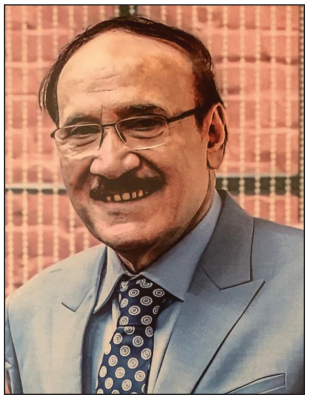
Obituary

Maharaj Kishan Bhan
(9 November 1947–26 January 2020)

An illustrious paediatrician, biomedical scientist and thought-leader who shaped country's child survival and biotechnology endeavour



The history of nations, in a large measure, is shaped by the extraordinary contribution of men and women in ordinary walks of life. It is these people, who think different, behave different, deliver different, and inspire others to be different, who embark on extraordinary professional journeys and achieve remarkable things. They challenge the status quo, disrupt the edifice of mediocrity and push the boundaries of their profession. Lucky are the organizations that find them, the countries that nurture them, and the lives they touch, for they show us all, the wondrous power of ideas in this imperfect world.

These were the elements of the incredible life of Professor Maharaj Kishan Bhan, a man of startling genius, humility and dazzling charisma. A paediatrician with a golden heart who taught us—his friends, students, colleagues and many fans—to pursue excellence with values, and share love and warmth. He thought big, took on challenges, and empowered others for the ultimate cause of science and humanity.

Maharaj Kishan Bhan was born on 9 November 1947 in a large, loving family. He inherited his father's sharp mind and his mother's warm heart. While his genius was yet to be seen, stories of compassion and empathy suffused his early years. One day, an earthquake struck their town and as the tremors got stronger, the children ran out to safety. Bhan, however, just eight at the time, was found carefully guiding his grandparents down the stairs, blithely unaware of the risk to his own safety. Deep, unconditional love for people, earnest support to colleagues and empathy for those without means would later become the defining features of his life.

Dr Bhan obtained his MBBS degree from the Armed Forces Medical College, Pune. 'I was more immersed in reading political philosophy, not physiology, and in spending more time at the cricket ground, than the dissection hall,' he would later say.

He honed his skills as a paediatrician during his residency at Safdarjung Hospital where, deeply influenced by Dr Shanti Ghosh, he became a socially conscious and *caring paediatrician*. He was an 'ideologue' leader in the 100-day agitation by junior doctors in 1974 that led to the provision of pay scale and allowances to resident doctors instead of the earlier paltry stipends.

After his senior residency, he had brief stints at the Indira Gandhi Institute of Medical Sciences, Kabul, and Postgraduate Institute of Medical Education and Research, Chandigarh. He joined the Department of Paediatrics at the All India Institute of Medical Sciences (AIIMS), New Delhi in 1980 as an Assistant Professor.

At AIIMS, almost instantly, he gained popularity as an energetic, knowledgeable and 'philosopher-type' physician. Our visionary, then head of the department, Professor O.P. Ghai spotted his talent and nudged him towards paediatric gastroenterology.

This was the beginning of Dr Bhan's transition from a *caring paediatrician* to an *academic paediatrician*. We began to see what made him special. Like all of us, he conducted his rounds discussing differential diagnoses and treatment decisions at length. But he would focus on exploring disease mechanisms, physiology, pathogenesis, and, in the same vein, the social determinants—the biology and epidemiology behind health and disease fascinated him.

This was a tumultuous time for the science of childhood diarrhoea with characterization of enterotoxigenic *Escherichia coli*, discovery of rotavirus and the promise of oral rehydration solution. He started the paediatric gastroenterology clinic at AIIMS, creating a system with structured clinical records, protocol-based management and robust follow-up—which would form the foundation of his later research and several publications. He started a compact laboratory (with microbiology, biochemistry, animal facility and histopathology—all in one), that produced incredible research output, and a plethora of PhDs.

