Access, Innovation & Reach of Healthcare in India

July 27, 2012, Mumbai.

Knowledge Partner

UC UNIVERSAL CONSULTING

India's Strategy Boutique

Conclave

Improving Access, Innovation & Reach of Healthcare in India

Inaugural Session

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- Mr. Rakesh Bhargava, Chairman, Fresenius Kabi Oncology Ltd.

Foreword

Mr. Tapan Ray
Director General, *OPPI*

The conclave on Improving Access, Innovation & Reach of Healthcare in India held in Mumbai on 27th July, 2012 organized by the Organisation of Pharmaceutical Producers in India (OPPI) is very timely as it provides an excellent opportunity for policy makers and various stakeholders including the industry experts to present their views on diverse aspects of growth of the healthcare sector in India. OPPI has always attempted to facilitate greater access and has encouraged research and development to provide quality healthcare solutions.

The presentations in the symposium highlighted the need to increase India's healthcare expenditure from 1.2% of GDP, reduce the burden of out of pocket expenses which is as high as ~70%, drastically improve healthcare infrastructure on a globally comparable level, form a collaborative approach involving all stakeholders and focus on a few specific areas within innovation to create an R&D centric base.

The eminent speakers at this conclave range from policy makers at the government level, World Health Organization, pharmaceutical industry, Industry associations, Insurance bodies, reputed consulting firms and healthcare facilities. Their thought provoking views, outlook and brainstorming sessions on the pertinent matter has definitely enriched the members at the conclave and will facilitate improvements in the healthcare sector.

We hope that you will find this publication informative and useful.

Tapan Ray

Director General

OPPI

Executive Summary

India is currently ranked the world's 11th largest economy by nominal GDP and third largest by Purchasing Power Parity (PPP) and has seen strong economic growth and rising per capita income in the last decade. However, India's continued economic growth will be at risk unless quick action is taken to improve the health of its growing population.

Although India has made substantial progress in key healthcare indicators such as, infant mortality and maternal mortality, our distinguished speakers have highlighted a set of key challenges that must be overcome to improve access and reach in an equitable manner across states, urban and rural areas, income groups and education, gender and caste strata. The most frequently spoken of at the conclave were the following:

Poor public health services - The government provides only a part of actual healthcare services, the quality of care varies significantly across states and there are real challenges in providing basic healthcare in rural areas.

Inadequate healthcare financing - Insufficient government funding for healthcare which at 1.2% of GDP ranks India 178 out of 190, countries coupled with low insurance penetration that does not cover outpatient care and medicines leads to ~70% of healthcare expenditures being borne out of pocket and even drives people into poverty.

Dual disease burden - India's infectious disease burden is inadequately controlled while there is an emerging epidemic of chronic diseases.

Shortage of healthcare human resources - A shortage of close to 20,000 doctors and 13,000 nurses at primary health centers and community health centers has significantly impacted the quality, efficiency and cost of treatment, this is further compounded by imbalances caused by 80% of India's medical personnel based in urban areas.

Poor healthcare infrastructure - India has only 0.9 beds per 1000 population versus a minimum requirement of 2 beds per 1000 population, countries like Sri Lanka and China have close to 3 beds per 1000 population.

Among the priorities and aims for improvement in healthcare access and reach, the following themes were highlighted by the eminent speakers who comprised a mix of policy makers at the government level, WHO, pharmaceutical industry, industry associations, insurance bodies, reputed consulting firms and healthcare facilities.

Improving access to medicines - The governments intent to spend INR 26,000 over a 5 year period on a free medicines scheme was welcomed, which will increase public expenditure on medicines from 0.1% of GDP to 0.5% of GDP, by increasing the public procurement of medicines through an efficient stocking and distributing based central procurement system at a state level, similar to that in Tamil Nadu.

Increased government expenditure on healthcare - The government intends on increasing public expenditure on healthcare from the current level of 1.2% of GDP to at least 2.5 % of GDP by the end

of 12th five year plan and eventually increases it to 3% of GDP by 2022 to universalize healthcare services. It was proposed that the government should ensure the even distribution of healthcare expenditure between states by allocating state proportional budgets.

Creation of healthcare infrastructure - Initiatives spoken of were the upgradation of primary health centers and making them available 24x7, upgradation of community health centers to bring them at par with the Indian health standards, and mass recruitment of ASHA workers, doctors and nurses. India also needs to open ~600 medical colleges and ~1,500 nursing colleges to meet the global average of doctors and nurses.

Support the Universal Health Coverage (UHC) agenda - The UHC proposed a basic health package with no user fee that will focus on ensuring that expenditures on primary healthcare should account for at least 70% of all healthcare expenditure. This will ensure that the demand for secondary and tertiary healthcare services and correspondingly healthcare costs reduce substantially.

Focus on innovation in healthcare – There is an urgent need is to facilitate the adoption of innovative technologies and products in the Indian healthcare system to improve access and reach.

A range of initiatives were spoken of ranging from eco-friendly toilets known as Bio-digesters created by DRDO for the rural poor, thus improving sanitation to leveraging technologies such as a phone based screener, which uses a needle free system which does not pierce the patient to detect anemia and other technologies like Tele-ophthalmology and Tele-mentoring that, with the advent of the tablet, handhelds and other mobile devices equipped with 3G facilities are gaining strong momentum.

Improve health insurance penetration - There is a strong need to bring all state specific schemes under the UHC and bringing improvements to the government health insurance scheme RSBY. One such example discussed was the Rajiv Gandhi Jeevandaye Arogya Yojana in Maharashtra which built on the learnings gained from the Rashtrya Swasthya Bima Yojana and the Andhra Pradesh Arogyasari. The RGJAY has focused on improving the monitoring systems, reserved certain procedures for only government hospitals to ensure flow of money in the system and put in place various efforts to keep the administration cost low, eg: where unclaimed amount has to be returned to the scheme.

It was also suggested to improve penetration of insurance in the tier 3 cities and semi urban areas, companies should leverage bank branch network, post office and micro finance entities.

Focus on preventive measures rather than curative practices - Drawing from international experiences to reduce the burden of healthcare on the state which indicate that India must focus on building a preventive healthcare approach and outlook. Programs must be devised paying lots of attention to health checkups that incentivize people to keep up to the standards of wellness thus diminishing the need for medical treatment.

There was a unanimous view that the key to improving healthcare access and reach will be where Government, Non-Governmental Organizations, Corporate sector, Pharmaceutical companies, doctors, policy makers and various other stake holders collaborate and enhance their knowledge level in finding innovative ways to improve access to healthcare.

In summary, many of the speakers echoed the quotation cited by Dr. Srinath Reddy, “If we want to create a future, we cannot extend the present”.

The agenda with regard to innovation at the conclave was focused around how India could become a global hub for R&D and how it could become a potential leader in Biotechnology.

With regard to India as a centre for R&D it was felt that while India has made some steps forwards with the % of global R&D invested in India increasing from 0.1% to 1.1%, the main driver for this increase has been labour cost arbitrage which may not really count as innovation and is not something that may be a sustainable proposition.

Asking the question of what India is good at and where it can build competitive advantage Bart Jannsens, a Partner at BCG spoke of India’s advantages in the form of a large, diverse and representative patient population and key areas where India is strong such as Information Technology (IT), Engineering and Clinical Research.

With regard to India becoming a potential leader in Biotechnology it was suggested that the industry has been short sighted and is unable to think ahead of the success gained in the generic space.

It was felt that a step in the right direction and the creation of a new paradigm for pharmaceutical R&D innovation was the Indian government’s approval of Ranbaxy’s anti-malarial drug, a drug developed with cost-efficiencies at a price that’s affordable. It showcases how an emerging country can play a key role in developing drugs for neglected diseases.

A series of recommendations were made which would allow India to become a global R&D hub and a leader in Biotechnology. It was suggested that India should focus where it can build a competitive advantage and focus on the convergence of life sciences with the three disciplines India is strong at namely IT, Engineering and Clinical research. This could throw up opportunities in areas such as Bioinformatics, Bio-nanotechnology, genomic databases and translational research.

A general thought on overcoming the hurdles that derail progress and of creating a business environment that is conducive to investment, particularly innovation by reducing uncertainty as well as reducing policy delays and policy paralysis. An example cited was how as a result of India not creating a conducive environment for clinical development its share in new started trials dropped from ~ 36% in 2005 to ~ 20% in 2011.

Finally they suggested India needs to move beyond the legacy of success derived from the generics industry, focus more specifically on local needs and public health issues, learn to coordinate and collaborate with other Indian firms to take advantage of scale and pooling of resources and capitalise on the spirit of entrepreneurship. There has been consensus that the Indian Government has recognized the fact that there is a great opportunity for innovation in India and is working towards this in its 12th 5 year plan.

Organisation of Pharmaceutical Producers of India

Inaugural Session

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Welcome and Opening Remarks

Mr. Tapan Ray*
Director General, OPPI

Good Morning Ladies and Gentlemen

Welcome to you all at the 'OPPI Conclave' for a day long deliberation on Access, Innovation and Reach of Healthcare in general and Pharmaceuticals in particular by the national and international experts.

Our special welcome to the Chief Guest, Shri Dilsher Singh Kalha, Secretary , Department of Pharmaceuticals for carving out some time from his busy schedule to address us this morning.

Our hearty welcome goes to one of the key architects of the healthcare reform initiatives in India, Dr. K. Srinath Reddy, world renowned cardiologist and the President of Public Health Foundation of India (PHFI). We are honored to have you with us Sir.

We are privileged to have with us the representative of the World Health Organization (WHO) in India, Dr. Nata Menabde. We cordially welcome you madam to this Conclave and eagerly look forward to listening and taking note of the WHO perspective on healthcare access in India.

I welcome all our speakers of the conclave and the vibrant media of our country and all the members of OPPI for your kind presence.

Our Inaugural and the first Business Session is on 'Access to Healthcare'. Despite so much of stringent Government control, debate and activism on the affordability of modern medicines in India, on the one hand, and the success of the Government to make medicines available in the country at a price, which is cheaper than even Pakistan, Bangladesh and Sri Lanka, on the other, the fact still remains, a large percentage of Indian population does not have access to affordable modern medicines, as compared to just 15% in China and 22% in Africa.

The moot question therefore arises, despite all stringent price regulatory measures by the Government and prolonged public debates over nearly four decades to ensure better 'affordability of medicines', why then 'access to modern medicines' has remained so abysmal to a vast majority of the population of India, even after sixty five years of Independence of the country?

While India is making reasonable strides in its economic growth, the country is increasingly facing constraints in providing healthcare benefits to a vast majority of its population with ballooning 'Out of Pocket (OoP)' expenditure of around 78 per cent of its population.

This is mainly because of the following key reasons:

- Low public spending on health at around just 1.1 percent of the GDP
- Fragile healthcare infrastructure
- Very low penetration of health insurance
- Poor healthcare delivery system
- Absence of 'Universal Health Coverage'

As we know access to healthcare comprises not just medicines but more importantly the healthcare infrastructure like, doctors, paramedics, diagnostics, and health centers/hospitals. In India the demand for

these services has outstripped supply. However, the key focus of the government has still remained primarily on access to medicines. There is an urgent need to have a holistic approach in developing adequate healthcare infrastructure, efficient delivery systems for medical supplies and creation of a talent pool of healthcare professionals and paramedics, to ensure access to healthcare for all the citizens of the country.

OPPI has undertaken an important study on 'Enhancing Healthcare Access in India'. The Study aims to identify the key barriers in accessing healthcare today, what needs to be done to eliminate these barriers and develop a roadmap for improving healthcare access in India.

The second Business Session is on Innovation. Healthcare industry in general and the pharmaceutical sector in particular, across the world, have been experiencing a plethora of innovations not only to cure and effectively manage ailments to improve the quality of life, but also to help increasing overall disease-free life expectancy of the population with various types of treatment and disease management options. Unfortunately despite all these, over half the global population is still denied of basic healthcare needs and support.

It is encouraging to hear that the Government of India is working towards this direction in a more elaborate manner in its 12th Five Year Plan.

In business session II, titled: Moving Ahead in the 'Decade of Innovation', two global experts will enlighten the august audience on 'Making India a Global Hub for R&D and Making India a Leader in Biotechnology'.

Innovation, as is widely acknowledged, is the wheel of progress of any nation. This wheel should move on and on with the fuel of IPR, which is an economic necessity of the innovator to make the innovation sustainable. Moreover, pharmaceutical innovation is a very expensive process and grant of patents to the innovators is an incentive of the government to them for making necessary investments towards R&D projects to meet unmet needs of the patients. The system of patent grants also contributes to society significantly by making freely available patented information to other scientists to improve upon the existing innovation through non-infringing means. By unleashing the power of innovation, India will also be able to create socio - economic transformation, which is a critical step towards developing India as a knowledge economy.

Thus, innovation being one of the key growth drivers for the knowledge economy, creation of innovation friendly ecosystem in the country calls for a radical change in the mind set-from 'process innovation' to 'product innovation', from 'replicating a molecule' to 'creating a molecule'. A robust ecosystem for innovation is the wheel of progress of any nation.

Considering all these, our Prime Minister has very aptly declared 2010-2020 as the "Decade of Innovation".

The third Business Session before the Panel discussion will be on 'Reach of Healthcare'. While India is making reasonable strides in its economic growth, the country is increasingly facing constraints in providing healthcare benefits to a vast majority of its population.

We find some good initiatives though, especially for population below the poverty line (BPL) with *Rashtriya Swasthya Bima Yojana* (RSBY) and other health insurance schemes through micro health insurance units, mostly in rural India. It has been reported that currently around 40 such schemes are active in the country.

As the disease pattern is undergoing a shift from acute to non-infectious chronic illness, the reach of treatment is becoming even more challenging.

Currently, health insurance schemes only cover expenses towards hospitalization. However, medical insurance schemes should also cover domiciliary or inpatient treatment costs and perhaps loss of income along with hospitalization costs, as well.

We shall know much more about it from the experts during their deliberations.

OPPI Conclave will conclude with a stimulating 'Panel Discussion' on the theme of the Conclave: 'Improving Access, Innovation & Reach of Healthcare in India', which will help us charting the Way Forward.

I am sure you all will enjoy the Conclave and find it very useful… but do not miss the opportunity of interacting with the galaxy of speakers to enrich ourselves with their perspectives on this important subject.

Thank you.

**** Mr. Tapan Ray***

Mr. Tapan Ray is the Director General of the Organisation of Pharmaceutical Producers of India (OPPI).

Mr. Ray has over 30 years' experience in the Pharmaceutical and Life Science Industry and has held various senior positions in India and abroad like Global Commercial Strategy Manager, Glaxo plc. U.K.; Director in the Board of Glaxo India Limited and Managing Director, Abbott Laboratories India Limited; Chairman of the Board of Shasun Pharma Solutions Ltd., Northumberland, England, U.K. He was also the President of OPPI.

Mr. Ray is Member of the Council, International Federation of Pharmaceutical Manufacturers & Associations (IFPMA), Geneva. He represents various Committees of the Government and Industry Associations like, FICCI and CII. He is also a Member of the Governing Board of Institute of Intellectual Property Studies (IIPS) and is a visiting faculty in India's top Management Institutes.

Mr. Ray holds a B.Sc. (Honors) and a Master's Degree in Geology from the University of Calcutta and was a National Scholar. He is an Alumnus of the Indian Institute of Management (IIM), Ahmedabad.

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Inaugural Address

Mr. Ranjit Shahani*
President, OPPI

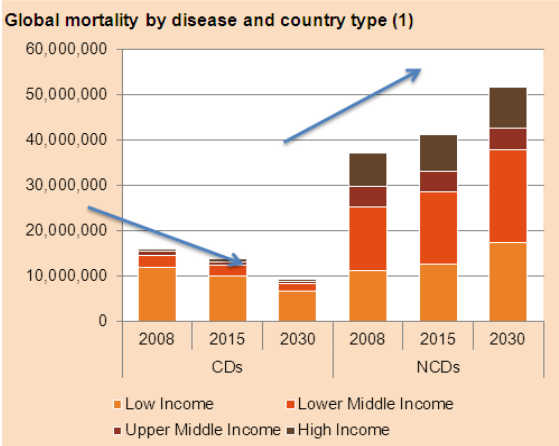
Mr. Kalha, Dr. Reddy, Dr. Menabde and my dear friends from the industry. It is always a pleasure to be here with you.

Improving Access, Innovation and Reach of Healthcare in India is the key to achieving Universal Healthcare for all and has many dimensions. Today's agenda will hopefully help bring out these dimensions and point us in the direction of some solutions. The question that is often asked is what is access? One definition by Parker explains access as: "The ability to reach, obtain or afford entrance to services."

Today, health is not uni-dimensional; health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

We have to look at the context in totality. As global population is growing, the disease burden due to non-communicable diseases is also growing at a fast rate, especially in the poor income segments. This has become a cause for great concern in India. In addition, the burden of communicable diseases, though on the decline, remains a concern.

Life expectancy has more than doubled in the last century; however, the quality of life has not increased. In the 19th century, life expectancy was on an average, 31 years of age, by that count, none of us here in this room would be alive today. By developing access to clean drinking water life expectancy rose to 48 years. With the advent of an advanced Pharma industry, life expectancy has risen to 68 years. So, we must pat ourselves a little bit on our back that we have contributed to life expectancy.



However, despite these improvements, there are huge disparities. Today, a girl born in Germany is destined to live a 100 years, but a girl born in Botswana may live to be only 35. This has to do with a multitude of factors as there are huge challenges at play globally.

The complexity of their causes of poverty as well as the inter dependencies with health deficits make "simple" solutions impossible. So, whilst there is general agreement that health matters and that good health is certainly desirable for all, there is a pronounced pluralism of opinions with regard to what ought to be done and by whom to ensure poor people's health. And the rhetorical question I ask here is, "are the poor the wards of the state, or of the pharma industry, or of the hospital?"

I think multiple stakeholders need to come together to solve this very difficult problem, particularly when we have such a large population living on an income of USD 2 or

less; there are issues of basic needs, such as food, health comes much later. So, there are big challenges as we go ahead.

Poverty and health we all know create a vicious cycle, and there is a fundamental inter relationship between the 'state of poverty' and the 'state of health' of a nation and its citizens. Poor health is not only a component and consequence of poverty but is also the cause of it. An individual's state of health determines the person's ability to work and therefore earn. For poor people the health of their bodies and minds is a critically important asset, and often their only asset.

Men and women were sick because they were poor; they became poorer because they were sick and sicker because they were poorer: we all know this vicious cycle. The state of health depends not only on having a sense of good personal hygiene, safe drinking water, adequate food and lifestyle choices, but also on a host of other factors which shows that multiple stakeholders need to come together to manage this stark reality.

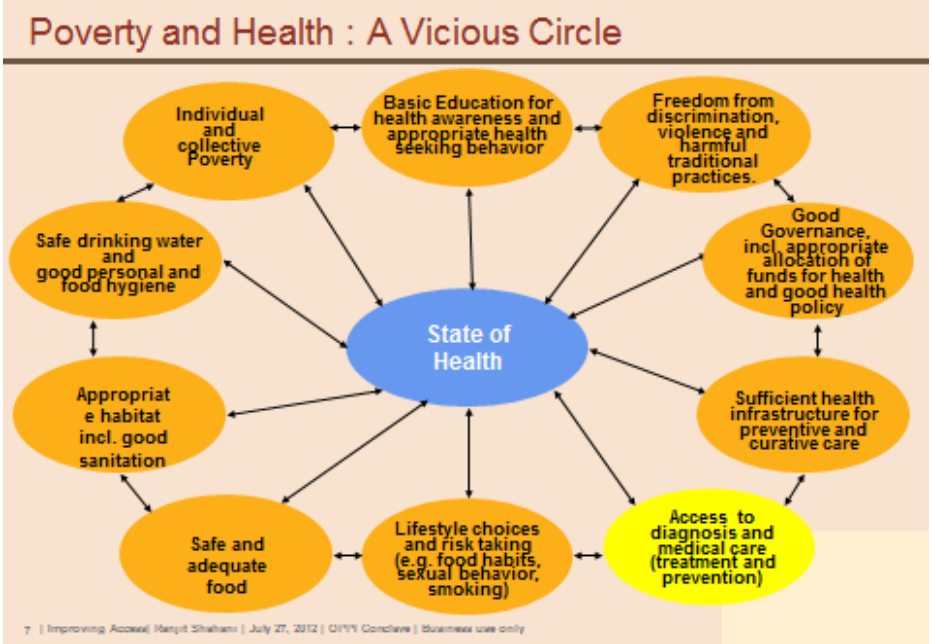
Of course, the developing world suffers the most. The reality check is sobering: The human cost of 2.5 billion people facing a daily struggle for survival is high in terms of mortality and morbidity. This can be easily demonstrated by two of the most significant health indicators which are infant mortality and maternal mortality. Nearly 10 million children die before they reach their fifth birthday and 500,000 women succumb to preventable illnesses during pregnancy and complications during childbirth. Low-cost interventions are available that could prevent at least two-thirds of these deaths but access to these facilities is poor.

There are differences in the factors leading to disease, disability or death between the developing and developed world. The inter-relationship between poverty and health is reinforced when you notice that factors such as unsafe water, sanitation, and hygiene and iron deficiency are negligible causes for concern in developed countries, yet they are the chief reasons for the atrocities in poor countries. For iron deficiency there is a low cost intervention which could dramatically change the lives of thousands of people but access is an issue. India bears the highest burden of diseases as we all know, both in terms of mortality and morbidity, and also in terms of the lowest investments in healthcare.

Clearly, there are many choices, but developing new, scalable and high impact approaches are important. We hear a lot about tele-medicine, chip in the pill and many other devices, but to make an impact these need to reach the huge population that currently has no access.

Millions of patients benefit from what the pharmaceutical industry does, we are not just talking of providing medicine at a cost and marketing it, but also a lot of differential, innovative pricing for expensive medicines, donation programs, vast research and development investments in tropical diseases and the tremendous support for broader health and development goals across the world.

Just by improving access to vaccines, up to 10.5 million lives could be saved every year worldwide. In India, we all know the availability of vaccines is at a very low cost and yet the penetration is very, very dismal.



This continuous battle for the fulfillment of the right to health has to be fought on many fronts. The right to health goes much beyond access:

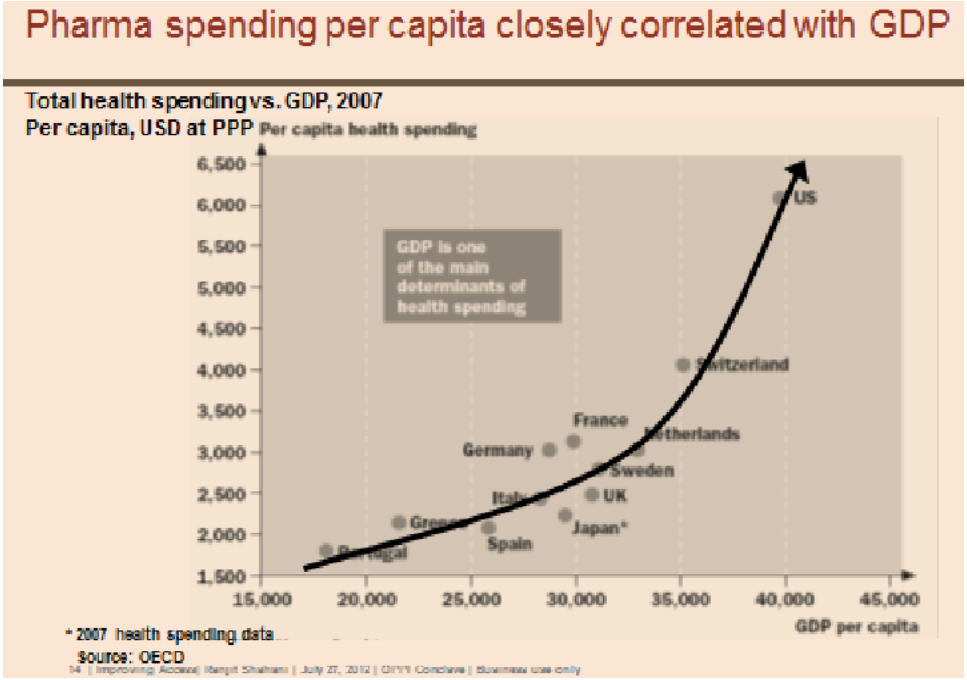
Besides safe drinking water, sanitation and family education, it is also about delivering medical interventions and cost effective treatments, to go not only to the better off but to the poorest and well into the interiors of India, and many non-medical health interventions which includes the training of medical staff where simple foot soldiers can make a big difference.

There is a clear correlation between per capita spend on health and GDP. As our GDP increases, the expenditure on healthcare will go up and therefore access should also improve. So, there is hope on the horizon that India with its current GDP growth is directionally headed in the right direction. Income levels which you see from 2005-2025, is an example of the growing middle and bottom segments of the population pyramid – As prosperity increases health will increase so life expectancy will also increase.

During the course of today we will discuss the multiple barriers to access which affect global health. We will also talk about solutions as we go forward, for we certainly need more and more stakeholder management and partnerships. A lot of it has to be truly collaborative, and involves partners such as the World Health Organization, United Nations agencies and Non-Governmental Organizations. We all have to come together; there cannot just be a single or one dimensional approach to this.

Just to summarize, what I have said and strongly feel is:

Access to healthcare has three fronts and these can be summed up as find new and better treatment, make these treatments available and more importantly create an adequate healthcare infrastructure.



Research-based companies have a long legacy of corporate responsibility in India, with countless contributions to the improvement of health outcomes in the country. We are working every day around the clock to find new treatments and cures for society's greatest health problems. The way forward is really through the creation of infrastructure, expanding awareness of healthcare and greater use of technology.

"We are getting there, we are not there yet, but I am confident that with the support and help of all stakeholders, we will manage it!"

Thank you for your time.

**** Mr. Ranjit Shahani***

Mr. Ranjit Shahani is Country President responsible for the overall operations of the Novartis Group of Companies in India. He is also the Vice Chairman & Managing Director of Novartis India Limited. A Mechanical Engineer from IIT Kanpur and MBA from JBIMS, Mumbai, with over three decades of distinctive senior managerial experience in national and global MNCs and a proven track record of success in creating sustainable shareholder value within local and internationally competitive environments, covering a range of industries, including Pharmaceuticals, Petrochemicals, Synthetic Fibers, Specialty Chemicals, Dyes and Intermediates, he has extensive functional knowledge of Mergers and Acquisitions, Off shoring and Outsourcing ventures and Research & Development Processes. Mr. Shahani is President, Organization of Pharmaceutical Producers of India (OPPI), President of Swiss-Indian Chamber of Commerce (SICC) and past President of the Bombay Chamber of commerce and Industry.

Address by Chief Guest

Mr. Dilsher Singh Kalha*
Secretary, Department of Pharmaceuticals, Government of India

OPPI president, OPPI members and my dear colleagues, it gives me immense pleasure to address this gathering

On my way to the conclave, I was told that usually there are not many government representatives addressing the conclave. However, I realized this is not the case this year. Several of my colleagues were scheduled to speak later in the day. I was keen to understand, why this is the case this year. I was informed that to have a meaningful discussion on the pertinent issues strong government participation is imperative. I am glad to share this platform.

Access, Innovation and reach are three critical issues that outline the agenda of this conclave. I presume the discussion on access would be an independent one whereas the role of innovation in bridging the gaps in access to healthcare would be dealt in the latter sessions.

We know that access to healthcare is a major issue gripping the nation today. Our new president in his inaugural address to the nation pointed out hunger as a major problem that our country faces today. I feel that hunger represents just not an empty belly but a whole lot of things which include poverty, under nourishment, death and loss of earnings. The consequences of hunger are much larger than the above-mentioned; it deprives a person of his basic needs and that gets reflected in lack of education and opportunities. The gravity of the issue of access can be very well understood in the context that India is still struggling to cope with the issue of hunger.

I agree with Mr. Shahani that health and healthcare do not just include medicines and hospitals. One has to critically recognize other aspects such as safe drinking water, adequate supply of nutrition and food, improved sanitation and above all education. Some of the barriers to access are closely related to the issues just stated above. I do not regard myself as a “guest” in this conclave; in fact my concerns are in unison with all of you present here. Keeping in mind the emphasis given by the Prime minister on inclusive growth, I believe that the healthcare sector displays a stark rural urban disparity.

When we talk about the indicators affecting healthcare or about the barriers to access, we find that the crux of the problem lies in delivering primary health care. These problems though present in urban areas become more prevalent in rural areas because of lack of geographical access. When trying to answer the question as to whose wards these poor people are, I can say that they are not a particular company’s or the pharmaceutical Industry’s wards rather they are the wards of the nation.

There are a number of problems that we face. There is lack of even the most primitive means of communication in some parts of India. There are some places in India where even the armed forces would not go. So making sure that health facilities reach the population in such areas is a mammoth task. Even in areas where there is adequate access to healthcare, there isn’t much statistics to show whether the population can afford it. In urban areas, one may have to travel for a shorter distance than someone in a rural area, but does accessibility guarantee affordability is a question that

remains unanswered. Hence the issue of access cannot be looked upon as a standalone issue; instead it should be looked upon as a means to evaluate the progress that the country has made.

