



Report of _____

4th PGIVAC

PGIMER's International Vaccinology Course

9th - 13th June 2025

Organized by

Department of Community Medicine and School of Public Health
Post graduate Institute of Medical Education and
Research (PGIMER), Chandigarh



डॉ. विनोद कुमार पॉल
सदस्य
Dr. Vinod K. Paul
MEMBER



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May 28, 2025

Message

I am pleased to share my thoughts on the **4th PGIVAC- PGIMER International Vaccinology Course** - an important initiative that reflects India's growing leadership in the field of vaccines and immunization science. This course, hosted by PGIMER Chandigarh, addresses a critical need—equipping professionals with the knowledge, skills, and multidisciplinary perspective required to navigate the evolving landscape of vaccinology. Today, as the world grapples with the twin challenges of infectious disease threats and lifestyle disorder, strengthening immunization capacity is not a choice but necessity.

The Government of India has taken decisive steps in recent years to expand the reach of life-saving vaccines and invest in indigenous innovation. From enhanced routine immunization through **Mission Indradhanush**, to the scale and speed of **COVID-19 vaccine development and deployment**, and India's global contribution through **Vaccine Maitri**, the efforts reflect a sustained commitment to public health reach and equity. NITI Aayog continues to support these initiatives theory of catalytic coordination.

PGIMER's role in this endeavor is both commendable and strategic. As one of India's leading academic institutions, PGIMER brings to PGIVAC its strength in clinical research, training, and public health implementation. I am confident this course will create a ripple effect, empowering participants to apply scientific insights to real-world challenges in immunization and beyond. I congratulate the organizing team for curating a rich and relevant learning experience and wish all participants success in their professional and public health journeys.

(Vinod Paul)



स्नातकोत्तर चिकित्सा शिक्षा एवं
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चण्डीगढ़ 160012 (भारत)
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"Service to the Community, Care of the
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Prof. (Dr.) Vivek Lal
MD (Med), DM (Neuro)
Director
&
Head, Department of Neurology



No. DPGI-4/25/55
Date : 02-05-2025

Message

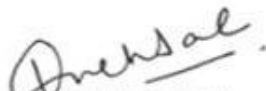
Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, is dedicated to excellence in medical education, research, and patient care. Established in 1962, PGIMER has been at the forefront of providing high-quality healthcare services and training in various medical disciplines. Recognized as an 'Institute of National Importance', we offer a wide array of educational programs, including postgraduate and doctoral degrees, diplomas, and fellowships across more than 50 specialties and super specialties. Our commitment to research is evident in our focus on addressing community health challenges, with significant contributions in areas such as infectious diseases, oncology, and public health. PGIMER also serves as a leading tertiary care hospital in northern India, catering to patients from Punjab, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Haryana, Bihar, and Uttar Pradesh.

It is with immense pride that I welcome you to PGIMER's **International Vaccinology Course**, organized by the **Department of Community Medicine & School of Public Health, PGIMER, Chandigarh**. This esteemed program serves as a crucial platform for strengthening capacity in vaccinology by bringing together leading experts, researchers, and healthcare professionals to enhance their knowledge and expertise in vaccinology, immunization science, policy, and implementation strategies. Vaccination remains one of the most powerful tools in public health, significantly reducing morbidity and mortality from infectious diseases. In an era of emerging infectious threats and rapid vaccine advancements, it is imperative that healthcare professionals remain updated with the latest evidence-based practices and



innovations in vaccinology and immunization. This **International Vaccinology Course** is a testament to PGIMER's unwavering dedication to fostering excellence in public health and medical education which is at par with global level. I encourage all participants to actively engage in discussions, exchange insights, and collaborate to strengthen immunization programs at national and global levels. Your collective efforts will play a pivotal role in innovations in vaccinology, enhancing vaccine accessibility, coverage, effectiveness, and reducing inequalities, ultimately contributing to a healthier society.

I extend my best wishes to the organizing team and all attendees for a successful and enriching learning experience.


(Dr Vivek Lal)



Dr. Arun Kumar Aggarwal

Organizing Chairperson, Professor and Head
Department of Community Medicine and
SPH, PGIMER, Chandigarh

It is with great enthusiasm that I welcome you to the PGIMER's International Vaccinology Course, organized by the Department of Community Medicine & School of Public Health (DCM & SPH) at the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. This course stands as a testament to our unwavering commitment to advancing public health education and practice at a global level. Established in 1977, our department has undergone remarkable transformation over the decades. Department has remained dedicated to develop feasible healthcare delivery models and addressed current and emerging public health challenges. Our core activities revolve around comprehensive teaching and training programs. We offer a range of academic courses including the MD in Community Medicine, a 3-year program for medical graduates; the Master of Public Health (MPH), a 2-year course open to graduates from various disciplines; and the Doctor of Philosophy (PhD), a 3 to 5-year program for candidates holding degrees such as MBBS, BDS, BVSc, BE, MA, MSc, or MPH. Additionally, we offer a Postgraduate Diploma in Public Health Management, specifically designed for sponsored medical officers, and a 4-year Bachelor in Public Health program (including one year internship) for students who have completed 10+2 education. Beyond these structured courses, we are actively engaged in training various categories of healthcare professionals and in educating the public, reinforcing our commitment to capacity building and community engagement. Senior faculty has also served as member of National Technical Advisory Group on Immunization (NTAGI) and Special Task Group on Immunization (STGI). The International Vaccinology Course is one of our flagship initiatives, designed to enhance the competencies of healthcare professionals in the domain of vaccinology and immunization. This course offers a comprehensive curriculum encompassing the latest advancements in vaccine development, immunization strategies, and policy implementation. Participants will have the opportunity to engage with leading experts, partake in interactive sessions, and collaborate on strategies to improve vaccination coverage and effectiveness. I encourage all participants to immerse themselves fully in this course, engage in meaningful discussions, and leverage this platform to enhance their knowledge and skills in vaccinology. Together, let us contribute to building a healthier nation through informed public health practices.



Dr. Madhu Gupta

Course Director, Professor
Department of Community Medicine and
SPH, PGIMER, Chandigarh

Vaccination has revolutionized public health by significantly reducing the incidence and mortality of infectious diseases. It remains one of the most cost-effective and evidence-based interventions for disease prevention. The success of immunization programs has led to the near-eradication of life-threatening diseases such as smallpox and polio, while newer vaccines continue to combat emerging threats like COVID-19, malaria, and antimicrobial resistance. Despite these advancements, challenges persist in the form of vaccine hesitancy, supply chain limitations, inequitable distribution, and gaps in immunization coverage, particularly in low- and middle-income countries. Ensuring widespread immunization requires a trained workforce adept in vaccinology, epidemiology, immunology, and health policy to drive evidence-based decision-making and program implementation. The PGIMER International Vaccinology Course (PGIVAC) has been meticulously designed to address these gaps by equipping healthcare professionals, researchers, academicians, and policymakers with specialized knowledge in vaccinology. Organized by the Department of Community Medicine & School of Public Health, PGIMER, Chandigarh, this intensive training program provides a comprehensive understanding of vaccine science, covering critical aspects such as vaccine research and development, preclinical and clinical trials, regulatory approvals, immunization strategies, programmatic challenges, and health economics. The course emphasizes both theoretical and practical dimensions, enabling participants to translate knowledge into actionable strategies for strengthening immunization initiatives at local, national, and global levels. With a distinguished faculty of experts, interactive sessions, case-based learning, and hands-on training, PGIVAC fosters a collaborative and engaging learning environment. This course offers a unique opportunity for participants to enhance their expertise, exchange ideas with global leaders in vaccinology, foster collaborations and networking with vaccinologists and contribute effectively to strengthening vaccine and immunization policies and practices globally. We welcome all participants to this enriching learning experience and look forward to collectively advancing the field of vaccinology for better public health outcomes



NITI Aayog



Organizing Team

Organizing Chairperson

Dr. Arun Aggarwal, Professor and Head, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Course Director

Dr. Madhu Gupta, Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Scientific Committee Members

- Dr. Shankar Prinja, Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh
- Dr. Sanjay Verma, Professor, Advanced Pediatrics Centre, PGIMER Chandigarh
- Dr. Rashmi Bagga, Professor, Department of Gynecology, PGIMER, Chandigarh
- Dr. Vikas Suri, Professor, Department of Internal Medicine, PGIMER, Chandigarh
- Dr. Rimpi Singla, Additional Professor, Department of Gynecology, PGIMER, Chandigarh
- Dr. Vivek Sagar, Additional Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh
- Dr. Kapil Goel, Associate Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Technical Course Coordinators

- Dr. Adarsh Bansal, Research Scientist-III, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Ms. Nupur Vats, Ph.D. Scholar, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Dr. Aprajita Mehta, Ph.D. Scholar, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Ms. Manjeet, Ph.D. Scholar, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Dr. Indrakshi Sharma, Research Scientist-III, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Dr. Diksha Thakur, Research Scientist-III, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Ms. Radhika Aggarwal, Statistician, Department of Community Medicine and School of Public Health, PGIMER Chandigarh

Administrative Course Co-Coordinators

- Mr. Narinder Duggal, Admin. Assistant, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Mr. Shyam Joshi, Admin. Assistant, Department of Community Medicine and School of Public Health, PGIMER Chandigarh
- Ms. Priyanka Mishra, Admin. Assistant, Department of Community Medicine and School of Public Health, PGIMER Chandigarh



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Abbreviations

AEFI	Adverse Events Following Immunization
AI	Artificial Intelligence
AIIMS	All India Institute of Medical Sciences
AH50	Alternative Pathway Hemolytic Complement
Alum	Aluminium salts (adjuvant)
BCG	Bacille Calmette-Guérin
BSL-3	Biosafety Level 3
CMC	Chemistry, Manufacturing, and Controls
CDL	Central Drugs Laboratory
CDSCO	Central Drugs Standard Control Organization
CEPI	Coalition for Epidemic Preparedness Innovations
CGD	Chronic Granulomatous Disease
CH50	Total Hemolytic Complement
COVID-19	Coronavirus Disease 2019
CRT	Cluster Randomized Controlled Trial
CTD	Common Technical Document
DCGI	Drugs Controller General of India
DCVMN	Developing Countries Vaccine Manufacturers Network
DBT	Department of Biotechnology
DHR	Dihydrorhodamine assay
EC	Ethics Committee
ERIG	Equine Rabies Immunoglobulin
FOXP3	Forkhead Box Protein P3
GCP	Good Clinical Practice
GEAC	Genetic Engineering Appraisal Committee
GMP	Good Manufacturing Practice
HPV	Human Papillomavirus
HRIG	Human Rabies Immunoglobulin
IC50	50% Inhibitory Concentration (commonly used in neutralization assays)



ICMR	Indian Council of Medical Research
IgA	Immunoglobulin A
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IMDG	Imidazoquinoline derivative (adjuvant used in Covaxin)
IVIG	Intravenous Immunoglobulin
IVI	International Vaccine Institute
KEM	King Edward Memorial (Hospital, Mumbai)
LMICs	Low- and Middle-Income Countries
MHC	Major Histocompatibility Complex
mRNA	Messenger RNA
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NDCTR	New Drugs and Clinical Trials Rules
NITAG	National Immunization Technical Advisory Group
NQAS	National Quality Assurance Standards
NBT	Nitroblue Tetrazolium test
OPV	Oral Polio Vaccine
PDP	Product Development Partnership
PCV	Pneumococcal Conjugate Vaccine
PGIMER	Postgraduate Institute of Medical Education & Research
PGIVAC	PGIMER International Vaccinology Course
PMS	Post-Marketing Surveillance
PSUR	Periodic Safety Update Report
QC	Quality Control
R&D	Research and Development
RCGM	Review Committee on Genetic Manipulation
RCT	Randomized Controlled Trial
R₀	Basic reproduction number
R	Effective reproduction number
ROTAVAC	Indian rotavirus vaccine



