

**Key discussions and takeaways from
webinar on**

“Vaccines-Past, Present and Future”

**by Innovative Thought Forum (ITF)
and Arogya Bharati (AB)**

5th May 2020

Programme

- Welcome by S B Dangayach
- Opening remarks by Dr Ramesh Gautam, Karyadhyaksh, Arogya Bharati
- Public health and vaccines by Dr Dileep Mavalankar, Director, IIPH, Gandhinagar
- Vaccine history in perspective by Dr Abhay Chaudhary, Ex Director, Haffkine Institute
- Vaccines and epidemiology by Dr Abdul Ghafur, Adjunct Professor, Infectious diseases, Apollo Hospital
- Perspective on animal vaccines and their relationship to human health by Dr Shankar Chinchkar, Hester Biosciences Limited
- What do we learn from COVID 19 ? Are we primed enough by Dr Ravindra Patel, OmniBRx
- Perspective on nosodes by Dr Rajesh Shah, Life Force Foundation, Mumbai

Important Points

- Vaccine is an antigen imitating specified pathogens to arouse defence system to produce antibodies
- Vaccination used as a synonym for inoculation though inoculant uses raw pathogen whereas vaccine is made from attenuated or inactivated pathogen or elements thereof.
- Inoculation invented and used in India in sixth century A D when pus from smallpox of an infected child was put into body of healthy members to provide specific immunity.
- According to current history, however, 1796, Edward Jenner published his paper on experiences using cowpox pus for inoculation to protect against smallpox. Manufacture started in 1798
- Vacca is Roman word for cow. Thus the advent of term vaccination to define such inoculations. Later became synonymous with all such interventions
- Major development by Louis Pasteur to use deactivated or killed agents to produce anthrax and rabies vaccines in 1895
- Maurice Hilleman, the most prolific inventor. Created vaccines for mumps, measles, hepatitis A, hepatitis B, meningitis, chickenpox etc
- Vaccines for viral infections more difficult due to rapid mutation of virus. Failure in finding vaccines for HIV, MERS, SARS1 etc . Flu vaccine also not unqualified success as found to provide only 30 to 60% protection and that too only for one year
- Total success in smallpox after around 180 years and polio after decades of introduction. All other vaccines yet to achieve milestone of total eradication of threat from the globe
- Lot of variables at work to foil vaccine .Success rate indeed poor among candidates undertaking development
- Side effects and toxicity also noticed in many cases. Hence lot of strong opponents to vaccines. A highly debated subject with many for but several against

- Nonetheless, vaccines considered essential for preventing infectious diseases worldwide. And hence the most important tool for public health. WHO created in 1948 under UN by member nations focussed on vaccines for public health. Many groups like Global Alliance for Vaccines and Immunisation (GAVI) or not for profit organisations like Bill & Melinda Gates Foundation (BMGF) working alongwith commercial enterprises
- According to all experts and stakeholders, normal time for development around 5 years. Confirmed by even WHO that for a successful vaccine development similar period needed to ensure safety, efficacy and effectiveness. Enormous costs involved in development and hence alliances of different groups and governments considered necessary. Surety, however, elusive as virus mutates at variable speed increasing chances of failure. Thus many factors to increase chances of failure or reduce safety levels
- In India, credit to Dr. Waldemar Mordecai Haffkine, a Russian scientist, and a student of Louis Pasteur for trying out cholera vaccine in Calcutta from 1893. Invited by Governor of Bombay to find a vaccine for plague with facilities provided in JJ Hospital. Plague vaccine developed successfully by him in 1897 paving the way for manufacture of vaccines by Haffkine Institute and others. Today India a leading maker of vaccines worldwide that provide primary prevention, secondary protection and health improvement.
- Lot of action since independence on vaccines for tuberculosis, smallpox, tetanus etc. India now free from polio and neonatal tetanus besides smallpox in totality
- Immunization programme of our country one of the largest targeting 2.6 crores newborns but only 65-70 per cent of children getting full protection.
- However, many segments like adult vaccine and effective vaccines for diseases prevalent in India like malaria, TB, leprosy, cholera etc needing attention.
- Animal health closely intertwined with human health. Lot of action in animal vaccines. Total eradication of tander paste. Many vaccines for animals, poultry etc a part of ambitious programme of Govt of India to prevent infectious diseases in them that can sometimes affect human health
- Nosodes, Homoeopathic vaccines, are diluted and potentised antigens imitating pathogens to arouse defence system for producing antibodies. Nearly 45 nosodes a part of Homoeopathic Pharmacopeia of India and used as prophylaxis and therapeutic agents by Homoeopaths. Not as popular as vaccines for specific immunity .
- Innovation slow in vaccine field though work now going on. However costs rising rapidly disturbing overall economics . Work on diseases and threats in poor and developing nations given less attention

Key takeaways

- Vaccine development an arduous process with a mixed track record. Vaccine for COVID 19 at least 18 to 24 months away despite work with highest urgency and efficiency according to experts and promoters like Bill Gates, WHO etc .
- With no proven drug for C 19 in allopathy, efforts on to repurpose existing drugs. Clearance given to HCQ for high risk people after patient centric trials in Europe, U S A and now given in India. Other symptom based medicines recommended as a part of treatment protocol

- Personal and public hygiene measures of WMD (washing,masking and distancing) essential for all
- Immunity boost hence considered vital. AYUSH (Ayurveda, Yoga and naturopathy, Unani, Siddha and Homoeopathy) proven for promotive and preventive health. To increase reliance on them as per traditional knowledge and advisories of AYUSH to protect ourselves
- Development of nosodes to be accelerated as they are safer and quicker to create .With ease of oral delivery at ambient temperature ,administration all over cheaper and faster
- Innovative and disruptive thinking like following for dramatic reduction in cost and time while increasing safety and efficacy
- Reverse vaccinology for designing vaccines using the pathogen’s sequenced genome from new wealth of information as well as technological advances
- Edible vaccines from edible parts of a plant that has been genetically modified to produce specific components of a particular pathogen to generate protection against a disease
- Vaccines from nucleotides and mRNA which act like proteins after proving
- Using disposable technologies for vaccine manufacturing having following advantages
- Using digital technologies to reduce clinical trials

Actionable Points

- 1) Washing, Masking, Distancing (WMD) to be followed by all
- 2) Improvement of general immunity with Ayurveda and specific immunity by Homoeopathy
- 3) Maintenance of mental health with Yoga and Pranayama
- 4) Consumption of healthy food and proper nutrition
- 5) Acceptance of all safe and harmless AYUSH medicines and methods for treatment of COVID 19 for mild cases at homes or hospitals while observing recommended guidelines
- 6) Support to development of nosodes

SB Dangayach
Founder Trustee Innovative Thought Forum (ITF)
and
National Vice President Arogya Bharati (AB)
+919998822680
sbdangayach@gmail.com
www.itf-india.com