I would also like to take this opportunity to clear some of the misconceptions in the public about the working of the government in the healthcare sector. I often hear people say that the government is sleeping. Let me assure you that this is not the case. Although I concede the argument, put forth by many, that the government could have done better, allocated more resources to the health and education sector and improved upon the inefficiencies in the system, It is not that the government has not tried and this is evident from the fact that the health profile in general has improved over the last decade. The Government has put in considerable efforts ranging from health policy initiatives in the year 2002 – 2003 to coming up with schemes like National Rural Health Mission (NHRM) targeted specifically at improving healthcare in the rural population. India's IMR (Infant Mortality Rate) and MMR (Maternal Mortality Rate) figures still portray a horrific story as the ratios are worse than those of the sub Saharan region. But the efforts put forth by government have significantly arrested this trend. The government has repeatedly missed the target goals and may continue to miss it in future but that does not stop it from putting in the desired effort. An example of the above mentioned scenario is the improvement in the IMR and MMR figures over the past decade. The Infant Mortality Rate has come down from 64.9 per 1000 in 2000 to 47.57 per 1000 in 2010 whereas the Maternal Mortality rate has come down from 32.7 in 2000 to 24.0 in 2010. Also the program to provide clean drinking water has ensured that most of the country has access to drinking water.

The crux of the entire talks and discussions on right to education, right to food and nutrition, right to healthcare, development of human resource is the need to focus on improving access to education and health. This is evident from the draft proposal of the 12th five year plan, whose emphasis is largely in the sectors of health and education.

There is never a straight forward answer as to how much government expenditure is sufficient to meet the healthcare needs of the country. The current expenditure of the government on healthcare sector is close to 1% of GDP. An increase in the allocation of resources from the government may not be the answer to the dismal state of healthcare in India. In spite of criticism, initiatives like NRHM (National Rural Health Mission) continue to meet their desired objectives. But there is a need to focus on preventive care and promote it on a larger scale in rural areas.

There is a shortage of talent in the Indian healthcare sector. Currently India needs close to 20000 doctors and 13,000 nurses. One of the objectives of schemes like NRHM is to involve local communities to be a part of the healthcare system. At this point I want to share one of my personal experiences. As part of the work related to the planning commission, I visited some of the states and got an opportunity to see the ground realities of some of the schemes implemented by the government. In spite of the fact that many a times resources were scare and the processes were inefficient because of the presence of numerous departments, there was no dearth of motivated ASHA (Accredited Social Health Activist) workers. Another worrying issue is that, despite greater prevalence of non-communicable diseases, Tuberculosis, malaria and cholera are still prevalent in India. Though architectural correction of the health sector is the key objective of the NRHM, it is to be carried out through integration of vertical programs and structures.

Whether the impact of health policies or the results of government efforts has truly been as desired, is debatable. I stand here today not only representing the government but also assuring the pharmaceutical fraternity that the government is aware of the realities. Further, the government interventions go beyond just lowering the price of medicine. The government has adopted a more holistic approach. However, let me concede that we would love the results to be better than what appears to be generally on paper.

I would now like to draw your attention towards some of the barriers that the industry faces today.

Education and awareness are major concerns and are interrelated. It is possible to get the physical infrastructure in place but to make people aware of its presence becomes a challenging task. There are enough statistics available to prove this. The importance of education was very well emphasized by Dr. Shahani, in his speech. I would like to quote some of the statistical data provided earlier by him which brings out a stark reality in India today.

- Infant Mortality Rate (IMR) is 50% higher in rural areas than in urban areas
- Children whose mothers have at least 10 years of education are twice as likely to survive than children whose mothers are uneducated
- Only 23% of women take folic acid, which incidentally is available for free
- Significant number of deliveries takes place at home despite having schemes like Janani Surakhsha Yojna, a safe motherhood intervention under the National Rural Health Mission (NRHM) being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women. Many still believe that it is safer to have a delivery at home than in a hospital

I strongly believe that education is the key to increasing awareness. Education and improved reach would result in an increase in awareness and as a result the rural health mission would stand a better chance of delivering the desired results.

Another barrier to increasing the access of healthcare has been the diagnostics ability and the positive will of the person who diagnosis. There are some indications suggesting an undesired scenario of over prescription of both diagnostics and treatment. There also exists the underutilization of the widely available diagnostic tools. Increase in awareness among the users about these tools can go a long way in helping overcome the barriers to access.

Without going into the statistical details, there exists an uneven distribution of healthcare expenditure between urban and rural areas. In this context, I would like to share a personal experience. I come from Punjab. The economic conditions of Punjab are considered better than several other states. CMIE has continuously rated Punjab's infrastructure as the best in the country. Despite the economic well-being, the need for affordable healthcare remains an issue. I once enquired with a commission agent, also known as RTI agent, responsible for marketing of agro-produce, what has he experienced with farmers. His response was, farmers having greater than 10 acres don't come to him, while farmers owning less than 5 acres line-up outside his house. These small acreage farmers come to him to get their children treated in hospitals. They have limited options when somebody falls ill in their family.

The out of Pocket expenditure on health in the country is close to 75% of the total healthcare expenditure. According to NSSO, one out of three people who are hospitalized are forced to borrow money or sell assets to pay for the expenditure. The survey also points out that because of high OOP expenditure; 20 million Indians are pushed below poverty line every year because of loans. An even graver concern is the unreported ones who can't even borrow money. Not many people would be willing to lend to these people. In addition to this there is prevalence of gender bias, where women and girl children may not be given the same priority in a family when it comes to healthcare.

These are some of the major barriers impeding the access of healthcare in India. In order to overcome these barriers, I feel that everyone, both government and private, should work together and contribute towards improving the healthcare in the country.

The government understands the need to improve the infrastructure in NRHM and realizes that the initiatives may not lead to dramatic changes in improving access in a short span of time. Some of the initiatives include - up gradation of the PHCs (Primary Health Centers) to make them 24x7, up gradation of CHCs (Community Health Centers) in order to bring them at par with the Indian Health Standards, recruitment of ASHA (Accredited Social Health Activist) workers, doctors and nurses and proper utilization of the referral units.

I feel that apart from the initiatives of the government bodies there is a lot that can be achieved by innovation. Innovation in technologies and pharmaceuticals and innovation in administering of drugs can help lower cost. Although low cost generics are not the only solution to improving access, but this is a sensitive issue. Hence the government is weighing all possible scenarios and is likely to come up with a decision on low cost drugs. In order to ensure a happy and healthy India, essential medicines should be made available to the poor and vulnerable section at an affordable price. The formula for pricing that the government comes up with would be balanced keeping in mind the interest of the industry and the concerns of healthcare in India.

I recognize the efforts put in by many of you here in order to ensure that innovative products drugs reach the poor at an affordable cost. My request to you would be to enhance the initiatives such as differential pricing in areas with no accessibility, ensuring reach of innovative products in the interiors of the country, improving clinical awareness, improving reach of basic primary healthcare by utilizing the qualified manpower, increasing awareness through use of multimedia like television and radio. Some of the initiatives like the programs aimed at improving medical education and capacity building are commendable.

Another pressing issue that has come to our notice is the presence of large number of unnecessary drugs variants available in the country. This seems to be an issue gaining prominence and which is quite evident from the fact that one finds this concern documented on the approach paper of the planning commission.

There are an increasing number of innovations related to healthcare and sanitation that one comes across. Although these innovative products are sometimes cheap there is an issue related to the adaptability of these products. A recent example being the Bio-digesters, eco-friendly toilets designed by DRDO (Defense Research and Development Organization) for the rural poor, which convert human waste into usable water and gases in

an eco-friendly manner. The effluent from these bio-digesters is odorless and harmless and can be used for gardening and irrigation. These are mostly pre-fabricated structures and are easy to install in any terrain. As a pilot project these bio digesters would be launched in 300 gram panchayats this year. I feel that, India needs millions of these systems in order to improve sanitation. Another interesting innovation is the phone based screener, a prick free system for detecting and reporting anemia, costing around USD 20. Dr. Reddy in his speech has pointed out many such examples. There is a need to facilitate the adoption of these innovative technologies and products in the healthcare system. Even the flagship programs of the government like the NRHM need to evaluate and incorporate the usage of such tools in our country.

Going forward, I hope the initiatives by the government succeed and the targets are achieved. The government plans to spend INR 27,000 crore on free medicines and increase the expenditure on health sector to 2% of the GDP. The department of Pharmaceutical is planning to re-launch the Janashudi scheme. DOP is committed to work in collaboration with the industry and strive to move in a direction of better health and better sanitation for the country.

Mr. Dilsher Singh Kalha

Mr. Dilsher Singh Kalha is an Officer of the Indian Administrative Service. He received his schooling at the Doon School, Dehradun, and obtained Master's degree in History from St. Stephen's College, University of Delhi. He was sponsored by the Government of India to Australia to pursue Master's degree in Business Administration (MBA).

Mr. Kalha has worked in various capacities in Government of Punjab and Government of India. These include District Magistrate, Gurdaspur, Commissioner, Patiala Division, Director of Industries, Member (Finance) of the State Electricity Board, State Excise and Taxation Commissioner, Secretary (Science & Technology) and Finance Secretary of the State of Punjab. He has also served as Senior Adviser in the Planning Commission between 2008-2010 where he was in charge of the Industry Division and of Development Plans of the States of Jammu & Kashmir, Himachal Pradesh and Uttarakhand. This exposed him not only to the issues involved in development of industrial sector, including pharmaceuticals. He was appointed Secretary, Department of Pharmaceuticals in the Government of India in January, 2012.

World Health Organization Perspective

Dr. (Ms.) Nata Menabde*
World Health Organization – India Representative

I am very pleased to have an opportunity to speak before you today. The topics that we are discussing today are not new; they are strongly emerging and taking great importance in the public debate, both in media and very importantly, at various levels of the government. Today, this conclave brings much closer the views of the private sector, public sector, government and service providers across this country.

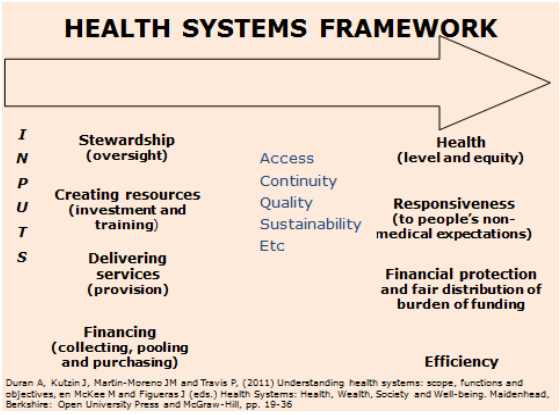
I have taken up my job in India less than 2 years ago and indeed I have seen many gatherings which were, perhaps, less inclusive in terms of representation of different sectors, public and private.

The previous speaker, the Secretary of the Department of Pharmaceuticals, has appropriately pointed out the presence of a larger representation of government members in this conclave. I think the reason for so many government and/or public sector representatives being present today is a common understanding that governance matters; and it matters increasingly as government takes seriously its role in looking into issues such as access and reach.

There is the issue of a holistic approach to access and health improvements and it goes far beyond the health sector itself. We are increasingly trying to reach out to other sectors with implications on health outcomes. However, I think it is premature to conclude that unless other sectors do their job, the health sector cannot improve its own deliverables and outputs, for there are multiple aspects that can and should be improved within the health system itself.

We need to take a balanced approach. On one hand let's properly deliver from within the health sector and on the other, use the tools and mechanisms of governance to reach out to those other sectors which can contribute and add value to the progress in health system outcomes.

I want to briefly share with you the World Health Organization's framework for the health system



What it shows is that, there are a number of inputs which need to go in the health system for it to perform its core functions. The World Health Organization considers four aspects: governing the system, generating necessary resources at various levels to run the system, producing services with the use of those resources and, very importantly, financing the sector. Financing does not only mean making money available but also managing that money in a way that can produce good quality services. Then, through various issues and intermediate systems outcomes such as

improved access, improved continuity of care and improved quality of care, we can achieve the main outcomes of the health system.

Although “improved health for all people” is a major goal of any health system, there are two other aspects which are equally important if not more important. One is: “Responsiveness of the system to people’s needs”. This is a very important non-medical dimension of health system outcomes which is not always looked at very carefully. This is evident from the examples highlighted earlier today that those issues should not be underestimated and, although we have to build awareness, we also have to hear and understand what is it that people need? And how can we improve their interaction with the health system, so as to meet their expectations.

The other goal is “financial protection”. And that is, in the World Health Organization’s view, protecting people from catastrophic expenditure and from falling into poverty when they get sick. Financial protection is not just a means to health improvement, but it is put in its own right as one almost equal objective of the health system. So improving just health indicators is not good enough - financial protection also must be improved. And that should be done, amongst other things, also through “efficiency improvement”.

If we translate it into the Indian context, the government has to look at not only how to provide financing but also at how to make the financing effective in reaching desired health related and other goals of health system.

The finances should not only be used to deliver necessary services to people who need them, but also to ensure that those service environments are fairly regulated and that they are supported by solid planning and not just emergence of some brilliant, but often adhoc response initiatives many of which are currently taking place in India.

It is only with a combination of the necessary resources, technology, staff, and difficult policy decisions that the performance of the system will improve. This should hopefully bring about easier access to services, better quality of services and an important emphasis on equity, which is another fundamental cross-cutting principle of the World Health Organizations health system framework along with the dimension of higher system efficiency. This chain of interrelated activities will have the greatest impact on health.

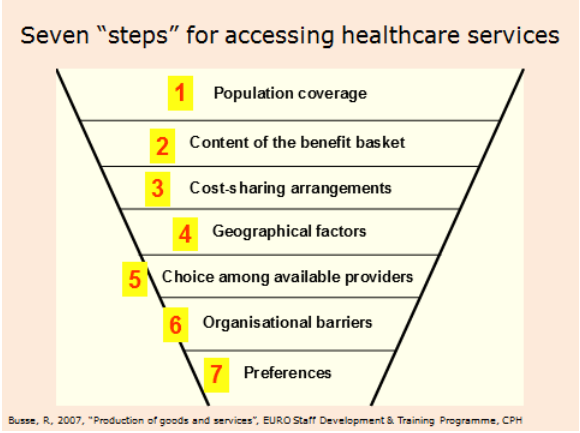
There are various dimensions of access, and I would like to highlight some: As far as the World Health Organization is concerned, effective and equitable “population coverage” is a single most effective strategic intervention, since it derives from human rights and equity principles, which are fundamental for the functioning of any modern society.

Indeed, the breakthrough report on Universal Health Coverage (UHC) led by Dr. Srinath Reddy has made a historical shift in India’s thinking in this area. Although we are still a bit far from achieving the UHC goals, having framed such an explicit analysis of challenges that we face and possible solutions is already helping in organizing and mobilizing communities, systems and sectors to think how they can best contribute to this important goal.

There are several factors that influence access, such as “geographical factors”, “cost sharing arrangements” and others, and, as Dr. Devi Shetty often says, even if government financing is increased, it may not be able to pay for all what Indian people need, therefore “low cost-sharing arrangements” have been proposed as a solution. But given diversity of India, this needs to be debated as various arrangements could be considered in various

contexts within India. Also, adequate choices between the providers need to be made available - this requires an adequate regulation and enforcement of the service quality and is largely a role of a government.

There are various "organizational barriers" to access and there are "preferences" of the population, who choose where they go and seek services - markets develop along with those preferred choices. So on one hand, system has to respond to these choices and, on the other hand, one has to think whether these choices are the most rationale, efficient, of best quality and how to influence the behavior and choices of the consumers while meeting their expectations.



If we look at India's public spending on health among 190 countries for which data are available, it ranks low by any angle you want to look at it (World Health Statistics 2012, WHO);

- General government expenditure on health as % of GDP: 1.3% (Rank 178);
- Total expenditure on health as % of GDP: 4.2% (Rank 168);
- General government health expenditure as % of total health expenditure: 30.3% (Rank 174);
- Per capita government expenditure on health: 38 PPP int. $ (Rank 160);

There is therefore vast scope to increase public financing for health and we are hopeful that this impetus will come during the 12th five year plan and in further government plans. Already, there has been quite a strong commitment expressed by the government regarding increased public allocation for health, but let us also be aware that the inspiring, almost double digit economic growth of India over the last decade, which has brought India to one of the 10 largest economies of the world needs to be sustained and there are challenges to overcome such as lack of infrastructure, lack of human resources, bigger macro-economic issues that need to be addressed through effective government policies.

However, increased public financing will not solve all the problems immediately, since making money available is not the only solution, there are many other interventions that are necessary.

If we look again at India's total health expenditure, as a percentage of GDP (which includes public and private expenditure), it is not too low in absolute terms. So, we are not talking about India not spending money on health; we are talking about this expenditure largely falling on the patients in a form of an out-of-pocket expenditure. But, the challenge is, at present, that these out-of-pocket expenses correspond to nearly 80% of India's total health expenditure.

Although the public expenditure on health is increasing and developments are happening through various government initiatives (I very much agree that the government is actively driving in many directions today), still there are issues which are challenging and have great impact on health, such as some primary health care centers and sub centers having inaccessible roads, shortages of electricity,

irregular supply of water and lack of telephone and computer facilities.

There is also a shortage in the number of health personnel available at primary health centers and community health centers. We can talk about these numbers at length, but we ultimately need to see the impact of implementing some major policy decisions, such as establishing medical colleges, and these cannot be simply left to the private sector to address. Having said that, there are some policies which are encouraging, for example, developments in tackling health personnel issues - this is one of the crucial factors which will have a great impact on the future of India's population and their health.

It is that in India we are facing a double epidemiological burden of communicable and non-communicable diseases (NCDs). NCDs have now become a serious challenge and numbers are growing not only in urban areas but also in the rural sector. Many of these are lifestyle diseases and we are very much looking at how to address these through both pharmacological and non-pharmacological therapies, and, very importantly, through effective disease prevention policies in India, which, at first sight, may not always be in the interest of pharmaceutical manufacturers.

But pharmaceutical manufacturers also want to have a healthy nation and environment to operate in. I think this requires very close collaboration, common understanding and a dialogue on how to advance health promotion and disease prevention measures.

As has been mentioned today, a long list of pharmaceutical products is available on the market in India. In this context, I would like to draw your attention to some other pharmaceutical markets, for example, of Norway.

Norway, not a member of European Union, had its own policies and until few years back had only about 2000 products authorized on its market. This was achieved through applying a so called "need" clause (so that each time a pharmaceutical company applies for marketing authorization, the regulatory authorities would assess whether the product is really required or not - are there already other products with similar effect on the market or noted.). So Norway would not have, for example, 50 brands of Paracetamol authorized on its market, This used to be a very powerful clause and health of Norwegians was not less good when compared to French or Danish populations where such limitations for market entry did not apply. Evidence shows that there is no direct correlation between the number of products circulating in the market and the number of medicines prescribed per patient and corresponding health outcomes. So, one can look at all the possible strategies to reduce the number of products in the market, without causing direct effect on health. At the same time we must be careful in interpreting such evidence as health outcomes are not just a result of use of pharmaceuticals, but we have to look also at other determinants of health. Furthermore, there is a scope of looking into drug use practices, such as whether medicines are prescribed properly, whether antibiotic resistance is growing etc.

In any case, unfortunately for all of us, health promotion will not solve all issues very quickly – it will take time. Pharmaceutical markets in emerging countries are growing now and will be growing in the years to come. So there is going to be higher consumption, but it will also increase the burden in terms of cost of health system while we still need to find answers to several issues: hunger, malnutrition, routine immunization coverage of children etc.

Furthermore, there are multiple additional barriers in terms of access to medicines:

pricing, financing mechanisms, neglected diseases for which necessary medicines do not exist but also the irrational use of medicines, lack of adequate regulations and guidelines and lack of properly functioning bodies in terms of accreditation of services or ensuring proper prescribing practices. Barriers also include unreliable supply systems, inadequate infrastructure and logistics for supply of pharmaceuticals.

You would agree that India is the world's generics pharmacy. In fact, within the World Health Organization's "Pre-qualified" product lists (which are supplied through international development assistance mechanisms) Indian HIV medicines have largest share (72%). Similarly, India keeps a rather large share of TB products in WHO's prequalification programme (35%).

What this indicates however, is that there is a larger scope yet to be reached in many other areas, such as non-communicable diseases, in which India could step in within years ahead? There is a large scope for generic markets not only in India but worldwide - in the US, rate of generics coverage is as high as 78%, in Brazil: 63% and in South Africa: 71%. However, the time to market for generic product after the patent expires varies from country to country. So, whereas in the US it would take 6 months, in many European countries for most products it will take much longer before the generic products reach the market. Market after patent expiry varies greatly with high priced branded generics often taking market share. This presents a great opportunity for Indian generic manufacturers to export if they meet international quality specifications consistently.

According to a study we have conducted in 17 countries, where we surveyed some of the products to estimate what would be the economic impact of switching from the originator brands to generic alternatives, greater than 50% savings can be achieved by using generic alternatives. However, our study has several limitations and is not comprehensive. Nonetheless, explicit generic policy is important to ensure a better access to essential pharmaceuticals.

So, there are various mechanisms, which could be used for reaching universal health coverage, and as Dr. Reddy and his team have highlighted, the first winner could be in pharmaceuticals area.

Then there is also the issue of Foreign Direct Investment in the pharmaceutical sector. I am sure you will be discussing this somewhere today because there has been a recent ruling on this, and I know that the Organization of Pharmaceutical Producers of India has not been very welcoming this decision for a variety of reasons, but we have to also assess what are the benefits and risks here and there are hopefully some benefits too, in terms of protecting India's generic manufacturers. But one has to look very carefully how this ruling will be applied because it will be dealt with on a case by case basis.

And then there are issues of price control and regulation - we have heard already today about the ongoing debate. It is not clear as to where it will end up, but it has to end up in the area where the reasonable compromises are being made, so that Industry is not put in conditions where it cannot anymore operate, cannot do research, cannot make investments in its development but also such policies should ensure that people do not die because they cannot afford necessary medicines. And sometimes this is a choice between death, impoverishment or survival. So it is not and it cannot be looked at only from the perspective of profit margins for pharmaceutical industry. We have to recognize that this high out-of-pocket expenditure on health care and medicines is a very prominent characteristic of

middle and low income countries. The countries that are economically affluent do not accept that people have to make such choices; instead they regulate, reimburse, have government systems, have Universal Health Coverage schemes and protect their people through various mechanisms. So, in a way, low and middle income countries actually put higher economic burden on their populations for health care. This is a general trend which hopefully will be improving in India as it moves on with Universal Health Coverage.

Money availability alone is not going to resolve the hurdles of Universal Health Coverage. It has to be supplemented by various health system interventions as highlighted in the beginning of my speech, but also through addressing social determinants and other health determinants such as environmental ones and others.

We have recently launched with the Government of India, the World Health Organization's new country corporation strategy for the next 6 years through which we will be very closely focused on supporting the Universal Health Coverage agenda. The World Health Organization will provide support on strengthening information systems, evidence generation, policy analysis, linking private and public sector contributions, facilitating and convening various stakeholders and several other selected areas such as quality and accreditation of health services.

Despite all the challenges I spoke of and highlighted today, I want to mention that the Indian government has made very impressive, historical health policy and political decisions in the recent past. The government is doing extremely well in terms of pushing health agenda across other sectors and has already implemented several major successful initiatives such as the National Rural Health Mission and many others.

Now, more has to be done, it has to be done in a better way. However, this is not so simple and we all bear the responsibility to contribute and help in this very important agenda for the benefit of India's people.

Thank you very much.

Dr. (Ms.) Nata Menabde

Dr. Nata Menabde is WHO representative to India. Prior to taking up her current job Dr. Menabde has worked as Deputy Regional Director of the WHO Regional Office for Europe. She has led WHO Regional Office's work on Health Systems and their relationships with health and wealth which culminated in adoption of Tallinn Charter on health systems. Dr. Menabde has successfully partnered with key stakeholders such as the Council of Europe, the European Union, the European Commission, UNICEF, the, World Bank, OECD, the Global Fund, the European Investment Bank and others to increase the effectiveness of WHO's work.

Keynote Address

Dr. K. Srinath Reddy*
President, Public Health Foundation of India

Good morning ladies and gentlemen. It a pleasure and a privilege to be here, particularly to have been preceded by three eminent speakers, who have already detailed the need for focusing on improving access to healthcare as well as the quality of healthcare in India. Part of my presentation will be repetitive but nevertheless may help to underscore the key messages that have already been communicated.

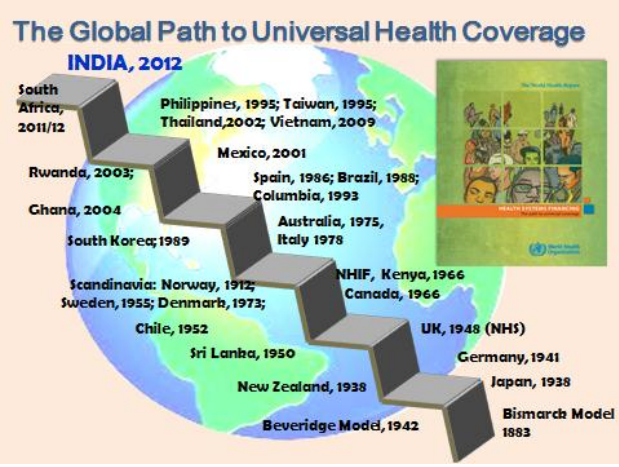
Clearly, it is important that OPPI devotes its attention and efforts to improve access and reach of healthcare and also promote innovation in healthcare so that the health indicators in India improve and improve across all sections of our society. But as Mr. Kalha and Dr. Menabde have clearly emphasized that we need to think of health beyond healthcare. Since multiple determinants of health exist, we need to try and address each of these determinants. I am in unison with Dr. Menabde that if we look upon this as a nation building effort rather than just the task of an industry to advance its own objectives, then I think OPPI would find it very convenient to also enter this space of health promotion and look upon it as part of extended responsibility for improving healthcare in this country. Nevertheless, I will focus this presentation on healthcare because this will detail some of the recommendations that we have made to the Government of India (GOI) and the planning commission in our report on Universal Health Coverage (UCH).

The path to universal health coverage opened up at least two centuries ago in the 19th century, when the Bismarckian reforms took place in Germany, principally propelled by some of the social ferment that was unleashed by the work of Rudolph Virchow and others. Chancellor Bismarck, a smart strategist, recognized that the protection of the health of the people was integral for growth of the economy in Germany. It was important from the point of view of not only the industrial production but also the army. Hence, apart from some of the social ferments that was taking place in Germany, the economic and the imperial aspirations of Germany were among the principal reasons to start the movement towards Universal Health Coverage.

The Beveridge model that came in United Kingdom in the 20th century led to the formation of the National Health Service. Since then several countries have embarked upon the path to the universal health coverage. We now have varying models across the world to pick from and to choose some of the better elements to see how best we can craft them into our own model as we develop it. Several low and middle income countries have now moved swiftly towards Universal Health Coverage, having already accomplished 100% coverage or reaching very close to it. For example, Mexico announced at the end of last year that they had attained 100% universal coverage. China has attained 96% coverage and is proceeding to attain 100% coverage this year and South Africa too is well on its way. In our region Thailand and Sri Lanka have been among the important leaders in this segment. At the time of Independence, India started off with a vision of Universal health coverage, spelt out very clearly in the Bhore report and also adopted the egalitarian objective. The

Indian government and the Indian constitution have subsequently faltered to some extend in delivering on that promise but they are now rededicating itself to that vision and commitment this year.

It has now become imperative for global policy makers, not only within the health sector but from other sectors to look at the need for addressing universal health coverage. Laurie Garrett in the introductory section of the report recently released by the Council on Foreign Relations of the United States, on Universal health coverage talks of global health's three



overreaching needs:

- Health financing schemes that cover the costs of care without putting health consumers, governments, or providers at risk of bankruptcy or severe economic hardship
- Systems of health-care delivery that can absorb the many now-fragmented services and provide accessible treatment and prevention universally to those in need
- A health-care workforce worldwide that should be at a minimum five million persons larger than it is currently, that displays a deeper range of skills, and that features greater attention to health management and community-based caregivers. This is underscoring the huge health workforce crises that we are now experiencing not just in India but in many parts of the world.

Pharmaceutical products do have a very important role to play in this journey towards Universal health coverage because people do need medicines at some stage of their life. Mexico, as I mentioned earlier, has already achieved Universal Health Coverage. In terms of the coverage part of it, the Mexican Health Minister declared a few months ago that by the end of the previous year every single Mexican would have access to the medical care and more than 106 million Mexicans would be receiving healthcare through public financing. But the interesting part is that the Health Minister said that government is investing 3.5% of the GDP or 32 billion USP spending in the public health sector in the fiscal year of 2011-2012, of which 30% would be used exclusively for medicines given free of charge. So the interesting part is that, although there is a clear emphasis on public financing as a goal of universal health coverage, there is also a great emphasis on the supply of essential medicines free of cost as an integral first step at achieving universal health coverage. At the same time Spain, which was on the brink of a major financial crises, which unfortunately continues even now, announced that they were shifting to a policy of complete prescription of generic drugs only across the country and estimated that they would save 2.5 billion Euros by shifting to that particular policy. So there is a clear understanding by the global policy makers that in terms of the economic environment one has to look at healthcare cost and within the context of healthcare cost one has to look at the availability and pricing of pharmaceutical products.