RSV	Respiratory Syncytial Virus
SAS	Social and Anthropological Sciences (context: institution mentioned)
SEC	Subject Expert Committee
TCV	Typhoid Conjugate Vaccine
TAB	Technical Advisory Board
TH1	Type 1 T helper cells
TH2	Type 2 T helper cells
UIP	Universal Immunization Programme
VLP	Virus-Like Particle
WJCF	William J. Clinton Foundation (context: Clinton Health Access Initiative)
WHO	World Health Organization
ZD	Zero-Dose (children)



Introduction of the Course

Vaccinology is the science or methodology of vaccine development. Vaccines are life savior by preventing diseases and disabilities. Benefit of vaccines in public health is enormous. There is strong evidence that shows that infectious diseases like Polio, Diphtheria, Pertussis (whooping cough), Measles, Rubella (German measles), Mumps, Tetanus, Rotaviral diarrhea, Haemophilus influenzae type b (Hib) and pneumococcal Pneumonia are effectively prevented by use of vaccines. These are very effective in dealing with pandemic situations like Covid-19 pandemic, and also with rising antimicrobial resistance. Vaccination is one of the most cost-effective public health interventions that have contributed in the decline of under-five mortality & premature deaths among elderly. However, vaccine preventable diseases are still responsible for many preventable deaths in India and Low middle income countries because of the programmatic issues related to access of these vaccines especially to the vulnerable groups and vaccine hesitancy. Several licensed vaccines are available in the market like Human Papilloma Virus vaccine for prevention of cervical cancer, Influenza vaccine, Pneumococcal vaccine, but these are either not affordable due to high cost or are inaccessible due to regulatory issues which needs advocacy at the policy level. Also, there are diseases like malaria, dengue, AIDS which has a huge public health burden. Fortunately, newer vaccines against malaria and dengue are now available; however, their full potential in large-scale settings remains to be thoroughly evaluated.

Need for PGIVAC

There is a pressing need to build the capacity of the professionals in the field of vaccinology to ensure that its benefits are maximized at every stage, from vaccine development to introduction and large-scale implementation. However, there remains a critical gap in the availability of specialized training programs, courses, and workshops focused on vaccinology, particularly in India and other LMICs. This lack of structured educational opportunities limits the ability of healthcare professional. Previous three National Vaccinology Workshops were a huge success. In line with it, the 4th PGIVAC International Vaccinology workshop is going to be conducted at Department of Community Medicine & School of Public Health, PGIMER, Chandigarh, an Institute of National Importance.

Objective of the Course

The objective of this course is to build capacity of the participants from a diverse background including medical, public health, basic sciences, or pharmacology to conduct research related to vaccine development, estimating the vaccine efficacy & effectiveness, strengthening the existing immunization programs, and policy level decision making regarding introduction of newer vaccines.



Scientific Program

DAY 1: 9th June 2025

Time	Topic	Resource Faculty	
Day 1: 09/06/2025		Module 1: Introduction and History of Vaccine Development	
8.00-9.00 am	Registration	Organizing Team	
9:00-9:20 am	Introduction and objectives of the course	Dr. Madhu Gupta , Professor, Department of Community Medicine and School of Public Health (DCM & SPH), PGIMER, Chandigarh	
9:20-10:00 am	History of vaccines and vaccination	Dr. Rajesh Kumar , Former HOD, DCM & SPH, and Former Dean (Academics), PGIMER, Chandigarh, Adjunct Faculty, UIPHS, Maharshi Dayanand University, Rohtak	Chair: Dr. Jayaprakash Muliylil , Former Principal, Former HOD, Department of Community Health, Academic Officer, Christian Medical College, Vellore
10:00-10:45 am	Case study 1: Small Pox eradication	Dr. Madhu Gupta , Professor, DCM & SPH, PGIMER, Chandigarh	
10:45-11:10 am	Tea Break		
11:10-11:50 pm	National Vaccine Policy in India	Dr. Nirmal K Ganguly , Former Director General, ICMR, New Delhi	Chair: Dr. Rajesh Kumar , Former HOD, Dept. of Community Medicine and School of Public Health and Former Dean (Academics), PGIMER, Chandigarh
11:50-12:30 pm	Impact of vaccination on disease epidemiology: Strategies to control, eliminate and eradicate vaccine-preventable diseases	Dr. Jayaprakash Muliylil , Former Principal, Former HOD, Department of Community Health, Academic Officer, Christian Medical College, Vellore	
12:30-1:30 pm	Inauguration		
12:30-12:35 pm	Welcome Address	Dr Arun K Aggarwal , Professor & Head, DCM & SPH, PGIMER, Chandigarh	
12:35-12:45 pm	Inaugural Address	Prof. Vivek Lal , Director, PGIMER Chandigarh	
12:45-1:00 pm	Distinguished Address	Guest of Honour: Dr Rajeev Singh Raghuvanshi , Drug Controller General of India, CDSCO, MoHFW, GoI	
1:00-1:10 pm	Address on Credit Hours	Guest of Honour: Dr Rupinder Bakshi , Punjab Medical Council's Representative	
1:10-1:25 pm	Keynote Address	Chief Guest: Dr Vinod Kumar Paul , Member, NITI Aayog, New Delhi	
1:25-1:30 pm	Vote of Thanks	Dr. Madhu Gupta , Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh	
1:30 - 2:30 pm	Lunch		
2:30 -3:10 pm	Vaccine as a tool to solve public health problem: Lessons learnt from Polio	Dr. Ananda Bandyopadhyay , Deputy Director, Polio, Gates Foundation, USA	Chair: Dr. Nirmal K Ganguly , Former Director General, ICMR, New Delhi
3:10 - 3:40 pm	Measles Elimination and Rubella Control Strategies	Dr. Shivani Gupta , Surveillance Medical Officer, WHO	
3:40 - 4:00 pm	Tea		
4.00 - 4.30 pm	Role of vaccines in managing outbreaks of Vaccine Preventable Diseases	Dr Kapil Goel , Associate Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh	Chair: Dr Arun K Aggarwal Professor & Head, DCM & SPH, PGIMER, Chandigarh
4.30 - 5.00 pm	The role of the vaccine industry in the development of vaccine	Dr. Prasad Kulkarni , Executive Director, Serum Institute of India, Pune	
Special Legacy Lecture: Insights from Vaccinology Legend ★			
5:00-5:30 pm	Public health importance of vaccines: Lessons learnt and Way forward	Dr. Stanley A. Plotkin Professor Emeritus, University of Pennsylvania, Philadelphia, USA Professor – Adjunct, International Health Division Global Disease Epidemiology and Control, Johns Hopkins Bloomberg School of Public Health, USA	Chair: Dr. Ananda Bandyopadhyay , Deputy Director, Polio, Gates Foundation, USA
5:30 pm	Wrap up of the day and Feedback of the sessions Open introductory session: Meet the participants	Dr Madhu Gupta Course Director	



DAY 2: 10th June 2025

Time	Topic	Resource Faculty
Day 2: 10/06/2024		
Module 2: Immunology Related to Vaccines		
8:30-9:00 am	Recap of Day 1	Dr Madhu Gupta , Course Director
9:00-9:30 am	What a vaccinologist should know about basic aspects of immune response: Innate, Cell-mediated and humoral immune response	Dr. Biman Saikia , Professor and Head, Department of Immunopathology, PGIMER, Chandigarh
9:30-10:00 am	Laboratory assessment of Immune response	Dr. Ritu Aggarwal , Professor, Department of Immunopathology, PGIMER, Chandigarh
10:00-10:40 am	Immune response to vaccines: durability and long-term immunogenicity	Dr. Vipin Vashishtha , Director and Consultant Pediatrician, Mangla Hospital & Research Centre, Bijnor, UP
10:40-11:10 am	Vaccines, indirect effects & why mucosal immunity matters	Dr. Adam Finn , Professor of Paediatrics, Bristol Medical School, UK.
11:10-11:30 am	Tea	
11:30-12:00 pm	Vaccination in special situations among children	Dr. Sanjay Verma , Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh
12:00 -12:30 pm	Vaccination in special situations among adults: Immunocompromised individuals including HIV positive and Haematological malignancies	Dr. Vikas Suri , Professor, Department of Internal Medicine, PGIMER, Chandigarh
12:30 - 1:00 pm	Vaccination in special situations: Pregnancy	Dr. Rimpi Singla , Additional Professor, Department of Obstetrics & Gynaecology, PGIMER, Chandigarh
1:00-2:00 pm	Lunch	
2:00 - 3:00 pm	Open Discussion Forum Case studies on vaccines in special situations	Panellists: Dr. Sanjay Verma , Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh Dr. Vikas Suri , Professor, Department of Internal Medicine, PGIMER, Chandigarh Dr. Rimpi Singla , Additional Professor, Department of Obstetrics & Gynaecology, PGIMER, Chandigarh Dr. Harpreet Singh , Associate Professor, Department of Internal Medicine, PGIMER, Chandigarh
3:00-3:20 pm	Tea	
3:20-3:50 pm	Adverse Events Following Immunization (AEFI)	Dr. Deepak Polpakara , Senior Team Lead – AEFI, Immunization Technical Support Unit (JSI-MOHFW)
3:50- 4:30 pm	Adverse Events Following Immunization (AEFI): Causality assessment	Dr. Madhava Ram Balakrishnan , Medical Officer Pharmacovigilance, WHO HQ Geneva, Switzerland
4:30-5:00 pm	Adverse Events Following Immunization (AEFI): Chandigarh Scenario	Dr. Manjeet Singh , District Immunization Officer- cum- District Family Welfare Officer, Chandigarh
5:00-5:40pm	Advocacy in AEFI management at community level; and Introduction of a new vaccine	Dr. Manmeet Kaur , Former Professor, DCM & SPH, PGIMER, Chandigarh, Adjunct Faculty, UIPHS, Maharshi Dayanand University, Rohtak
5:40 pm	Wrap up of the day Feedback of the sessions	Dr Madhu Gupta Course Director



