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## With the AIDS epidemic, Indians can easily go the way of the Aztecs



Our Club was addressed last week by Dr Vijay Yeldandi on 'Economic Consequences of the HIV AIDS Pandemic - Prognosis for India'. Introducing him, Rtn Dr Rohini Chowgule said, "Vijay and I did our fellowship together many years ago at Chicago's Loyola Medical College. I did it in pulmonary medicine and he did it in infectious medicine. Vijay did his medical schooling in Hyderabad, Gandhi Medical College, Osmania University before went to Chicago, where he was considered a brilliant student. When I came back to India, he got promoted as the Head of the Infectious Diseases Department in the Transplant Unit. Since then, he has done a lot of good work and won many awards. In Hyderabad, he started with his own funds a 'Medi

City' and set up an Immunological and Infectious Diseases Research Institute. This is undoubtedly his great contribution to India," Rohini said.

Dr Vijay Yeldandi began by saying that though he was not an economist, social scientist, or historian, he had an interest in history. "My friends and I worry a great deal about India, because we are Indians. We worry about what is happening in India today. And we worry a great deal about what will happen to India from now. One of our great concerns is: Will India be, like today, a great world economic power after 50 years? Or will it be an impoverished destroyed economy with a population that does not exceed 200 million?"

"You must be wondering why we worry about India's population plummeting from today's one billion to 200 million in the coming few decades. By the end of my presentation you will understand some of the reasons why we worry so much. I will take you through a little bit of history, and therefore must digress a little bit.

"When I talk about India, particularly in US, we have to tell everybody that India is not a single homogenous entity, but is a continent with diverse groups of people — ethnically, culturally and linguistically. It is difficult to describe India in one sweeping generalized statement because there are many different Indias, each completely different from the other part.. Each component is unique, and yet India is one. In all of its diversity, there is unity. It is an amazingly cohesive culture that has withstood thousands of years of onslaught, of many different crises, and continues to endure. This is the beauty of India.

### What Decimated the Aztecs

### Regular Weekly Meetings

**Tuesdays, 1:15 pm.  
At The Taj Mahal Hotel**

▶ **24th Oct:** Diwali Holiday. No Meeting.

▶ **31st Oct:** Shailesh Gandhi will speak on "Right To Information Act".

▶ **7th Nov:** Sharyar Khan of Pakistan Cricket Control Board will address the Club. (To be confirmed).

▶ **14th Nov:** CitiSpace presentation by Nayana Kathpalia and Meher Rafat.

▶ **21st Nov:** Rotary Awards.

▶ **28th Nov:** To be announced.

▶ **5th Dec:** Rotary Awards.

▶ **12th Dec:** Dr Suman Sahai, will speak on, "The strategies for a food secure India; The relevance of genetic engineering".

▶ **19th Dec:** Renowned painter, Krishen Khanna, will

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“As a young boy, I was fascinated by the fact that Hernan Cortez and Fransisco Pizarro, who were considered illiterate barbarians in Spain, managed to conquer the Americas with no more than 600 or 700 conquistadors under their command. How did they do that? When the Spaniards arrived in the Americas, they encountered a sophisticated and flourishing civilization that had the technological capability of building those huge pyramids, an engineering marvel, without the help of computerized, mechanized and high precision equipment. They had a beautiful calendar, could calculate and predict lunar and solar eclipses, and so on.

“And this great civilization was not only conquered but destroyed by the Spaniards. So much so the Incas and the Aztecs abandoned their own rich, sophisticated heritage and adopted the religion and culture of their conquerors. It wasn't because of the firearms that the Spaniard used, which were long clumsy weapons, muzzle loaded, flint locked. They required to be mounted on a tripod stand with the help of several people. By the time it was fired, it was far more likely to injure the persons handling the weapon, and the enemy soldiers could simply walk up and lop off the heads of those gunmen.

“Spaniards had brought to the Americas far stronger weapons than these firearms — measles, smallpox and chicken pox, to which the natives had no immunity whatsoever. This is what destroyed the Aztecs and the Incas.

“Look at the population curves of American Indians. In 1520, when Cortez and Pizarro arrived, the combined population of the Incas and Aztecs exceeded 36 million! Only 50 years later, the population was below four million! Over 90 % reduction in the population. This what we refer to as demographic collapse!

“That is the thing we are worrying about India. I think all of us in this room — the elite of Indian society — are the ones who have the power to avert what is going to happen to India 50 years hence.

**Recent Epidemics**

“I will walk you through much greater events with which you may have greater familiarity. Remember the Indo-Pakistan war, commonly referred to as the Bangladesh Liberation War in 1971, consequent to which millions of refugees streamed into India, leading to a major outbreak of cholera which killed thousands? A political or a military event can cause major epidemics with devastating impacts on the population.

