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Everyone thought my $1 vaccine shot idea was crazy

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My journey as a scientist and a entrepreneur began with my strong interest in science and how it relates to health and wellness. I am very much concerned about public health, especially neglected and preventable diseases that affect human life. I knew I could only make a difference as an entrepreneur. I founded Bharat Biotech in 1996 along with my wife Suchitra with a vision to create a truly Indian multinational company. The primary focus was to develop and produce world class vaccines and biopharmaceuticals that are safe and affordable to every section of the society.

Today, our company is located in Genome Valley, Hyderabad, which is one of Asia's largest biotech facilities that helps catalyze growth of life sciences companies. With more than 100 companies engaged in life sciences research, product development and manufacturing, we are proud that Genome Valley in Hyderabad is growing rapidly. With over 2.5 billion doses delivered worldwide, Bharat Biotech is globally recognized for its innovative research, good manufacturing practices and highly motivated talent pool of scientists and researchers. We delivered the world's first cesium-free hepatitis vaccine, Revac-B, developed indigenously using our patented Himax technology that costs less than a bottle of water.

I grew up in an agricultural family. As a young man, I wanted to study agricultural sciences and become a farmer. After my studies, I decided to work in a large multinational company. Although I was interested in research at that time, I was not happy with the kind of research that was being conducted in India. My interest to pursue science intensified when I traveled to the US with the help of Rotary Foundation Scholarship, to study molecular biology at the Universities of Hawaii and Wisconsin-Madison. The thought-provoking lectures from National Science Academy winners and Nobel Laureates led to a paradigm shift of my thought process. I decided to challenge all the risks and to pursue science passionately. Afterwards, I successfully completed my master's degree from the University of Hawaii, got a doctorate from the University of Wisconsin-Madison and

then chose to move to the Medical University of South Carolina-Charleston for further research and teaching.

It was during this period in the US, that I took the first step towards nurturing my entrepreneurial dreams. It was a difficult choice and although I was not keen to return to India, I got strong support from my wife and my mother to take the first step. My biggest inspiration came from my mother who said, "Son, you only have a nine-inch stomach and how much ever money you make, you can't eat more than that. You come back and do whatever you want; I will see to it that you get food! As long as I am alive, you will not starve."

I decided to move back to India in 1996 with a 40-feet container, in order to pursue my ambition to establish a hepatitis vaccine business and started conceptualizing an affordable vaccine for hepatitis prevention, which had a big demand in India. I began by setting up a small lab in Hyderabad with the research equipment I had brought along with me from the US and started producing the protein. Initially, I had to face stiff resistance from financial institutions and investors, who thought my idea lacked business foresight. Especially, my proposed price for the vaccine was $1, when the going rate was $35-to-$40. I was looked at with suspicion as the proposed cost of my project and the price of the vaccine was so much less, compared to other proposals they received. However, this did not deter my spirit as I believed that science and business are very similar. In both the domains, you plan and implement ideas. If it is hypothesis in science, it is business plan in commerce. If its risk analysis in business, its testing the methods in science.

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In 1996, I made a presentation to Mr Chandrababu Naidu, former chief minister of Andhra Pradesh, on the need to have a biotech knowledge park. We requested for land from Andhra Pradesh Industrial Infrastructure Corporation (APIIC) to set up only knowledge-based industries that do not pollute the environment. I succeeded in convincing the government to pass an order for setting up the knowledge corridor, which is now named as Genome Valley, Hyderabad. Our $2.5 million (Rs12.5 crore) hepatitis vaccine plant was the first to come up in this life sciences cluster, followed by the ICICI Knowledge Park. Today, Hyderabad is one-of-the-most the most favored destination for biotech companies in India, constituting around 50 percent of the biotech industry in the country.

When we set out to establish Bharat Biotech, we asked ourselves the question, "What does it take to be a leader in the life science sector?" We saw opportunities in emerging infectious diseases as a sector to focus upon. There were several reasons for this, one being MNCs with commercial interests were primarily not interested in regional markets for region specific diseases like chikungunya, typhoid, malaria, Japanese encephalitis, and Chandipura. As a nation we made very little effort to ascertain the economic loss to the country in the event of a major epidemic which pushed my determination even further. Needless to say, this became the mission and vision of Bharat Biotech. In January 1998, former Indian president, Dr Abdul Kalam, launched Revac-B. Our hepatitis vaccine was the first product to roll out from our plant. We supplied 35 million doses for the National Immunization Program to the government of India at a price of 20 cents (Rs 10) per dose. Today, we are one-of-the-largest producers of hepatitis B vaccines, with supplies to over 50 countries including Africa, Latin America, Pakistan, and to the UNICEF.

Initiatives in regional diseases gave us leadership status in the sector and the confidence that we have the capabilities to develop novel vaccines just like any other global multinational companies. In 2001, we made a commitment to the Bill and Melinda Gates Foundation to develop and supply a novel rotavirus vaccine at $1-a-dose. Currently, it is undergoing phase III clinical trials for efficacy in approximately 8,000 subjects, which is one of the largest ever clinical trials conducted in India.

In 2004, we introduced India's first recombinant human epidermal growth factors for I and II degree burns, skin grafts, and diabetic foot ulcers, called Regen-D. We simultaneously launched our second bio-therapeutic product, Zelect oral rehydration salts. In February 2009, Bharat Biotech launched Comvac-5, a single-shot pentavalent combination vaccine which contains the first indigenously developed and manufactured haemophilus influenza type-b (Hib) in combination with hepatitis B vaccine and DPT.

Currently, we have two promising programs, a third generation typhoid conjugate vaccine that can be given to infants and a Japanese encephalitis vaccine with high immunity. We also have a malaria vaccine, currently in a development stage being developed in partnership with International Centre for Genetic Engineering and Biotechnology (ICGEB). Our IND Rota is the second Investigational New Drug Application (INDA) filed in India after Lysostaphin. Our mission is to serve the seven billion emerging market population that are affected by region-specific diseases with novel and affordable vaccines that can serve every section of society.