India has had much to be proud about in terms of its health gains since independence. As the health secretary has pointed out in recent

years we have accelerated that progress. Nevertheless, there are still several areas of concern which we must remind ourselves of, if we have to really look at the appropriate solutions and implement them effectively. If we compare ourselves with our own neighbors, Sri Lanka and Thailand, our Infant Mortality Rate (IMR) was 50 when Sri Lanka's was 13 and Thailand's was 12. Even the under-5 mortality rate in India compares very poorly with Sri Lanka and Thailand. When we look at the percentage of children fully immunized, it was 66% in India when Sri Lanka, even at the height of its civil conflict achieved 99%.

In terms of the current health scenario, we have recently recorded in a major survey that-

- 42% of our children under-5 years are underweight, which the Prime Minster termed as a national shame.
- The current infant mortality rate is 47 per thousand which has certainly started declining since NRLM(National Rural Livelihoods mission) but still needs to accelerate in terms of its further decline
- Maternal mortality ration (MMR) is about 212 per 100000 live births and there is a challenge to meet the national goals that we have set for ourselves in the 12th plan period by 2017. We have to achieve an IMR of 27 and an MMR of 100.
- We have multiple burdens of disease that are competently challenging an under resourced health system.
    - In 2011 it was estimated that we have about 61 million persons with diabetes and is estimated to rise to about 101 million by 2030.
    - Clinical Hypertension was about 130 million in 2011 and likely to rise to 240 million by 2030.
    - Tobacco related deaths are at least 1 plus in million and is currently estimated to be about 1.2 in a million. These are likely to rise to 2.4 million by 2030.

Some of these deaths due to chronic diseases are occurring because a variety of risk factors are combining to kill Indians much earlier as compared to the western population. For example, the first heart attack occurs about 10-15 years earlier in Indian population as compared to western populations. and since a large number of deaths occur below the age of 64 years, if you consider the age range of 35 to 64 and look at the number of premature cardiovascular deaths that have occurred, and are likely to occur, India lost about 9.2 million potentially productive years of life due to premature cardio vascular disease in the year 2000. And we will lose close to 18 million by year 2030. This is about 570% more than the United States in year 2000, and will be 900 percent than the U.S. for that age band in the year 2030. No country which aspires for accelerated economic development and positions itself as a potential economic power of the 21st century can afford such a hemorrhaging of human resources in the productive prime of midlife.

The health inequities that exist in India are also appalling. A girl baby born in Kerala is 6 times less likely to die before her first birthday than a girl baby born in Madhya Pradesh. Similarly, neonatal mortality rate varies from 11 per 1000 in Kerala to 53 per 1000 in Odisha. Same country but different fate! This health inequality is reflected not only across states, but within states between urban and rural areas, across income strata, education strata and across gender and caste strata.

If we want to look for a compelling reason for why Universal Health Coverage urgently required by India, we can look at the data from

the National Sample Survey, published in 2006.

- 28% or rural residents and 20% of urban residents had no funds for healthcare
- Over 40% of hospitalized persons had to borrow money or sell assets to pay for their care
- Over 30% of hospitalized persons fell below the poverty line because of hospital expense

Part of this, is because of the low priority accessed to health in our overall envelope of public financing. Our public financing is fairly high when compared to other countries, but the proportion allocated to health has been consistently low, and therefore as a percent of GDP, we compare poorly with Sri Lanka, China and Thailand. This is also reflected if one looks at per capita expenditure on health; there is a substantially lower expenditure on health in terms of total expenditure. When one looks at per capita public expenditure on health, where the government is contributing, there again one sees a huge disparity that occurs between countries like Sri Lanka and Thailand, and India. Our expenditure on health lacks far behind.

LOW PRIORITY TO PUBLIC SPENDING ON HEALTH – INDIA AND COMPARATOR COUNTRIES 2009

	Total public spending as % GDP (fiscal capacity)	Public spending on health as % of total public spending	Public spending on health as % of GDP
India	33.6	4.1	1.2
Sri Lanka	24.5	7.3	1.8
China	22.3	10.3	2.3
Thailand	23.3	14.0	3.3

Source: WHO database, 2009

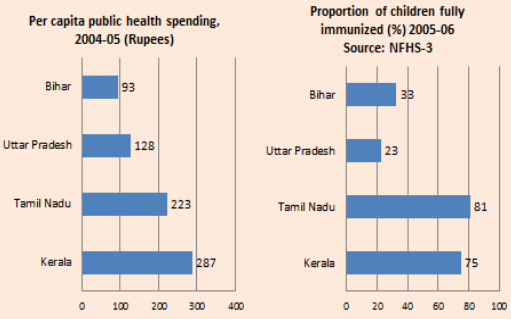
Low levels of health spending

2009	Total expenditure on health as % of GDP	Per capita total expenditure on health (PPP$)
Sri Lanka	4.0	193
India	4.2	132
Thailand	4.3	345
China	4.6	309

Source: WHO database, 2009

There are also large interstate differentials in public spending. In terms of public spending on health, Kerala spends about 3 times more than Bihar. And it is not surprising to see that we find this reflective in the different levels of immunization in these states. Tamil Nadu does a little better than the projected amount it spends because it has a sturdy system for delivery, whereas UP does even worse in its allocation for health because of poor governance. So there are a number of factors but public financing of health does matter.

Large inter-state differentials in public spending



If one looks at the high burden of out of pocket expenditures, India has a very high burden, variably estimated from 70% to 80% over the years. The planning commission currently says it is 78% but nevertheless, it is outrageously high compared to many other countries. If you look at the contributors to out of pocket

expenditure, we recognize that it is outpatient care that is the predominant contributor; as per some estimates of out of pocket expenditure.

Low levels of public expenditure on health

2009	Public expenditure on health as % of GDP	Per capita public expenditure on health (PPP$)
Sri Lanka	1.8	87
India	1.2	43
Thailand	3.3	261
China	2.3	155

Source: WHO database, 2009

If one looks at some of the recent data from NSSO for 2009 - 2010, then one can see that 13.68% of the households spend more than 10% of household expenditures on health. Obviously the poorest cannot afford to spend more than 10% even though they require doing so and thus they remain deprived of even access to healthcare; but as income strata rises, the proportion of household spending on high level health increases. But what is important to note is that virtually across all income strata, the percentage contributed by out of pocket expenditure on drugs is very high, spanning of an average of 60% contribution.

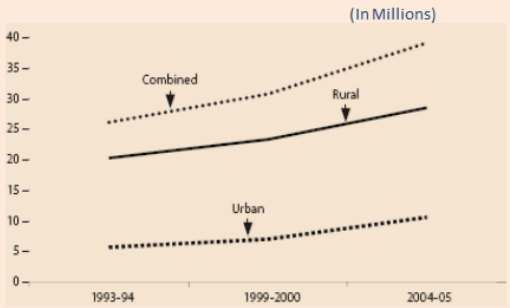
Percentage of Households Spending >10% of HH Expenditure on Health, 2009-10

Quintile Groups	OOP Exp.	Inpatient Exp.	Outpatient Exp.	Drug Exp.	% of Drug to OOP Exp.
Poorest	7.656	1.082	6.329	4.523	58.44
2nd Poorest	9.875	1.980	7.394	6.012	60.71
Middle	12.237	2.770	8.848	7.392	61.67
2nd Richest	16.197	4.496	10.979	9.591	60.00
Richest	22.456	7.954	16.207	14.852	66.15
All	13.684	3.656	9.951	8.474	59.54

Source: Unit Level Records of NSSO

We know that people are impoverished and are pushed into poverty because of healthcare expenditure. And it is estimated that about 40 million persons in India are pushed below the poverty line because of unaffordable health care expenses.

Impoverishment Due to OOP Payments in India



Source: Selvaraj and Karan (2009)

In terms of the financial protection that is needed the current available insurance schemes, particularly the government funded insurance schemes like the Rashtriya Jan Bima Yojna (RJBY), Arogyahsree and its clones across different states, are all well intended. They do provide some benefits but they neither cover the cost of out of patient care nor the cost of drugs and lab diagnostics, which together constitute the largest fraction of out of pocket expenditure, so in terms of providing relief from the financial burden these schemes are not really successful. More importantly they do not cover Primary Health care, which is undoubtedly the fulcrum on which any good healthcare system must be based.

A study was conducted by Anup K Karan and S. Selvaraj on the impact of publicly-financed health insurance schemes on financial risk protection in India's health sector. This study demonstrated that “Poorer sections of households in intervention districts of the Rashtriya Swasthya Bima Yojana, Rajiv Arogyasri of Andhra Pradesh and Tamil Nadu

Health Insurance Schemes experienced a rise in real per capita healthcare expenditure, particularly on hospitalisation, and an increase in 'catastrophic headcount' – conclusive proof that RSBY and other state government – based interventions failed to provide financial risk protection''

This appears paradoxical because if they were actually being provided free care through insurance systems then they would end up spending lower. This is because of the huge add-on costs that are imposed by the hospitals, thereby resulting in rise in actual net expenditure. They may derive some clinical benefits but invariably the cost just rises.

If you look at the access to medicines in India from 1986 - 2004 the percentage of patients receiving free medicines in the inpatient setting decreased substantially from 31% to 9% and in the outpatient setting from 17.98% to 5.34%.

TRENDS IN ACCESS TO MEDICINES IN INDIA – 1986-87 TO 2004

Period	Free Medicines (%)	Partly Free (%)	On Payment (%)	Not Received (%)
In patient				
1986-87	31.20	15.00	40.95	12.85
1995-96	12.29	13.15	67.75	6.80
2004	8.99	16.38	71.79	2.84
Out patient				
1986-87	17.98	4.36	65.55	12.11
1995-96	7.21	2.71	79.32	10.76
2004	5.34	3.38	65.27	26.01

Source: Health data extracted from National Sample Survey Rounds 60, 52, and 42

If you look at the government expenditure on drugs as percentage of overall government expenditure on health, you find two states that spend substantially on drugs i.e. Kerala (12.5%) and Tamil Nadu (12.2%). Obviously all the health gains in those two states cannot be ascribed to the expenditure on drugs but the fact that they are paying attention to drugs is important because they are the leaders in terms of health indicators in this country.

Government Expenditure on Drugs (% to Overall Govt. Exp)

States	2008-09 (Actuals)	2009-10 (RE)	2010-11 (BE)
Assam	5.7	5.6	5.0
Bihar	6.3	5.9	7.0
Gujarat	6.5	4.9	7.6
Haryana	8.6	6.8	5.5
Kerala	10.6	10.4	12.5
Maharashtra	9.6	5.2	5.2
Madhya Pradesh	9.1	10.1	9.3
Punjab	1.1	1.0	1.0
Rajasthan	3.0	1.9	1.5
Uttar Pradesh	6.9	4.8	5.3
Jharkhand	2.9	2.3	3.4
West Bengal	9.2	6.8	6.8
Andhra Pradesh	7.3	6.8	10.0
Karnataka	8.0	7.2	6.3
Tamil Nadu	11.2	9.3	12.2
Himachal Pradesh	4.5	2.3	1.9
J & K	6.5	5.2	4.3

If we also look at the state wise availability of free and partly free medicines at government facilities during 2004, we again find that states like Tamil Nadu, Delhi, Kerala and Karnataka are the leaders. Again, in terms of stock-outs, the average availability of a basket of essential drugs in 2010 was 43% in Bihar vs. 88% in TN. Bihar's health facilities registered an average of 42% stock-outs of drugs with a mean duration of 105 days whereas in TN it was 17% with an average duration of 50 days. If we have to reduce some of the health inequities, we need to replicate the good practices in several states across the country.

If we were to look at the in hospital environment in terms of hospital bed capacity we lack far behind other countries. For example India has 0.9 beds per thousand populations as opposed to Sri Lanka's 3.1 or China's 3 or so. Obviously we may not require to go up to 3 because now outpatient care and day care are becoming the norm for many procedures, the availability of the technology reduces the duration of hospitalization and increases turnover but it is very likely that we will require at least 2.1 beds per thousand population.

In terms of health worker density across major states of India one again sees a huge disparity. India, as a country has been categorized by

World Health Organization (WHO) as a country experiencing a health work force crisis. But within India you see a very differential distribution. The central, northern and northeastern states have relatively few health workers. The mal distribution has already been referred to – 80% of the doctors, 75% of the dispensaries and 60% of the hospitals are located in urban areas. And there is a huge disparity in terms of availability of qualified physicians in urban (11.3/10,000) versus rural areas (1.9/10,000).

As indeed emphasized by both the preceding speakers the National Rural Health Mission (NRHM), reflects a strong governmental commitment to address this sorry situation and to try and enhance the outreach of health services to the farthest corners of the country and to reach the poorest sections of our population. However there are some limitations, the main focus has been on maternal and child health. There is a need to really make it a much broader based program by integrating with other programs. The emergence of the Accredited Social Health Activist (ASHA), now around 800,000 of them in position has been a very welcome development in terms of emerging rural communities and mobilizing them for better health seeking behaviors. Conditional cash transfers, especially for institutional deliveries have been very effective, though what happens at the level of the institution in terms of the quality of the care delivered still needs critical examination and substantial improvement. In terms of infrastructural strengthening primary health centers have benefited but again much needs to be done for primary health centers and especially for sub centers. There has been increased fund flow to states with flexible funding mechanisms, decentralized planning, which is welcome and there is a proposed platform for operational integration of multiple national health programs. This often brings about a certain degree of divisive response between the ministries themselves, because, those who are managing vertical programs don't like to let go of the vertical program and talk about the greater efficiency of the vertical programs in terms of clear cut objectives, better accountability, better management and so on. But those who would like to see greater integration would first talk about optimization of fairly limited health workforce particularly in the district level by trying to integrate many of the functions, multi skill people, have task sharing and at least ensuring better coordination among different programs and sectors. And there are others who suggest that there should be diagonal approach combining some elements of both.

High Level Expert Report on Universal Health coverage for India – Instituted by the planning Commission of India

I along with 14 other colleagues from other sectors and different parts of India submitted our report on Universal Health Coverage for India on November 2011. In terms of reference, the key terms of reference were health care financing and financial protection, obviously recognizing that a financial protection as an entitlement will not be dealt unless there are enabling pathways. The terms of reference were expanded to include Optimizing human resources for health, Defining norms of access to health services, planning management reforms in health delivery, Community participation for health and Enhancing access to essential drugs, vaccines and technologies. We also pleaded

Definition of Universal Health Coverage
"Ensuring equitable access for all Indian citizens resident in any part of the country, regardless of income level, social status, gender, caste or religion, to affordable, accountable and appropriate, assured quality health services (promotive, preventive, curative and rehabilitative) as well as public health services addressing wider determinants of health delivered to individuals and populations, with the government being the guarantor and enabler, although not necessarily the only provider, of health and related services."

that we ought to have a look at Social determinants of health. That was not one of our terms of reference nor did we go into it in depth but we did signal that it is very important to address the social determinants of health through multi sartorial approaches if one needs to advance health and really look at universal health coverage in a much more holistic manner. As the Swedish Nobel Laureate Economist, Gunnar Myrdal said “Health leaps out of science and draws nourishments from the society around it”. So you cannot really talk about health without talking about water, sanitation, nutrition, environment, education, gender and equal distribution. All of these need to be really looked at the overall health context.

So what we said in our definition of Universal Health Coverage was that we must ensure equitable access for all Indian citizens to affordable, accountable and appropriate, assured quality of health service, which will include promotive, preventive, curative and rehabilitative. I suggested even adding diagnostic but others said it is a part of overall curative services. So essentially we are suggesting that all of these should be included. There should be public health services addressing the wider determinants of health, with the government being the guarantor and the enabler although not necessarily the only provider of health and services. Of course the government has to be a key provider but in a mixed system the government cannot be the only provider. The Government has to guarantee and create a framework and manage a framework which brings in all the provider communities together to work in public interest.

Our vision is an entitlement provided to every citizen of Universal Health Care. This entitlement would consist of guaranteed access to an essential health package - Primary, Secondary and Tertiary care, including cashless inpatient and outpatient care free of cost. The inclusion of tertiary care again became a debatable point. Many people cited the unaffordability of tertiary care as a reason to not put in the entitlement package. Responding to this I asked - Can we deny a young snake bite victim the need for ventilation when required? Can we deny a falsapariavictim for dialysis when required? Can we deny a woman who has had a mishandled delivery to get her ruptured uterus operated vesico-vaginal repaired? So tertiary care is not a luxury in many circumstances, it is a lifesaving need. So we need to even identify those elements and integrate them here. And thus we said that, there would be integrated healthcare delivery and people would be provided facilities by public sector facilities or contracted in private providers. I’ll discuss later as to why there exists a need for contracted services.

There are three main objectives related to financing Universal Health Coverage, these are:

1. To ensure sufficient financial resources for the provisions of essential healthcare to all

2. To ensure financial protection and health security against impoverishment. This is to ensure that the Out of pocket expenditure decreases.

3. To put in place financing mechanisms those are consistent with improved wellbeing as well as containment of health care cost inflation. This is important because countries are now being bankrupted because of unaffordable and uncontrolled healthcare cost.

What do you think is the reason for the world economic forum to start talking about health in such a big manner over the last 3 years? It is

because General Motors went bankrupt – Healthcare became its principal business and automobile production only became an ancillary. So we cannot afford to have that kind of environment. So we have to contain our healthcare costs and help ensure that we not only put more money into health but also get 'More health out of the money'. My mentor at AIIMS, Professor Ramalinga Swamy, said so several years ago and is now frequently quoted by people like the UN secretary general.

In terms of the recommendation, we suggested that the central government along with the states together must increase public expenditure on health from the current level of 1.2% of GDP to at least 3% of the GDP in the 13th five year plan. Of course we would like to have had much more possibly 6% but some of our committee members represented the fiscal interest of the country and would not allow us to increase the percentage allocation. So we conceded that this is the fiscal space that is available to us in the next two plan periods.

We were also reassured by another independent analysis that said 3.8% of GDP dedicated would be actually sufficient to achieve all the necessary healthcare expenditure required by India. This was a study performed by University of Toronto and BG, Chandigarh. They extrapolated the cost of universal health care delivery through the existing mix of public and private health institutions to the entire country and concluded that the Indian government needs to spend about 3.8 % of GDP for universalizing health care services.

We also recommended that general taxation be used as the principal source of health care financing, complemented by additional mandatory deductions from salaried individuals and tax payers – either as a proportion of taxable income or as a proportion of salary.

We recommended that insurance schemes be avoided, as they fragment health care, do not provide full coverage of needed services and fail to cover the whole population. This appears to be a major challenge to the private healthcare industry. One reason being, tax funded schemes have been the major foundations for the health coverage in most of the countries, which have achieved Universal Health Coverage. It is very difficult to do so without a tax derived general revenue pool dedicated resources to this and particularly in lower middle income countries. In a country like India it is very difficult to have a payroll taxes as the principal source or the contributory social insurance because 93% of our workforce is in the unorganized sector and there are a huge number of poor people who cannot contribute. Unlike in countries where there is a huge organized sector enabling direct deduction from the payroll, in India it is very difficult unless tax revenues are utilized. Since taxes are in a progressive system - increasing taxes for people earning more, this is actually reflected in terms of contributions by different sections of the people and will ultimately lead to the creation of a common resource pool.

This particular critique of the insurance system is not an aberration of Indian left wing thinking. Let me quote Bill Hsiao, Professor of health economics and health policy from the Harvard University.

"Empirical evidence indicates that a free market for insurance cannot achieve social equality and that serious market failures allow insurers to practice risk selection, leaving the most vulnerable people uninsured. Adverse selection among insurance buyers impairs the functions of the insurance market and deters the pooling of health risks widely. Moreover, the insurance market's high transaction costs yield highly inefficient results". Let me give you an example of this. The Rashtriya Swasthya

Bima Yojna (RSBY) in Kerala had a three year contract with the Oriental Insurance Company. The company wanted to charge a premium of Rs 400 for the 1st year, Rs 800 for the 2nd year and refused to continue further if the premiums were not increased to Rs 1100. When we inquired the reasons for continuous increase in premiums in Kerala, they replied that they presently have a utilization rate of 130%. They said these rates were not because people in Kerala were very ill but because they demanded lot of services. People in Kerala are very educated very politically conscious and hence tend to demand a lot of services. So these schemes are not going to become financially stable then. On the other hand, evidence indicates that reliance on market competition for the provision of health care may hold potential for more efficient and higher quality care and so we need to reconcile both of these. We need to provide some competition and choice at the same time ensuring equity of access.

We have also recommended that that no fees of any kind be levied for use of healthcare services under the Universal Health Coverage for the essential health package. In the late 1980s and the early 1990s it became the gospel of the Brettenwood twins (i.e. the World Bank and International Monetary Funds) that user fees must be levied otherwise people will over utilize health services. But subsequently the global experience has shown that user fee is counterproductive. Even the World Bank has now revised its opinion. Evidence suggests that user fees had increased in equalities in access to healthcare because of three main reasons:

1. They do not generate sufficient revenue
2. One requires a huge bureaucracy to keep collecting these fees for every laboratory test and identify who is poor so as to given them exemptions
3. It is inequitable- it is shown that even with small amounts of fees the poor actually reduce their access to health services. They do not reach out for health services. This has been shown for many things like de-worming for iron tablets in Africa. Even Canada has witnessed such a trend. So there is a global experience.

Again it's just not an opinion of the few who are in the high level expert group. The director general of WHO Dr. Margaret Chang said that the User Fees for health care were put forward as a way to recover costs and discourage the excessive use of health services and the over-consumption of care – this was the economic theory. This did not happen; instead, user fees punished the poor. One may say that this is a public health professional speaking. But Dr. Jeffrey Sachs, a true blue economist, who went in for millennium development villages in Africa shares a similar view. He says that the 'quick win' strategies recommended by the Millennium Project was the removal of user fees for primary education and essential healthcare by the end of 2006.

So our recommendation was that the Universal Health Coverage must have an essential health coverage package of health services as for which no user fee must be levied. There could be other components for which one can have either a user fee or private insurance – e.g. for hospitality components like private ward, services not covered in the insurance health package or persons who wish to go to hospitals which do not want to be part of this system say if X which is a corporate hospital does not want to be a part of this system and individual Y wants to go only to that hospital, he sure can pay either by private insurance or from out of pocket.

Further, our recommendations are that expenditures on primary health care should account for at least 70% of all health care expenditures. Primary health care should cover general health information and promotion, curative services at the primary level and screening for risk factors at the population level. Again it has been very clearly emphasized that if one does all of this, the demand for secondary and tertiary healthcare services will substantially reduce. And even the healthcare cost would be substantially reduced.

Our recommendation in terms of medicines was to ensure availability of free essential medicines, by increasing public spending on drug procurement, an increase in public procurement of medicines from around 0.1% to around 0.5% of GDP. Streamline and centralize the procurement, similar to the model in Tamil Nadu. As Mr. Kalha, Secretary, Department of Pharmaceuticals, has already announced that the Government of India is likely to implement these changes in stages ensuring that in the first step essential medicines will be made available free of cost at all public facilities. The cost involved is not much. The budget is estimated to be 0.1% of GDP additional spending. If that can be done this would go a long way towards reducing out-of-pocket expenditure as earlier results show from Rajasthan, improve the credibility of the public system will increase attendance at primary health centers.

So key characteristics of a reliable and efficient medicine supply systems are

- At least 15% allocation of public funding for health to drugs;
- The State must procure all EDL medicines;
- Separate AYUSH EDL and centralized procurement at state level;
- Prescription & Dispensing in accordance with Standard Treatment Guidelines (STG);
- A two-bid open transparent tendering process;
- Quality generic drugs ensured;
- Warehouses at every district level;
- An autonomous procurement agency for drugs, vaccines & diagnostics;
- An empanelled laboratory for drug quality testing;
- Enactment of Transparency in Tender Act;
- Prompt payments;

In terms of drug quality control we recommended

- Strengthen Centers and States Drugs Control Dept., for effective quality control with adequate human resource, technology & institutions;
- Build a network of drug quality testing laboratories, to be accredited by NABL in each state with periodic renewal;
- Establish blood banks and quality of blood banks to be ensured;

In terms of provision of healthcare we recommend

- Strengthen Public Services (Especially: Primary HealthCare – both Rural And Urban areas also District Hospitals)
- Contract Private Providers (As Per Need And Availability – With Defined Deliverables
    - The insurance provider, who is now the intermediary without any

particular interest in controlling cost in the government funded insurance scheme is an unnecessary luxury. We need to do direct contracting with clear cuts terms of contract.

- An integrated primary, secondary, tertiary Care through Networks of Providers.
  - These can be networks of public provider or networks of private provider or network of public private provider. A word on Public Private Partnership (PPP) – PPP are of varied kind and this country has received considerable flak from both the partners and of course from the civil society. Quite often the government and the civil society feel that the private sector partners have not delivered what was not promised. On the other hand, the private sector partner also feels that the government has not gone out to provide them all the facilities which are required. There is a considerable amount of distress on both sides. Indeed PPP has come to be expanded in some sections as partnership of private profit. I would like to redefine PPP as "partnership with public purpose". So first define what the public purpose is and then agree on how to implement it. If we have a partnership with public purpose it need not be only a public private partnership even two private sector partners can actually have a partnership for public purpose. So that's the critical element.

In terms of human resources for health, the frontline health workers must be increased. We recommended

- Doubling of Social Health Activist Accredited Social Health Activist (ASHA) and Auxiliary Nurse Midwife (ANM)
- Male Health Workers (MPW) and Mid-Level Health Professional (3 year trainee)/AYUSH at Sub-Centre level
- Expand Staff (esp. nurses) at PHC (Primary Health Center) and CHC (Community Health Center)
- Nurse-Practitioners for Urban Primary Health Care

We also suggested that

- Establish new medical and nursing colleges preferably in underserved states and districts with linkage to district hospitals
  - There is no point in having 38 medical colleges in Karnataka and 9 or 10 in Uttar Pradesh and saying we will add more in Karnataka and none in Uttar Pradesh
- Increase the number of ANM schools
- Scale up number and quality of Allied Health Professional training institutions
- Establish District Health Knowledge Institutes to coordinate and conduct training of different categories of health workers
- Develop Public Health and Health Management Cadres (District, State, National) - something that figures in the 12th plan now.

In terms of regulations we recommended that National Health Regulatory and Development Authority be formed, because regulation has been the Achilles heel of the health sector in India. We are one of the most under regulated countries in the world.

- First we need a UHC support system, which would have the technical wing to help develop standard treatment guidelines, Management protocols, quality assurance methods, something akin to the National Institute of Health and Clinical Excellence (NICE) in the UK and the national institute for technical excellence and legal and financial regulatory wing.
- Then a managements information wings for serving the UHC.
- In addition we must have an accreditation body for norms and national registry Independent monitoring and development elevation body
- The central body should be normative but there should be similar state bodies which are operational

There should be a much higher level of citizen partnership and citizen engagement. Thailand has health assemblies every year. Brazil has health council's right from the village to the national level and so does Thailand. We need to strengthen our local governance system and strengthen the role of civil society and non-governmental organizations. We also need to institute formal grievance redresser mechanisms at the block level.

To sum up ladies and gentleman, when we look at universal health coverage, we have to recognize multiple benefits

- Financial protection
- Greater equity
- Improved health outcomes
- Efficient accountable and transparent health systems
- Reduced Poverty
- Greater Productivity
- Increased Jobs

We certainly need a much more efficient and accountable health system. We have had a situation where at least 3 of the chief medical officers of UP have experienced a lower life expectancy than the average male, dying violent deaths. We cannot afford to have that kind of situation.

Reduced poverty, greater productivity but also increase number of jobs. If every economist in the world now goes on to the platform or to the printed page and says that there is a need to increase the number of jobs in order to revive a sagging global economy, what better than to expand the health workforce which in turn will create millions of jobs for women, young persons and improved health sector outcomes provide remunerative employment. So here there are convergent interests which are important for the development of our country.

The journey has begun with the prime minister announcing that the 12th five year plan will be a health plan and that there will be increase in public financing up to 2.5% of GDP of which 2% will be for health and 0.5% for clean water and sanitation, free provision of essential drugs in public facilities, 'Cashless and Hassle Free' Out Patient Care, Public Health Cadre to be created, Focus on Primary Health Care and Social Determinants. Some of these have been reflected in the findings of the Steering Committee on Health (Planning Commission).

We have had extensive discussions with the Ministry of Health and Family and we are in agreement with the recommendations that public expenditure on health should be increased.

- Scale up public expenditure on Health
- Lay emphasis on Primary Healthcare

- Strengthen and upgrade of District Hospitals
- Ensure access to free generic medicines in Government Health Facilities
- Expanding Human Resources in Health
- Emphasize Public Health and its management
- Strengthen regulatory systems for Drugs

I will leave you with this thought that, "If we don't create the future, the present extends itself".