“When the Soviet Union collapsed, their entire public infrastructure collapsed, diphtheria reemerged there with a vengeance and swept the population, even though it had been eliminated from Russia many years ago. So also, the multi-drug-resistant tuberculosis reemerged particularly in their prisons.

“We are trying to eradicate polio, which is what crippled me many years ago in India. The Western hemisphere is now free of polio. But we cannot eradicate it in the Eastern hemisphere, particularly in Pakistan, Afghanistan and Nigeria because volunteers who need to go and immunize the population cannot get there due to terrorism.

**The Story of HIV**

“The case of HIV disease is very interesting. We now know from very good scientific data that

address the Club.

► **26th Dec:** To be announced.

**Sacred Space**

► Joy is an unexpected byproduct of doing something for someone.

► God always answers the prayers of His children, but His answer isn't always a yes. He loves us so much that sometimes He gives us what we need and not what we ask for.

► God's purpose and design is behind every event. At times, what we consider to be a disaster is simply His hand arranging our lives.

the HIV has crossed the species' barrier! It was introduced into the human population from chimpanzees in the 1930s in Africa as a consequence of the practice of hunting chimpanzees and monkeys for meat. This was an isolated occurrence, here and there and a few people got infected and perhaps died. There was never a major public health problem until the 1960s, when we first started hearing about 'slim disease' — wasting away by way of diarrhoea. Nobody bothered about slim disease. After all, who bothers about what is happening in Africa? Now we know that the 'slim disease' was nothing but HIV AIDS at a prevalent rate of less than 1% in African continent. But then it kept on increasing inexorably particularly because of the massive dislocations of people — rural-to-urban migration, the ghettos of South Africa created by apartheid, which led to disruptions of families. The result of which was a massive increase in HIV epidemic, which crept up from 1% and affected 5% of the population after many, many years. And then it jumped to over 30% in less than 5 years!



“And once you are at 30%, you face economic and demographic collapse, which is what happened to Botswana and Swaziland, which are the heart of South Africa. There are many villages in South Africa where there are no young people alive any more.

“The slums of Bombay are no different from the slums of South Africa. As I am a great admirer of Gandhi, I went to his Natal Farm in Durban and had to pass through a slum for getting there. When I saw the slum and the deprivation in Durban, it was no different from the slums in Bombay and other major cities of India. Rural Africa is no different from rural India.

### **The Story of TB**

“Let us look at tuberculosis, which is very interesting. Why did tuberculosis become a problem. We know that this wasting disease existed in human beings for thousands of years. We have the evidence of fossils of people affected by tuberculosis 5000 years ago. Through PCR technology, we can demonstrate that the bones of those who died 5000 years ago were affected by tuberculosis. This disease has been described in Chinese and the Hindu literatures which are a few thousand years old.

“But this disease was never a major problem until the industrial revolution of 1700s and 1800s, which led to massive migration from rural to urban areas, causing unhealthy ghettos and long, long working hours — as long as 16 hours a day, seven days a week! And nobody was paid a living wage, nobody could get enough to eat, let alone feed their wives and children. So the wife

and children worked in the same factory with no ventilation, no heating, and so tuberculosis spread like crazy and killed thousands. 10% of deaths were due to tuberculosis.

“One out of four young people died of this disease in some cities! In 1904, 188 per 100,000 deaths were due to tuberculosis. It slowly declined in 1920 to 100 per 100,000; and in 1955, it was less than 10 per 100,000.

“When I ask my medical students for reasons for this decline, they always tell me that it was because of the anti-tuberculosis drugs. The reality was that in those days there were no such drugs. In 1950s, people were put in sanatoria because the best that could be offered was only fresh air, good food and a clean sanatorium for treatment for tuberculosis!

“Ramanujan, one of the world’s greatest mathematical geniuses ever, died of tuberculosis. So innovative were his mathematical theories — all intuitive by the way — that the computational maths that were required to prove them required super-computers but could not be done until the 1980s! That was his genius! Think of what India would have been if he had lived for a few more years!

“Although the first tuberculosis drug available was in 1940s, effective chemotherapy for tuberculosis was not a reality until the 60s and 70s. What brought it down earlier really was not drugs, but labour law reforms, and the minimum wage. Working hours were cut down to 40 hours a week; child labour was eliminated; and the man who worked in the factory was promised a minimum wage (in 1930 the Minimum Wage Bill was enacted). And interestingly, as you see, as the minimum wage going up, the incidence of tuberculosis kept coming down. With labour law reforms coming in, tuberculosis started going out.