DAY 3: 11th June 2025

Time	Topic	Resource Faculty
Day 3: 11/06/2025 Module 3: Regulations and Ethics; and Phases of Vaccine development		
8:30-9:00 am	Recap of Day 2	Dr. Madhu Gupta , Course Director
9:00-9:30 am	Regulations and ethical considerations related to vaccine trials	Dr. Nusrat Shafiq , Professor, Department of Pharmacology, PGIMER, Chandigarh
9:30-10:00 am	Case study 2: Ethical issues in vaccine development	Chair: Dr Samir Malhotra , Professor and Head, Department of Pharmacology, PGIMER, Chandigarh
10:00-10:30 am	Understanding role of regulators in conducting vaccine trials	
10:30-11:00 am	Introduction to statistical aspects of vaccine trial (defining sample size: practical approaches, data analysis with examples)	
11:00-11:20 am	Tea	
11:20-11:50 pm	Phase I Vaccine trial: Methodology and implementation	Dr. Badri Narayan Patnaik , Director, Clinical Development, Bharat Biotech International Limited, Hyderabad
		Chair: Dr. Temsunaro Rongsen Chandola , Senior Scientist and Director, SAS
11:50-12:20 pm	Phase II Vaccine trial: Methodology and implementation	Dr. Badri Narayan Patnaik , Director, Clinical Development, Bharat Biotech International Limited, Hyderabad
12:20 – 1:15 pm	Group exercise 1: How to design, recruit and analyse the results of phase I/II trials of SARS-CoV-2 vaccine	
1:15 - 2:00 pm	Lunch	
2:00-2:30 pm	Phase III Vaccine trial: How to assess vaccine efficacy? Rotavirus vaccine	Dr. Temsunaro Rongsen Chandola , Senior Scientist and Director, SAS
2:30-3:20 pm	Group exercise 2: How to design, recruit and analyse the results of phase III trials of rotavirus vaccine?	Chair: Dr Rubina Bose , Deputy Drugs Controller (India), CDSCO, MoHFW, Gol
3:20-3:50 pm	Phase IV: Population based post licensure surveillance and pharmacovigilance (Effectiveness studies)	
3:50-4:10 pm	Tea	
4:10-4:40 pm	Assessing herd protection and vaccine effectiveness	Dr. John Clemens , Senior Scientific Advisor to the Director General, International Vaccine Institute (IVI), Republic of Korea
4:40-5:00 pm	Use of vaccine development platform technologies for Pandemic preparedness	Mr. Sourabh Sobti , Head of Business Development, Coalition for Epidemic Preparedness Innovations (CEPI), New Delhi
5:00-5:20 pm	Codon deoptimization technology and its application in viral vaccine development	Dr. Raju Sunagar , Deputy General Manager R&D, Indian Immunologicals Ltd., Hyderabad
5:20-5:40 pm	Ethical Issues in Human Challenge Trials	Dr Nithya Gogtay , Professor and Head of Clinical Pharmacology, KEM Hospital, Mumbai, Member NTAGI.
5:40 pm	Wrap up of the day Feedback of the sessions	Dr. Madhu Gupta , Course Director



DAY 4: 12th June 2025

Time	Topic	Resource Faculty	
Day 4: 12/06/2025 Module 4: Introduction of Vaccines in National Immunization Programs			
8:30-9:00 am	Recap of Day 3	Dr. Madhu Gupta, Course Director	
9:00-9:30 am	Evidence to policy making	Dr. Narendra K. Arora, Executive Director, The INCLEN Trust International, New Delhi	Chair: Dr. Shankar Prinja, Professor (Health Economics), Department of Community Medicine and School of Public Health, PGIMER
9:30-10:00 am	Role of disease burden assessment in the decision-making process related to vaccines	Dr. Jacob John, Professor, Community Medicine, Christian Medical College, Vellore	
10:00-10:30 am	How to do assessment of burden of vaccine preventable disease	Dr Brian Wahl, Assistant Professor, Yale School of Public Health, USA	
10:30-11:10 am	Implementation of evidence-based vaccination policies in Indian Context: Recent updates in the National Immunization Schedule	Dr. Pawan Kumar, Additional Commissioner, Incharge (Immunization & Maternal health), MoHFW, India	
11:10-11:30 am	Tea		
11:30-11:50 pm	Newer vaccine’s introduction and health systems strengthening in India	Dr. Arindam Ray, India Country Lead, Immunization and Surveillance at Gates Foundation	Chair: Dr. Raj Shankar Ghosh, Senior Advisor, One Health & Environmental Health, Public Health Foundation of India, Former Consultant Senior Advisor, Vaccines & Immunization, South Asia, Path, Former Deputy Director, Vaccine Delivery and Infectious diseases, Gates Foundation
11:50-12:20 pm	Introduction of HPV vaccination in Nepal: Experience sharing	Dr. Abhiyan Gautam, Chief, Child Health and Immunization Services, Ministry of Health and Population, Nepal	
12:20-12:40 pm	Experience sharing/lessons learnt/Success stories in the national immunization program of Sri Lanka	Dr. Samitha Ginige, Director of Quarantine, Ministry of Health, Sri Lanka	
12:40-1:00PM	Experience sharing on How to better reach the zero-dose or under-vaccinated children in LMICs	Dr. Suresh Dalpath, National Technical Lead: Immunization Implementation Country Program- India, William J Clinton Foundation	
1:00-2:00 pm	Lunch		
2:00-2:30 pm	Innovations in immunization in the health system of India	Dr. Raj Shankar Ghosh, Senior Advisor, One Health & Environmental Health, Public Health Foundation of India	Chair: Dr Jacob John, Professor, Community Medicine, Christian Medical College, Vellore
2:30-3:00 pm	Latest technological advancements in vaccine platform and One Health	Dr. Santosh Ramesh Taur, Director Medical Affairs, Vaccines, Rare Diseases and Digital, Pfizer	
3:00-3:30 pm	Health economics as a tool in analysing vaccine policy option	Dr. Shankar Prinja, Professor (Health Economics), DCM SPH, PGIMER	
3:30-4:00 pm	Economic Perspectives on Group A Streptococcus Vaccine Introduction	Dr Jeffrey Cannon, Senior Research Officer and Health Economist, The Kids Research Institute, Perth, Australia	
4:00-4:20 pm	Tea		
4:20-4:50 pm	Vaccine Hesitancy and Advocacy	Dr. Naveen Thacker, Executive Director, International Pediatric Association	Chair: Dr. Pawan Kumar, Additional Commissioner, Incharge (Immunization & Maternal Health), MoHFW, India
4:50-5:20 pm	Procurement of vaccines: Role of GAVI, WHO, UNICEF etc.	Mr. Homero Hernandez, Senior Country Officer, GAVI Alliance, Geneva	
5:20-5:50pm	Open Discussion Forum: Addressing Challenges in introduction of newer vaccines at the national level	Panelists Dr. Raj Shankar Ghosh Dr. Pawan Kumar Dr Arindam Ray Dr. Jacob John Mr. Homero Hernandez Dr. Shankar Prinja Dr. Navneet Bichha	
5:50 pm	Wrap up of the day Feedback of the sessions	Dr. Madhu Gupta Course Director	



DAY 5: 13th June 2025

Time	Topic	Resource Faculty
Day 5: 13/06/2025 Module 5: Update on Current and New Vaccines		
8:30-9:00 am	Recap of Day 4	Dr. Madhu Gupta , <i>Course Director</i>
9:00 – 9:30 am	Life course approach in Immunization	Dr. Chandrakant Lahariya , <i>Founder, Foundation for People-centric Health Systems (FPHS), New Delhi</i>
9:30 – 10:00 am	Need for adult immunization	Dr. Suneela Garg , <i>Professor of Excellence, Chair Programme Advisory Committee, NIHF, New Delhi, India, Ex-Director, Professor & Head Community Medicine, MAMC, Head FMC, Delhi University</i>
10:00-10:30 am	Vaccination and Anti-microbial resistance	Dr Kamini Walia , <i>Scientist G & Head, Descriptive Research Division, ICMR, New Delhi</i>
10:30-11:00 am	Update on Influenza vaccines and Experience sharing regarding adult immunization clinic	Dr. Lalit Sankhe , <i>Associate Professor, Grant Medical College, Mumbai</i> Dr. Muralidhar Tambe , <i>Professor and Head, Department of Community Medicine, BJ Medical College, Pune, India</i>
11:00-11:20 am	Tea	
11:20-11:40 am	Update on Adult Pneumococcal vaccine	Dr. Veena G Kamath , <i>Professor & Head, Department of Community Medicine, KMC Manipal, Karnataka</i>
11:40-12:00 pm	Update on Shingles and Varicella vaccines	Dr. Parvinder Kaur Chawla , <i>Senior Consultant Internal Medicine, Fortis Mohali</i>
12:00-12:20 pm	Update on Meningococcal vaccine, Cholera and Hepatitis A vaccine	Dr. Ashish Bhalla , <i>Professor, Department of Internal Medicine, PGIMER, Chandigarh</i>
12:20-12:40 pm	Update on Human Papilloma Virus Vaccine	Dr. Rashmi Bagga , <i>Professor, Department of Obstetrics & Gynaecology, PGIMER, Chandigarh</i>
12:40-1:00 pm	Update on TB Vaccines	Dr. Manjula Singh , <i>Scientist F, Delivery Research, ICMR, New Delhi</i>
1:00-1:20 pm	Update on Travel Vaccines	Dr. Swayampragyan Parida , <i>Additional Professor, DCM & FM, AIIMS Bhubaneswar</i>
1:20-2:00 pm	Lunch	
2:00-2:20 pm	Licensed vaccines in children & Adolescents: Pneumococcal and Hexavalent vaccines	Dr. Sanjay Verma , <i>Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh</i>
2:20-2:40 pm	Licensed vaccines in children: Typhoid and RSV vaccines	Dr. Unmesh Upadhyay , <i>Director and Consultant Pediatrician, Vismay child care hospital, Ahmedabad, India</i>
2:40-3:00pm	Update on Rabies vaccine	Dr. Omesh Bharti , <i>Deputy Director Health Services-cum- State Epidemiologist, Himachal Pradesh</i>
3:00-3:20 pm	Update on Dengue and Malaria vaccines	Dr. Harpreet Singh , <i>Associate Professor, Department of Internal Medicine, PGIMER, Chandigarh</i>
3:20-3:40 pm	Tea	
3:40-4:00pm	Update on HIV/AIDS vaccines	Dr. Jerome H. Kim , <i>Director General, International Vaccine Institute, Seoul, Republic of Korea</i>
4:00-4:20 pm	Update on Group A Streptococcus Vaccine	Dr. Vivek Sagar , <i>Additional Professor, Department of Community Medicine & School of Public Health, PGIMER</i>
4:20-4:40pm	Climate Change and Immunization	Dr. Ravindra Khaiwal , <i>Professor of Environment Health, Department of Community Medicine & School of Public Health, PGIMER</i>
4:40-5:00 pm	Leveraging Public-Private Partnership (PPP) to Accelerate the Vaccines R&D for LMICs	Dr. Tarun Saluja , <i>Head of Clinical Development, International Vaccine Institute, Seoul, Republic of Korea</i>
5:00 pm	Valedictory followed by High Tea	



Venue:



Taj, Sector 17A, Chandigarh



Inauguration

Inaugural Program

12:30-1:30 pm	Inauguration	
12:30-12:35 pm	Welcome Address	Dr Arun K Aggarwal <i>Professor & Head, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh</i>
12:35-12:45 pm	Inaugural Address	Prof. Vivek Lal , <i>Director, PGIMER Chandigarh</i>
12:45-1:00 pm	Distinguished Address	Guest of Honour: Dr Rajeev Raghuvanshi , <i>Drug Controller General of India, CDSCO, MoHFW, GoI</i>
1:00-1:15 pm	Keynote Address	Chief Guest: Dr Vinod Kumar Paul , <i>Member, NITI Aayog, New Delhi</i>
1:15-1:25 pm	Address on Credit hours	Representative from Punjab Medical Council
1:25-1:30 pm	Vote of Thanks	Dr. Madhu Gupta , <i>Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh</i>
1:30 - 2:30 pm	Lunch	



Lamp Lightening





Welcome Address & Vision for PGIVAC

Dr. Arun K. Aggarwal

Dr. Arun K. Aggarwal opened the course by warmly welcoming dignitaries, faculty, and delegates from India and abroad. He highlighted PGIMER's ongoing commitment to public health excellence and acknowledged Dr. Madhu Gupta for her leadership in conceptualizing and organizing the PGIVAC course. Stressing the importance of institutionalizing such programs, he urged that PGIVAC should evolve into a sustainable academic tradition. The session underscored the interdisciplinary nature of vaccinology, bringing together experts from academia, public policy, industry, and international organizations. The course's agenda, described as "5-star," was praised for its strong content and practical relevance in the post-pandemic era. He emphasized the need for collaboration across sectors to tackle emerging global vaccine challenges and lauded PGIMER's role in strengthening field-based public health interventions.





