

DECCAN Chronicle

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STARS OF 2020

DECCAN CHRONICLE. | DC CORRESPONDENT (/byline/dc-correspondent)

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All eyes on the COVID Vaccine makers



📷 Adar Poonawalla CEO, Serum Institute of India, Pune

Dr Aswin Sekhar

As they say, often a crisis brings the best in (wo)men. This pandemic changed the landscape and dynamics of our world in unprecedented ways. Exceptional conditions call for exceptional commitment, dedication and sacrifices.

Here is the story of some of those exceptional COVID warrior heroes who have made significant contributions towards the COVID testing plus vaccine development and delivery; which in turn is going to transform the lives of millions of fellow citizens. Each of these personalities have a different skill set and contribute in their own unique ways in this historic battle. They are in the spotlight as the stars of 2020 in their collective vaccination response against COVID. Praising them, N.R. Narayana Murthy, President, Infosys Science Foundation and Trustee, Institute of Advanced Study, Princeton, said, "I am happy that the ingenuity of the human mind has triumphed again over a pandemic like Covid-19 facing us. I congratulate the scientists who have made vaccines possible."

Prof Gagandeep Kang,

Vaccine Scientist, Christian Medical College, Vellore

Education:

Schooling at La Martiniere, Kolkata MBBS at Madras University, MD (Microbiology) and PhD at Dr MGR Medical University.

About her:

Described as India's 'vaccine godmother', she's the first Indian woman to become an elected Fellow of Royal Society, London. Leading global researcher on viral infections in children and key contributor to rotavirus epidemiology and vaccinology in India. Contributed significantly to COVID management protocols by serving on committees looking into indigenous COVID drugs and vaccines as executive director of Translational Health Science and Technology Institute, Faridabad. Co-author of book 'Till We Win: India's Fight Against The COVID-19 Pandemic' (published by Penguin Random House) which has become an instant bestseller.

Member of the WHO's Global Advisory Committee on Vaccine Safety and the Immunization and Vaccine Implementation Research Advisory Committee and chairs the Immunization Technical Advisory Group for the WHO's South East Asian Region. Associated with the Coalition for

Epidemic Preparedness, a global consortium involved in facilitating vaccine candidates for the novel coronavirus. She says, "I think it's very important to understand that there has been absolutely no compromise in clinical testing of COVID-19 vaccines. The only thing that we do not have from these trials, that we might have had otherwise, is the duration of safety follow-up. Generally, we follow up on trials for six months or one year, and generally, we do not find anything extra in the six months or one year"

Member of Lancet Citizens' Commission on Reimagining India's Health System, which will work on developing a strategy for implementing universal health coverage (UHC) in India.

Dr Kizzmekia

Shanta Corbett, Viral Immunologist, Vaccine Research Center, National Institute of Allergy and Infectious Diseases, Maryland, USA

Education:

Schooling at Orange High School, North Carolina, B. Sc at University of Maryland Baltimore, Lab Technician at University of Maryland School of Nursing, Ph.D in Microbiology and Immunology at University of North Carolina at Chapel Hill Research Fellow at National Institutes of Health

Her USP

National Institute of Health's lead scientist for coronavirus vaccine research. One and only black woman scientist to be directly involved in COVID vaccine development. Part of the elite team which worked for Moderna on one of the two mRNA vaccines which got emergency authorization from Food and Drug Administration, USA. Brand ambassador from the same community who is able to convince vaccine-hesitant Black Americans to take the COVID vaccine. Active voice to eliminate fear and stigma about vaccines in the conservative black community who have been victims of misinformation and exploitation in medical research. Strong advocate against lack of diversity in the present COVID taskforce. Trust, especially when it has been stripped from

people, has to be rebuilt in a brick-by-brick fashion. And so, what I say to people firstly is that I empathize, and then secondly is that I'm going to do my part in laying those bricks. And I think that if everyone on our side, as physicians and scientists, went about it that way, then the trust would start to be rebuilt. A global icon in vaccine research after breaking barriers of black background.

Dr Soumya Swaminathan,

Chief Scientist, World Health Organization (WHO), Geneva

Education:

MBBS at Armed Forces Medical College, MD in Paediatrics at All India Institute of Medical Sciences, Post-Doctoral Fellowship at Children's Hospital Los Angeles, University of Southern California

Her USP

Was instrumental in giving regular bi-weekly press briefings on COVID-19 pandemic to world media. Involved in formulating an effective communication strategy to disseminate information about the do's and don't about the pandemic to the general public. Coordinating various COVID management strategies with world leaders, heads of state, international organizations and global think tanks.

Acted as a powerful liaison for regular interaction between UN agencies and Indian govt agencies at crucial times during COVID waves.

Previously Deputy Director General, WHO, Geneva; first Indian to reach that position. Former Director General of Indian Council of Medical Research, New Delhi. A distinguished paediatrician and global expert on TB and HIV research matters. She says, "The argument we are making is that it would be impossible to go back to normal, for the global economy to recover if only pockets of people are protected, while the virus rips through other economies. India will play a major role in scaling up and manufacture of the vaccine"

Adar Poonawalla

CEO, Serum Institute of India, Pune

Education:

Schooling at Bishop's School Pune and St Edmund's School Canterbury, England BA Honours in Business Studies at University of Westminster London.