“The point I am making is that infectious diseases and socio economic conditions are intertwined. There is a close relationship to what happens from one to the other; we need to think about the linkage.

“When I went to United States in 1980s, tuberculosis was staging a comeback there. The US had just dismantled the most effective antituberculosis programme on earth, because the US government decided to cut federal funding. They blamed it on the HIV epidemic. Now, the interesting thing to note here is that though that the incidence of HIV disease is rising in many US cities, the tuberculosis cases are declining in the Baltimore section, because tuberculosis is well controlled in Baltimore.

“This was thanks entirely to Dr Glass’s efforts in not allowing the tuberculosis programme to be wound up because of federal funding cuts, and the City of Baltimore supported him, and the disease remained controlled, and became a model for how public healthcare should be run.

“It is not just funding and drugs, but committed people too that are necessary for this to happen. Baltimore’s healthcare system adopted an Indian technology called ‘the Direct Observed Therapy,’ a programme that was a creation of the smart and wonderful doctors of ICMR in Chennai. Only nobody gives them the credit, because they called it domiciliary treatment programme, and WHO took it over and called it DOTS and now everybody thinks it is a WHO programme! In reality it is an Indian innovation that the world has adopted.

“If you increase the funding, tuberculosis goes down. So to control a disease and a public health problem not just technology is required, but the entire society’s commitment is required.

## What AIDS does to Population

“Let us see what is happening with HIV-AIDS in Africa. Economies that were growing are now beginning to contract; there is a 1 to 2 per cent drop in GDP. This fall in GDP may seem like obscure macro economics. But at the family level, it is devastating; it cripples the family's economy to such an extent that it cannot afford to buy good food, and to have a roof over its head.

“What happens to life expectancy? Botswana had a life expectancy which was better than India in 1980. It has now dropped to a life expectancy of around 30 years. The same case with several other countries. This is a consequence of HIV epidemic in Botswana, Swaziland and other countries of Africa.

“What happens to populations in nations? Let us compare population in 2000 and projected population in 2025. As HIV AIDS destroys the population of those in the working age between 18 and 45, the economy will inevitably collapse.

“Let me go back to what HIV AIDS does to families? Women and children will be the biggest sufferers. Children can no longer go to schools for learning or to the farms for working. Women won't be able to work on the farms or look after their cattle or poultry. When adults in the families die, the children become homeless, vulnerable, and most importantly, become vulnerable to sexual exploitation and become victims of HIV, thus ruining their futures. So the economy as a whole slumps.

“Let's look at India whose economy is growing between 5% and 7%, population growth is down to 1.7% from 2.2%. Literacy has risen from 52% to 55%; poverty has declined from 50% to 26%. India has historically unprecedented reserves of food grains, one of the largest in the world. And yet 70% of Indian children are malnourished. Foreign Exchange Reserves are over \$ 150 billion. But what is happening in the HIV scenario? At present only about 1% of the general population is infected. But we were amazed to find that there are three times more HIV infected people in Indian villages than in the cities! This was a revelation to us. And also a lot of young people in Universities are HIV infected. Roughly about 55% of villagers whom we screened are women. This is a powerful commentary on our claim that India is a conservative society; in fact nothing of that sort.

“Believe me. We have now very sound data to show that there is a lot of premarital sex, a lot of extramarital sex, and all of it is unprotected. And therefore any infection that is sexually transmitted spreads like wild fire. If you look at the people who are infected, roughly about 40% of the women who are infected are women, almost all of them housewives.

“So I tell everybody of Indian origin in the US that the single biggest risk factor in India for an Indian woman to get HIV AIDS is marriage. Since almost all marriages are arranged ones, when you spend all the time looking into horoscopes and into family pedigrees, please spend five minutes to look at the horrorscope — which is an HIV test.

“Let us look at a very nice study done recently by National Council of Applied Economic Research (NCAER) and published by the UNDP. It was one of the first ever such study done in this country, very scientifically and rigorously designed. What they did was very interesting. They studied three households where somebody was infected by HIV, and had three control-groups ie. families which did not have HIV in the same 'so-so' economic and demographic group.

“What they found was that in the HIV infected households, about one month every year is lost to work, leading to one-month income loss. They get hospitalized, incurring heavy expenditure. They borrow for meeting the cost and liquidate their assets. Not only the infected people, but those who take care of them, lose economically, because they lose workdays, lose their jobs, and lose income. In this way, AIDS affects not just the infected person, but the entire family. What happens to their savings? The HIV infected people would be forced to sell off their jewelry, land, assets, and can't save anything.