Welcome Address & Vision for PGIVAC

Dr. Rajeev Singh Raghuvanshi

Dr. Rajeev Singh Raghuvanshi, the Drug Controller General of India (DCGI), delivered a distinguished address on the role of regulators in India's vaccine ecosystem. He highlighted that India currently produces over 8 billion doses annually and is home to 29 WHO-prequalified vaccines. He noted that India's vaccine regulatory system has been rated at Maturity Level 3 by WHO, signaling a high degree of functional capacity. He discussed India's preparedness for evaluating vaccines for rare and emerging diseases and emphasized the importance of regulators in ensuring timely access to safe and effective vaccines. Dr. Raghuvanshi praised PGIMER's initiative in hosting a comprehensive vaccinology course and noted the increasing importance of such training programs to support regulatory excellence and policy leadership. His session positioned regulators as key enablers in the public health ecosystem and called for stronger collaboration between research institutions and regulatory agencies.





Welcome Address & Vision for PGIVAC

Dr. Bhupinder Tripathi (Gates Foundation)

Dr. Bhupinder Tripathi delivered a thought-provoking special address highlighting the complex interplay between scientific innovation, public trust, and equitable access to vaccines. Acknowledging PGIMER's longstanding legacy in public health research and education, he commended the organizers for curating a globally relevant course. He urged participants to not only absorb knowledge but also to challenge existing paradigms and lead the next wave of public health innovation. Dr. Tripathi emphasized that vaccines alone cannot solve public health challenges—their successful deployment depends equally on systems for delivery, social acceptance, and inclusive policy-making. He stressed the importance of community engagement, trust-building, and culturally sensitive communication in tackling vaccine hesitancy. The Gates Foundation's support for PGIVAC was framed as an investment in nurturing future vaccinology leaders. His address served as a motivational call for young professionals to act as both scientists and advocates, ensuring that no community is left behind in the quest for vaccine equity.





Address on Credit Hours

Dr. Rupinder Bakshi (Punjab Medical Council)

Dr. Rupinder Bakshi addressed the growing academic importance of vaccinology and the transformative impact of interdisciplinary collaboration. He acknowledged the evolution of vaccines from conventional technologies to modern platforms like mRNA, recombinant proteins, and genomics-driven formulations. He commended PGIMER for hosting a program that not only reflects scientific excellence but also supports professional development for medical practitioners. Emphasizing the expanding scope of vaccinology, Dr. Bakshi pointed out how it now integrates data science, bioethics, regulatory science, and global health policy. He announced that participants of PGIVAC would receive 20 CME credit hours from the Punjab Medical Council, recognizing their commitment to lifelong learning and skill enhancement. His message reinforced that continuous medical education is critical for adapting to rapid developments in vaccine science, especially in the wake of COVID-19. Dr. Bakshi encouraged all attendees to carry the course learnings into their practice, teaching, and policy work, helping to build a well-informed, resilient public health workforce.





Keynote Address

Dr. V. K. Paul (Member, NITI Aayog)

Dr. V. K. Paul delivered an impactful keynote address outlining India's monumental COVID-19 vaccine journey and its preparedness for future pandemics. He described the robust scientific infrastructure—including ICMR, DBT, CSIR, and the National Institute of Virology—that enabled rapid vaccine development, animal testing, and scale-up of clinical trials. He applauded the DBT-BIRAC partnership that had already pre-identified trial sites, helping speed up human testing for vaccines like Covaxin and ZyCoV-D. India's regulatory framework, led by CDSCO, adapted quickly by recognizing global approvals and implementing emergency use authorizations. Public-sector delivery networks enabled more than 2.2 billion doses, with logistical innovations such as drones, camels, and boats reaching remote areas. India also exported over 291 million doses to 100+ countries, reinforcing its position as a global vaccine leader. He introduced the “100-Day Vaccine Challenge,” which calls for rapid development and deployment of vaccines in future pandemics. Dr. Paul underscored India's commitment to self-reliance through the Atmanirbhar Bharat initiative, with complete control over the vaccine supply chain—from raw materials to platforms like Co-WIN. His talk concluded with an inspiring message about the power of collective will, institutional collaboration, and scientific agility in shaping public health outcomes.





Vote of Thanks & Acknowledgements

Dr Madhu Gupta, Course Director, 4th International PGIMER Vaccinology Course (PGIVAC)

Dr. Madhu Gupta delivered the formal vote of thanks at the conclusion of Day 1, expressing heartfelt appreciation to all dignitaries, faculty, institutional partners, participants, and the organizing team who contributed to the successful commencement of the 4th PGIMER Vaccinology Course.

She began by extending her sincere gratitude to **Dr. Vinod Kumar Paul**, Member, NITI Aayog, for taking time from his demanding schedule to deliver an inspiring keynote address. His insights on India's self-reliant COVID-19 vaccine strategy and the country's global leadership in vaccine production set the perfect tone for the course. She acknowledged that such efforts motivate academic institutions to design globally competitive educational programs like PGIVAC. She also thanked NITI Aayog for providing the logo support, which she noted added credibility and national visibility to the course. Dr. Gupta warmly acknowledged the presence of **Dr. Rajeev Singh Raghuvanshi**, Drug Controller General of India, describing his participation as deeply encouraging for the academic community. She appreciated his ongoing efforts to make India's regulatory ecosystem more facilitative for researchers and vaccine developers. She then thanked **Dr. Bhupinder Tripathi** from the Gates Foundation, whose continuous support and partnership have been instrumental in sustaining and scaling PGIVAC. She emphasized that the course would not have reached this level without his involvement. **Dr. Rupinder Bakshi**, from the **Punjab Medical Council**, was also thanked for awarding 20 CME credit hours to participants—a value-added component for the professional development of attending clinicians and researchers. Special mention was made of **Dr. Vivek Lal**, Director, PGIMER, for his blessings and silent yet constant support, and **Dr. Arun Aggarwal**, Head of the Department and Organizing Chairperson, for his strategic guidance and foresight throughout the planning process. Dr. Gupta expressed deep appreciation for the distinguished national and international faculty who joined Day 1, including Dr. Madhav Ram Balakrishnan (WHO), Dr. Dalpat, Dr. Ganguly, Dr. Sanjay Verma, Dr. Nanda, Dr. Parvinder Chawla, Dr. Rajesh Kumar, Dr. Manmeet, and Dr. Jayaprakash Muliylil, among others, for their insightful contributions. She closed by recognizing the exceptional work of the organizing team, including Dr. Adarsh, Aprajita, Nupur, Manjeet, Shyam, Narinder, and Indrakshi, who dedicated the last 7–8 months to meticulous planning and seamless execution. The day concluded on a note of optimism, collaboration, and gratitude, setting a strong foundation for the days ahead.





Day wise Proceedings of the Sessions



Day 1

Date: 09.06-2025

Module 1: Introduction and History of Vaccine Development



Scientific Program Day 1

Time	Topic	Resource Faculty	
Day 1: 09/06/2025		Module 1: Introduction and History of Vaccine Development	
8.00-9.00 am	Registration	Organizing Team	
9:00-9:20 am	Introduction and objectives of the course	Dr. Madhu Gupta, Professor, Department of Community Medicine and School of Public Health (DCM & SPH), PGIMER, Chandigarh	
9:20-10:00 am	History of vaccines and vaccination	Dr. Rajesh Kumar, Former HOD, DCM & SPH, and Former Dean (Academics), PGIMER, Chandigarh, Adjunct Faculty, UIPHS, Maharshi Dayanand University, Rohtak	Chair: Dr. Jayaprakash Muliylil, Former Principal, Former HOD, Department of Community Health, Academic Officer, Christian Medical College, Vellore
10:00-10:45 am	Case study 1: Small Pox eradication	Dr. Madhu Gupta, Professor, DCM & SPH, PGIMER, Chandigarh	
10:45-11:10 am	Tea Break		
11:10-11:50 pm	National Vaccine Policy in India	Dr. Nirmal K Ganguly, Former Director General, ICMR, New Delhi	Chair: Dr. Rajesh Kumar, Former HOD, Dept. of Community Medicine and School of Public Health and Former Dean (Academics), PGIMER, Chandigarh
11:50-12.30 pm	Impact of vaccination on disease epidemiology: Strategies to control, eliminate and eradicate vaccine-preventable diseases	Dr. Jayaprakash Muliylil, Former Principal, Former HOD, Department of Community Health, Academic Officer, Christian Medical College, Vellore	
12:30-1:30 pm	Inauguration		
12:30-12:35 pm	Welcome Address	Dr Arun K Aggarwal, Professor & Head, DCM & SPH, PGIMER, Chandigarh	
12:35-12:45 pm	Inaugural Address	Prof. Vivek Lal, Director, PGIMER Chandigarh	
12:45-1:00 pm	Distinguished Address	Guest of Honour: Dr Rajeev Singh Raghuvanshi, Drug Controller General of India, CDSCO, MoHFW, GoI	
1:00-1:10 pm	Address on Credit Hours	Guest of Honour: Dr Rupinder Bakshi, Punjab Medical Council's Representative	
1:10-1:25 pm	Keynote Address	Chief Guest: Dr Vinod Kumar Paul, Member, NITI Aayog, New Delhi	
1:25-1:30 pm	Vote of Thanks	Dr. Madhu Gupta, Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh	
1:30 - 2:30 pm	Lunch		
2:30 -3:10 pm	Vaccine as a tool to solve public health problem: Lessons learnt from Polio	Dr. Ananda Bandyopadhyay, Deputy Director, Polio, Gates Foundation, USA	Chair: Dr. Nirmal K Ganguly, Former Director General, ICMR, New Delhi
3:10 - 3:40 pm	Measles Elimination and Rubella Control Strategies	Dr. Shivani Gupta, Surveillance Medical Officer, WHO	
3:40 - 4:00 pm	Tea		
4.00 - 4.30 pm	Role of vaccines in managing outbreaks of Vaccine Preventable Diseases	Dr Kapil Goel, Associate Professor, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh	Chair: Dr Arun K Aggarwal Professor & Head, DCM & SPH, PGIMER, Chandigarh
4.30 - 5.00 pm	The role of the vaccine industry in the development of vaccine	Dr. Prasad Kulkarni, Executive Director, Serum Institute of India, Pune	
Special Legacy Lecture: Insights from Vaccinology Legend ★			
5:00-5:30 pm	Public health importance of vaccines: Lessons learnt and Way forward	Dr. Stanley A. Plotkin Professor Emeritus, University of Pennsylvania, Philadelphia, USA Professor – Adjunct, International Health Division Global Disease Epidemiology and Control, Johns Hopkins Bloomberg School of Public Health, USA	Chair: Dr. Ananda Bandyopadhyay, Deputy Director, Polio, Gates Foundation, USA
5:30 pm	Wrap up of the day and Feedback of the sessions Open introductory session: Meet the participants	Dr Madhu Gupta Course Director	