About him:

Leader of the world's largest vaccine manufacturer in terms of sheer number of doses. His company exports their pharma products to about 140 countries in the world. Serum Institute of India has collaborated with the University of Oxford and the British-Swedish pharmaceutical company AstraZeneca for making the COVID-19 vaccine, 'Covidshield'. Serum Institute and AstraZeneca would partner together to make about one billion doses of the latest vaccine. They expect to produce enough vaccines for everyone by Oct 2021 and a good proportion of India can be vaccinated by then.

Board member of the prestigious Global Vaccine Alliance (GAVI).

"Half of our initial production will be reserved for India. Once 20% of India gets the vaccine, we can hopefully see the confidence and sentiments coming back, and by September-October next year, hopefully there will be enough vaccines for everyone and normal life can return"

Mahima Datla,

MD and CEO, Biological E, Hyderabad

Education:

Bachelors in Business Administration at Webster University London.

About her:

Her company has finalised multiple deals to co-develop COVID vaccine with various international players. Mega tie up with New Jersey based corporate giant Johnson & Johnson to manufacture vaccines for them. Current monthly capacity of 80 million vaccine doses to be expanded to about 100 million vaccine doses in her company. Spearheading a vision to increase India's share in global vaccine production. Proven track record in large scale development of pentavalent vaccine formulation which contains five antigens

of — diphtheria, pertussis, tetanus, hepatitis B, and H1 influenza B. She says, “We have made multiple investments because science is science. And as passionate as I might be about it, at the end of the day, it has to prove itself. What we’ve lost in time, we will more than make up for in capacity and scale. One has to aim to be the best”

Dr Krishna Ella

Chairman and MD, Bharat Biotech International Ltd,
Hyderabad

Education:

B.Sc at University of Agricultural Sciences Bengaluru, M.Sc at University of Hawaii, Ph.D at University of Wisconsin-Madison.

About him:

Under his leadership, Bharat Biotech has grown to become a global leader in innovative vaccines. Expanded the organisation to contribute in multiple areas like veterinary vaccines, food processing and developing biotechnology infrastructure in India. Planning to ship COVID vaccines to UNICEF directly from Hyderabad with advanced cold chain management. Bharat Biotech to tie up with Ocugen to co-develop Covaxin for the US market. Proven track record in making the cheapest Hepatitis vaccine and first in the world to find a vaccine for Zika virus. Has dispensed in a total of 3 billion doses globally of various vaccines at an affordable rate. Established a biotech knowledge park named Genome Valley in Andhra Pradesh. He says, “We partnered with ICMR for COVID-19 vaccine and as we speak it entered the phase 3 trials. Despite vaccines in phase 3 we need global cooperation, healthcare diplomacy to combat the Covid pandemic”

Pankaj Patel

CEO, Cadila Healthcare Ltd, Ahmedabad

Education:

Schooling at Sheth CN Vidyalaya, Ahmedabad, BA in Science and Law at University of Mumbai, B.Pharm and M.Pharm at Gujarat University, Ahmedabad.

About him:

His company manufactures drugs to treat COVID-19 such as Remdesivir.

Phase 3 trial is expected to finish by Mar-Apr 2021 and the new vaccine is expected to be launched in mid-2021.

Developed ZyCoV-D vaccine which can be stored for a long timeframe at 2-8 degrees making it a feasible fit for existing cold chain infrastructure in India. For a short time frame like 3 months, this vaccine is stable even at room temperature like 30 degrees which is a significant logistical advantage.

Developed vaccine which can be administered through an intradermal route which is easier than typical intramuscular injection (which needs more trained health care workers). A leader with an out-of-the box thinking is reflected in their drug development and performance. Ex-President of FICCI and present President of Indian Pharmaceutical Alliance. He says, "We feel this is a very stable vaccine and would not even need 2 to 8 degrees temperature, but can remain stable even at 30 degree Celsius for about three months at least"

Melinda Gates & Bill Gates,

Founders, Gates Foundation, Seattle, USA

Education:

Bachelors in Computer Science and Economics and MBA at Duke University (Ms Gates), Pre-law Major with Computer Science and Mathematics, Harvard University (Mr Gates)
Their role thus far Gates foundation has been instrumental in investing funds for the research and development of vaccines against COVID.

Developed something called a therapeutic accelerator which has raised over USD 125 million to help find treatments that are going to be effective against COVID. Grand Challenges India was set up as a partnership of the Department of Biotechnology, Government of India, and the Bill & Melinda Gates Foundation.

Provided the platform that looks at related issues which is empowering scientific leadership in developing countries, particularly women, to think about what the long-term issues

of the future are going to be, including but beyond COVID-19.

Millions of free doses of COVID vaccine planned to be distributed through their foundation. “The biggest vaccine manufacturer in the world, Serum Institute of India, is producing doses of AstraZeneca’s vaccine. And our foundation took on some of the financial risk, so if it doesn’t get approved, Serum won’t have to take a full loss”

— **Bill Gates**

The Unsung Heroes

Junior and Senior Research Fellows and Post Doctoral Fellows, Institutes Across India and Abroad

About them

Collectively, the work of nameless and faceless research scholars cover a wide range of COVID domains:

Teoretical

Infectious disease forecasts, modelling the spread of the infections, coming up with good fits to available data

Experimental

Isolating the SARS-CoV-2 virus, sequencing the genome, analysing the viral genome

Practical

Diagnostic testing for COVID-19, estimating resources in health care at different points in time

Instrumental

In technological advancements in developing COVID test kits, augmenting Personal Protective Equipment (PPE), low-cost ventilators, its distribution system and so on.

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