The present is untenable and therefore we need to change it collectively together. I believe OPPI should see itself as an important part in this whole effort and look at what India needs and put that particular priority on its agenda in all its dimensions and I am sure you will.

Thank you.

Dr. K. Srinath Reddy

Dr. K. Srinath Reddy, as President of the Public Health Foundation of India, is playing a major role in strengthening training, research and policy development in the area of Public Health in India. Formerly head of the Department of Cardiology at the All India Institute of Medical Sciences, Dr. Reddy is a global leader in preventive cardiology, who has worked to promote cardiovascular health, tobacco control, chronic disease prevention and healthy living across the lifespan. He has served on many WHO expert panels and chairs the Science and Policy Initiatives Committee of the World Heart Federation.

He is presently chairing the High Level Expert Group constituted by the Government of India for developing a framework for Universal Health Coverage in India. Dr. Reddy chairs the Core Advisory Group on Health and Human Rights for the National Human Rights Commission of India and is also a member of the National Science and engineering Research Board of Government of India.

His several awards include Padma Bhushan (Presidential Honour, 2005), Queen Elizabeth Medal (2005), WHO Director General's Award for Global Leadership in Tobacco Control (2003), Luther Terry Medal of American cancer Society (2009) and D.Sc. (Honoris Causa) from the Dr. NTR University (2011), the Aberdeen University (2011) and University of Lausanne (2012).

Organisation of Pharmaceutical Producers of India

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India's Strategy Boutique

Opening Remarks by the Chairman

Dr. Shailesh Ayyangar*
Managing Director, India & Vice President, South Asia, Sanofi India Ltd.

We had a phenomenal morning session where the time went beyond scheduled, I think the speakers were extremely enriching which resulted in a brilliant session. I promise you that I will try to make this session equally interesting and provide thoughts that each one of us can mull over and learn from.

I am going to start with a very small example of the industry. I would like to have a disclaimer here that this is not a Sanofi presentation and we are not specializing in this.

The issue about access to health is all about reaching out to the stakeholders and in this case, if you are looking at those vulnerable parts of our society, especially in the rural areas, one of the most important aspects we saw earlier today and are aware of is the gap between the diagnosis and the treatment. How can we bridge that gap?

Dr. Reddy eloquently presented data on healthcare statistics in India, so I will not go in detail on that. There is a clear divide between rural and urban India. India is really going global; we have telecommunications that have reached to every nook and corner of this country, FMCG companies that are supplying their goods and services to every corner across villages and the success of retail. But, healthcare, has not really reached where it should.

Hospitalization expenditure has impoverished our population. The information and stark statistics we saw earlier today make us all concerned as citizens of this society. Obviously, this is something that is bothering each and every one of us. So, what the industry is trying to do here is make an effort, and one example is called '*Prayas'*, which in Sanskrit means: 'attempt' or 'an effort'. *Prayas* is a pilot initiative, just to understand if we can work towards creating some kind of bridge in the gap which exists with regard to the quality of healthcare practices within our country.

There is a pyramid with key opinion leaders on the top, doctors in the middle and primary healthcare practitioners at the bottom. The way in which we approached this was to have 48 top and specialist clinicians from urban centers in 9 states and 564 post graduate's in internal medicine or any other subject referred to as 'mentors' from 14 states. We also identified primary healthcare doctors essentially MBBS and registered practitioners which totaled to around 11,500 doctors in 14 states of the country.

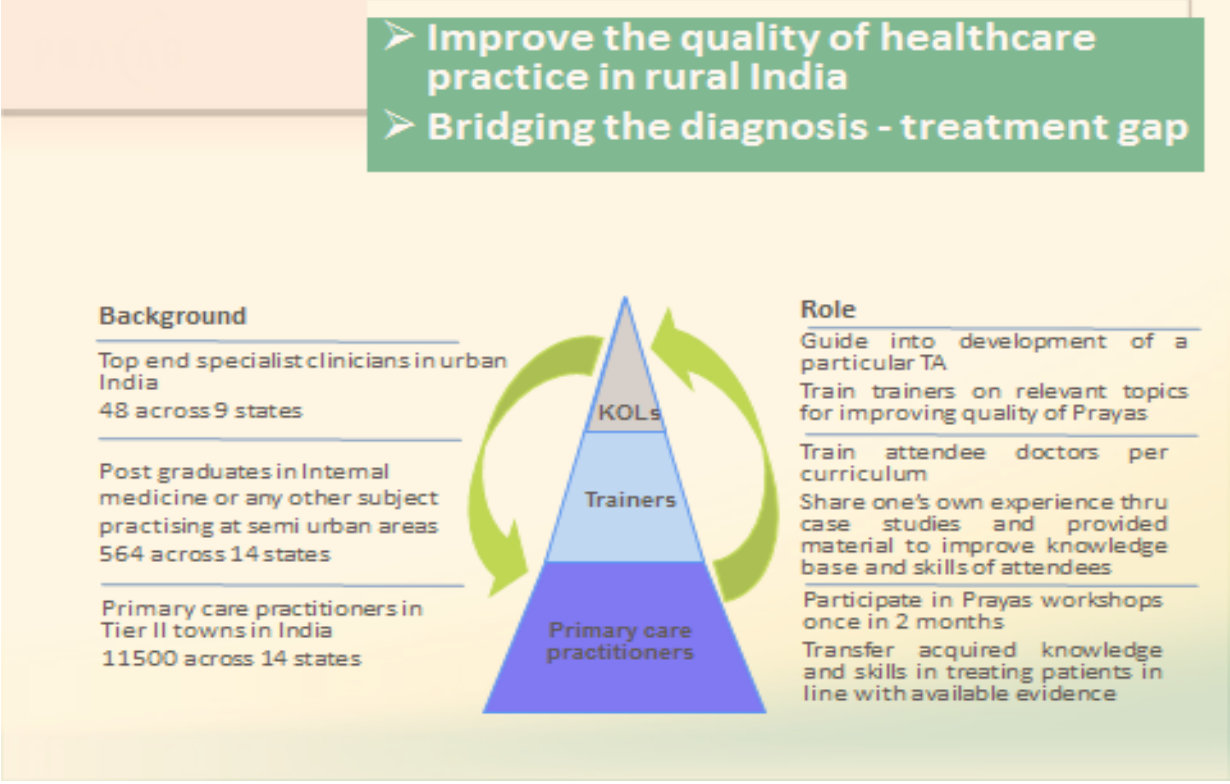
Now, what was the role? The role of the Key Opinion Leaders or the doctors was that they provide a course curriculum and clearly identify the therapeutic areas on which we should focus on in terms of providing education. The trainers were the key element of this *Prayas* initiative. The trainers were trained to ensure they deliver the healthcare messages to the primary healthcare doctors and were also trained on public speaking, the various topics and were of course provided with all the education materials needed. The bulk of this whole process was the 11,500 doctors spread across 14 states of the country who really needed to understand the modern practices and understand the gap between the diagnosis and the treatment We did a survey to find out,

what are the most elementary requirements in the primary healthcare sector; one of them was emergency cases in medicine. It came across as a very important gap that the doctors wanted to learn. Doctors wanted to know how fever can be differentially diagnosed and treated. We did these programs in a number of clusters. For example: An *On-Alert* contained all kinds of issues and problems that normally doctors face in an emergency. As far as the fever was concerned, there were areas like dengue, malaria, typhoid and so on and so forth.

In the rural areas we created the presumptive diagnosis that is required within the shortest possible time, Initial care at the primary level which needs to be done and the practice that doctors must refer exactly when the patient should come so he reaches at a particular time for a definitive treatment. The course curriculum was developed based on an expert advisory group along with the support of various universities. We created a specific educational program for semi urban classes where speaker notes were created and trainers were given the necessary inputs which enabled them to then impart this training in a structured manner to these rural doctors.

We started with a small activity in Uttar Pradesh with about 3,422 workshops and now over the three years that we have been doing this; we have conducted about 6,400 workshops among almost 11,500 attendees. Each of them present in at least 5 modules for which the attendance of each module has been over 90%.This attendance rate has been a key criterion to know whether the initiative is interesting enough for these rural doctors to come back to the workshops.

Another important aspect of this initiative is, not a single Sanofi product or service was ever talked of in the workshops, not even a poster, and there is even no mention of Sanofi as the

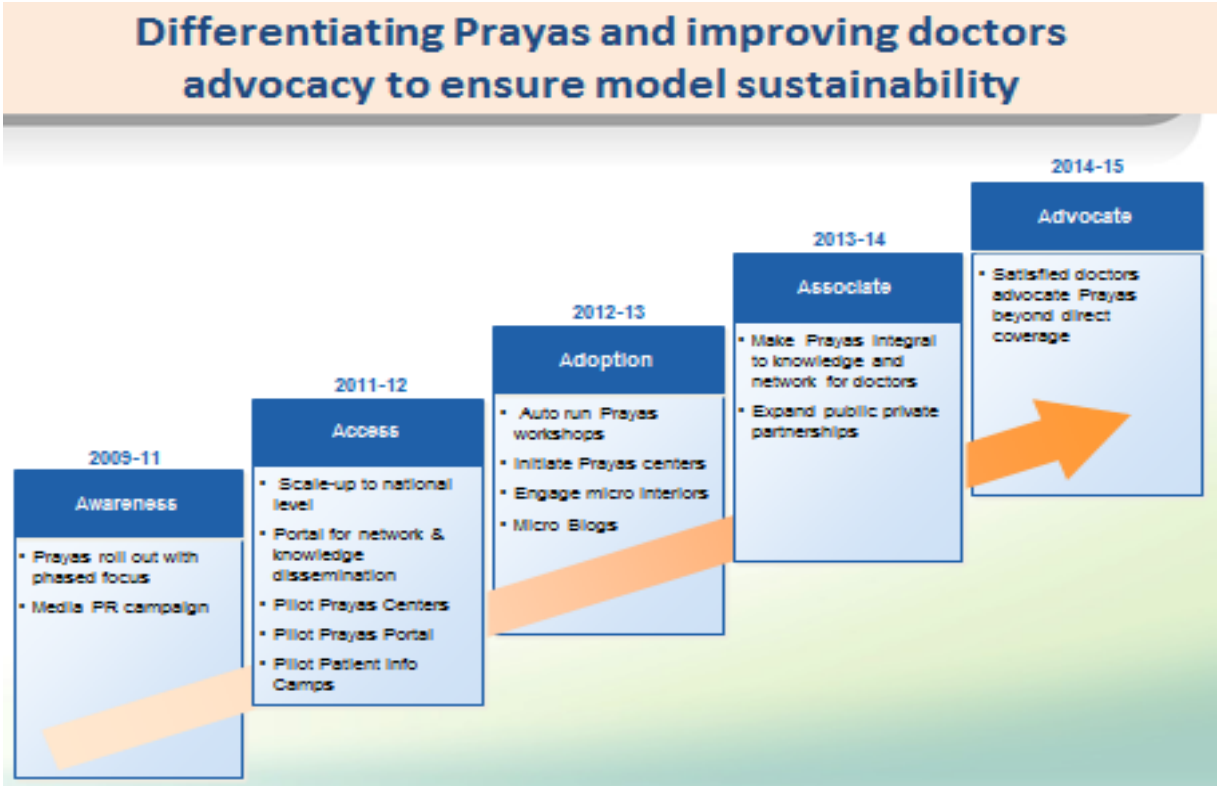


sponsor. The industry is willing to partner and we had tremendous amount of partnership. The 554 doctors and the key opinion leaders did not charge a penny to come for this workshop. The doctors are willing to partner, for where there is a will there is a way to make things happen in our country.

This is what happened, experts and trainers grouped to empower rural physicians. The rural physicians got their certificates from the American College of Physicians and we have certified those who completed the 5 modules in a successful manner such as: respiratory, gastrointestinal health and pain to name a few. There was an expert group who worked on '*on-alert'* and gave certification to the rural doctors.

There are now video conferencing and webcast programs going on, where doctors are exactly explained various aspects of treatment and of course we created a lot of public awareness and there was lots of press.

The entire program has got an evolution process from an awareness level to an advocate level, where we will increase involvement. The idea is that joint physicians-industry capacity building in semi urban and rural areas is an important aspect of building access. Addressing the needs and issues of the physicians and communities is a critical element for success. Of course it needs to be customized across geographies and of course we need to have a sustained model.



The question is, since this is a pilot, how do we go to those 500,000 rural doctors or those people who are going to be rural doctors, how do we reach out to them? Now, we have just about started the *Prayas* portal, it is a portal developed with Infosys which can be used by any of my colleagues in the industry. It really

provides education on the click of a button; all one need is an internet connection and the most basic computer. One can learn through an excellent module by module training method that everybody will get.

We are talking about industry walking hand in hand with the government, NGOs and stakeholders to ensure that first we build the level of knowledge. This is a critical element before we start treating those patients in the rural areas. So things are happening and changing dramatically.

I have great pleasure in introducing my panelists today who are going to be speaking to us on improving access to healthcare.

Mr. Anil Kamath is the founder chairman of Esmcee Advisors, which provides strategic advisory services in strategic planning, organizational development, financial planning and restructuring.

Mr. Kamath has retired from the Wockhardt hospital as its managing director; he was the president of Bombay Management Association and has held several important positions in the industry. He has been a part of the faculty at the Bombay Charted Accountants Society and Institute of Chartered Accountants and Cost Accountants. He is an Honor's graduate in Commerce and a qualified Chartered Accountant from India. He is an alumnus of the Executive Program of the Michigan Business School and several other US universities.

It is my great pleasure to invite Mr. Anil Kamath to please come forward and speak to us on this occasion.

Dr. Shailesh Ayyangar*

Dr. Shailesh Ayyangar is currently the Managing Director - India & Vice President - South Asia, Sanofi India Limited. He is the Vice-President and Member, Executive Committee of Organization of Pharmaceutical Producers of India (OPPI) and the Chairman of its Ethics &Compliance Committee.

With a career spanning over 25 years, Dr. Ayyangar began as a practicing veterinarian in the rural areas of Gujarat where he was employed by National Dairy Development Board and was instrumental in setting up the country's first Animal Disease Diagnostic Laboratory. He joined the pharmaceutical industry - with Ranbaxy and joined Smith Kline Beecham as the National Sales Manager for Animal Health Products in the late 80's. In 1991, he became the Vice President – Sales Operations for Pharmaceuticals for Smith Kline Beecham. In early 1995, he took charge as Director, International Tropical Medicine Initiative of Smith Kline Beecham in UK. He returned to India in late 2000 to support the merger of SmithKline Beecham and Glaxo Welcome and then took over as the Executive Vice President, Sales & Marketing in GSK India. In April 2002, he took over as the Managing Director of Sanofi lab operations in India. Dr. Ayyangar completed his post-graduation program in Business Management from the Indian Institute of Management, Ahmedabad (IIMA) in 1984.

Improving Access to Healthcare: Hospital Chains

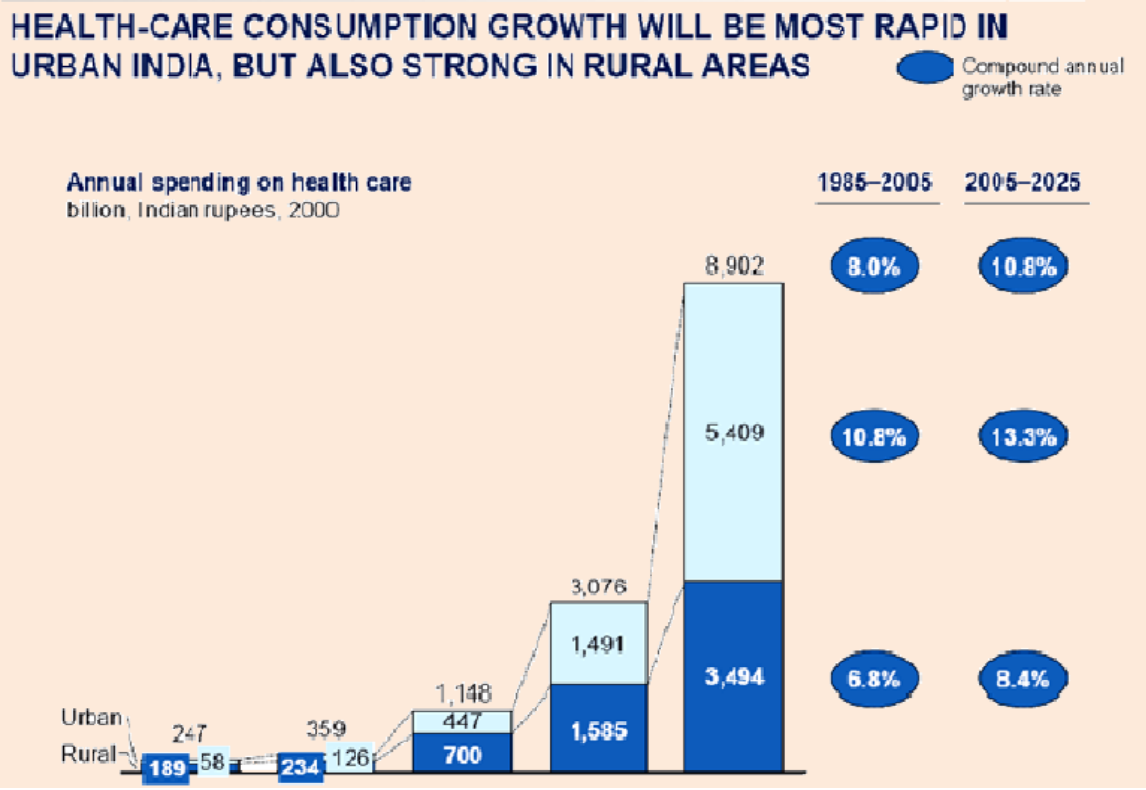
Mr. Anil Kamath*
Founder Chairman, Esemcee Advisors, (Former Managing Director, Wockhardt Hospitals Ltd).

Good afternoon everyone.

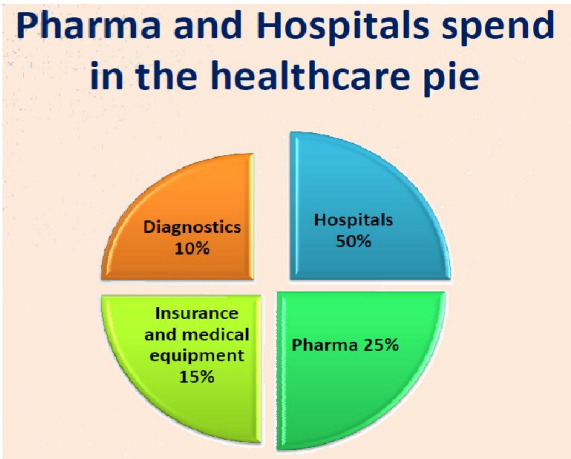
Even before I begin my presentation, I would like to state an inconvenient truth. India has a population of 120 crores and I do not think any hospital chain in this country can enhance anything. Imagine 23,000 hospitals catering to a population of 120 crores. It is a ratio that indicates that catering to such a large audience is almost next to impossible given the level of infrastructure needed for the same. Nevertheless, through my share of experiences in dealing with issues pertaining to healthcare, I shall discuss strategies and ways in which this gap can be reduced.

The Indian healthcare Industry is witnessing a robust growth curve which is estimated to almost double every five years. In spite of this, there is still a huge percentage of the population which does not have access to healthcare. If 70% of the population that does not have access to healthcare at present, was given a sum of INR 10 per year to avail healthcare facilities, approximately USD 2-3 billion would be required to be spent to provide such healthcare facilities.

The Healthcare landscape in India is showing trends which are both interesting and unusual. On one hand is the very serious issue of a large population Below the Poverty Line and on the other there is wide urbanization. Hence



we are at a stage where we are dealing with different sets of parameters to improve access to healthcare and we may have a situation where people are able to afford healthcare but are unable to access it due to geographical barriers.



When you look at pharmaceutical and healthcare spend, hospitals account for 50% and is estimated to reach 71%, thus playing a vital role in the contribution to the total healthcare consumption. In spite of this we do not have adequate infrastructure to deal with the healthcare needs of India.

The key enablers of growth in the healthcare sector include affordability, rise of medical tourism, and growth of insurance, increase in life expectancy, growing population and an increase in lifestyle diseases. Nevertheless, there is still a huge part of the population which continues to be denied healthcare facilities. I agree with the earlier speakers that dealing with healthcare is not the government's or any company's problem but rather a national problem. I also believe that we should concentrate more on the public purpose of what we need to do rather than finding out who will support whom and who should support whom.

I want to draw your attention to some of the reforms undertaken by China. The reason I have chosen China as a comparing medium is because it is the world's most populated country and faces problems similar in nature to those of India. We observe that the 12th five year plan of China provides major emphasis on the healthcare sector. The prominent features of the five year plan are:

- Expanding the basic medical insurance card – This is in spite of the debate that has been going on about the effectiveness of providing basic healthcare insurance
- Establishing a national essential medicines list system
- Working towards providing grass route medical infrastructure
- Providing more equitable access to basic healthcare services

The initiatives have indeed yielded results:

- Public health insurance has expanded to 96% of the population of China
- China's new rural cooperative medical system covers more than 863 million rural people
- The number of hospital beds per 1000 in China has grown from 2.45 to 3.56 in 2010 while India is struggling at 1.25 to 1.3
- The government is committed to bring down the burden of Out Of Pocket expenditure on individuals to less than 30%

This achievement of the Chinese government, which has similar problems when compared to India, is commendable and shows that though healthcare reach poses great challenges for India, it is something that can be targeted and achieved. The good news is that as discussed earlier, the gap in the annual healthcare spending between rural and urban areas is expected to diminish by 2015. An increase in income generation in rural areas is also anticipated. Statistics also point to equal

wealth distribution in the "well-off" segment (> INR 5 million) in rural and urban areas.

The disease profile of the Indian population can be said to most prominently include serious diseases such as Cancer, Diabetes, HIV, Epilepsy, Hypertension, Schizophrenia, Asthma, Alzheimer, Cardiac and lifestyle related diseases which affect a large part of the population. However, even while dealing with such serious diseases, we should not forget to draw our attention to some basic diseases like fever, malaria and tuberculosis that are yet to be attended to and which continue to affect the mass population.

I would like to take this opportunity to showcase two real life examples from when we were running hospitals that would draw our attention to two basic problems engulfing the poor in India today:

- The first example highlights the gap in diagnosis we see in India. A patient from rural India was admitted to my hospital and was being diagnosed. We got to know that he was having fever for the past 6 months and had yet not healed. He was correctly diagnosed, treated and discharged within 8 days, all free of cost but for six months he had been in a serious situation.
- The second example highlights the presence of fraudulent medicines in pharmacies in India due to inaccessibility. A patient was brought in a serious condition, not because of any disease or not being given treatment but because of his intake of spurious drugs. This happened due to his inaccessibility to proper healthcare facilities, in this case, the access to genuine drugs. I don't know why they didn't go to a nearby government hospital but the drugs had adversely affected him.

However, private and public hospitals can complement each other in terms of the learning we get as hospitals. There are some key success drivers for corporate hospitals and both private and public hospitals have in the past learnt and adopted practices from each other working in tandem.

There are various success drivers for hospital chains:

- Clinical Innovation
- Patient Care: Patient care becomes a critical aspect of measuring the success of an institution as it refers to providing care irrespective of the kind of medicine or equipment a hospital has in store. To illustrate this point further I would like to point out the working of some of the municipal hospitals in Mumbai. Generally strapped for resources, these hospitals still attempt to provide top quality medical care to patients. Thus, I think patient care becomes one of the most important factors in determining the success of a hospital chain
- Improving the quality of life: Hospitals play a defining role in improving the quality of life of a patient. A hospital's frame of reference extends well beyond diagnosis and treatment.
- Centre of Excellence and quality of clinical outcome: Centre of excellence is not about getting the right infrastructure. Though, the basic infrastructure is very important, the real need is to improve the quality of clinical outcomes. What are the few things that we need to do to make the hospital a center of excellence? What you really need to do is,

determine how you are going to improve the quality of outcomes. If we concentrate on the quality of clinical outcomes, you will find that the entire process for running a hospital changes.

Hospital Chains constitute 10% of the total beds in India. They are not equipped to handle the entire magnitude of problems that India faces but there were some key trends and shifts that we identified in the healthcare Industry.

They are:

Increased awareness and Preventive Healthcare

Indian healthcare Industry in recent years has witnessed a remarkable and significant change. There has been an increase in awareness about diseases and their treatments both in rural as well as in urban India. In urban India, factors like technological advancements, internet, and interactions have helped build awareness. In rural areas, the government, NGOs and even the private sector hospitals like us have put an extra thrust to spread awareness. An example of a private sector initiative would be the senior citizen programs that our hospital has conducted in places where our branches exist. These healthcare programmes were specially designed and aimed at providing preventive care for senior citizens. The main aim of these programmes was to increase awareness amongst the elder population about basic healthcare preventive measures such as to be careful while walking, avoid slipping and getting hurt. This simple act of prevention could save lot of efforts for the family members. This initiative is taken by numerous public and private hospitals.

One of the lessons that we learned from the American Associations, especially the insurance sector, is the remarkable focus on preventive care. They have devised programs, paying lots of attention to preventive care/preventive health checkup that incentivize people to keep up to the standards of wellness thus diminishing the need for medical treatment. This in turn has reduced the burden of healthcare on the state. Indian healthcare has taken great learning lessons from this. I feel that there can be nothing better than making a whole hearted effort towards building preventive healthcare in India.

Safety of patients

Another important matter of concern is the safety of patients. Safety not only includes getting surgical treatments done on time but also encompasses the entire range of treatments that ensure preventive infections. Statistics suggest that 40 – 50% of problems post-surgery happen mainly due to infections rather than the disease itself. In short, keeping a check on factors such as infection control helps ensure the safety of patients.

Backup in case of emergency

Indian healthcare is such that on many occasions patients visit doctors with basic problems for a long time. Such cases are to be treated very differently from the regular or normal cases. So a safety net and infection control mechanisms need to be in place.

Ecosystem for talent acquisition

Hospitals need to create an ecosystem for talent acquisition in an organized sector to become relevant in today's scenario. There are many incidents of a doctor being affiliated to numerous hospitals. The presence of a sound ecosystem not only retains the talent in an organization but also motivates them to put in extra effort in bringing out better clinical outcomes, improves their efficiency and helps them take out time to serve the needy and

poor. Doctors in fact wanted to do some social work. I share this example from my personal experience. Doctors would come to me and offer to treat patients without charging them. Camps were organized by our hospitals where the doctors would provide primary medical diagnostics care for free. Through this philanthropic activity, doctors working there earned the respect of people around and this helped them establish leadership in the society. A hospital setup like the one I just mentioned helps motivate doctors and keeps them inclined to serve the community.

One of the important lessons that have been repeatedly pointed out by speakers today, something that we have started incorporating like most other hospitals, is the way we can bring down the costs of clinical treatment. But how do you do it? The answer is- you rationalize the way you do things. For instance, you have an antibiotic policy in the hospitals that advises doctors to prescribe antibiotics only when specifically diagnosed. You may have a policy whereby drug abuse is prevented because the first line of treatment generally seems to be such that you just give the patient a drug and let him get well. All this adds to cost.

Evidence based medicine is gradually emerging in all respects of our life. Evidence based medicine implies that all surgical ways you employ have steps or processes. If you follow these steps or processes properly, whether in a private or public hospital or in a village, your surgical process will be assured of positive and quick outcomes. You improve on grounds of operational efficiency and are able to bring better delivery to the hospital. Let me give you two quick examples of such hospitals which I have personally visited.

One is Arvind Eye hospital and the other is Shankar Netralaya. I have personally visited and seen how they work. For instance, Arvind Eye hospital performs more than 200,000 surgeries a year and you may find an ophthalmic surgeon often performing 34 surgeries in a day. The surgeons have excelled in the art of productivity. The surgeon times the duration of a cataract operation with such precision, that by the time she is about to finish with her first operation, another patient is brought in on the second bed next to the first. The surgeon just has to move around and start with the second operation process as the first patient is taken out.

We spoke to the authorities there who told us that over a period of time they had realized that they would have to lower costs since more than 50% of their operations were done free of charge. This could only be made possible by improving productivity, thus lowering costs. The second thing they did to lower costs was to backward integrate to manufacturing foldable lenses at a very affordable cost of USD 2.5 to USD 3 that were initially expensive to buy. In this way, volume generation has helped them charge affordable costs. These are very classy examples of what is being done across the country to reduce costs and increase reach.

The other important thing that we need to understand is that like in the US, hospital chains or large hospitals work towards a common purpose. Though, unfortunately we have not yet reached such a situation as of now, it always remains something we can strive to do in the future. One advantage that hospitals chains have is that of negotiation. Hospital chains are able to get medicines and equipment at much better prices than anybody else. In fact in the US I believe, there is only one organization that buys pharmaceutical products for hospitals together. Hospitals do not have pharmacies. They outsource it to this organization that negotiates with all the original manufacturers and gets the hospitals the best

deals with respect to prices because in America the cost of healthcare is state based.