Proceedings

Day 1



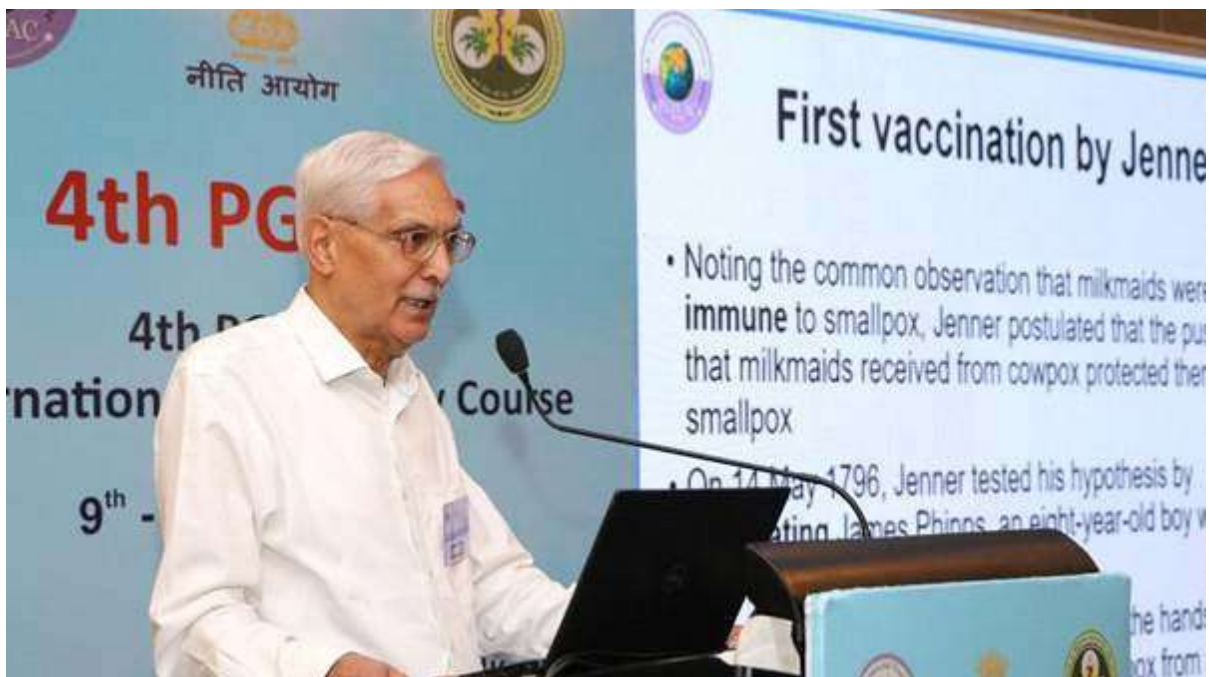
Session 1: History of Vaccines and Vaccination

Speaker: Dr. Rajesh Kumar, Former HOD, DCM & SPH, and Former Dean (Academics), PGIMER, Chandigarh, Adjunct Faculty, UIPHS, Maharshi Dayanand University, Rohtak

Dr. Rajesh Kumar delivered a detailed and scholarly lecture tracing the evolution of vaccines and vaccination, encompassing both global milestones and the Indian context. Beginning with early immunization practices, he described how variolation—using material from smallpox lesions—was documented as early as 1000 AD in India, China, and the Middle East. This practice laid the foundation for Edward Jenner's groundbreaking work in 1796, wherein Jenner inoculated James Phipps, an eight-year-old boy, with pus from cowpox lesions, thereby providing immunity against smallpox. Dr. Kumar underscored that Jenner's work not only introduced the term vaccination (from *vacca*, Latin for cow) but also heralded the modern era of immunology. Expanding beyond smallpox, the lecture highlighted key contributions by Louis Pasteur, who pioneered vaccines against anthrax and rabies. Dr. Kumar described Pasteur's anthrax field trial in 1881 and the first successful rabies vaccination of Joseph Meister in 1885, emphasizing how these achievements shaped vaccine science. He further discussed the development of the Bacille Calmette–Guérin (BCG) vaccine for tuberculosis by Albert Calmette and Camille Guérin, and the discovery of adjuvants by Gaston Ramon, which significantly improved vaccine efficacy. In the Indian context, Dr. Kumar recounted the historic administration of the first smallpox vaccination to Anna Dusthall in Bombay on 14 June 1802. He provided valuable insights into the socio-cultural resistance from traditional inoculators (*tikadaars*) and widespread misconceptions that initially impeded vaccine acceptance. The lecture also spotlighted Dr. Waldemar Haffkine's pioneering work in India, including his development of vaccines for cholera and plague, culminating in the establishment of the Haffkine Institute in 1899. Dr. Kumar elaborated on the critical roles played by other indigenous institutions, including the King Institute (Chennai), Central Research Institute (Kasauli), and Pasteur Institute of India (Coonoor), in strengthening domestic vaccine production capacity. Moving into the post-independence era, the lecture traced India's public health achievements, beginning with the National Smallpox Eradication Programme initiated in 1962, which led to India being declared smallpox-free by 1977. This success paved the way for the launch of the



Expanded Programme on Immunization (EPI) in 1978 and the Universal Immunization Programme (UIP) in 1985, which together transformed the landscape of vaccine-preventable disease control in India. Dr. Kumar concluded by reflecting on the evolution of ethical standards in vaccine research—from limited oversight during early trials to today's stringent, evidence-based regulatory frameworks. His presentation compellingly positioned vaccination as not only a scientific triumph but also a transformative public health intervention that continues to protect millions and contributes to global disease control and eradication efforts.





Case Study – Smallpox Eradication

**Facilitator: Dr. Madhu Gupta, Professor,
DCM & SPH, PGIMER, Chandigarh**

Dr. Madhu Gupta led an interactive case study session on smallpox eradication, engaging participants in group discussions around key factors, barriers, facilitators, and lessons learned. Participants identified the unique characteristics of smallpox such as visible symptoms, no animal reservoir, and a single stable strain, political commitment, strict monitoring and evaluation, development of vaccine and less logistic issues that made eradication possible. Long incubation period, no cold chain requirement and long duration of protection along with active surveillance to trace the cases were other factors contributing to the eradication of small pox. Initial challenges like underreporting, competing disease control priorities (e.g., malaria), vaccine hesitancy, under funding, civil wars going on in other part of the worlds and weak health systems were reported as key barriers in small pox eradication. Participants highlighted innovations such as the bifurcated needle and community-level vaccination campaigns as crucial enablers. Global cooperation, including Cold War rivals USA and USSR, was noted as a pivotal factor. Key lessons included the importance of active surveillance, case detection, containment, and community engagement. Dr. Gupta emphasized how localized implementation of WHO strategies and leveraging existing health infrastructure created sustainable public health gains. The session closed with reflections on how these lessons remain relevant for present-day eradication efforts such as polio and measles. The smallpox eradication programme offers enduring lessons for current and future disease eradication initiatives. It demonstrated that an intensified, targeted approach—centred on active surveillance, rapid case detection, and ring vaccination—is essential for interrupting transmission and achieving eradication. The pivotal role of an apex coordinating body like the World Health Organization (WHO) highlighted the need for global commitment, technical guidance, and sustained international cooperation. Equally important was the leadership and advocacy by public health scientists, who ensured that strategies remained evidence-based, responsive to field realities, and politically supported. Collectively, these lessons underscore that eradication efforts succeed when scientifically robust interventions are implemented through coordinated global action and strong local engagement.





Session 3: Impact of vaccination on disease epidemiology: Strategies to control, eliminate and eradicate vaccine-preventable diseases

**Speaker: Dr. Jayaprakash Muliyl, Former Principal, Former HOD,
Department of Community Health, Academic Officer,
Christian Medical College, Vellore**

Dr. Jayaprakash Muliyl delivered a thought-provoking session highlighting the critical role of epidemiology in assessing vaccine performance and formulating effective disease elimination strategies. He clarified that vaccine effectiveness should be interpreted as the observed reduction in disease incidence at the population level, rather than as an absolute guarantee of protection for every individual a distinction often misunderstood, leading to public misconceptions and erosion of trust. Dr. Muliyl underscored the necessity of grounding vaccine policy in a nuanced understanding of disease pathophysiology and warned that biases and conflicts of interest can distort scientific evidence and compromise policy integrity. He emphasized that epidemiologists must critically question and interrogate the underlying assumptions and methodologies behind presented data, rather than accepting findings at face value, to ensure that public health policies remain grounded in robust scientific evidence. Using the example of BCG vaccination, he illustrated that although it may not substantially reduce leprosy incidence, it plays an important role in mitigating disease severity, a critical but sometimes overlooked public health benefit. He emphasized that disease control and elimination strategies cannot rely on a uniform approach; instead, interventions must be tailored to specific epidemiological contexts, guided by rigorous scientific analysis. Importantly, Dr. Muliyl advocated for epidemiologists to take an active role not only in data interpretation but also in shaping evidence-based public health policies. His lecture reinforced that achieving disease elimination goals through vaccination depends fundamentally on sound epidemiological reasoning and context-sensitive program design, rather than solely on technological advancements.





Session 4: Vaccine as a Tool to Solve Public Health Problem: Lessons learnt from Polio

**Speaker: Dr. Ananda Bandyopadhyay, Deputy Director,
Polio, Gates Foundation, USA**

Dr. Ananda S. Bandyopadhyay delivered an evidence-rich and forward-looking presentation on the persistent challenges and scientific advances in global polio eradication efforts. He emphasized that achieving a “polio-free” status does not equate to being free from polio risk, as underscored by recent detections of circulating vaccine-derived poliovirus type 2 (cVDPV2) in regions with historically strong immunization programs including the UK, US, Israel, and most recently Gaza in 2024. Dr. Bandyopadhyay highlighted how global insecurity, disrupted health systems, and gaps in surveillance contribute to the continued circulation of wild poliovirus type 1 (WPV1) in endemic countries like Pakistan and Afghanistan, and enable cross-border reintroductions elsewhere. A central focus of the presentation was the development and deployment of the novel oral poliovirus vaccine type 2 (nOPV2), engineered to reduce the risk of reversion to neurovirulence through targeted genetic modifications. Since its emergency use authorization in 2020, over 1.6 billion doses have been administered in 41 countries, significantly lowering the rate of cVDPV2 emergence compared to traditional Sabin OPV2. Dr. Bandyopadhyay also outlined the Strategic Advisory Group of Experts (SAGE) recommendations for IPV-only schedules in the polio endgame, including a three-dose primary series and the use of IPV in outbreak responses to enhance mucosal immunity. Looking ahead, he described next-generation innovations such as nOPV1 and nOPV3, currently in clinical development, and virus-like particles (VLPs), which could enable safe, non-infectious vaccine production in the post-eradication era by eliminating live virus handling. Importantly, the session acknowledged that technological advances alone are insufficient without sustained operational commitment. Dr. Bandyopadhyay paid tribute to frontline vaccinators working under challenging conditions, emphasizing that vaccination not merely vaccine availability drives disease elimination. His closing message framed polio eradication as the “Olympic gold” of global public health, requiring not only scientific innovation and global collaboration but also robust surveillance, adaptive strategies, and deep community engagement to address persistent and emerging threats





Session 5: Measles Elimination and Rubella Control Strategies

Speaker: Dr. Shivani Gupta, Surveillance Medical Officer, WHO

Dr. Shivani Gupta delivered a comprehensive presentation on India's commitment and strategy to eliminate measles and rubella (MR) by 2026, aligning national efforts with global and regional frameworks. She underscored measles as both a leading cause of childhood mortality and a sensitive tracer of immunization system strength highlighting that a decline in vaccination coverage can rapidly lead to resurgence. Rubella, meanwhile, remains a significant public health threat due to its potential to cause congenital rubella syndrome (CRS), leading to birth defects such as heart anomalies, blindness, and deafness.