He elucidated immunity in rotavirus infections and pathogenesis of persistent diarrhoea, described epidemiology of childhood typhoid and organized multiple community-based trials on modalities such as vitamin A, zinc and kangaroo mother care, among others. He worked on low osmolality oral rehydration solution, zinc in the treatment of diarrhoea, invented a new diagnostic test for coeliac disease and simplified treatment for persistent diarrhoea. By the mid-1990s, Dr Bhan had become a focal point for global research in diarrhoeal disease and an international celebrity with admirers and friends across continents.

This *academic paediatrician* had now transitioned into a role model *physician scientist* of international stature.

His painstaking 25-year research in rotavirus culminated into the first Indian rotavirus vaccine. The Honourable Prime Minister launched this fully indigenous vaccine, Rotavac, in March 2015. Today, the vaccine is a part of India's national immunization programme saving illness and deaths of lakhs of children. It is also an effective intervention to reduce malnutrition and an integral part of the Poshan Abhiyaan.

From 2004 to 2012, in what will surely be known as a golden period for biomedical sciences, Dr Bhan served as Secretary, Department of Biotechnology (DBT), Government of India. It was under his leadership that DBT witnessed a rapid transformation. He created research and development pathways spanning the entire R&D ecosystem of idea–prototype–product–delivery.

Dr Bhan's tenure in DBT will be remembered as that of a reformist and an institution builder. He created biotechnology research and development clusters in Faridabad (biotech science), Bengaluru (life sciences), Kalyani (systems medicine) and Pune (bio-cluster). He established stable interdisciplinary linkages of existing and nascent DBT organizations with institutions such as AIIMS, Indian Institute of Technology, universities, and

institutions of the Department of Science and Technology (DST) and Council of Scientific and Industrial Research (CSIR).

One of his most innovative experiments was BIRAC—the Biotechnology Industry Research Assistance Council—which brings academia and industry together. He believed India needs enormous capacity for advanced innovation and recognized how the global biotechnology enterprise stands on twin pillars of academia and industry. He was seen as an enabler of Indian biotech and medtech industries. As a technocrat, he imparted vision and confidence, and opened liberal policy windows for India's enterprise.

For his immense contributions, Dr Bhan was awarded the Padma Bhushan for public service. He was also a recipient of the Dr Shanti Swarup Bhatnagar Award for scientific research. His scientific work will continue to save millions of children all over the world. As a thought-leader, he conceived research ideas on child health and nutrition for the developing world that WHO and the global health community implemented.

His unique intellectual and academic attribute was the exceptional range of his understanding and contribution spanning basic and mechanistic science, translational research and innovation, clinical research and practice, and population and public health dimension. The only other luminary I have known of that genre is the legendary Late Professor V. Ramalingaswami. The country today is deeply missing his leadership in science, public policy and vaccine development in its battle against thes SARS-CoV-2 pandemic.

For me, he was the quintessential friend, philosopher and guide. He guided my doctoral thesis and left an imprint on every aspect of my professional work and contribution. His affection for me was unwavering and deep, and our bond selfless. Interacting with him was a treat for the heart, mind and intellect. His thought-provoking one-liners with a signature smile left you speechless. Here is one of those gems that I treasure: 'World has enough smart people, we need good people.'

VINOD PAUL
Member (Health), NITI Aayog
and
Former Professor and Head, Department of Paediatrics
All India Institute of Medical Sciences
New Delhi

Obituaries

Many doctors in India practise medicine in difficult areas under trying circumstances and resist the attraction of better prospects in western countries and elsewhere. They die without their contributions to our country being acknowledged.

The National Medical Journal of India wishes to recognize the efforts of these doctors. We invite short accounts of the life and work of a recently deceased colleague by a friend, student or relative. The account in about 500 to 1000 words should describe his or her education and training and highlight the achievements as well as disappointments. A photograph should accompany the obituary.

—Editor