Another important dimension that we need to deal with is care for the elderly. I think what is imperative over here is that there has to be a model where we can deliver healthcare to the elderly at home. Though we talk about it being done in the US and other places as well as in some places in India, the question holds as to whether we can have a set of trained people who are equipped to go across and provide this service. If we are able to do this, we would be saving on three things, one: we would be saving the person of the burden of coming to the hospital, second: we would be reducing unnecessary foot fall in the hospitals and third: we would be using our facilities to optimize and do more high end work than we presently do. So I think this is something that will come up in the future through which hospital networks may benefit.

As I keep saying, we have to be efficient enough to handle volumes. The other important thing that we were able to do and are doing like most other hospitals are setting up at least eight to ten outreach centers near our hospitals. We operate these outreach centers by having a partnership either with a physician, an NGO or with small government primary centers where we send our doctors and have camps. To illustrate this better, let's say there is a primary healthcare center. Now, there may be various problems such as 'mother and child problems', problems of people who can't see properly or several other issues. We try and support these activities, our trained doctors visit those places, get an opportunity to serve people and if the cases are very complex, they are referred to our hospitals or the nearby local hospitals where our doctors have a tie-up. We do this work as a part of our corporate social responsibility.

I would like to conclude my speech with the point that what we really need to do today is work together. Government, Non-governmental organizations, the corporate sector and pharmaceutical companies should work together. I would like to mention that these pharmaceutical companies provide us support with the pharmaceutical products we need and the sponsored awareness programs. They help us spread awareness with the objective of building strong relationships between the community and ourselves, especially because people hold a general perception of not looking forward to visiting hospitals.

With this I finish my chapter and thank you for your patience.

Mr. Anil Kamath

Mr. Anil Kamath is currently Founder Chairman, Esemcee Advisors which provides strategic advisory services in Strategic Planning, Organization Development, Financial Planning and Restructuring, and Acquisitions and Mergers, with his rich experience in hospitals he also consults with organizations in areas of planning, setting up and successfully operating their facilities both in India and overseas.

Improving Access through Affordable Healthcare

Dr. K. Venkatesham*
CEO, Rajiv Gandhi Jeevandayee Arogya Yojana

The **Rajiv Gandhi Jeevandayee Arogya Yojana:** It is an initiative whose objective is to reduce financial catastrophes because of high healthcare expenditure on low income families and is a scheme for tertiary care, covering families whose annual income is less than or equal to INR 1 lakh. On a pilot basis, the Maharashtra state Government has started the scheme 25 days ago. The scheme is a clone of Aarogyasri, of which Dr. Reddy spoke earlier in the morning. We have taken the good and bad learning of their 4 year experience with the Andhra Pradesh Aarogyasri and have factored Maharashtra's requirements to devise the Rajiv Gandhi Jeevandayee Arogya Yojana.

Maharashtra has witnessed various schemes over the years to provide free/affordable healthcare to its citizens.

The Rashtriya Swasthya Bima Yojana (RSBY) targeted at every below poverty line family, entitles each family to receive up to INR 30,000 per year; however, there is need for effective monitoring systems to ensure its purpose.

The **Chief Minister's relief fund** where the common man would approach the CM directly or through a local MLA to try and secure some funding in time was later modified to the **Jeevandayee Yojana** in 1996. Under this new scheme the money would go directly to the concerned hospital after the necessary approvals. This involves a lengthy approval process, difficulty in identifying the rightful beneficiary, incorporates a limited number of critical procedures, is not substantial, does not cover costs of: consumables and disposables, surgeon, anesthetist, operation theatre and is eventually still a reimbursement plan!

Hospitals which have been allocated public land free of cost fall under the **Charity Hospital Scheme**. These hospitals have to reserve 20% of their beds, 10% for below poverty line patients and 10% for above poverty line patients. Treatment is charged at the cost price, which is usually the lowest price available. However, the scheme is poorly implemented, making it very difficult to efficiently secure a bed under such scheme.

The global standard related to the "desirable" limit of out of pocket expenses towards healthcare is less than 15%, however in India, the out of pocket expenses is close to 71% of total healthcare expenditure.

With results from recently conducted surveys in rural and urban areas, we can infer that the percentage of ailments that go un-treated due to financial constraints is on the rise.

It is evident that citizens, especially the vulnerable sections of society, do not have any form of financial protection and are forced to make unaffordable out of pocket payments when they fall sick.

This is not only regressive but has strong economic and social consequences for countrymen and country alike.

Despite the presence of these three initiatives a representative case study demonstrates the inadequacies in the system and the struggles of a family. This prompted us to further improve access to healthcare by making it

more affordable by launching the Rajiv Gandhi Jeevandayee Arogya Yojana.

In 2008 Smt. Sundatai Pattewar from Kinwat Taluka was diagnosed with a heart condition in Kinwat which was later confirmed in Nanded, for which she required a valve replacement. She was advised to travel 800 Kms to Mumbai to JJ hospital which had the necessary infrastructure and expertise for her treatment. She was soon apprised that a surgery was required which would cost her approximately INR 1.5 Lakh. She struggled to organize the finances till she learned of the "Jeevandayee Yojana" scheme. However, in order to get a grant she had to prove she was below the poverty line and had to organize the relevant certificates and identification proofs, she thus had to return to her village in her un-healthy state to get the certificates. After several months of uncertainty and tension she was sanctioned INR 85,000 for the procedure.

She was still short of a considerable sum of money and had no income for nearly 4-6 months since her husband had to be with her and could not work. To cover the balance she took advances from her husband's employers, loans at high interest rates from local co-ops, begged from relatives and sent her children to work with the local merchant thereby abruptly stopping their education in the 10th and 12th standard.

Although her family was able to put through the mental agony and she received the required medical care in time, it seemed as though the Pattewar family had once again entered a hopeless situation due to their new financial burden.

The social effects on the family were also grave, they lost their self-respect since they literally had to beg for money by "touching everybody's feet" and now the family's only dream is to pay back the loan as soon as possible, let alone the education and upbringing of the children.

Inspired by the learning's from the prevailing schemes, especially the Andhra Pradesh Aarogyasri and countless desponding individual experiences as brought to light above, we in Maharashtra have devised the Rajiv Gandhi Jeevandayee Arogya Yojana in an attempt to reduce financial catastrophes due to high healthcare expenditure on low income families, for the treatment of diseases involving hospitalization and surgery/therapy, through an identified network of healthcare providers.

The objective of the scheme is to improve cashless access of families with less than INR 1 lakh annual income, to quality tertiary and lifesaving medical care. All members of below poverty line and above poverty line families with yellow/orange card will be covered to a sum insured of INR 1.5 lakhs per family on a floater basis for critical illnesses.

Under the scheme we have shifted from the reimbursement model to an insurance based model which has its own pitfalls and criticisms. We have given the insurance to National Insurance Company Limited. Our network hospitals will consist of those from the private and public sector. Pre/post-operative and follow up expenditures for 10 days are included in the package.

The pilot project came in to effect on 2nd of July, 2012 and covers ~49 lakh families in 8 districts of Maharashtra. At present ~60-70% of the population of Maharashtra is expected to be under cover and the objective is to gain learning's from this pilot project and further expand.

At present 972 surgeries, 30 specialty therapies and procedures with 121 follow-up packages are covered. To facilitate smooth operations there is an elaborate system of

software, each network hospital will have our representative from where the authorizations will be raised which will then require approval from the medical audit team in the central office, following which an evidence based sanction process will be carried out with strict time limits and an emphasis on efficiency, where Preauthorization, that is approval of the request must be done within 12 hours. This efficiency will also extend to payment to the hospital, only if we give money on time can we negotiate lower prices. To ensure this, we have a clause which says, after submission of claims, within 7 days the claim will be settled.

The scheme is unique in that we are providing free outpatient department in the network hospitals so primary care is covered, health camps with specialists in the remotest parts of villages, free food when a patient comes into the hospital, return fare transport costs to be borne by the hospital.

The government has created a trust which will monitor the activities of all stakeholders under the scheme. In fact, to ensure smooth processes, the insurance company and its third party administrator will be sitting in the project office and will not administer it from a remote location.

Some important learning's we have gained from Andhra Pradesh Aarogyasri are:

A) Since the scheme is surgery driven, large sums of money were going to the insurer where patients would get their surgeries done in private hospitals. As a consequence the government was pumping money into the system however it was not flowing back in. Under the RGJAY, we have reserved some of the procedures for only government hospitals, therefore money will flow back and not out.

B) In order to keep administration costs low, we have insured that the unclaimed amount, after an insurance administrative charge of maximum 20%, has got to be returned to the scheme. This ensures that there is more money available for disbursements and those private players are not exploiting the initiative.

For example: If the claim ratio is 60%, 20% will go for administration, and the balance 20% money has to be returned to the government, so in case the claim is not made the money has to be returned to the government.

I thank the OPPI for organizing this conclave and am confident that the efforts undertaken will yield results.

Thank you

**** Dr. K. Venkatesham***

Dr. K. Venkatesham (IPS) is the Chief Executive Officer, Rajiv Gandhi Jeevandayee Arogya Yojana (RGJAY). The State Government of Maharashtra has launched RGJAY in order to improve medical access facility for both Below Poverty Line (BPL - Yellow card holders) and Above Poverty Line (APL- orange card holders) families to enhance the quality of medical care to BPL and APL families.

Salient Features of the Rajiv Gandhi Jeevandayee Arogya Yojana	
Launch Date	♦ 2nd July, 2012 (Pilot Scale)
Objective	♦ To reduce financial catastrophes due to high healthcare expenditure on low income families for tertiary care
Geographical Area Covered	♦ 8 districts in Maharashtra: Mumbai Urban, Mumbai Suburban, Raigad, Dhule, Nanded, Solapur, Amarawati, Gadchiroli
Targeted Population	♦ Below poverty line and above poverty line families with yellow/orange card ♦ Families that have an annual income of less than INR 1 lakh
Number of People Covered	♦ ~49 lakh families, which constitutes 60-70% of Maharashtra population
Scope of Coverage	♦ 972 surgeries, 30 specialty therapies and procedures with 121 follow-up packages
Network Hospitals	♦ Public and private providers
Insured Amount	♦ Critical illnesses: INR 1.5 Lakhs per family ♦ Kidney transplant: INR 2.5 Lakhs per family
Sources of funds	♦ Premium paid by Government
Unique Features	♦ Health camps in remote villages ♦ Free food for patients at the hospital ♦ Return fare transport cost is included ♦ Pre and post-operative expenditure, follow up costs for 10 days included ♦ Free outpatient department in the network hospitals

Organisation of Pharmaceutical Producers of India

Business Session 2
Moving Ahead in the 'Decade of Innovation'

Knowledge Partner

UC UNIVERSAL CONSULTING

India's Strategy Boutique

Opening Remarks

Mr. Kewal Handa*
Managing Director, Pfizer Ltd.

A very good afternoon to all of you,

The topic for this session is innovation. When I look at innovation, I think of some Indian thought leaders and the first few names that come to my mind are Mr. C.K. Prahlad, who gave us the concept of "bottom of the pyramid" and Mr. Vijay Govindraj, who gave us the concept of "reverse innovation". However, I cannot think of a single thought leader who stays and works in India and is globally recognized. Now that is the biggest challenge we have when we talk about innovation and thought leadership.

What is innovation? Innovation is a novelty in how value is created and distributed. All you need to do is to first create that novelty and then say that this is what I have created. Although you will find that so many novelties across so many government institutions are created, not a single one has been commercialized to the extent that it should have been. So novelty has to be created, distributed and commercialized to make it really impactful. Innovation just for the sake of innovation does not help. Innovation has to go to the masses and only then does it become an innovation. Innovation could be in products, services, process improvements, designing organizations, models or delivery systems. In fact Multinational Companies across the globe today are facing challenges of having few products and high prices. Consequentially Multinational Companies are looking for innovative models.

If you look at India's history, a lot of people argue that we are not an innovative country because of our education system. Dr. Barbhaiya is going to talk about it in greater detail and I am just opening it up for him. But the same Indians, when they work abroad, for example in Silicon Valley or in any other place, become creators and innovators. Is it the education system or is it the eco-system? We need to think about this, since so many Indian's have found success in the US. What stops them from being innovative in India?

Global companies have taken the thought process and said, "How do we build our next product in India or how do we bring the next change from India?" Therefore a lot of models have started to emerge, regarding which Mr. Bart Janssens will cover in his presentation.

The first model is a captive model where companies came in to India and started their own R&D centers. There are parallel examples in GE, Intel, Cisco, etc. In the pharmaceutical industry, the only company I can think of is Astrazeneca which has put up an R&D center in India and looked for innovative and new discovery products. This model has been very successful for a lot of companies in IT. The "Xeon series "that came from Intel was from India, the low cost X-Ray of GE came from India. These models worked well and were very successful.

Another model that came from the IT industry was the outsourcing model. In the pharmaceutical case, to outsource R&D functions. I'm giving you a parallel of the IT industry and how it molded over a period of time. For example: Wipro has 30% of its revenue from R&D IT that was completely outsourced and today, it is a leader in this segment. Dr. Reddy in the pharmaceutical

sector bought a company called Auriegene Discovery Technologies. They followed the innovation delivery model where they split the company into two, one as a discovery and R&D company and the other as a pharmaceutical company. They were the first ones to start this process in India.

The third model is the process innovation model, in which we have become experts. I don't think I have to name any companies here, as most Indian companies' today due process engineering and offer it as low cost generic products. This was a great improvement.

The Indian Government is recognizing the fact that there is a great opportunity for innovation in India. I'm surprised that sometimes when I go to the market and talk to the doctors, they think Dr. Reddy, Ranbaxy, Sun, Zydus, Cadila are innovative companies and companies like Pfizer are the ones that bring in products once in a while. Now that's the perception of the Indian layman as to what an innovative company in India is.

Mr. Bart Janssen is going to talk about how to create an innovative hub in this country and how to take this forward in a big way. Most of you know Bart pretty well; he is a Partner and Director with the Boston Consulting Group where he joined in 1999. He has worked across multiple European countries and has been based in India since 2002. He is a core member of the BCG global healthcare practice and has an extensive healthcare experience in Bio-Pharma industries. He is going to talk about Bio-Pharma industries as well since he advises both innovator and generics companies. Prior to joining the Boston Consulting group, Bart worked with Citibank. He holds an MBA from the Booth School of Business in Chicago, USA and has a Masters in applied economics from a school in Belgium.

Ladies and gentlemen, please welcome Mr. Bart Janssens.

Mr. Kewal Handa

Mr. Kewal Handa is currently the Managing Director of Pfizer Limited, Managing Director of Wyeth Ltd and Vice President of the Organization of Pharmaceutical Producers of India (OPPI) and Chairman of its Finance & taxation Committee. Prior to this, Mr. Handa served as Executive Director - Finance, Pfizer Limited. In the past he has held various senior positions like President of All India Management Association (AIMA) and have been Committee Member of the Confederation of Indian Industry (CII); Member of the Managing Committee of the Bombay Chamber of Commerce & Industry and the Chairman of the Pharmaceutical Committee –ASSOCHAM; Member of the Governing Boards of IIM, Ahmedabad and Raipur and independent director and the Chairman of audit committee at Alfa Lava ltd, Pune.

Making India a Global Hub for R&D

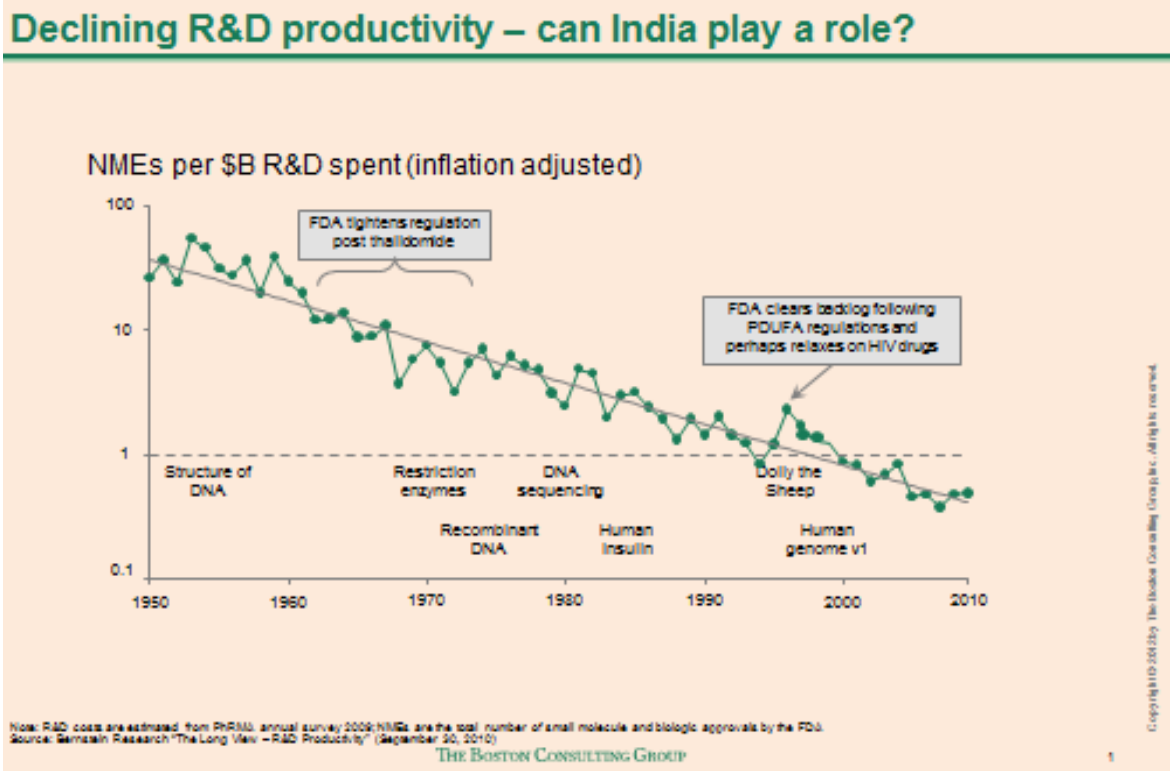
Mr. Bart Janssens*
Partner and Director, The Boston Consulting Group

It is a pleasure for me to be here with you today. When I was asked to talk about how India can become an innovative hub, I thought to myself, well that's a tall order! I will try and give you a realistic perspective; I know there has been a lot of optimism in 2005-2006, yet now many people are turning to a more pessimistic perspective. Let me try and keep a fine balance between what I believe is possible and plausible what I feel is not possible.

I am going to present a part of recent work that BCG did with the USA-India Chamber of Commerce. We spoke to over 40 global and Indian leaders who are active in innovation; these leaders come from industry, government, funding organizations, and academia, and are from India and abroad.

It is good to start this kind of discussion with a problem statement (see exhibit below): continuously declining R&D productivity. This graph represents how many new molecular entities have come out of R&D pipelines per billion dollars invested over time (inflation adjusted). The worrisome trend is that new molecular entity discoveries are declining rapidly and if this graph is updated for 2011 and 2012 it would probably show data points that are even lower than in 2010.

We are at a point today, where it costs approximately USD 2 billion to bring a new product to the market. Here, the question we should ask is:



"Has it become too expensive to create innovation? Or as an industry are we becoming too unproductive to bring something meaningful to the market?" This answer is probably a bit of both.

So, what has been the response from some companies?

The data below is from Pharma, the US equivalent of OPPI, where they track how much US-based biotech and pharma companies are investing in R&D and in what geographies these investments take place. In 2000, 80% of the investment was in the US, with most of the remainder in other developed markets and negligible fractional amount in emerging markets. This picture has slowly started to change.

Today, there is more money flowing into emerging countries such as India and China, while Japan has remained steady. As a response to some of the issues of R&D productivity, people have started to wonder: "Can we actually get that billion dollars or a fraction of that to generate more value in other places?" Then, India obviously comes squarely under the lens of many decision makers.

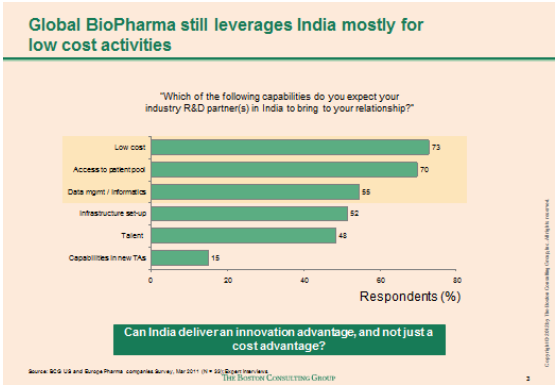
In 2002 only 0.1% of all US-originated R&D investments were deployed in India. This percentage has gone up substantially to 1.1%; a tenfold growth, however it is still from a small base. So, we have made some steps forward.

However, if you talk to R&D decision makers, and try to understand what this money is buying them, you will learn that is basically labor cost arbitrage (see exhibit below): trying to do the same things that people have been doing for the last 10 years in places such as Europe and USA, but in a cheaper manner in a market like India. This is not really innovation; it is trying to be a little more efficient without really changing the way one works. So a question we must ask ourselves: "Is there something else we can do in India rather than just be a source of labor cost arbitrage?", because, frankly, labor cost arbitrage is not a sustainable proposition. There will always be somebody at some point of time who will be able to do the same thing at a lower cost. So, if you think about what generates value: it is about creating new products rather than doing something that many other people can do but more cheaply.

I want to introduce the notion of "competitive advantage" which holds true in innovation and secondly the notion of "convergence". Competitive advantage is a term that's often used in the context of companies but it holds true for countries as well. If you want to explore if India can become an innovation hub, the first question to ask is: "where can India be better than anybody else?" because that is the only way money will come here. Simply being good is not good enough, you need to be better than everybody else. So, that is the first premise I want to put out there, and I think that is really starting to resonate with people.

"Convergence" is a particularly powerful concept to explore where India can win compared to other markets. India has traditionally been reasonably good in the life-sciences industry and bio-pharma industry, but it has not been particularly innovative. We have decent capabilities in biology and very good capabilities in chemistry, but not from the perspective of understanding how diseases work, or to create new and innovative medicines. Joining a playground where you are going to compete with established players and eco-systems on the West and East coast in the US is going to be difficult. India is far behind, not only from experience perspective but also from a talent and eco-system perspective. Where India can make a real difference, is on the boundaries between different disciplines, not just life sciences necessarily per se, but

really where life science is at the confluence of other disciples.



There are three confluences that I want to highlight and spend some time on today:

1. The confluence between life sciences and IT

We have all been talking about bio informatics for a long time, and India has established a very strong reputation there. Health care innovation today is driven by the ability to master enormous amounts of data and extract insights from them. The technological advancement that has happened over the last 10 years (e.g. genome sequencing) has created an explosion in the amount of data that can be generated. The problem is not in the generation of data; it is actually in trying to make sense of it. India is very well positioned to capture that opportunity; we have a good understanding of life sciences and a great capability in understanding how to mine enormous amounts of data to better understand diseases, disease pathways and interactions between potential drug candidates and biological targets.

2. The confluence between life sciences and engineering

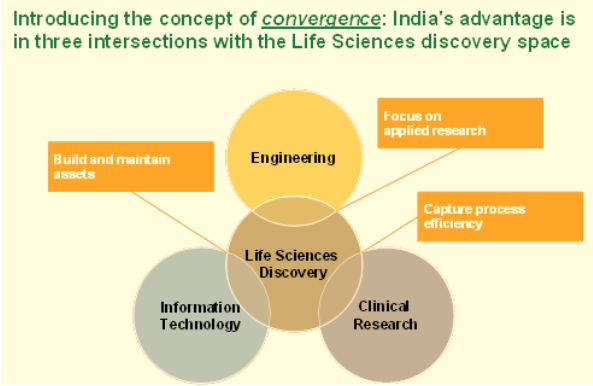
There is a lot of innovation already taking place in this space – think about the medical technology industry. However, we must also consider new delivery mechanisms here - which are more efficient in delivering a new or existing drug, and hence improving the effectiveness of the treatment. Bio-nanotechnology is one of the new hot spots where significant money is being invested. Again, India's engineering prowess has been established for a long time and this skill, combined with a strong biological and chemical understanding, with a necessary amount of focus, can really make a difference there.

3. The confluence between life sciences and clinical research

Everything that you discover and want to bring to the market needs to go through some amount of clinical research. This process has not fundamentally changed over the last 30 years or so. It is only now that companies are seriously trying to shorten the timeline between getting a drug out of the lab and introducing it into the market, and that is what translational medicine is about. I believe India is well positioned to make a big difference here.

We tested the concepts in introduced above for a particular disease, to make it more tangible. The disease we picked was oncology. Obviously, there is a lot of R&D money deployed in oncology, constituting about 35-40% of R&D investments of big pharmaceutical firms. Nevertheless, our understanding of the actual disease and the disease pathways is still limited.

One meaningful role India can play in the confluence of life sciences and information technology is around creating a genetic database of different tumor types, with DNA sequencing data, following that up over time with patient treatment patterns to create a larger data set that really helps to develop a better understanding of drug-tumor interactions, the link between genetics/genomics and treatment outcomes



and so on. It will also help test how personalized medicine can better help address the challenges faced in treating cancers.

India is well positioned due to the diverse patient pool and the large number of treatment naïve patients. But what India requires is a collaboration of different stakeholders among a set of independent physicians, hospitals and care institutions which will work to collect that information, complemented by a set of partners who will actually help in doing something with that data.

To build an extraordinarily rich data set with real life information where patients can be tracked over several year, India is really the place to do it cost effectively. The next area I will discuss is transnational medicine. Although it has been on the government's agenda to create transnational research centers and hubs, presently, it is more at a policy stage than an implementation stage. If you consider the biggest value creator for a pharmaceutical company, it is not necessarily about conducting similar research cheaply but about improving the speed at which research is being done.

There are two reasons why the time period is important -

- The first one being if you can get your product a year faster into the market, you can enjoy one extra year of exclusive sales. That typically offsets more than some of the cost savings that you could potentially achieve by doing things a little cheaper
- Secondly, for diseases such as oncology, a lot of animal models are used which may not be good predictors of what happens in reality in the human body. Translational research allows to actually introducing a compound in the human body earlier than what you typically do today and create a very quick feedback loop with what happens in the lab.

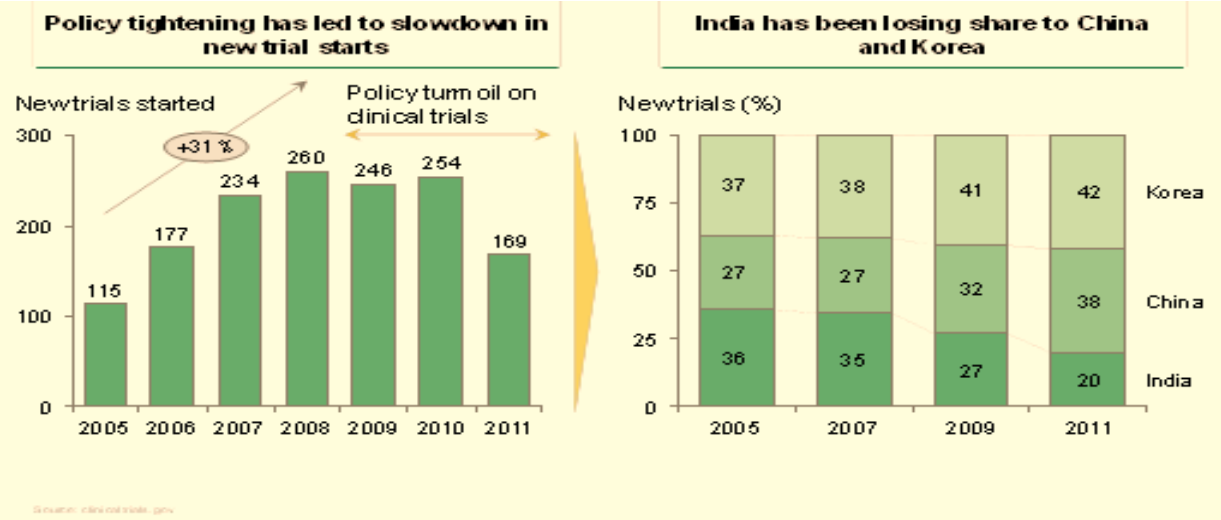
Again, India is very well positioned here since it is necessary to tap into patient populations, which are diverse and have a good representation of what the potential global patient population will be (i.e. from a genetic makeup and behavioral perspective)..

There are a few entities involved in conducting transnational research including the Duke-Medanta partnership that has been set up. Duke brings new ways of conducting clinical research and Medanta brings the infrastructure and implementation. Both Medanta and Duke are excited about this partnership and have had some good initial results. This transnational research example can be replicated where one leg of the collaboration can be in India. However, as I mentioned with the first opportunity, it is not something typically where one party controls the entire spectrum of what happens in innovation, it is a set of different partners who work together to achieve something that independently they would not be able to achieve.