Drawing on the Measles and Rubella Strategic Framework (MRSF) 2021–2030, Dr. Gupta outlined seven strategic priorities, including integration into primary healthcare, addressing immunity gaps, enhancing surveillance, ensuring sustainable financing, and promoting research and innovation. Regionally, under the resolution SEA/RC77/R3, the WHO South-East Asia Region has targeted interruption of endemic transmission by 2026, supported by a regional strategic plan (2024–2028) focusing on immunization, surveillance, laboratory strengthening, outbreak preparedness, and enabling systems. Dr. Gupta presented India's national roadmap, which aims to achieve and sustain at least 95% two-dose coverage (MRCV1 and MRCV2), strengthen case-based and CRS surveillance, and maintain a robust laboratory network. Notable progress includes targeted catch-up immunization campaigns for children under five years and efforts to recover coverage lost during the COVID-19 pandemic. However, challenges remain, including persistent pockets of low coverage at the subnational level, uneven surveillance sensitivity, limited private sector engagement, and laboratory constraints due to global shortages of diagnostic kits. The presentation emphasized strategic pivots: moving from uniform national approaches to locally tailored interventions that address district-specific risks, integrating MR activities into routine immunization and primary healthcare, and leveraging multisectoral collaboration including partnerships with professional bodies, civil society, and local governance structures. Dr. Gupta highlighted recommendations from the MR International Expert Advisory Group (IEAG), such as establishing state-level “war rooms” for real-time monitoring, conducting root cause analyses of outbreaks, and adopting advanced laboratory methods to improve diagnostic accuracy.



Concluding, Dr. Gupta reiterated India's commitment to measles and rubella elimination by 2026 within the broader Immunization Agenda 2030 vision of "leaving no one behind." Achieving this goal, she emphasized, requires sustained high coverage, strengthened surveillance, enhanced outbreak response, and addressing social and behavioural determinants of vaccine uptake, underpinned by the guiding principles of equity, sustainability, and data-driven action.





Session 6: Role of Vaccines in Managing Outbreaks of Vaccine-Preventable Diseases

**Speaker: Dr. Kapil Goel, Associate Professor,
Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh**

Dr. Kapil Goel delivered a comprehensive and field-driven session on the critical role of vaccines as both preventive and reactive tools in managing outbreaks of vaccine-preventable diseases (VPDs). He explained the immunological foundations of vaccination, emphasizing how herd immunity not only reduces individual risk but also interrupts community transmission. Drawing on Indian and international case studies including the Measles-Rubella (MR) elimination campaign (2017–2020), India's COVID-19 vaccination drive, and the oral cholera vaccine (OCV) response in conflict-affected regions of Sudan Dr. Goel demonstrated how timely and targeted vaccination strategies can markedly reduce morbidity and mortality, even in complex and resource-constrained settings. His presentation outlined the three-tiered use of vaccines in outbreak management: prophylactic immunization to build baseline herd immunity; reactive measures such as ring vaccination and mass campaigns during outbreaks; and post-outbreak interventions like booster doses and serological surveillance to prevent resurgence. He highlighted operational considerations essential for effective response, including cold chain logistics, real-time data integration through platforms like CoWIN, cross-sector collaboration, and strategies to counter misinformation. The talk also referenced global initiatives such as GAVI and COVAX, which enhance vaccine access and stockpiling in low- and middle-income countries. Importantly, Dr. Goel noted persistent challenges such as uneven surveillance sensitivity, stockpile limitations, logistical hurdles in remote and conflict zones, and vaccine hesitancy fuelled by misinformation. Looking ahead, he advocated for investments in real-time outbreak intelligence, scalable vaccine platforms, regional manufacturing hubs, and the strengthening of adult immunization platforms. Concluding, Dr. Goel emphasized that vaccines transform outbreaks from potential humanitarian crises into controllable public health events provided they are supported by robust



surveillance systems, trained health workforces, and adaptive, evidence-based policies. His presentation reinforced that vaccination remains one of the most cost-effective, scalable, and life-saving strategies in modern public health practice.





Session 7: Role of the Vaccine Industry in the development of vaccine

**Speaker: Dr. Prasad Kulkarni, Executive Director,
Serum Institute of India, Pune**

Dr. Prasad Kulkarni provided a comprehensive overview of the vaccine industry's indispensable role in transforming scientific advances into large-scale, life-saving public health interventions. He traced the complex and highly regulated pathway of vaccine development from identifying disease burden and selecting target antigens through preclinical and multi-phase clinical trials, to large-scale manufacturing and global distribution. Using the development of MenAfriVac® as a case study, Dr. Kulkarni illustrated how a targeted serogroup A meningococcal vaccine successfully eliminated meningitis A epidemics across Africa's meningitis belt, and described the subsequent creation of MenFive®, a pentavalent vaccine developed to address emerging outbreaks from other serogroups (C, Y, W, X). Dr. Kulkarni emphasized that vaccines, unlike conventional pharmaceuticals, are derived from living systems, requiring validated processes, stringent lot-to-lot consistency checks, and constant regulatory oversight to ensure safety and efficacy. He detailed the phases of clinical evaluation from preclinical toxicity studies, through Phase I safety trials, to large Phase III efficacy studies and underscored the importance of WHO prequalification for global procurement by agencies such as UNICEF and PAHO. The presentation also covered critical post-marketing vigilance mechanisms, including Phase IV trials and periodic safety update reports, essential for detecting rare adverse events and informing additional indications or populations.

Highlighting India's contribution, Dr. Kulkarni showcased Serum Institute's capacity and achievements, such as supplying billions of doses of vaccines like Covishield® and Covovax®, and its pipeline of new-generation products, including recombinant, conjugate, VLP, and mRNA-based vaccines. He noted that vaccination has been estimated to avert over 154 million deaths globally in the past 50 years and shared evidence, such as the Stanford University report, which found that COVID-19 vaccination saved more than



3.4 million lives and generated substantial economic benefits in India alone. Concluding, Dr. Kulkarni underscored that the industry's work bridges scientific discovery and real-world disease prevention, requiring a delicate balance of innovation, compliance with regulatory standards, and scalable manufacturing. His talk reinforced that without sustained commitment from the vaccine industry, even the most robust scientific advances and public health strategies could not translate into population-level impact.





Session 8: Special Legacy Lecture: Insights from Vaccinology Legend Public health importance of vaccines: Lessons learnt and way forward

Speaker: Dr. Stanley A. Plotkin, Professor Emeritus, University of Pennsylvania, Philadelphia, USA, Professor – Adjunct, International Health, Division Global Disease Epidemiology and Control, Johns Hopkins Bloomberg School of Public Health, USA

Dr. Stanley A. Plotkin, internationally recognized as the “Father of Modern Vaccinology,” delivered an intellectually profound and historically grounded virtual address that enriched the PGIVAC participants with both depth and foresight. With an illustrious career exceeding six decades, including the landmark development of the rubella vaccine and foundational research on cytomegalovirus, rotavirus, rabies, and other vaccines, Dr. Plotkin offered an authoritative perspective on the evolution of modern vaccinology. Commencing with a historical overview, Dr. Plotkin traced the discipline's transformation from the empirical use of live attenuated and inactivated whole-organism vaccines to the integration of sophisticated molecular and immunological technologies. He elucidated how the introduction of cell culture systems revolutionized antigen production, paving the way for safer and more immunogenic vaccines. Further, he highlighted the pivotal role of protein-polysaccharide conjugate technology in overcoming the limitations of plain polysaccharide vaccines, particularly in infants and immunologically naïve populations.

A significant portion of his discourse focused on recombinant DNA technology, which enabled the production of highly purified subunit vaccines, exemplified by the hepatitis B vaccine. Dr. Plotkin also discussed the paradigm-shifting potential of nucleic acid-based vaccines, notably mRNA vaccines, which have demonstrated unprecedented speed and efficacy during the COVID-19 pandemic. These platforms, he noted, are poised to address complex pathogens such as HIV and malaria, which have historically eluded successful vaccine development.

Dr. Plotkin emphasized the expansion of vaccinology's remit beyond pediatric populations to include adolescents, adults, pregnant women, and the elderly, thereby embracing a true life-course approach to immunization. His analysis underscored the importance of cell-mediated immunity, particularly T-cell responses, in designing next-generation vaccines



capable of conferring durable and broad protection. Highlighting India's significant contributions, Dr. Plotkin praised the country's emergence as a leading global manufacturer and innovator of affordable, quality-assured vaccines. He advocated for India's enhanced investment in translational research, vaccine adjuvants, and universal vaccines such as pan-influenza formulations—to address both endemic and pandemic threats. In the end, Dr. Plotkin urged the scientific community to sustain global immunization achievements through relentless innovation, interdisciplinary collaboration, and the training of future vaccinologists and public health leaders. His address served not only as a chronicle of scientific milestones but also as a strategic blueprint for addressing the evolving landscape of infectious diseases through the power of vaccines.





Group Photo Day 1





Day 2

Date: 10.06-2025

Module 2: Immunology Related to Vaccines



Scientific Program Day 2

Time	Topic	Resource Faculty
Day 2: 10/06/2024		
Module 2: Immunology Related to Vaccines		
8:30-9:00 am	Recap of Day 1	Dr Madhu Gupta , Course Director
9:00-9:30 am	What a vaccinologist should know about basic aspects of immune response: Innate, Cell-mediated and humoral immune response	Dr. Biman Saikia , Professor and Head, Department of Immunopathology, PGIMER, Chandigarh
9:30-10:00 am	Laboratory assessment of Immune response	Dr. Ritu Aggarwal , Professor, Department of Immunopathology, PGIMER, Chandigarh
10:00-10:40 am	Immune response to vaccines: durability and long-term immunogenicity	Dr. Vipin Vashishtha , Director and Consultant Pediatrician, Mangla Hospital & Research Centre, Bijnor, UP
10:40-11:10 am	Vaccines, indirect effects & why mucosal immunity matters	Dr. Adam Finn , Professor of Paediatrics, Bristol Medical School, UK.
11:10-11:30 am	Tea	
11:30-12:00 pm	Vaccination in special situations among children	Dr. Sanjay Verma , Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh
12:00 -12:30 pm	Vaccination in special situations among adults: Immunocompromised individuals including HIV positive and Haematological malignancies	Dr. Vikas Suri , Professor, Department of Internal Medicine, PGIMER, Chandigarh
12:30 - 1:00 pm	Vaccination in special situations: Pregnancy	Dr. Rimpi Singla , Additional Professor, Department of Obstetrics & Gynaecology, PGIMER, Chandigarh
1:00-2:00 pm	Lunch	
2:00 - 3:00 pm	Open Discussion Forum Case studies on vaccines in special situations	Panellists: Dr. Sanjay Verma , Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh Dr. Vikas Suri , Professor, Department of Internal Medicine, PGIMER, Chandigarh Dr. Rimpi Singla , Additional Professor, Department of Obstetrics & Gynaecology, PGIMER, Chandigarh Dr. Harpreet Singh , Associate Professor, Department of Internal Medicine, PGIMER, Chandigarh
3:00-3:20 pm	Tea	
3:20-3:50 pm	Adverse Events Following Immunization (AEFI)	Dr. Deepak Polpakara , Senior Team Lead – AEFI, Immunization Technical Support Unit (JSI-MOHFW)
3:50- 4:30 pm	Adverse Events Following Immunization (AEFI): Causality assessment	Dr. Madhava Ram Balakrishnan , Medical Officer Pharmacovigilance, WHO HQ Geneva, Switzerland
4:30-5:00 pm	Adverse Events Following Immunization (AEFI): Chandigarh Scenario	Dr. Manjeet Singh , District Immunization Officer- cum- District Family Welfare Officer, Chandigarh
5:00-5:40pm	Advocacy in AEFI management at community level; and Introduction of a new vaccine	Dr. Manmeet Kaur , Former Professor, DCM & SPH, PGIMER, Chandigarh, Adjunct Faculty, UIPHS, Maharshi Dayanand University, Rohtak
5:40 pm	Wrap up of the day Feedback of the sessions	Dr Madhu Gupta Course Director