“Why should we worry about what they do with their savings? The vast majority of institutional lending in this country that fuels any kind of investment comes from household deposits in banks. That's why we should worry about it. Because, it may portend declining investment in the Indian economy, as ultimately, the institutional source of investment may dry up. What is the financial burden in the liquidation of assets? It is roughly about one year's income for an average household. This is the early part of the epidemic; because most of the people surveyed were in the early part of the HIV infection. As the disease progresses, it gets worse. As the number of people getting infected becomes larger, the disease keeps on getting worse.

“Let's look at the socioeconomic trends. Roughly about three quarters of our population is rural. Nobody thinks about that. 70% of our children are malnourished. This is the reason we worry that the HIV epidemic can cripple India's economic engine. And anytime we have economic deprivation, the fringe ideologies grow and take to criminality. Think about the Naxalites.

“When I was in medical school, Naxalites were a problem. I used to talk to these people, who were youths enamoured about the Marxist ideology. They called themselves as belonging to the Communist Party of India (Marxist- Leninist). They used to proudly tell me: 'My father was a communist, my grandfather was a communist.'

“The background was that they were severely deprived people, socially economically; they had no source of income, nothing at all. They believed in an ideology that was seductive: 'Everybody must have the same. Why should there be some rich people, others poor? There should be no rich people. If we kill all rich people, the remaining poor people will no longer be poor.' It was a simplistic way of looking at things, but they were convinced of this ideology.

“But today the naxalites are not convinced of any ideology; when they find a rich man, they get a gun and shoot him and loot his wealth, or at least kidnap his daughter and try to extort some ransom. This is the transition from fringe ideology to overt criminality. But what fuels that is socio-economic deprivation. It is the same among the religious fundamentalists, splinter groups of the IRA, or the parts of the Nazi Army that no longer follows the leader.

### **How Long a Collapse Takes**

“How can that lead to demographic collapse? The interesting thing is that all of these econometric analyses cannot project what happens beyond two or three or four or a maximum of five years. None of them can. If you look at all the data, every single study will point out that 'demographic collapse as a consequence of a major public healthcare problem occurs in a span of 50 to 70 years.' Remember the Aztec and Inca empires. Remember the HIV epidemic in Africa, which was introduced in 1930s but assumed a takeoff stage in 1960s, and Botswana and Swaziland's 30 to 40% population got infected in 1990s to 2000. All this happened in a 50 to 70 years' time frame!

“Why this occurs is that whenever we have a disease, particularly in the working class, the issue

of survival expresses itself over everything else. No investments such as children's education, better nutrition and housing or income avenues can ever be made. You cannot send the kids to school, cannot invest in more land or tools, can't look for a better house, or even think of bank deposits! Even farmers shift to less labour intensive crops. Unfortunately the less labour intensive crops are also less nutritious, there is less variety. The debt burden of the family goes up; women and children lose inheritance; and then happens the loss of trans-generational transfer of capital. The best example I can give you is about my own family.

"My great grandfather was an illiterate carpenter; my grandfather was the first educated person in my family. He was an engineer. He gave a good education to my father and my father became the first person in our family to get his Masters degree.

"I was the first in my family to leave India and go abroad. And you will notice that there has been a trans-generational transfer of capital to every succeeding generation. But such a transfer is halted when horrible diseases and deprivation afflict a family. So over a period of time that keeps on accumulating, undermining not only the economy of the involved families, but cumulatively an entire national economy.

"So the question I have for you, esteemed Rotarians, do you think we need to worry about these things in India? What are we going to do about it? Consider whether you have the ability to wipe the tears of these ladies and destitute children. And do it today. Thank you."

#### **Q&A**


**PDG Manibhai Doshi:** How can we come out of this predicament? What should be done to resolve this problem?

**Dr Yeldandi:** One thing that we in the US are all convinced of is that the answer lies in India, and its people's wisdom can solve the problem. It is a problem much greater here than there. I look to you all for answers. And I think that you hold the key.

With everything that I have been watching about India and I look at what you all of you — sitting in front me here — have accomplished in the world today. It is nothing short of phenomenal. It is absolutely mind-boggling what Indians have accomplished. And like I said, so many things, such as the tuberculosis control programme - it was Indian genius that created it. I have faith and my faith is enduring that the answers will be found by Indians in India and the whole world will benefit from it.

**Visiting Rotarian:** What action programme do you suggest to solve the problem?

**Dr Yeldandi:** We need to work hard to eliminate deprivation, to ensure that every Indian gets the basic healthcare that he deserves. Healthcare is not just a basic human right, but it is an essential part of economic development. Because without health we cannot have economic development. I want to see more rich Indians, and they get richer. I recommend that the only way you could do that is to ensure that there are no poor Indians.



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