The last area I will speak about is on applied research where we have singled out nanotechnology and applying nanotechnology to life sciences. There is some exciting work that is happening in India, it is still very nascent and we are definitely not ahead. Several countries like Russia, China, Singapore and

Korea are further along the development curve. However, by focusing on our intrinsic engineering skills rather than thinly spreading resources across many different initiatives, we can really make a meaningful difference towards creating an innovative future.

That being said let us not forget there are a set of things that do not work well. I would like to single out clinical research and policy. The Organization of Pharmaceutical Producers of India has a very important role of influencing policy and it needs to continue doing this because it has a very meaningful, large impact on business.



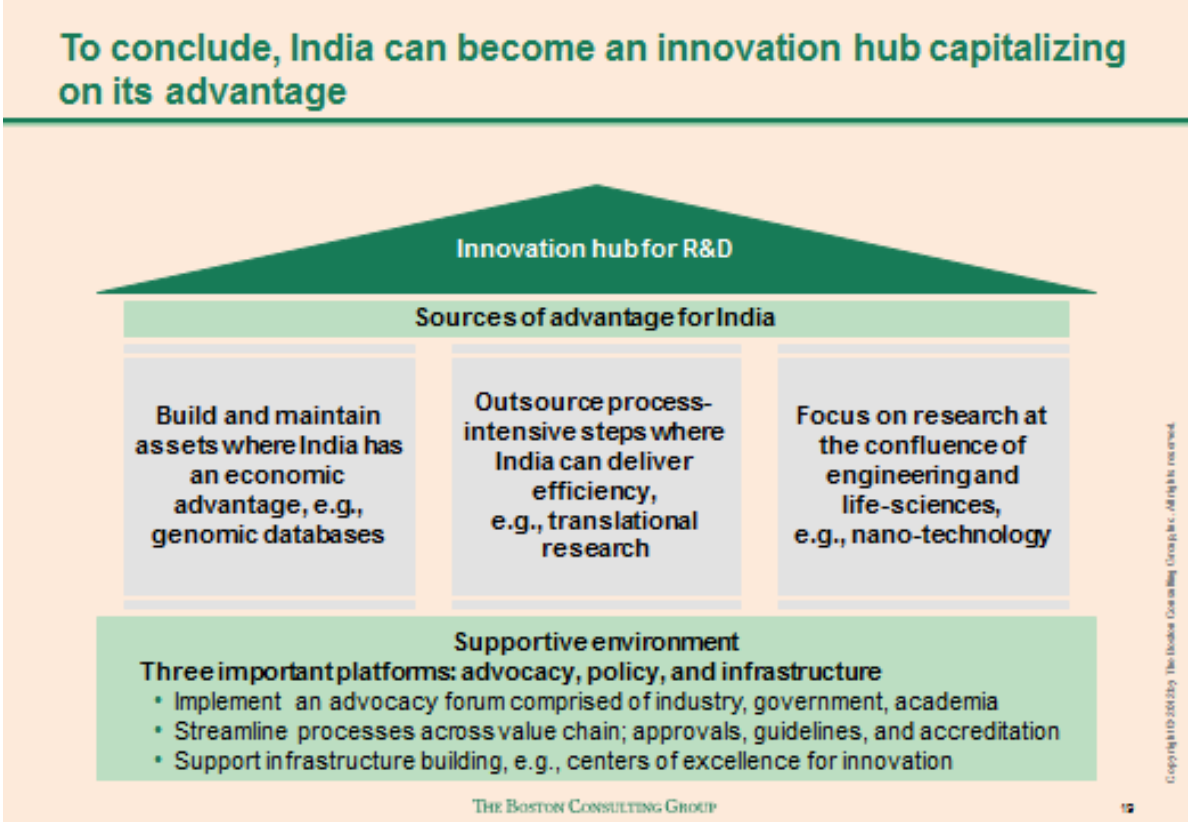
If you look at what happens from a patents perspective in nano-biotechnology, it shows there is innovation is being developed in India. While it is becoming a priority for the government, we still have a long way to go to translate that into real action on the ground.

The point I want to make is that trying to innovate in anything and everything under the sun is not possible. We are too far behind and do not have the necessary skills across the spectrum of sources of innovation. What needs to happen to really make a meaningful difference is to focus on those specific capabilities and opportunities where as a nation we can become better than everyone else. That is the only way to create an innovation hub which will be sustainable in the long run.

The number of newly started clinical trials in India has more than doubled with 30% growth year on year up until 2008. After 2008, it remained stagnant for a couple of years and then dropped to 40% of the peak years.

What has happened in 2008? Something that I call policy paralysis, where approval times started taking longer, public opinion was not well managed and it was simply not the priority of the government to create a very conducive environment for clinical development. We have compared new started trials in India versus China and South-Korea and you can see that India had about 36% share in 2005 which dropped to 20% in 2011. Particularly the journey that South-Korea has made is impressive. China can somewhat be explained because of its large domestic market that

drives increasing clinical research investments. But this is not the case in Korea where the market is relatively smaller than India's



So what happened in Korea? In the early 2000s, approval times in Korea were approximately 100 days. The industry worked with the government to really create a conducive environment, and the government committed to making Korea a global top 10 destination for clinical research and innovation. Subsequently, they quickly worked to reduce approval time. Results followed quickly. In terms of the number of new trials in rank order of country, Korea was 32nd position in 2005 and is amongst the top 10 today. What did they do? Nothing earth-shattering really, most initiatives were focused on reducing business uncertainty for companies (through policy) and improving infrastructure and multi-stakeholder dialogue.

Three things need to happen in India to address the clinical research decline. First, a dialogue must be encouraged between various stakeholders in the industry to agree on what they are going to do. This dialogue needs to include academia and government as well. Second, policy needs to be clarified and improved. Lastly of course, is a clear need to improve infrastructure. I believe the first step needs to be to encourage dialogue and reduce uncertainty. Private investment will take care of the infrastructure issue. This is what has what happened in Korea and I am very optimistic that this is something that can work in India as well.

Let me conclude and wrap up. In summary, I do not believe India can become a competitor to life science innovation in the US West or East coast. Certainly not for the next 10 years. But I do believe that India has some real assets. With focus, in investments, talent

development and in ecosystem creation, I do believe India can become a leader in specific innovation segments.

It might not work on all the three areas I have proposed, but I am certain that there are a set of ideas where we can make a very meaningful difference. Not just in India for India, but in India for the world.

This will require some amount of foundation building when it comes to policy or upgrading the skills of academia in India.

If that can put this agenda in place, I believe it is possible. The key will be: focus and try to do a few things right rather than do a little bit of everything. I think, that will make the biggest difference over the next 5 years.

Thank you for your time.

Mr. Bart Janssens

Mr. Bart Janssens is a Partner and Director with 'the Boston Consulting Group. Mr. Janssens is a core member of BCG's global Healthcare Practice and heads the Healthcare Practice in India. He has extensive experience in the bio-pharma industry, and advises both innovator and generics companies, helping them to chart out their strategy, to improve their performance, and to strengthen their innovation capabilities. Prior to joining the Boston Consulting Group, Mr. Janssens worked at Citibank.

Organisation of Pharmaceutical Producers of India

Business Session 3
Improving Reach of Healthcare

Knowledge Partner

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India's Strategy Boutique

Introduction – Improving Reach of Pharmaceuticals

Mr. Rajan Tejuja*
President & Executive Director, Janssen, Johnson & Johnson Ltd.

Good afternoon ladies and gentlemen.

We now come to the third portion of the conclave today which is all about getting healthcare to people. The esteemed speakers in the morning gave us the government's view on what are the key elements in access of healthcare. Obviously, the first and foremost thing coming out is infrastructure, infrastructure and infrastructure and that is the story of India in fact, not only healthcare, but beyond healthcare too.

A study by D.Y. Patil College in Pune, talks about somebody having to walk 3.9 Kms on average to get to a public or primary health center, with a standard deviation of 5.7. I was wondering how the standard deviation can be more than the average, but that is the challenge we have in our country.

It is a bit obvious that the infrastructure is a mix of both public and private and it is only going to change when the government increases healthcare spending from 1% of GDP to 3.8%. That is when we are going to be able to see a significant change in the health infrastructure.

The other aspect is insurance as part of the whole financing piece. So you may build infrastructure, but can people afford it? How do we make health care affordable for the large population that we have got? The new Below the Poverty Line figures say that close to 350 million people are Below the Poverty Line. How do these people access healthcare? The story does not end there; it also entails the middle class, the lower middle class and the upper middle class, as to how they are going to access healthcare?

How do we get the financing act together? The government has taken a big step and announced *an* ***INR 5 million free medicine scheme*** and as Dr. Reddy mentioned, the government will work on the details in the 12th 5 year plan. But this is just the medicines piece, how is this whole thing going to get there? How is it going to go to the patient? There are a lot of steps that have to be taken between the central and the state governments.

How is insurance going to help here? Although there are different estimates on what percentage of the population is actually covered by some type of insurance, the fact still remains, that it is a small portion of the population. If you take the right to healthcare as one of the key rights, it is obviously going to become very important.

I read a statement which says, "High insurance penetration without accessible facilities is meaningless". So obviously both these go together, you need to have a higher insurance penetration and you need to have facilities where people can go, otherwise it is meaningless.

Now, I have two esteemed speakers here, who are going to share their side of the story.

The first one is Anil Varma:

Anil is the President of Howden Insurance Brokers India Private Limited. He is going to talk to us about how to improve reach in pharmaceuticals where he will focus on the insurance piece. He is currently the president

of his company and has over 26 years of managerial experience in the general insurance industry. Mr. Varma commenced his career in the Insurance sector with the Oriental Insurance Company where he worked for almost 15 years in various capacities at Mumbai, Ahmedabad and Vadodara. He then joined Bajaj Alliance General Insurance Company as the regional head at Hyderabad, Delhi and Mumbai. He later joined Pioneer Insurance and Re-insurance Brokers in 2006 as CEO for the direct retail broking segment. He holds a Bachelor's degree in Commerce and is a Chartered Accountant.

We leave it up to you to help us understand the road map ahead.

Over to you Anil.

Mr. Rajan Tejuja

Mr. Rajan Tejuja is currently the President of Janssen, India and has extensive experience across Medical Devices and Pharmaceutical sectors. Prior to this, Mr. Tejuja was Vice President - Cordis, Supply Chain and International Business, (J&J Medical). Mr. Tejuja is a member of the Executive Committee of the Organization of Pharmaceutical Producers of India (OPPI) and also chairs the OPPI - Sales Force Excellence Committee and a member of the Board of Studies for MBA Pharmaceuticals Management - NMIMS, Mumbai. In the past he has been the Executive Co-sponsor of the Action Learning Program in Asia Pacific for Pharma and was a Process Excellence Examiner.

Improving Reach of Pharmaceuticals: Health Insurance

Mr. Anil Varma*
President, Howden Insurance Brokers India Pvt. Ltd.

Good afternoon ladies and gentlemen,

As I've been told that insurance is a very dry subject, I will try and make it as lively as possible. The content of the presentation will be as follows – I will start by giving a brief perspective on what the essentials of insurance are and the need to increase the reach of healthcare in India. I will then talk about the Rashtriya Swasthya Bima Yojna, a Government initiative in partnership with insurance companies and would like to delve on that since I personally feel this scheme has done wonders, though not to the extent we would have liked it to do but it is a step forward. Apart from the Rashtriya Swasthya Bima Yojna, we need to find other channels to reach to the rural public who is more in need of healthcare than the urban public. I will then talk about other channels including the Bancassurance Channel that can reach to the rural public. Lastly, I will talk about the strategy going forward for an insurer to insure a vast number of the rural population.

You may have heard the sentence "Insurance is the subject matter of solicitation" quite frequently since these days so many insurance companies now advertise. Traditionally, insurance has always been bought and not sold. As per the operative clause in insurance, 'the buyer has asked or requested an insurer to insure his risk and in return the insurer has agreed to insure his risk.' But ever since private companies have come into existence and opened their offices in India, this particular concept has changed and insurers have realized that there is a need to go out and sell aggressively. So this is what, "Insurance is the subject matter of solicitation", means.

I will run you through a brief synopsis of the health insurance industry with the help of the numbers collated by the Insurance Regulatory Development Authority. The numbers are correct since the Insurance Regulatory Development Authority consolidates the numbers given by all the insurance companies. The health premium for the year 2011-12 is Rs 13,345 crores and has grown at a rate of 18.67% whereas the number of health policies in the same period is 1.41 crores and has grown at a rate of 8.03%. Hence, the premium under each policy is going up but the reach or the spread of insurance is lagging.

Insurance – A Perspective

- Insurance is a subject matter of solicitation
- Traditionally Insurance is bought and not sold
- Health Insurance – Brief synopsis

Details	2011 - 2012
Health Premium	13345 crs
Growth	18.67 %
No. of Health Policies	141 crs
Growth	8.03 %

Now in a scenario where so many stakeholders are vying to reach out to the rural public to increase all businesses, including the healthcare business. We have to understand that every business has some cost components whether it is a pharmaceutical company, a third party administration or a healthcare organization. Insurance similarly is also a business. We may not manufacture anything, but we have certain components that help us generate income and certain

components that account for expenses and as a reasonable business organization, we expect to make certain profits.

I wanted to share with this house what the components of an insurance policy are. Suppose you are paying INR 1000 premium, you'd like to know what the components of the cost are. If you know the components, you know what components you can cut down on for the cost to consequently go down to make the product more affordable. The first and foremost component of insurance premium is an incurred claim. Incurred claim is a claim paid by the insurance companies plus claims that have been reported by the insurance companies. This is a major component of policy pricing. The second component of insurance pricing is acquisition cost. Insurance companies pay an acquisition cost to the brokers, intermediaries, bank assurance channels and agents. The third component of insurance pricing is Third Party Administration. The Third Party Administration basically administers the claims and charges a fee for it. The insurance companies have a lot of management expenses or staff costs, which is the fourth component. Then you add a reasonable amount of profit to the four costs to get the cost of the insurance policy.

The General Insurance Corporation, which is the apex body in India and the national re-insurer, plus the four public sector undertakings, that is Oriental Insurance, National Insurance, United Insurance and New India Assurance, all suffered a loss of Rs 6,500 crores in the year 2011-12 as their pricing was not proper. This was because the incurred claims went above than what the insurance companies had budgeted resulting in a loss.

I would refer to the 2010 data of the United Nations Development Program that indicates that 37% of our population lives below the poverty line. As per the new 2011-12 census, the population should be around 44 crores and if you take an average of 5 people per family, you have 8.8 crore families living below the poverty line. So the first question is how do you reach quality healthcare down to the people living below the poverty line? And secondly, even if you're able to get them access to good quality healthcare, how would they afford it?

Theirs is an initiative which the Government of India has taken by which all state governments including the Government of India have tied up with insurance companies to start the Rashtriya Swasthya Bima Yojna**.**

We have been seeing such initiatives being taken up by the government since 2003 when enthusiastic private insurance companies joined the insurance sector and came up with a lot of schemes to cover the below poverty line people. The Rashtriya Swasthya Bima Yojna was started in 2008 and in our opinion it has been quite successful, as the numbers will show us. I would like to share the unique features of this particular scheme with this house. The beneficiaries are the people below the poverty line. For our rural population, illness which represents a permanent threat to their income earning capacities is covered by the scheme. If a rural person wants the desired healthcare, it would either mean that he would have to sell off his existing assets or would have to incur a huge debt. This particular scheme has been launched by the Ministry of Labor and Employment and it started from the first of April, 2008. The beneficiaries under this particular scheme are covered per family for an amount of Rs 30,000 for healthcare. Now I don't want to judge to see whether this particular amount is adequate or not but as far as we are concerned, it's been a step forward.

Another component of this scheme is that the transportation costs per visit are also covered. So if somebody wants to go from a village to

the nearest healthcare center or a nearby hospital, he's paid transportation charges of Rs 100 per visit subject to a maximum of Rs. 1000. Insurance companies along with Third Party Administration and the Government have fixed rates for all medical interventions in the hospitals. All preexisting diseases are covered, thus a man who might have had a heart problem before joining this scheme would also qualify for it. Once a person joins this scheme, every ailment whether it was pre enrolment or post enrolment, would be provided to him. Normally in insurance policies today, there is an age limit of 80 years but in this particular scheme there is no upper age limit. If a beneficiary suffers from a disease and goes to a panel hospital, he has to shell out just Rs 30 to get admitted and take treatment. This scheme is managed by the Central and the State Government in conjunction with the insurers. Now, how and why has this scheme become so successful? It is because this is the only scheme that has tried to see that all stakeholders of the healthcare gamut have been taken care of. We'll see how this is possible.

This scheme actually takes each stakeholder as a business partner and allows them to earn some reasonable amount of money. The insurers are paid a premium for each household they cover. Therefore there is a motivation that the higher the number of people you enroll into the scheme, the more the amount the insurer earns. Insurance is basically a concept where you take premium from a large number of people and pay claims to a few of them. So the wider my insurance book is the greater is my spread of risk. As for the hospitals, they are paid for each beneficiary who is treated. Public hospitals are also paid by the insurers directly. Insurers do monitor the working of the hospitals so that unnecessary procedure or frauds leading to excessive claims are avoided. Because the money is coming from the insurers, they have the right to monitor the claim settlement or the treatment procedures.

If you look at intermediaries, NGOs and others, they are also paid as per the service they render and are incentivized to reach out to as many people as possible. Government pays a maximum of Rs 750 per family per year, which is the maximum limit fixed, beyond which it is capped. The advantage is that the people living below the poverty line can have access to quality healthcare. By introducing public as well as private hospitals into the scheme, the government has tried to create some sort of a competition such that the people get access to best healthcare.

But how does it work? Each family is issued a biometric card containing finger prints and photographs. It's a pre-condition under the scheme that if the hospital wants to get empanelled under the RSBY, they need to be IT enabled. The biometric cards definitely ensure an advantage in the sense that it ensures that the benefit goes to the aright person only. The biometric card is a pan India card. It is a paperless and a cashless treatment because once the patient gets admitted to the hospital; the money is paid by the insurer directly to the hospital.

The table shows state wise statistics of the number of districts selected and the districts with enrolment. Number of districts is bifurcated into districts selected, number of enrollments completed and number of enrolments in progress. Districts with enrolment are bifurcated into total BPL families and the enrollments till date. If you look at Bihar, we have around 71 lakh families, Maharashtra we have around 20 lakh families, in Karnataka we have 15 lakhs families, in Kerala we have around 17 lakh families and in UP we have 41 lakh families already enrolled till date on this particular date scheme. I'm sure these figures can be increased over the years

but this is where we've gone to from 2008-12. If we look at below poverty line, we have 6.34 crore families, out of which enrolment of 3,12,00,000 families has already been done for good quality healthcare.

Rashtriya Swasthya Bima Yojana Achievements

State	Number of Districts			Districts with Enrolment	
	Selected	Enrolment complete	Enrolment in progress	Total BPL families	Enrolled till date
Andhra	-	-	-	-	-
Arunachal	14	9	1	92,312	39,615
Assam	5	5	-	4,94,929	2,04,548
Bihar	38	30	8	1,50,11,570	71,99,748
Chandigarh	1	1	-	9,668	4,993
Chattisgarh	16	16	-	24,76,424	16,73,015
Delhi	10	1	-	9,87,824	95,597
Goa	2	2	-		
Gujarat	26	26	-	3639634	1810326
Haryana	21	20	1	1377989	584995
Himachal	12	12	-	295683	235131
J & K	14	-	2	66505	34221
Jharkhand	24	21	3	2879101	1279208
Karnataka	30	-	28	3412318	1576748
Kerala	14	14	-	2611219	1748471
M.P.	-	-	-	-	-
Maharashtra	32	23	9	4438792	2085433
Manipur	3	1	2	60199	50862
Meghalaya	5	2	3	168709	74792
Mizoram	8	8	-	69299	43256
Nagaland	10	7	3	183624	83871
Orissa	30	9	16	4559528	2060339
Punjab	20	17	3	447694	221979
Rajasthan	5	-	5	617275	294314
Tamil Nadu	2	2	-	-	-
Tripura	4	2	2	445309	315290
U.P.	71	71	-	10931670	4145929
Uttarakhand	13	13	-	612953	336879
West Bengal	19	12	6	7648343	4483854
Total	**449**	**326**	**90**	**63477167**	**31295150**

What are the achievements? 3,12,00,000 smart cards have already been issued. Total hospitalization cases will give you an idea that at least 10% of them have claims. Thus, there have already been around 40 lakh worth of claims under this scheme from 2008. The total number of hospitals empanelled across India is 10,862 of which 7576 are private hospitals and 3,286 are public hospitals. I personally feel quite proud of the insurance fraternity for having been able to at least penetrate to this extent with the initiative of the government. But then we can't stop here and we need to find out more and more channels to distribute heath products.

That brings us to another channel which is Bancassurance Channel. Even though the Insurance Regulatory and Development Authority has put a stipulation that a certain percentage of your premium has to come from the rural sector, I personally feel that we have not been very successful in reaching the below C class towns of India, let alone villages. Private insurers have still not reached the C class towns and their reach is limited to metros and major towns only. But the banks have tremendous reach in rural India. Thus, they would be ideal partners for insurance companies to spread their insurance policies since unlike a property policy, that has a conflict of interest between an insurer and insured, you know that whenever a banker insures a property on behalf of the loaned, he only takes insurance to the extent of his loan, though the property maybe 10 times worth that value so there always arises a conflict of interest in terms of claims. There is a lot of problem because the insurance company penalizes the insured for insuring the property at a lower value; but in case of healthcare, banks basically have interest to the extent of servicing their customers and earning a reasonable amount of revenue.

Basically, health insurance policy is a very easy policy to sell and there are not too many complications in these policies. If you look at the European markets, Bancassurance channel has 30% share. That is, out of 100 policies sold, 30 are sold by Bancassurance Channel. In countries such as Portugal and Spain, the share of the Bancassurance Channel is more than 50% and in countries such as UK, Germany and Greece, the share of the Bancassurance Channel is less than 50%. Thus across the world, Bancassurance has been a major partner with insurers to reach the general public.

Now let's take a look at how many banks there are in India and what is the reach that they enjoy. Under the commercial PSUs and Private Banks, you have 55 commercial banks with approximately 22,000 rural branches; under Regional Rural Banks you have 117 rural

banks with 1,500 branches across 516 districts with nearly 6.2 crore customers and under Cooperative Banks you have 1,11,000 cooperative banks across rural India. Now can anybody beat this kind of reach? Thus, they obviously turn out to be the ideal partners with whom insurers can tie up to spread the reach of healthcare in India. There are some basic strong points in favor of the banks also. One, in whichever area they operate in, the bank branch always knows the financial capability and the protection needs of its customers and they enjoy very good brand equity. Thus, if a rural person has great faith on a bank and if that bank tries to sell the insurance, the person would easily buy it. Some of the other channels through which we can spread health insurance is Post Office Agents, NGOs, Self Help Groups, Cooperative Sector, Micro Finance Institutions.

Now what could be the strategy going forward from the insurers perspective? When we say that we want to develop a sort of a venture where there will be so many stakeholders, it's imperative that each of the stake holders is given a chance to earn a reasonable amount of revenue. Just to give you an example; of the healthcare portfolio or the health insurance portfolio which is Rs 13,345 crores, the incurred claims are 111%. This basically means that the insurance companies are losing 40 rupees for every 100 rupees of premium they earn. Now if that is the situation, how do we expect insurers to keep supporting this kind of a loss? Moving forward, since we are going into the rural areas, we need to develop products which are easy to understand, easy to sell and easy to administer. In terms of rural communications, we can have brochures and leaflets in local languages, no hidden surprises in between the lines and communication should be plain, simple and easy to understand.

The pre-sale process and the post-sale process should be simple and efficient. Technology integration has to be there between all stakeholders whether it's a hospital, Third Party Administrator or an Insurer. And finally, we have to answer what the biggest challenge facing the insurance companies is and how to make the policy affordable. Policies should be affordable to the rural population and should take care of their irregular incomes due to seasonality.

That's all from my side, Thank you.

Mr. Anil Varma

Mr. Anil Varma is currently the President of Howden Insurance Brokers and has over 26 years of managerial experience in the General Insurance industry. Mr. Varma commenced his career in Insurance with The Oriental Insurance Company (Oriental) and then joined Bajaj Allianz General Insurance Company and later joined Pioneer Insurance & Reinsurance Brokers (Pioneer) in 2006 as the CEO of the Direct (Retail) Broking segment.

Improving Reach of Healthcare: Use of Technology

Dr. Rohit Shetty*
Vice Chairman, Narayan Nethralaya Postgraduate Institute of Ophthalmology

Good Evening friends,

I represent an Eye Hospital in Bangalore which is a 30 year old fully private organization. In these last thirty years, we have developed some innovative models of improving healthcare reach through the use of different technologies. In the course of my presentation, I will explain about the different programs and technologies that we have adopted in these last thirty years.

If you look at ophthalmology as a branch of medicine, what you would observe is that an ophthalmologist normally uses lamps, looks at the light and inspects the patient. But now we observe a changing trend in the way ophthalmologists work. An ophthalmologist engages in molecular diagnostics, genetics, eye plantations and stem cells. I was told by someone that ophthalmology is one of the fastest growing branches of medicine today in terms of technology. According to published reports, 94% of our diagnosis is through images. You can also argue that in case of radiologists, 100% of their diagnosis is through images; however radiologists only diagnose, they don't treat. We as ophthalmologists diagnose and treat. Thus, we are one of the branches of medicine where technology can be used to enhance reach since most of our work can be done through images.

There is a second area where ophthalmology distinguishes itself completely from other branches of medicine. In ophthalmology as a subject, we can study the anatomy, physiology, optics, physics and the conduction of cells as well. What makes the subject even more interesting is that it is the only branch of medicine where we can measure the strength of a tissue. That's the beauty of this subject and its importance will be realized as we move forward to understand a cornea. When a new machine or technology unravels, we try to make the most of it before it becomes very common. This ensures that we have every known machine with us that can study the eye, that is, from optics to histology. I would be discussing about one such technology which is very uncommon. There is only one machine of this kind currently in our country. This machine looks at the complete deformation of the cornea. This means that if you take a plastic tissue and try to stretch it, it tells you how much the deformation of the tissue is and what its strength is. What is unique about this machine is that it opens up a completely new dimension of understanding about the way in which we can approach and treat a disease.

We believe in the model of planning ahead and as planned by us ten years back, we continue standing as a single no support private organization today. There are 4 questions that we have always answered or tried to answer when planning ahead- Who are you? What do you want? What are the immediate strategies? What do you stand for? The answers to these become our objectives for the next five to 10 years. Thus, as a hospital, we have always been keen on growing vertically and beyond. We have two branches as of now, one concentrating on the clinical aspect and the other concentrating on the research aspect of ophthalmology. What we have been trying to concentrate on is inspiration, innovation and

collaboration. I've been very fortunate to have worked and been part of an experienced group of people from companies I have been associated with. Ultimately, it's only patience and truth helps us reach our goals.

What I'm going to discuss about in the next ten minutes is how we can use technology to think beyond. I would also like to speak about our innovative path breaking projects, and then conclude with one of my favorite topics; something I feel every hospital should incorporate - skill transfer. Different medical colleges have different ways of educating their students. This results in high probabilities of you being subject to only a very superficial part of the required education. Thus the aspect of skill transfer becomes very important to create better and more confident surgeons. This would form the basis of my discussion at the end of my speech; however, to begin with, let's look at the segment, 'Innovations and beyond'.

Ophthalmology, being an image based field, you can study a lot. To delve into this field more, what we did was, we came up with a complete optics institute. It took us four years to successfully set it up. What this institute does is simple - it studies vision. The reason it took us four long years to set it up is because we still do not know the exact definition of normal vision. We still don't know how a patient actually sees. For instance, the patient may come and tell you that his vision is fuzzy. However, there are different reasons for seeing fuzzy.

Through this optics institute of ours, which we call 'Novel' named after our hospital; we look at completely decoding vision while looking at every aspect of it. This is made possible through the use of technology. How does it help? We call this the department of X-files. 15% of our company's population today is engaged in this department. It helps ophthalmologists and patients who don't have a diagnosis report. Though such patients may have visited multiple places and travelled to various institutes, they still don't have a proof of their vision. Thus moving to the next plane of treatment or research becomes extremely difficult. This phenomenon has changed for us since we have started with this institute. The combination of technology and intellectual minds has helped us achieve this success. Thus we are now able to at least provide a diagnosis report to the patient which could help start his treatment.

Today we have come to a stage where we can image the tear film as well. We all use torques and lubricants, every company is trying to bring in Omega 3 fatty acids, but till today we have not known how a tear looks. This machine is another one of its kind in Asia to have been able to image the tear film. (Refers to slide) *This is how it looks, you can see the colored images out here and these colored images have nothing but Lipex floating on the tears.* I feel very proud to say that in one of my first associations with a pharmaceutical company here, both of us decided to invest on something like this as we realized the need to understand how a patient with a poor tear film behaves. Coming back to the point, what really happens is that when a person suffers from bad or blurry vision, the doctor tries to test everything on him, though a good tear film might have just been all that would have been needed. *You can see here how such a patient would view the letter 'E' when you project it.*

Thus, our understanding of how the patient sees is still in process. We haven't yet reached the stage where we can be certain about the cause of his fuzzy vision. However we may say that technology will help us better understand the reality. Such technology may help us understand a completely new dimension altogether. It would enable us to understand whether you need to heal it by providing nutrition or by giving him some drops. All the

companies present here I think are making excellent drops but we really don't know whether the drops are really going to affect the quality of the patient's tears.