Proceedings

Day 2



Session 1: What a Vaccinologist Should Know About Immune Response

**Speaker: Dr. Biman Saikia, Professor and Head,
Department of Immunopathology, PGIMER, Chandigarh**

This session, led by Dr. Saikia, provided a foundational understanding of immunological concepts crucial for vaccinology, emphasizing the basic aspects of immune response to a vaccine that every vaccinologist should know. He began by clearly differentiating innate immunity, our body's immediate, non-specific defense present from birth, which includes anatomical barriers and cellular defenders like neutrophils, macrophages, and dendritic cells. In contrast, adaptive immunity was explained as a highly specific and memory-based response, primarily driven by B and T lymphocytes. The discussion highlighted the pivotal roles of CD4+ (helper) and CD8+ (cytotoxic) T cells, detailing how various cytokines direct their differentiation into specialized effector T cells with distinct functions. The relevance of specific immunological disorders, such as Forkhead box protein P3 (FOXP3) mutations and Interleukin-17 (IL-17) pathway defects, to vaccine responsiveness was also explored, underscoring the importance of a healthy immune system for vaccine efficacy. Dr. Saikia further elaborated on the intricate process of B cell activation, including class switching and somatic hypermutation, and the critical role of germinal centers in generating robust, high-affinity, and long-lasting antibody responses. A key takeaway was the explanation for why protein antigens, particularly when used in conjugate vaccines, induce more durable immunity and memory compared to polysaccharide antigens, which typically elicit T-independent responses. The innovation of glycoconjugate vaccines was emphasized as a key advancement, enabling T-cell-dependent responses against polysaccharides, leading to enhanced memory and improved protection. The session concluded by contrasting the unique mechanisms of live vaccines (which efficiently trigger innate immunity similar to natural infection) and non-live vaccines (which often require adjuvants and rely more on local responses), stressing the importance of understanding these dynamics for effective vaccine development and evaluation. This comprehensive overview underscored the complex interplay of immune components vital for successful vaccination strategies and the continuous evolution of vaccine science.





Session 2: Laboratory Assessment of Immune Response

Speaker: Dr. Ritu Aggarwal, Professor, Department of Immunopathology, PGIMER, Chandigarh

Dr. Aggarwal's session comprehensively focused on laboratory tools and immunological parameters vital for evaluating vaccine-induced responses. She began by reviewing how the innate immune system recognizes pathogens via Pathogen-Associated Molecular Patterns (PAMPs), and how adaptive immunity is subsequently initiated through precise antigen presentation, emphasizing that T-cell activation necessitates both Major Histocompatibility Complex (MHC) interaction and crucial co-stimulatory signals. She further elucidated T-cell differentiation pathways based on distinct cytokine profiles, linking these cellular responses to specific disease contexts and the efficacy of various vaccine types. A significant point of discussion was the comparative immunogenicity of different antigen types: polysaccharide antigens were shown to elicit short-lived immune responses, whereas glycoconjugate vaccines, by leveraging carrier proteins, generate robust immunologic memory. This makes glycoconjugate vaccines particularly suitable for vulnerable populations like young children and immunocompromised individuals, who often respond poorly to polysaccharide-only vaccines. The session placed strong emphasis on practical diagnostics. Dr. Aggarwal detailed how immunoglobulin levels (IgG, IgM, IgA, IgE) are quantitatively assessed using methods like nephelometry or turbidimetry. Flow cytometry was highlighted as an indispensable tool for comprehensively evaluating lymphocyte subsets (e.g., CD3, CD4, CD8, CD19/20, CD16/56), enabling the calculation of absolute cell numbers and identifying deficiencies. Specific tests like the Nitroblue Tetrazolium (NBT) or Dihydrorhodamine (DHR) assay were presented for assessing neutrophil oxidative burst function, crucial for diagnosing conditions like Chronic Granulomatous Disease (CGD). Furthermore, she explained how Total Hemolytic Complement (CH50) and Alternative Pathway Hemolytic Complement (AH50) assays are used to determine complement system activity. Dr. Aggarwal also provided valuable insights into immunodeficiencies, noting that approximately two-thirds are antibody-related, and stressed the importance of interpreting laboratory values against age-specific thresholds. Her presentation effectively bridged theoretical immunological knowledge with practical clinical diagnostics, offering a clear understanding of how laboratory findings inform vaccine efficacy, safety, and the management of immune disorders.





Session 3: Immune Response Durability and Long-Term Immunogenicity

**Speaker: Dr. Vipin Vashishtha, Director and Consultant Pediatrician,
Mangla Hospital & Research Centre, Bijnor, UP**

Dr. Vashishtha's session comprehensively addressed the critical challenge of achieving long-term immunity through vaccination, a cornerstone for effective disease prevention. He meticulously distinguished between memory B cells and long-lived plasma cells (LLPCs), unequivocally identifying LLPCs as the more crucial cellular component for sustaining protective antibody levels over decades. To illustrate this point, he cited well-established vaccines such as Hepatitis B and measles, which are known for offering robust protection extending beyond 20 years, demonstrating the potential for truly durable vaccine-induced immunity. The discussion then shifted to the durability of newer vaccine platforms, particularly mRNA vaccines, where he raised pertinent questions regarding their long-term effectiveness, attributing potential concerns to aspects of their structural design and delivery mechanisms. He strongly emphasized the indispensable role of germinal center formation—a specialized microenvironment within lymphoid organs—as absolutely crucial for the optimal maturation of B cells and their subsequent differentiation into LLPCs, which are essential for prolonged antibody secretion.

Furthermore, Dr. Vashishtha delved into various vaccine formulation strategies designed to enhance durability. These included optimizing extended dose intervals, a method known to significantly improve immunological memory, and the strategic incorporation of novel adjuvants and slow antigen delivery systems that can prolong immune stimulation. He specifically highlighted Virus-Like Particles (VLPs) and live attenuated vaccines for their demonstrated superior durability, attributing this to their ability to mimic natural infection more closely and elicit broader, more robust immune responses. Despite these advancements, he candidly acknowledged the persistent absence of consistent and reliable correlates of durable immunity, underscoring a significant gap in current immunological understanding. His session concluded by emphasizing the paramount need for intelligent design, rigorous long-term follow-up, and continuous research in vaccine trials to ensure the development of truly robust and lasting protection against infectious diseases.





Session 4. Vaccines, Indirect Effects, and Mucosal Immunity

Speaker: Dr. Adam Finn, Professor of Pediatrics, Bristol Medical School, UK.

Dr. Finn provided a global perspective on the broader public health impact of vaccines, especially their indirect effects and mucosal immunity. He emphasized that vaccines not only protect individuals but also reduce disease transmission within communities, a concept known as herd immunity. He used examples like measles, HPV, and meningococcal vaccines to illustrate how vaccination campaigns can suppress the circulation of pathogens. He explained the role of mucosal surfaces as the primary entry points for many infections, and discussed the importance of secretory IgA in mucosal defense. While live oral vaccines like OPV elicit strong mucosal immunity, many parenteral (injectable) vaccines, such as PCV and Hib, also stimulate mucosal responses. In contrast, COVID-19 mRNA vaccines failed to generate secretory IgA, which may explain limited protection against viral transmission.

Dr. Finn also touched on the influence of gut microbiota on mucosal immunity and vaccine responses. The session emphasized how vaccinology must account for both systemic and mucosal responses, particularly for respiratory and enteric pathogens. He concluded by underlining the importance of vaccine design strategies that can maximize both direct and indirect protective effects.





Session 5. Vaccination in Special Situations: Children

**Speaker: Dr. Sanjay Verma, Professor, Department of Pediatrics,
Advanced Pediatric Centre, PGIMER, Chandigarh**

Dr. Verma's session provided crucial insights into tailored vaccination strategies for children in diverse special clinical contexts, emphasizing the importance of individualized schedules for safety and efficacy. He began by addressing neonatal scenarios, advising that Bacille Calmette-Guérin (BCG) and Oral Polio Vaccine (OPV) should be deferred in nurseries and administered at discharge for low-birth-weight babies to prevent nosocomial transmission, while Hepatitis B birth dose should be given irrespective of birth weight. He extensively elaborated on vaccination guidelines for immunocompromised states. For children on high-dose corticosteroid therapy (e.g., >2 mg/kg/day or 20 mg/day for ≥ 2 weeks, daily oral), live vaccines must be delayed by at least 4 weeks after discontinuing treatment, though killed vaccines can be given anytime. He also discussed specific conditions like nephrotic syndrome, where children are predisposed to invasive pneumococcal disease and severe varicella, necessitating prior vaccination with Measles, Mumps, and Rubella (MMR), varicella, Pneumococcal Conjugate Vaccine (PCV), and annual influenza vaccines before high-dose steroid initiation.

For children undergoing chemotherapy, live vaccines are strictly contraindicated during treatment and can only be given 6 months post-completion, with revaccination protocols often required. In cases of Intravenous Immunoglobulin (IVIG) administration, live vaccines should be deferred based on the IVIG dose and timing. He also detailed vaccination for children with hyposplenism, recommending Haemophilus influenzae type b (Hib), PCV, Meningococcal Conjugate Vaccine (MenCV), and Typhoid Conjugate Vaccine (TCV) at least two weeks before planned splenectomy. Dr. Verma reiterated the general principle of administering two live parenteral vaccines either on the same day or at least 28 days apart, and provided practical tips for managing missed doses and vaccine brands. This comprehensive session underscored the nuanced approach required for vaccinating vulnerable pediatric populations.





Session 6. Vaccination in Special Situations: Adults

Speaker: Dr. Vikas Suri, Professor, Department of Internal Medicine, PGIMER, Chandigarh

Dr. Suri's session provided a comprehensive overview of adult vaccination strategies, specifically tailored for immunocompromised individuals and those with chronic medical conditions, emphasizing the critical need for timely and planned immunization. He highlighted that live vaccines, such as Measles, Mumps, and Rubella (MMR) and varicella, are generally contraindicated in immunocompromised patients due to safety concerns.