When you look at a typical fundus examination (an imaging technique to visualize and photograph the fundus - the interior lining of the eyeball, including the retina, optic disc, and macula), we all look at the disc. The examination could be done to assess diabetes, hypertension, etc. We always tend to see the changes in the vessel but on many occasions, the enhancement is poor because we use common methods of evaluation. However, using these methods doesn't yield a good representation of hidden vessels. However, with color enhancement using different algorithms or software, you can view the same image better and thus see things that are hidden and were not seen before. Thus a mathematical representation of an image is derived rather than a true representation of it which is more insightful.

Now, in the second phase of my talk, I would concentrate on regenerative medicine. Everybody knows about regenerative medicine and the hype around it. I might be biased when I say that the clinical success of stem cells actually happens in ophthalmology. We looked at genetics, repair regeneration and ophthalmic work as we call it 'GROW', an initiative taken by our hospital, where we combine genetics, repair regeneration and ophthalmic work and try to identify genes and repair the genes and regenerate them through stem cell work. This is about where the stem cell emerges from. The stem cells perform two different tasks- one is of self-renewal, which can further be of two different types. It can be from different places from the eye when you can get these stem cells. For instance, I can provide two classic examples of how stem cells work. This is a visual from our own stem cell patient who has an affected eye, due to acid thrown on him. You can see all the stem cells are here.The limber of the stem cell (A limber nodule is a non-specific term describing any nodular lesion at the junction of the cornea and sclera) of the eye is also completely damaged. We took up small bits from the other eye, used it in the lab and placed the same cells on an amniotic membrane, the best medium, and transplanted it. All you need to do is put the stem cells on the whole area of the amniotic memory like a thin sheet and you will notice that you can differentiate which eye is better. This process doesn't cost much but just needs a bit of passion, passion enough to work in the lab. You would probably not even charge 10000 rupees from the patient for this operation as most patients are children.

What happens in the rural places is that elders ask the children to go and get a Chunna for their 'pan'. Chunna comes in small packets and looks very tempting to the child, who starts playing with it. It is commonly seen that the alkali in the Chunna goes into the eye of the child. In this patient, both his eyes are affected. The eyes suffer from bilateral injury. What we can do is that we can take it from the buckle nicoza and grow it. Again a monolayer is formed which is grown in an amniotic membrane and then transplanted after which this is what it gets to.

This is a classic example of two patients both of whom had a 10% vision. By this process, he could gain 60-65% vision, which is more of amniotic vision which you get at the end of the treatment. What is the future role of this process? Probably, the same process could apply in case of another disease that may be healed by taking a tissue from the bone marrow and injecting it in different areas. Again, a lot of articles have been published about this process in the medical journal, the Lancet in 2012.

Coming to the second aspect of genes, it is now possible to alter the genes you're born with. There are different approaches to doing it. One is you take the DNA, encapsulate it into an adenoviral capsule and then transplant it into the area you want. Now does it really work? Again the classic examples of the success in gene therapy can be attributed to ophthalmology. You either change the normal gene or the abnormal gene can be traded, it can be repaired or it can be regulated. These different ways have been in use for various reasons such as for the cure of diabetes. It is continuously expanding to more fields right now such as Leber's Congenital Amaurosis(a rare inherited eye disease that appears at birth or in the first few months of life, and affects around 1 in 80,000 of the population), a type of Retinitis pigmentosa. The process of gene therapy has been able to restore a minimum vision of 25% in completely blind individuals. Probably, in a few years down the line, there will be multiple areas of application and different phases of trials are happening all over the world. Implantation of retinal chips maybe the future of gene therapy. (Shows a visual)Here, you can see that this is how it's placed within a patient who has got scars all over the retina and this is how the chip will look. However, we have not really realized the stage where we can put in a chip. But it is too far-fetched and I think in the next three to four years, we would probably reach there.

There are two path breaking projects which we can consider here on the recent scenario of tele ophthalmology and what it really does. What I'm trying to look at is something which is very commonly observed in our country. It is retinopathy of prematurity (ROP) or blindness in a premature child. It's a very common phenomenon amongst children. If and when you go to a blind school, you will find that around 40% of such children belong to this group. This abnormality might not have been detected since birth since the entire system was probably trying to save the premature child during its birth through providing ventilation and support. The abnormality of the eye seems to get no prominence thus. When the child is three to six months old, their mothers observe that the child fails to follow light. This is where the vision gets lost forever. There are less than 20 specialists in the country looking at ROP currently.

We thus started with the Karnataka internet based retinopathy prematurity project. The project was started five years back. We have screened more than 26,000 babies in these last five years. I shall run you through this program. This is the world's first Pelion Pharma ophthalmology project map and at this point of time it will be the largest in the world for infant blindness. The concept revolves around a machine called as 'Red Cam' which is made by 'Clarity', US. There is a technician and a driver who uses a van and goes to different rural parts of the state. We have three such 'Red Cam' machines which have been placed in different parts of the state of Karnataka. We have developed software which can record eye to eye data. Through another software medium, the data can be uploaded to your I-phone, I-pad or computer. The doctor then checks the report and writes his feedback before sending it to this place. As soon as it reaches the destination, a printout is taken. The entire process takes not more than six and a half minutes. In case the doctor realizes that an urgent treatment is required, he would ask the patient to rush to the closest laser center**.** The laser operation would cost not more than 800 to 900 rupees and would be the only hope for the child being rescued of blindness.

We have been running this program as a part of our corporate social responsibility and have provided these services free of charge. However, now this program is eventually gaining national importance. The Karnataka National Health Rural Mission launched by the

Karnataka government has adopted this program and are planning to carry out the same for all the districts of the state. Even the Government of India aims to take it up in the future. This program has become one of the first public private partnerships in pediatric blindness. The triple T is Tele ROP which stands for Retinopathy of Prematurity. The program intends to train ophthalmologists on the same and also offer fellowships. Pediatricians and gynecologists will also be given training on the same.

I'll run a short video of this to illustrate better. This is our hospital, shows our vans, drivers and technicians loading this. And this is a machine; they start from three or four different places that could be as rural as this place. The starting point could be our hospital, could be some other place depending on where the Red Cam machine is kept. This is a technician and he is the doctor. The child that needs treatment is referred to the peripheral center where the laser operation is done. The operation takes some 2-2.5 minutes and would probably save the child from going blind all his life. The entire procedure is so simple but unfortunately because we are not being able to detect this abnormality in most suffering kids, close to 30% of them goes blind.

This is a session where the local gynecologists at the peripheral health centers are being trained and we give counseling to both parents and patients. The image is uploading. This is the software we use and all it needs is good internet connectivity. This is how the software works. You have to enter the password given to unlock the software after which this is how your patient data is generated. After seeing the data, you can write a report and find out. If the doctor feels that the patient needs treatment, he types in his feedback and this report goes immediately to the destination computer where it is received by a reporting panel. Thus an on the spot decision is taken whether to go ahead with further treatment or not. We tried to follow the same procedure through the iPad and realized that the reports are generated quicker and have better resolution.

In this child you can see this is the area which is dangerous because that is where the blood vessels are. Thus bleeding may happen anytime and the child could lose vision within 24 hours. Thus it is very crucial to act at the soonest and thus we tell the patient to rush within 24 hours. Through different instances, we have observed that the power of motherly love is very important. We have noticed that sometimes when you ask the patient to rush to the nearby laser hospital, they don't take it seriously. However, when you tell the child's mother, "Your child is going to go blind if not treated within 24 hours!", come what may she will make sure that the child is brought to your hospital within 24 hours. We see here that the doctor is trying to compare between images to see whether the child is progressing. There are days when we have to do it every day.

This is just to show why a cell phone is a good medium for reporting. The mobility of the device along with the facility of having constant network offers advantages. For cell phones having 3G facilities, the report can be generated within a minute and the entire procedure would take not more than five minutes. We have published a Harvard Business Review case study on our program. It is now a National Rural Health Mission program and has the potential to become a leading medical program in the future.

The second aspect of my discussion about regenerative medicine discusses about cancer. This is another common yet undetected phenomenon in children and may get as severe as this image. In this visual, this child was from the streets of Kabul post the Taliban regime. There was a WHO worker who took the child's photograph but did not know how to

help the child especially as the child was found on the street and the cancer seemed to have gone to a stage such as this. This is a white reflex (white glow in the affected eye) showing signs of cancer and is another very common phenomenon in children. We thought of getting this child to Bangalore but there was a problem with his visa and so we referred him to a place in Rawalpindi where we had long tele-discussions. Unfortunately I don't think the child made it because the cancer had reached a stage which was beyond repair. Now what really makes us miss this defect in children is the ignorance of assessing the seriousness of the white reflex. That's why we call Leukocoria (abnormal white reflection from the retina of the eye)to be nothing but a white reflex**.**

To facilitate detection and treatment of this, we run a program. In Kannada we call it 'Echereke' means 'is aware of'- a white reflex when you click a child's photograph. When you see this white reflex in a child, you should realize that the child is suffering from a serious problem.

Look at this visual - we call it the red reflex protocol. It can be detected only while in the presence of light or when clicking a photograph. The reflex could mean two things- one a small tumor or the second, a squint.

This is one child whose photo was picked up from a family album. Looking at him closely, they detected a reflex in his eyes. When diagnosed, the child was detected of having a tumor his eyes. This finding inspired us to run a program on red reflex. We had a student from Canada who later won many awards including the 'Humanitarian of the Year'. We sent her on our behalf to go to rural areas and make people aware of red reflex, about how we could just take a photograph and detect the presence of red reflex. As a result of this program, we got a huge response from patients suffering from such red reflex problems. In many of such cases, cancer was detected. Thus we see that this problem is not solely linked to India. There are people around the world who suffer from such red reflex.

Through our study, we noted that 6 out of 10 children between age groups five to twenty months had come with such problems. Therefore we thought of following a child to child reflex detection program where we thought of discussing the importance of this problem with school kids as well as with children in the rural areas. A big challenge we all felt was the process of getting the identified rural child with a blindness problem to get the treatment later, that is, "How do you get this child to come back to you for a treatment tomorrow?" So what we thought was that for every child who is detected of an abnormality, we would tag him. We called this process 'tagging the child' where a photograph of the child is taken today and tomorrow say if I need to find him, the GPRS tag of the place will provide me with information on him. This process is useful because most of these children do not have an established address. This process was named, 'Found for life'.

I would now start with the last part of my discussion which would concentrate on the concept of mentoring. All of us want to be great surgeons today but we have to realize that we need to be mentors for the new generation of doctors in order to make them successful in the future. Thus, we came up with the concept of tele-mentoring.

These are not people who have no access to healthcare, but are those who have a relevant medical degree. All we have to do to help them is mentor them when they do a surgery so that the required confidence is instilled in them to handle such operations. Thus we came up with a methodology which would be both inexpensive as well as useful on this front. We did a pilot test in the following way. This is one

of our surgeons who are operating in the operation theatre. The surgeon has a microscope which is linked to a camera which is in turn linked to a recording camera. Through a cable wire, the camera is connected to a test set box linked to the IP address of your computer or through software in case of an iPad. Thus you are able to visualize how the surgeon is operating and through a Bluetooth connected phone monitor the operating procedure adopted by the surgeon. The delay in transmission of the operation on the mentor's screen is not more than one and a half seconds and the day this delay can be avoided, better and real time monitoring would be made possible. The set box costs $150 which is very less when you compare it to the extent of confidence and learning that can be instilled in the surgeon at the same time.

To avoid this delay of one and a half seconds which may sometimes be very crucial, we moved on to refractive surgery where we did the same thing and found out that the delay here was not as big a concern as in case of a cataract operation. Thus, this process of tele mentoring would help us make better surgeons in the future who are not scared to take up serious operations.

Finally to conclude, I would like to add that the education system can be improved by either using Elsevier or different portals, or by using video recordings like this speech, or brainstorming and discussing ideas with mentors.

This is how I see the future of ophthalmology and how technology may be employed to delve into it better.

Thank you

Dr. Rohit Shetty

Dr. Rohit Shetty is Vice Chairman of Narayana Nethralaya Postgraduate Institute of Ophthalmology and Associate Professor of Ophthalmology in Neuro-Ophthalmology and Electro physiology department of the Institute. He is also a Senior Research Faculty with Singapore Eye Research Institute. He has to his credit thirty peer reviewed articles in national and international level and has been a Speaker in more than 200 conferences worldwide.

Organisation of Pharmaceutical Producers of India

Panel Discussion

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India's Strategy Boutique

Moderator:

- Mr. K.G. Ananthakrishnan, Managing Director, MSD Pharmaceuticals Pvt. Ltd.

Panelists:

- Mr. Bart Janssens, Partner and Director, The Boston Consulting Group
- Mr. Anil Varma, President, Howden Insurance Brokers India Pvt. Ltd.
- Dr. Rohit Shetty, Vice Chairman, Narayana Nethralaya Postgraduate Institute of Ophthalmology
- Dr. S.M. Sadikot, President Elect, International Diabetes Federation
- Mr. Ajit Mahadevan, Partner, Life Sciences, Business Advisory Services Ernst and Young Pvt. Ltd

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Mr. K.G. Ananthakrishnan: Good evening friends.

Let me set the tone for today. Since earlier this morning we have been listening to some extraordinary lectures on how we can try and collectively improve access to healthcare in this country, and we couldn't have asked for a better panel than the one that is here right now. This panel is going to help us understand the topic better, and will also give you an opportunity to ask questions as to what it is that we can do to collectively face the healthcare challenges in India.

A common theme across speakers was that healthcare access in our country is not a single stakeholder issue and can only be addressed through multiple stakeholder initiatives. Speakers from Dr. K. Srinath Reddy to our Secretary Department of Pharmaceuticals have tried to reason out why although in the last 60 years, lots of improvements have happened in healthcare, a lot still needs to be done to be comparable with the neighboring countries. There are different challenges that we need to address, and if we look at this as a multifaceted approach, there are 3 main issues that were raised today:

- There is limited access to healthcare.
- There is poor awareness, or lack of educated demand. I think Dr. Rohit Shetty's presentation illustrated this aspect very clearly in the field of ophthalmology and I am sure that it is applicable not only in that field but probably in every area of health care
- Lastly, there is the issue of low affordability. It is important to address the issue of affordability because access becomes a challenge not just due to affordability but due to a combination of awareness, infrastructure and affordability as well.

Looking at the challenges and the issues that act as barrier to access, what is clear again is that no single stakeholder can address this issue. So now we have here, a distinguished panel of physicians, consultants and also an insurance specialist. What I am going to do now is ask each one of them to briefly share their perspective on how we could work collaboratively to make that impact which can improve health care in this country. I shall start with Bart, will move ahead with other speakers and then we will open up for our Question & Answer session.

Mr. Bart Janssens: Thank you Mr. Ananthakrishnan. I will keep my speech very short. You have already described how complex the problem at hand is. Let me

perhaps single out one issue that I think is the most critical one, which needs to be addressed over the next couple of years, the shortage of talent. It is probably the biggest issue that will need to be addressed.

I think there is sufficient amount of investment dollars and goodwill in India, but the big issue is the shortage of talent. If you think about the problem of access to healthcare, there are about 400 million or 40 crore people, that do not have access to any health care facility in the country today. Some of them actually have the ability to pay for it. The problem arises when there is no physician in their immediate neighborhood. Even if we create more physicians, it is unlikely that we will actually get them to go to the rural areas. Thus, the big opportunity here is not necessarily to force people back in those areas, but, like Dr. Rohit Shetty has alluded to it multiple times; to think more smartly about the different business models that actually allow us to solve some of these complex issues and use technology to actually get people the necessary healthcare that they deserve.

I think you mentioned that there is no single entity, no single stakeholder that can spread awareness themselves. It will have to be a combination of industry, government and other stakeholders that need to work together. Technology would also have to play a vital role on this front.

Mr. K.G. Ananthakrishnan: Thank you Mr. Bart Janssens. I will now switch over to the physicians. May I request Dr. Shaukat Sadikot to share his perspective on what can be done?

Dr. S. M. Sadikot: First of all let me just thank you for having invited me here. Although I do endocrinology, I am going to talk only in terms of diabetes.

I would like to illustrate the seriousness of diabetes in India:

- Firstly, in 2005, the International Diabetes Federation came out with a report that said that in 2030, 360 million people in the world would have diabetes. Last year, we found out that the world already had 366 million with diabetes and that it would reach 540 million by 2030.
- Secondly, to show you how bad it is, every 3 seconds, a person is diagnosed with diabetes and every 7 seconds, a person dies because of this disease.

You can well imagine that if these statistics are from urban India, how critical the problem would be in rural India.

I think as Indians we cannot just bother about Mumbai because let's not forget that 70% of our people live in rural India. We have to do something about them. I think there has been a tremendous increase in our modalities of how we treat diabetes. There is no question about that; they have been brilliant. But, a lot needs to be done. However, why is it that despite becoming better at treating diabetes, we are not able to curb the tsunami of diabetes that has hit India, and the world?

I think there are two reasons for this. It is of course very easy to blame the government by saying that they are doing nothing, it cannot solely be the fault of the government. I really think they are doing quite well, though as a physician, I think they should spend a lot more. They spend only 1.40% of their budget on diabetes as of now. Can we blame the companies? Why? They have come out with different products but we can always question their costing of them. Can we blame the doctors? Probably yes, we should do something. But the point that we forget is that, at the end of the day it is not the innovations, not the technology, and not the money. What is important is - is it benefiting the bandwidth diabetes or not?

Today in India, all of you know that the person who controls treatment is not a super specialist but the primary care physician, we hear very little about how we are going to give them importance. This could be done by teaching them. That's what I liked about Mr. Tapan Ray's speech in which he emphasized on the concept of teaching primary care physicians.

How many of you today do not have a person in your family or a person whom you know suffering from diabetes. I doubt there will be a single person in this hall. You do not need too much to spread knowledge about diabetes or prevent diabetes. All you need to have is a tape measure. Doesn't everybody in every town, every village and home of India have a tape measure? Just ask them to measure their waist. A waist length of more than 90 cm for men and more than 80 cm for women creates 5-10 times the risk for diabetes and 2-3 times the risk of early heart disease. We also did another thing. We wanted to spread some knowledge in villages and rural areas about gestational diabetes i.e. women getting diabetes during their pregnancy. We realized that school teachers could be the best media for spreading such awareness. This worked very well in some places and didn't work at all in other places. The reason for this scheme to not work out in certain places was the caste system. Some of the children who were from the lower castes were not allowed into the school and therefore the teachers could never tell their mothers about what to do when they become pregnant. So we did another thing. We approached the postal department and used the postmen to spread knowledge about diabetes. And what did we give them? We tied up with a company involved in medicines for diabetes and we gave the postmen in the rural areas a new bicycle. This worked very well for us.

The point is that neither the OPPI nor the government or the companies can solve this problem. It is only the integrated efforts of all of us together that can solve the problem. I think it is essential that we come together and do something about this issue before it gets too late.

Mr. K.G. Ananthakrishnan: Thanks a lot Dr. Sadikot. I think there are a lot of simplistic measures that can have a significant impact on health in this country. May I now request Dr. Shetty to share his thoughts on innovation? We saw a lot of interesting stuff that you shared in the space of ophthalmology. I would request you to share some more aspects with us.

Dr. Rohit Shetty: I showed a slide on three things inspiration, innovation and collaboration. As doctors, we work in our domain, and Pharma companies or research groups work in a different domain. There is absolutely no marriage between us and this is creating a lot of good work but in pockets. And at this point, we wanted to bring this bench to desk, bench to clinic concept where you are working on the bench, you are working on research but you really don't know whether this is going to affect somebody or not. For instance, the tear film company I mentioned was Allergan; we reached out to them through a non-financial deal and today we have an understanding of how a tear film looks.

Every company here would have a branch or an arm which works on a tear film but we have no clue about how a tear film actually looks. The concept of this is probably so useful because:

- there was an inspiration of trying to do something,
- it was possible to view the innovative ways of doing it and there was collaboration

These three words are a complete fit for this project. And now, what is happening is that, we

have a nominative data of how much lipid should be there and we know how much of omega 3 we can take orally. Today, dry eyes are going to be the next epidemic. What does dryness cause? Dryness is coming out with new age disease. One of the new age diseases on what I am doing my own PhD is Keratoconus. It is a disease which affects people between the ages of 25-35 or even younger. It is a condition where the cornea collagen actually shrinks and the person, by the age of 30, needs a corneal transplant. We do not have corneas to transplant on a patient who does not have a genuine problem. This disease used to affect one in 10,000 people but today, the ratio has reduced to one in 2,000. If I sit in my OPD on a Monday or a Saturday, out of say 100 odd patients at least 60 cases will be of this. Youngsters are losing their productive tear glands. Why? It's because your tears are getting dry causing more inflammation. This can be studied using the mass spectrometer where you have more of a matrix metalloproteinase. All that is needed is a simple lubricant and the type of lubricant has to be justified by having looked at each individual case through the spectrometer. Thus, we are not only adding one disease which we are not able to control but also adding a completely new dimension, which we consider as insignificant one, which the second aspect is as discussed earlier, so we need to collaborate.

The third aspect is that we always wait for somebody else to make a gene and be involved in gene therapy. I don't think gene therapy will ever be affordable to the child who is from a village and doesn't even have an address. Unfortunately in our country, in the lower economic class of people, we see marriages within the family causing genetic hereditary blindness. Thus, if the parents cannot afford gene therapy treatment, should the child be allowed to go blind all his life?

The three words can be reiterated here again inspiration, collaboration and innovation. We had an inspiration to come up with gene therapy, thus we took a lead and got three Indians from different parts of the world who wanted to relocate and this is how we set up GROW (genetics, repair regeneration and ophthalmic work). Today, this GROW does not even have an office but continues on inspiration.

Now how do we innovate? We want to try and build a lab which can at least be equipped to conduct a gene test. In China, Beijing itself has 35 machines which can do genetic testing but we don't have a single one in India. Thus, it is not possible for me to send a blood sample and see what genes affect the illness. Why don't we have machines to innovate? I don't know. And should I wait for somebody to provide these machines? I don't think so. So what we want to do is collaborate, to have a lab at the least, where I can send my blood for a gene test. I just want to know which gene this child is affected by. And how does this help the future of gene therapy? First would be to identify the gene. As of now, we do not have the concept of genotype diagnosis in our country so that would pave the way for innovation in the future. The next wave of treatment is going to be gene repair or regeneration. It is definitely going to start in our lifetime and we will be witnessing it; however we are not ready for it. Currently, gene therapy is only going to be affordable to 0.1% of the population because there is a huge probability of it being patented. We should work towards processing where there are no patents. We should at least work to identify this gene. We have enough people and manpower who are inspired to do this kind of work. You might be thinking why we are only talking about ophthalmology. That's because ophthalmology is one such field where you can work and make a big difference.

Mr. K.G. Ananthakrishnan: Thank you Dr. Rohit Shetty. I think the three words inspiration, innovation and collaboration will be distinctly remembered. Now, I would like to open up at least a couple of questions to two eminent panelists Dr. Sadikot and Dr. Shetty, since they are about to leave, so that some of those lingering questions that are there at the back of your mind are not left unanswered. If you don't mind we will take just a few minutes and open up questions before I invite the other panelists to speak.

Any questions from the audience to Dr. Sadikot or Dr. Rohit Shetty: what is the question?

Question from the audience: Dr. Shetty, can you tell us a little about the eye institute, regarding its sustainability and scalability?

Dr. Shetty: We are a fully self-funded organization. There are very few donors that we get. Companies like Allergen have helped us in our strive towards innovation but there are very few such companies. So we not want to dilute our energy and our philosophy in trying to build more institutes and trying to do less of such work. I am able to do all this because we have only two centers to concentrate on that helps us grow vertically. Expanding vertically rather than expanding horizontally helps us because in such a situation, we can buy any machine and invest on any number of people so that tertiary care is made possible. Tomorrow, if gene therapy is made possible in our country, I want to be there before it becomes too costly to be afforded by many.

(From Dr. Barbhaiya directed to Dr. Sadikot)

I have a question on metabolic disease syndrome. Since India is almost becoming the diabetes capital of the world, how do you think India can contribute in a meaningful way in terms of clinical research, for new therapies on diabetes? Why is it that in spite of a huge diabetic patient pool, we don't have meaningful clinical trials here?

Dr. Sadikot: Well I think that we do have a number of clinical trials in process. In fact, there was a very wrong statement made by the Supreme Court last week about how they are going to examine and stop clinical trials in India. The point that I want to make is that we keep thinking of new therapies that should come in but we need to realize that we already have a tremendous number of good therapies already. Let's first get these to our people and let's see how they benefit out of it.

Thank you Dr. Sadikot for joining us today.

Now I think we should get back to the original format. We will first ask Mr. Ajit Mahadevan and Mr. Anil Varma to give us their respective opinions and then have a question and answer session. Mr. Ajit Mahadevan, I invite you to please come up and share your valuable perspective with us. You have an extraordinary working experience in the pharmaceutical industry, particularly in consulting, both in India as well as overseas. You also were instrumental in one of the key books that were written on healthcare access in this country. Thus, we would like you to share with us your thoughts about what is it that we can do together to make this impact.

Mr. Ajit Mahadevan: I think that there has been a lot of discussion today around access and affordability of healthcare. If you just look at access today, like Mr. Bart Janssens mentioned, you will barely see one bed per thousand and half a doctor per thousand people in India.

We are increasingly hitting a classical bottleneck of not having sufficient infrastructure. Infrastructure refers not only to the lack of hospital infrastructure but also the inadequacy of doctors in the right places.

Thus, at a very fundamental level, the question that we all face hovers around healthcare access; however we should feel slightly positive about things because there has definitely been a 20-25% increase in both - doctors and hospital beds.

The biggest swing has come in terms of affordability which has more than doubled in the last 4 years. But even today, 3% of our population gets pushed into the BPL (below poverty line) class because of healthcare. Thus every time you are adding, getting people out of healthcare and improving affordability, you are actually pushing 3% of our population into the BPL (below poverty line) segment. Thus, both these issues of affordability and access need to be addressed together.

We may now discuss the third A that is assurance of quality. Today, 70% of Indians believe that the quality of healthcare is poor in India. Thus if you get healthcare access to the group of people denied of it but you do not ensure reasonable quality, the mission of proper healthcare access won't be accomplished.

There are various models that I think we should talk about here including the PPP (Public-private partnership) model. This model involves getting insurers, the central government, state government and various other agencies involved such that everybody makes money in the system. I do want to reiterate what Mr. Anil Varma said earlier that people have to make money in the system. This is not about making a whole lot of cash but is about ensuring that the system works for everyone. This is probably the most crucial factor of the model that would make it work. I think all stakeholders will be supportive of the fact that we need to create a system that economically makes sense for everybody. If we want to reach the next level of healthcare, as a country, we will have to spend about 100 billion dollars in the next 10 years. I do not mean that the government has to spend this amount nor do I mean that it is the private sector that needs to spend it. It's just a suggestive number that would be required to be spent by our country to reach a level where developing countries such as China and Brazil stand today.

There is a deep sense of mistrust that lies between the entities in the PPP model. It is not that they do not want to work together. There is just a tremendous amount of mistrust between the government and private sector. Thus, we need to break such fundamental barriers and concentrate on collaboration between the government and the private sector. There are not too many great examples of such collaboration today, but a lot could be done to achieve this in the next 3 to 4 years.

Mr. K.G. Ananthakrishnan: Thank you Mr. Ajit Mahadevan. I would now request Mr. Anil Varma to share his perspective.

Mr. Anil Varma: Hello everybody. We have seen in recent times that the Insurance Regulatory Development Authority (IRDA) has been pro-active in taking the initiative of provision of healthcare forward. They have recently come out with new healthcare regulations to overcome the big hurdle faced by most of our senior citizens in India. The entry age limit was 55 into any policy of an insurance company. They have taken the initiative to raise this age limit to 65, which I think would be a very positive step in getting more insurance policies to senior citizens. In addition to this, they have also ironed out many of the previous problems that were there in health insurance. For example, there was no portability. Thus, you couldn't shift policies from one company to the other. Now they have come up with regulations where you can shift policies with all your benefits of the old policy remaining intact.

Lastly, I would want to reiterate on the fact that collaboration is a pre- requisite today and all stakeholders should be tolerant of the weaknesses of others. If you feel that insurers are making losses, try and cut down on expenses or try and cut down on prices, whichever would be more beneficial?

Mr. K.G. Ananthakrishnan: Thanks Anil, I think that was a very good message delivered on collaboration. I would now request for questions from the audience to our distinguished panelists.

Questions: Since morning we have been discussing about the issues on healthcare access with affordability being a very important aspect. The Pharma industry has been talked about as one industry which should really be looking at affordable drugs. Mr. Ajit Mahadevan mentioned about quality. Now one of the things that come to my mind is – differentiation in provision of healthcare. If you are well connected and of a particular economic strata, there is a distinctive difference in the quality and care that you get and the way in which you are treated in a hospital, via a via someone else who walks in there with no connections whatsoever and has a lower financial capability, even though he or she is willing to pay the required amount. Now if you go to the NIH in United Kingdom for example, it doesn't matter who you are. There is no compromise on the quality of healthcare come what may, though you may take ages to get an entry there. How do we bring this change in the ethos and in the thinking of healthcare providers which includes us? Thus, quality of healthcare delivered has become a major concern for the country as a whole. How are we going to reduce this discrimination in healthcare?

Mr. K.G Ananthakrishnan: This is a very good question. First let me hand it over to the direct medical service provider and then take opinions from others.

Dr. Rohit Shetty: I agree with you. There is always, in many places or sometimes even in your own place, a little difference when someone comes with a tagline of VIP or very important person. But I disagree that they get better treatment. They may be subject to a faster process, but I don't think that there is any difference in the treatment. A VIP is not a person who can pay more; it could be an electrician who takes care of your hospital, or anybody else. Thus, I don't think that there lies a difference in the provision of treatment. I can give a single example of this. Pediatric babies who get cataract, are given lenses made by a company called Alcon, called Acrysof. This lens is used all over the world. But these lenses are costly. In my own hospital, earlier we would give children who could not afford treatment some other lens that was not the best. So 8-9 years back, we took a call that irrespective of whether the child can afford it or not, we will not differentiate the lens we put in the child. Technically speaking, any lens can be used for a 45-50 year old adult, but for a child, the lens should not be compromised.

Mr. K.G Ananthakrishnan: I think what you are doing in your institution is really commendable, Dr. Shetty. But as Mr. Shailesh Ayyangar said, there do arise differences in treatment and provision of healthcare when a healthcare center caters to different strata of people. Mr. Ajit Mahadevan, do you have any views on how such difference may be narrowed.

Mr. Ajit Mahadevan: I agree with Mr. Shailesh Ayyangar that this issue is very rampant. I also think that we do come from a country where you still need a tatkal to get a passport! Thus, first of all I think that it is not only in healthcare that such differentiation happens but also other aspects of society. I also think that this

differentiation will always be there. I don't think that per say, anyone of us minds that. There can be a business and economy class. The question we should ask is – In the analogy of Dr. Rohit Shetty, does the segregation really mean that the economy class gets crashed and the business class reaches in the end? I think we have to reach to a stage where there is basic minimum quality treatment given. Then you may have bells and whistles and other fancier things. I am not a doctor to suggest what those bells and whistles should be, but I am only suggesting that basic minimum quality of treatment should be given utmost importance. There has to be a system in which there is a way by which an essential quality of treatment can be monitored and assured.

Dr. Rohit Shetty: I wanted to add one more thing to Mr. Ajit's argument. In our hospital system, we follow community-based surgeries where patients from different rural parts are brought into the hospital. We operate and send them back; free of cost including providing a day's meal and lodging. As Mr. Ajit Mahadevan mentioned, they are not placed in air conditioned rooms. They are put in a hostel facility but the OT (Operation Theater) is exactly the same whether you pay Rs. 1 lakh or Rs 10,000. The same surgeons do all the operations. Thus, there is no scope of differential treatment in spite of the fact that there may be cases where the patients cannot pay.

But in many places as you said, disparities are there. We always thought that if you have sterilization in one area and the rest of the procedure in another area, then your staff starts ignoring who is being operated. When I am performing a surgery in my main Operation Theater that may also have the chief minister operating tomorrow, the staff will not come to know about it. That is what we try to do. We don't have an Operation Theater that is different; but the wards, similar to the analogy of the business and first class as Mr. Ajit Mahadevan mentioned earlier, will be different.

Mr. K.G Ananthakrishnan: Mr. Anil Varma, do you think that insurance can be an equalizer to the question Mr. Shailesh Ayyangar has posed?

Mr. Anil Varma: No Sir. I don't think insurance could in any way be an equalizer or affect the outcome of this problem. As Mr. Ajit Mahadevan said, I think this is in-built in the system. Somehow each one of us has got used to the system where some get better treatment than others. Suppose I am suffering from an eye problem. I will try and find people who will help me get the best treatment. So this is something which is there within us. We have to get out of this habit by educating people. I would like to start this within my own organization by saying, "Treat all your customers in the same way". That's the message we need to pass on.

Mr. Bart Janssens: I would want to add a point here. I think discrimination in providing healthcare is certainly an issue in India. However, since we do a lot of work, referred to as value based healthcare, all around the world, I know that it is an issue in other places as well. I will give you an example of hip and knee replacement surgeries. In Sweden there is a patient registry that tracks different hospitals and their outcomes, for hip and knee replacements. The way they track it is by determining how long your intervention lasts and how quickly you need a new surgery. From the data found, there was a variance between different hospitals, of 4X. Thus, the variation in quality is 4X.

This suggests that in the best hospitals, the infection rates are 4X lower and the duration rates for which the intervention was made lasts 4 times longer. Therefore it's not a problem that is there only in India. It's just that the

problem is more acute in India than it is elsewhere. The basic issue is that people have a very poor measure of what quality is in India. When people are relying on what quality constitutes for a particular intervention- you start tracking it, measuring it, making it transparent across physicians and even publishing it. This is what has actually started happening in some countries and Sweden is a good example of this. By publishing this data, you can see the low performing countries catching up very quickly. Thus, I think that one lens to the issue is actually agreeing to what quality constitutes and the second is making sure that there is transparency around it.

Mr. K.G Ananthakrishnan: Thank you Mr. Bart Janssens.

Question from audience: I am Sushil Shinde from Abbott, India. My question is directed to Mr. Anil Varma and I would also like the panel to comment about it. We have been talking about collaborations. Mr. Anil Varma, can you tell us about the potential opportunities you see that insurance and pharma companies have in collaborating and improving access? I would also welcome the panel to comment about it because we have been repeatedly talking about these collaborations. Thank you.

Mr. Anil Varma: I think some sort of collaboration already exists today. Some of the private sector insurance companies have their own health administration teams. These have now reached out to most hospitals to try and finalize rates of treatment which are lower than what the rack rates are. I personally feel, as insurers, since we sell only 1.41 crore policies, we do not have that kind of leverage to interact with so many pharmaceutical companies. But I am sure if that reach doubles, or even triples, we should be able to reach out to all pharmaceutical companies. We can say that we are earning reasonable amount of money from our policies but by collaborating, we must ask the question, "What can you do to give medicines at a lower cost?"

That is the kind of collaboration which will help us reach out better and pay higher claims than what we are paying now. Ultimately it is all a question of what the bottom line is. If I am paying Rs. 40 for every Rs. 100 I earn, even if I reduce cost on medicines at Rs. 2- 5, that is money into the kitty. It will help us to reach out much better and much faster to other people. That is the kind of collaboration I am referring to.

Question: My name is Shridhar from Allergan. Does the panel see any challenges going ahead given we have innovation, inspiration and collaboration which is what we have followed through initiatives. What should be the steps forward?

Dr. Rohit Shetty: All of us including myself practice more of curative medicine and very little of preventive medicine. Thus, we are not looking beyond the box. A simple example, with respect to ophthalmology would answer the question. I have found two diseases which are serious, and are related to eyes becoming dry. I am using drops as a preventive measure, which can stop drying of eyes. If this drying process stops, it will save on manpower time, which is a huge issue and burden for all of us including the insurance companies. All it requires is eye drops which should be made commercially available. This is the first way in which we may look at the future. The second is, we are not looking at the other aspects of medicine like genetics. We do not have a proper lab to send and review treatment. The collaboration should be from bench to desk. And using the bench as a platform, companies probably need to put in more effort in R&D in clinical science.

R&D today, as we observe, is done more on curative medicine rather than on preventive

medicine. For example, in my clinic, I had a family who had 4 children and all the four children died before they reached 2 years of age. The disease they were affected by was genetic. We managed to identify the gene and told the parents that there was a very high chance that their child would die. The child was diagnosed even before it was born. After having done an amniocentesis, we diagnosed when the child was in the womb and was starting to show a change as it grew. When the child was born, we knew that the child was affected by the same gene and was definitely going to die. We checked the child through the camera continuously. By the end of one year, we could see small cancer cells in the retina. We froze those cancer cells through a simple cry therapy which took one and a half minutes, and saved the child. This is what we mean by preventive cure and this is where companies should aim to go. We had to send the child's blood sample to Toronto but according to the government norms, sending blood samples outside our country is not allowed. Then where could we send it? We don't have a lab of our own nor do we have any research facility of our own. We had to say that this child was suffering from a life-threatening disease and it was essential to send the sample to Toronto for further diagnosis. His parents would have had to pay for the same.

The Canadian hospital did not charge us for that one sample but if they would have charged, it would have cost approximately Rs. 3.5-4 lakh. In this family, within a span of 4 years, 2 children had died but by following a preventive cure approach, we had managed to save the other child, who has is now 6 years old and is cancer free. This is how preventive cure has gained importance today. A single drop can actually save people from contracting new age diseases like keratoconus. Thus, bench to desk process has to work very fast.

Mr. Ajit Mahadevan: Just to take on from that comment, I think we definitely have to move towards healthy outcome models of healthcare. We also realize that it is not that every other healthcare system in the world has worked. If you look at the economics of it, many of the western world countries are struggling under huge debt. Thus, I don't think we would want to recreate the same situation just because we are very efficiently and energetically following the same path. We have to be smart about it and use the benefit of having seen what some of the others have done and learn from it.

We have to use collaborations – technological and non-technological both to increase reach. We have to efficiently use our railways and post offices such that we don't have to invest huge amounts. Investments need to be made in the right places like building capability rather than just building a whole bunch of infrastructure. At present, I sincerely feel that there is nothing to be alarmed about.

Mr. K.G Ananthakrishnan: Mr. Bart Janssens, would you want to make any comment?

Mr. Bart Janssens: I would want to challenge the opening statement itself. I don't think that as a country, we have done enough. I don't think there is too much we should be proud of. Let's put things into context. We spend three times as much on defense as we do on healthcare. Healthcare infrastructure has been primarily built up by the private sector.

Yes, though I think there has been progress in healthcare for sure, it has been at a very base level. A lot more needs to be done.

Question: Ms. Sukriti asks a question on preventive cures and subsidizing prevention and can insurance play a role?

Mr. Anil Varma: Though I think that your question is very valid here, it would not be

viable when you look at it from the perspective of a commercial contract. I will be able to do something on prevention for all my insured, provided we are able to make some money out of it. If I am losing 40 rupees from every 100 rupees I take from you, where is the margin for us to subsidize prevention? It's like asking what came first - the chicken or the egg. Do we have the money to subsidize prevention? That's the bigger question.

Mr. K.G. Ananthakrishnan: I think that's a good point. It is all about economics. I mean as long as a proposition makes economic sense, everything is fine. Charity is not going to help remove this access barrier from this country.

Question from Ms. Monica Chaudhari: Is it geographic or socio economic reach or a combination of both that will enable us to establish minimum quality of care? What is going to be our key takeaway as OPPI from this seminar? How is the reach going to be made?

Mr. K.G. Ananthakrishnan: I think it's a good question to carry home. I think there are relevant points that you have made and we will revert to you with the stand of the OPPI on this. Questions that have to be clearly addressed are – How do we address the issue of access? How do we try and impact infrastructure? How can we have some innovations which are cost effective and that can be delivered across using technology? This could be in line with what Dr. Rohit Shetty shared with us. What I also liked was the presentation by Dr. Srinath Reddy. I agree with him that a change is happening- from the government's perspective as well. The four aspects that he spoke about- promotive, preventive, curative and rehabilitative were also very enlightening. I think this is the first time that the government has tried to frame a manner in which they would like to collectively address the challenges of healthcare in this country.

The second part on Public-Private-Partnerships was also very insightful. We all keep talking about public private partnerships; however there aren't many successful partnerships that we can really demonstrate or make a case study of at this point of time. The fact that the government is beginning to talk about public private partnerships opens up a new opportunity for all of us to collaborate.

The question of how to improve the healthcare status of our country has to be addressed by combining the collective energy and wisdom of the pharmaceutical industry, medical professionals, the insurance industry as well as consultants who are advising you. Discussions and seminars such as these are sure to stimulate the process and help us step in the right direction. Though we are very far from our goals as of now, we can still make it happen.

I would take this opportunity to thank our panelists Mr. Bart Janssens, Mr. Ajit Mahadevan, Dr. Rohit Shetty, Dr. S. M. Sadikot and Mr. Anil Varma for their active participation.

Thank you so much.

Mr. K.G. Ananthakrishnan

Mr. K.G. Ananthakrishnan is the Managing Director of MSD India and leads all three legacy entities in India: Fulford (India) Limited, Organon India Pvt. Ltd. and MSD Pharmaceuticals Pvt. ltd. He is currently responsible for South Asia Region operations which include Sri Lanka, Bangladesh, Pakistan and India. Mr. Ananthakrishnan is the Member of the Executive Committee and Chairman of the Technical Committee of the Organization of Pharmaceutical Producers of India (OPPI).

Mr. Ananthakrishnan holds a Masters in Marketing Management from Jamnalal Bajaj Institute of Management Studies, Bombay University, India and a Bachelor of Science degree from Osmania University, Hyderabad, India. He has done a program on Finance from Insead, France and a Senior Management Program at the Wharton Business School, U.S.

Mr. Bart Janssens

Mr. Bart Janssens is a Partner and Director with 'the Boston Consulting Group. Mr. Janssens is a core member of BCG's global Healthcare Practice and heads the Healthcare Practice in India. He has extensive experience in the bio-pharma industry, and advises both innovator and generics companies, helping them to chart out their strategy, to improve their performance, and to strengthen their innovation capabilities. Prior to joining the Boston Consulting Group, Mr. Janssens worked at Citibank.

Mr. Anil Varma

Mr. Anil Varma is currently the President of Howden Insurance Brokers and has over 26 years of managerial experience in the General Insurance industry. Mr. Varma commenced his career in Insurance with The Oriental Insurance Company (Oriental) and then joined Bajaj Allianz General Insurance Company and later joined Pioneer Insurance & Reinsurance Brokers (Pioneer) in 2006 as the CEO of the Direct (Retail) Broking segment.

Dr. Rohit Shetty

Dr. Rohit Shetty is Vice Chairman of Narayana Nethralaya Postgraduate Institute of Ophthalmology and Associate Professor of Ophthalmology in Neuro-Ophthalmology and Electro physiology department of the Institute. He is also a Senior Research Faculty with Singapore Eye Research Institute. He has to his credit thirty peer reviewed articles in national and international level and has been a Speaker in more than 200 conferences worldwide.

Dr. S.M. Sadikot

Dr. Shaukat M. Sadikot is President Elect of the International Diabetes Federation (IDF) (2013-15) also Vice President, International Diabetes Federation and President Diabetes India, is a Core Group Member of the Metabolic Syndrome Institute; Executive Board member of the Residual Risk Initiative (R31)and Executive Board, International Atherosclerosis Society. He has been actively involved with the cause of diabetes for the past 35 years. Presently, Dr. Sadikot is a Consultant in Endocrinology, Diabetes and Metabolic Disorders at Jaslok Hospital and Research Centre, Mumbai.

Mr. Ajit Mahadevan

Mr. Ajit Mahadevan is partner Ernst & Young, where he heads the Life Sciences vertical. He has 18 years of rich experience; with 11 years in consulting and 7 years in multiple leadership positions in industry. Prior to joining Ernst & Young, Mr. Mahadevan worked with Piramal Healthcare Limited where held cross-border M&A teams for multiple acquisitions for Piramal Healthcare from business strategy to integration implementation.

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Concluding Remarks

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Summing-up

Mr. Sudarshan Jain*
Managing Director, Healthcare Solutions, Abbott Healthcare Pvt. Ltd.

Good evening ladies and gentlemen, I've been a part of the OPPI for many years now and this is a great and momentous day. This is a landmark seminar as we deliberated three fundamental issues: access, healthcare and innovation, which are all extremely important elements of improving the life of patients. We have had eminent speakers from diverse backgrounds who have given us their views on important issues. We have had representatives from the government, World Health Organization, Pharmaceutical industry, Insurance as well as consultants who have spoken on the common theme of healthcare assuming national importance. We have to move beyond the basic necessities of "roti, kapda and makaan" and think about healthcare and education.

First I would like to focus on one of the aspects discussed by Mr. Bart Janssens, that our country spends three times the money on defense as against that on healthcare. As we have seen through Dr. Srinath Reddy's presentation, there is a high correlation between healthcare expenditure and growth of the economy. Thus the seminar has been enriching from the viewpoint of increasing awareness about healthcare issues and has highlighted the importance of increased healthcare spending. If the government is able to increase the healthcare expenditure to 2.5% of GDP through such awareness, it will be a great achievement for us.

Second, we have to realize that there cannot be one stakeholder who will play the role of improving healthcare. The quality of healthcare can be improved only when all stakeholders including pharmaceutical companies, doctors, hospitals and policy makers work together.

Third, an important point which emerged out of the panel discussion was on healthcare outcomes. We saw how technology has played a pivotal role in improving and expanding healthcare services as in the case of Narayan Nethralaya. The discussion on tele-medicine also yielded important conclusions as to how we can improve healthcare reach. We also discussed the increasing importance of life insurance and learned through one of the presentations how INR 3.14 crores worth of insurance is covered in the Rashtriya Swasthya Bima Yojna.

I will conclude by quoting Dr. Srinath Reddy, "If we want to create a future, we cannot extend the present." Thus, this seminar has thrown open a new dimension for us and we have to now take the initiative to accelerate our efforts of improving healthcare and innovation. A positive aspect of this seminar is that it has been recorded from beginning to end and all speeches will be made available by our knowledge partner Universal Consulting. This will enable us to have a starting point to the debate: "improving access, innovation & reach of healthcare".

Thank you.

Mr. Sudarshan Jain

Mr. Sudarshan Jain is the Managing Director, Healthcare Solutions, Abbott Healthcare Pvt. Ltd. He has a healthcare business experience of 31 years which includes stints in Piramal,

Abbott, Johnson & Johnson and Lupin. He has got extensive experience in field force management, brand building and overall business operations related to healthcare field. Mr. Jain is an Executive Committee Member & Chairman of the Materials Management Committee of Organization of Pharmaceutical Producers of India (OPPI);Member of the Advisory Board of Narsee Monjee University, Mumbai (NMIMS), Charter Member of The Indus Entrepreneurs, Mumbai (TIE) and is associated as Visiting Faculty with various leading Management Institutes in the country

Concluding Remarks

Mr. Rakesh Bhargava*
Chairman, Fresenius Kabi Oncology Ltd.

Ladies and Gentlemen, I would like to conclude the day's proceedings by delivering the vote of thanks on behalf of the OPPI. The day has been very enriching and stimulating for me and I do hope that it's been the same for you. I've just been informed by Mr. Tapan Ray that the proceedings of this entire conclave have been uploaded on the website of OPPI.

If I were to thank each and every speaker here, I would have to take the whole evening. Instead I would like to rush through and mention only a few names and seek indulgence from those whose names I don't mention.

First of all, I would like to thank Mr. Kalha, the Secretary of the Department of Pharmaceuticals for taking his precious time out of his busy schedule and being present here for almost half a day. I thank you very much Mr. Kalha, for your time and for giving us an insight into the barriers to healthcare access in India and for instilling hope by showing us how the government is really determined to move in the right direction. This fact was again reinforced by Mr. Anil Varma, who spoke about the insurance schemes, giving us his statistical inferences on the same.

I would also like to thank the World Health Organization representative in India, Dr. Nata Menabde who was with us for almost half a day. I would like to thank Dr. Srinath Reddy who gave us an impressive speech on how the delivery of healthcare may witness a paradigm shift. I am not sure how insurance and universal healthcare can fit together but probably universal healthcare may replace, complement or supplement insurance in the years to come. We have to watch and see how well the pharmaceutical industry fits in with this health coverage concept.

I would also take the opportunity to thank our:

- Co- partners: India health Progress,
- Business session partner: Via Media and Communication Private Limited,
- DHL Global Forwarding,
- Knowledge partner: Universal Consulting India Private Limited
- Other partners: K Point Technologies Private Limited, Esskay logistics, Hetero Drugs Limited and Signet Chemical Corporation Private Limited for wholeheartedly supporting this conclave.

I would like to thank the members of the press for being here in large numbers to cover the event. An event of this scale cannot be prepared overnight. The wheel started rolling in the month of December last year. I would like to thank the OPPI President Mr. Ranjit Shahani and Director General Mr. Tapan Ray for constantly providing exemplary leadership to all OPPI activities including organizing this outstanding conclave.

I would use this platform to appreciate the efforts of my colleagues in the executive committee for their constant support and contribution towards making this conclave a grand success.

My special thanks to Mr. Sudarshan Jain, who gave us a very succinct summary of the day's proceedings and to Mr. Ananthakrishnan, who efficiently conducted the panel discussion at the end of the day. We have been fortunate enough to have been backed by a team of motivated and dedicated colleagues. I would like to thank the OPPI secretariat for his excellent team work and professional support.

I thank the Nehru Center Foundation for providing this excellent venue and infrastructure and Jade Garden for the excellent lunch.

Finally, I would like to thank all stakeholders who have contributed to the success of this conclave as well as the audience for being present with us today.

Thank You

Mr. Rakesh Bhargava

Mr. Rakesh Bhargava is currently the Non-Executive Chairman of Fresenius Kabi Oncology Limited. He almost has 2 decades of experience in the pharmaceutical Industry. He has held various senior positions in Kabi Oncology Limited like Managing Director & CEO of Fresenius Kabi India Private Limited, Executive Vice President, South-East Asia of Fresenius Kabi Asia Pacific, a member of the Board of Directors of Fresenius Kabi Thailand, Fresenius Kabi Singapore, Fresenius Kabi Malaysia, and as Legal Supervisor of Fresenius Kabi Taiwan. Prior to assuming a position in Fresenius Kabi, he was the Managing Director of Lupin Chemicals (Thailand) Ltd., Bangkok. He has also worked with Imperial Chemical Industry U.K.'s Pharmaceutical Business (predecessor of Astra Zeneca) in the capacity of General Manager for India.

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Conclave – A Photo Feature

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Chief Guest Mr. Dilsher Singh Kalha, Secretary, Department of Pharmaceuticals, Government of India addressing at OPPI Conclave

Dr. (Ms.) Nata Menabde, WHO-India Representative addressing at OPPI Conclave

Mr. Ranjit Shahani, President, OPPI addressing at OPPI Conclave

Dr. Shailesh Ayyangar, Vice President, OPPI addressing at OPPI Conclave

Mr. Tapan Ray, Director General, OPPI addressing at OPPI Conclave

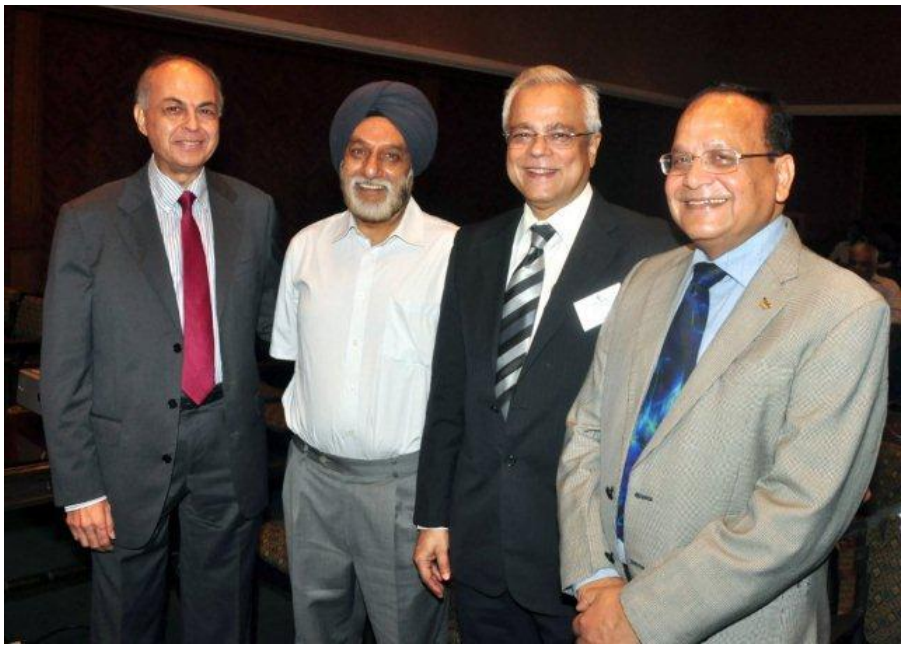
Dr. K. Srinath Reddy, President, Public Health Foundation delivering Keynote Address at OPPI Conclave

Mr. Rakesh Bhargava, Chairman, Fresenius Kabi Oncology Ltd. addressing at OPPI Conclave

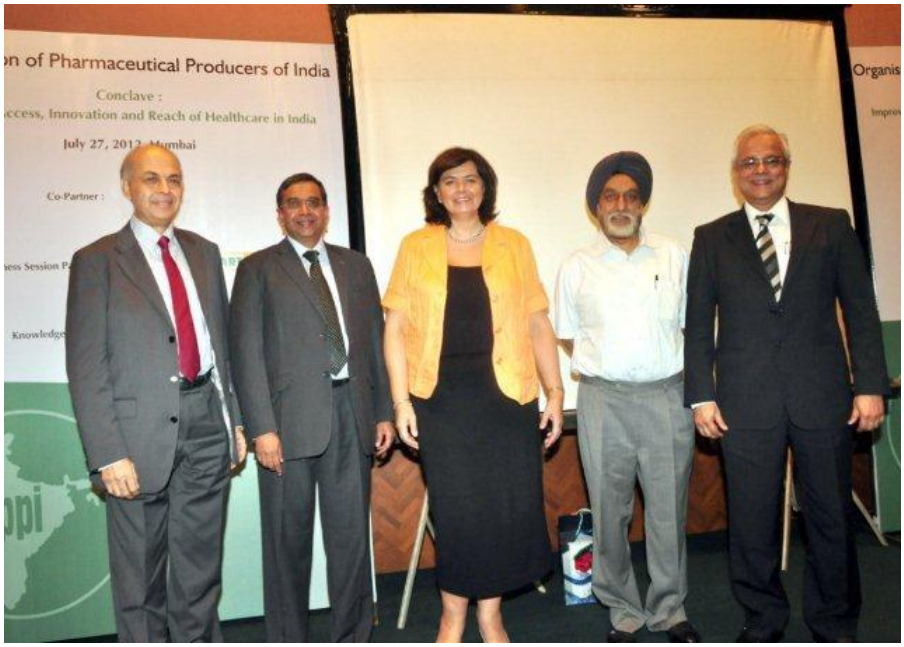
Mr. Rajan Tejuja, President & Executive Director, Janssen, Johnson & Johnson OPPI addressing at OPPI Conclave

Mr. Sudarshan Jain, Managing Director, Healthcare Solutions, Abbott Healthcare Pvt. Ltd. addressing at OPPI Conclave

Mr. Kewal Handa, Vice President, OPPI addressing at OPPI Conclave



Mr. Ranjit Shahani, President, OPPI, Mr. Dilsher Singh Kalha, Secretary, Department of Pharmaceuticals, Government of India, Mr. Tapan Ray, Director General, OPPI, and Mr. Sudarshan Jain, Managing Director, Healthcare Solutions, Abbott Healthcare Pvt. Ltd at OPPI Conclave



Mr. Ranjit Shahani, President, OPPI, Dr. K. Srinath Reddy, President, Public Health Foundation, Dr. (Ms.) Nata Menabde, WHO-India Representative, Mr. Dilsher Singh Kalha, Secretary, Department of Pharmaceuticals, Government of India and Mr. Tapan Ray, Director General, OPPI at OPPI Conclave

Mr. Bart Janssens, Partner and Director, The Boston Consulting Group, Mr. Ajit Mahadevan, Partner, Life Sciences, Business Advisory Services, Ernst & Young Pvt. Ltd., Mr. K.G. Ananthakrishnan, Managing Director, MSD Pharmaceuticals Pvt. Ltd., Dr. S.M. Sadikot, President Elect, International Diabetes Federation, Dr. Rohit Shetty, Vice Chairman, Narayana Nethralaya Postgraduate Institute of Ophthalmology and Mr. Anil Varma, President, Howden Insurance Brokers India Pvt. Ltd in a Panel Discussion at OPPI Conclave

Audience at OPPI Conclave

Vision

OPPI is an organisation of research and innovation driven pharmaceutical companies committed to address India's healthcare needs through:

- Facilitating greater access to quality healthcare solutions
- Encouraging research and innovation
- Disseminating knowledge and sharing best practices
- Contributing meaningfully in policy dialogues

Organisation of Pharmaceutical Producers of India

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