For adults with chronic kidney or liver disease, Dr. Suri strongly recommended various vaccines including Hepatitis A (Hep A), Hepatitis B (Hep B), Pneumococcal Conjugate Vaccine (PCV), annual influenza shots, and Tetanus, Diphtheria, and acellular Pertussis (Tdap). He detailed the optimal pneumococcal vaccination strategy, often involving a sequence of PCV13/PCV20 followed by Pneumococcal Polysaccharide Vaccine (PPSV23), and stressed the importance of annual influenza vaccinations due to the seasonal variability of the virus.

The discussion also covered specific high-risk groups. For adults over 50, the recombinant zoster vaccine (Shingrix) was advised for shingles prevention. In patients with Human Immunodeficiency Virus (HIV), live vaccines are only considered if CD4 cell counts are above 200 cells/ μ L, indicating a sufficient level of immune function. For cancer patients, the ideal approach is to complete necessary vaccinations before initiating chemotherapy, as the treatment can severely suppress the immune system. Finally, for transplant recipients, inactivated vaccines may be administered during immunosuppression, but live vaccines must be deferred until at least 6–12 months post-transplant, once immune reconstitution is more stable. This session underscored the importance of meticulous planning and individualized approaches to vaccination in adults with complex medical needs to ensure both vaccine efficacy and patient safety.





Session 7. Vaccination in Pregnancy

**Speaker: Dr. Rimpi Singla, Additional Professor,
Department of Obstetrics & Gynecology, PGIMER, Chandigarh**

Dr. Singla's session provided crucial insights into vaccine safety and prioritization during pregnancy, underscoring that maternal immunization offers dual protection for both the mother and her newborn. She emphasized the primary recommended vaccines during pregnancy, which include Tetanus, Diphtheria, and acellular Pertussis (Tdap), influenza, Hepatitis B (Hep B), and Respiratory Syncytial Virus (RSV) vaccines. A key highlight was the recommendation for Tdap administration during each pregnancy, ideally between 27 and 36 weeks of gestation, to maximize passive antibody transfer to the newborn, thereby providing crucial early protection against pertussis.

A critical point reiterated was the contraindication of live vaccines, such as Measles, Mumps, and Rubella (MMR) and varicella, during pregnancy due to the potential theoretical risk to the fetus. Consequently, women are advised to avoid conception for at least four weeks after receiving any live vaccine. Dr. Singla also introduced nirsevimab, a long-acting monoclonal antibody, as a valuable alternative for infant RSV protection if maternal RSV vaccination was missed, ensuring that newborns still receive crucial passive immunity.

She noted a significant and necessary shift in advocacy framing, moving from the question of "Is it safe?" to "Is it necessary?" to encourage greater vaccine uptake among pregnant women, highlighting the overwhelming benefits. The session also addressed practical scenarios, such as counseling women who inadvertently received MMR vaccine during the peri-conception period, clarifying that such an event is generally not an indication for pregnancy termination. This comprehensive session reinforced the evolving understanding of vaccine use in pregnancy and the paramount importance of proactive immunization strategies for optimizing both maternal and neonatal health outcomes.





Session 8. Panel Discussion: Vaccines in Special Situations

**Panelists: Dr. Sanjay Verma, Dr. Vikas Suri,
Dr. Rimpi Singla, Dr. Harpreet Singh
Moderator: Dr. Madhu Gupta
Chairperson: Dr. Vipin Vashishtha**

This interactive session addressed real-world dilemmas and clinical nuances in vaccination across special populations. The panel clarified that BCG and OPV are safe at birth even in HIV-exposed but uninfected infants. They emphasized the need to vaccinate before initiating chemotherapy when possible and shared that inactivated vaccines can be administered between chemotherapy cycles.

For rabies exposure, post-exposure prophylaxis is crucial, even without visible wounds from bat exposure. The use of monoclonal antibodies (mAbs) is WHO-recommended, though India still uses equine/human rabies immunoglobulins (ERIG/HRIG).

A common myth was debunked: the absence of a scar after BCG does not indicate vaccine failure. This discussion highlighted practical approaches to complex scenarios in immunization programs.





Session 9. Adverse Events Following Immunization (AEFI) Surveillance and Management

Speaker: Dr. Deepak Polpakara, Senior Team Lead – AEFI, Immunization Technical Support Unit (JSI-MOHFW)

Dr. Polpakara provided a comprehensive overview of India's evolving framework for Adverse Events Following Immunization (AEFI) surveillance, a critical component of vaccine safety monitoring. He classified AEFIs by severity (minor, severe, serious) and causality, noting that underreporting is a persistent challenge often stemming from fear or heavy workload. To address this, tools like the U-WIN portal and the SAFEVAC platform are being actively leveraged for real-time AEFI tracking and reporting by both public and private practitioners, including through the Health Management Information System (HMIS) and Indian Academy of Pediatrics (IAP) IDSurv system.

He introduced India's AEFI Quality Management System (QMS), which is modeled on National Accreditation Board for Hospitals & Healthcare Providers (NABH) and National Quality Assurance Standards (NQAS) standards. This system includes a robust structure of national, state, and district AEFI committees, routine reviews, structured training programs for health workers on reporting and causality assessment, and established media response protocols to manage public perception and ensure transparent communication.

The strategic roadmap for strengthening AEFI surveillance includes continuous state-level capacity building, timely investigation of serious AEFIs, and quarterly review meetings with State Immunization Officers and AEFI Committee Chairpersons to improve transparency and accountability in vaccine safety monitoring. Despite these advancements, significant challenges persist, such as persistent under-reporting, delays in investigations and causality assessments due to a lack of evidence or Indian-specific background rates, human resource limitations, and difficulties in effective risk communication. Future efforts will focus on enhancing reporting via UWIN, conducting regular review meetings, continuous training at all levels, identifying AEFI consultants at the state level, and crucially, integrating AEFI quality management with national health facility certifications to further improve overall vaccine safety monitoring and public trust.





Session 10. Adverse Events Following Immunization (AEFI) Causality Assessment

**Speaker: Dr. Madhava Ram Balakrishnan, Medical Officer Pharmacovigilance,
WHO HQ Geneva, Switzerland**

Dr. Balakrishnan provided a detailed explanation of the WHO's 4-step AEFI causality assessment process- Eligibility: Ensuring the case has a valid diagnosis and complete investigation details; Checklist: A thorough review of all available information; Algorithm: Applying a decision-making flow to guide the assessment; Classification: Final categorization of the AEFI's relationship to immunization (e.g., consistent, inconsistent, indeterminate, or unclassifiable).

AEFIs are categorized as Consistent, Inconsistent, Indeterminate, or Unclassifiable based on clinical evidence. The session highlighted the importance of systematically determining if an adverse event is causally linked to vaccination, rather than assuming a connection simply because the event occurred post-immunization. This meticulous assessment is crucial for public confidence and program integrity. The core of the session focused on the WHO's cause-specific classification for AEFIs, categorizing reactions into five types: vaccine product-related, vaccine quality defect-related, immunization error-related, immunization anxiety-related, and coincidental events. This classification provides a framework for detailed analysis. Key considerations emphasized were the necessity of a "valid diagnosis" and that "death is an outcome, not a diagnosis," requiring comprehensive clinical information. The importance of an independent review team with diverse expertise was also stressed. Challenges such as incomplete data, lack of specialized expertise, and delays in analysis can hinder effective assessment. The revised scheme aims for flexibility and standardization to minimize errors and continuously improve the understanding of vaccine safety.





Session 11. Adverse Events Following Immunization (AEFI) Chandigarh Experience

**Speaker: Dr. Manjeet Singh,
District Immunization Officer- cum- District Family Welfare Officer, Chandigarh**

Dr. Manjeet Singh's lecture on Adverse Event Following Immunization (AEFI) Surveillance in Chandigarh provided a comprehensive overview of the mechanisms, challenges, and innovative initiatives undertaken by the Chandigarh Administration's Immunization Department. The lecture detailed the composition of the State AEFI Surveillance Committee and outlined critical strategies for AEFI prevention, surveillance, and management, including robust vaccine cold chain management, regular training for health workers, mandatory 30-minute post-vaccination observation, and adequate facilities for managing acute reactions. Dr. Singh highlighted common immunization errors and their potential consequences, emphasizing the department's proactive initiatives such as establishing Model Immunization Centers, launching the "Hello Vaxi" WhatsApp Chatbot for 24/7 expert guidance and myth-busting, and engaging diverse community influencers like students as Immunization Ambassadors, transgender individuals, and religious faith healers. The department also conducts impactful "Nukkar Nataks" (street plays) and evening immunization camps to reach high-risk populations, ensuring public engagement and addressing access barriers. Furthermore, the lecture touched upon the department's effective media engagement strategies to disseminate information and build public trust. The success of these initiatives is reflected in improved AEFI surveillance process scores, with Chandigarh being recognized by the Parliamentary Standing Committee on Health and Family Welfare for its exemplary immunization campaign. Future plans include "Vaccination on Wheels," solar power backup for vaccine storage, and completing more Model Immunization Centers, showcasing a continuous commitment to enhancing immunization services and public health in the region.





Session 12. Advocacy in AEFI management at community level; and Introduction of a new vaccine

Speaker: Dr. Manmeet Kaur, Former Professor, DCM & SPH, PGIMER, Chandigarh, Adjunct Faculty, UIPHS, Maharshi Dayanand University, Rohtak

Dr. Manmeet Kaur concluded Day 2 by highlighting the strategic role of advocacy in vaccine introduction and policy change. Advocacy was defined as a structured process to influence decision-makers and mobilize communities. Effective communication should be brief, emotional, and targeted, especially when engaging with policymakers, media, or community gatekeepers. Dr. Manmeet Kaur's lecture offered a thorough examination of advocacy, defining it as a combination of individual and collective actions crucial for securing political commitment, policy support, and social acceptance to establish effective health systems, particularly concerning the introduction of new vaccinations and addressing adverse events following immunization (AEFI). The presentation underscored that vaccines are inherently political, given their profound "spillover effects" on individual and public health, economic growth, and social order, necessitating moral judgments debated within political spheres. A structured advocacy framework was outlined, emphasizing the importance of clear issue identification, setting SMART objectives, strategic planning, and identifying "windows of opportunity." Key elements include engaging decision-makers, preparing compelling materials and media campaigns, and conducting organized, impactful meetings followed by diligent debriefs. Dr. Kaur highlighted core principles for effective advocacy: ensuring credibility, planning for small wins, establishing a clear roadmap, optimizing timing, embracing opportunities, localizing issues, and fostering robust partnerships. Ultimately, advocacy and lobbying are vital for health promotion, building consensus, and mobilizing resources for optimal public health outcomes through continuous analysis, planning, action, and evaluation, engaging policymakers and communities alike. She outlined principles for crisis preparedness, community mobilization, and transparent engagement to build public trust in new vaccines. This session bridged technical vaccinology with public health messaging and policy influence, critical for successful implementation.





Group Photo Day 2





Day 3

Date: 11.06-2025

Module 3: Vaccine Trials: Regulations, Ethics, and the Role of Regulatory Authorities



Scientific Program Day 3

Time	Topic	Resource Faculty
Day 3: 11/06/2025 Module 3: Regulations and Ethics; and Phases of Vaccine development		
8:30-9:00 am	Recap of Day 2	Dr. Madhu Gupta , <i>Course Director</i>
9:00-9:30 am	Regulations and ethical considerations related to vaccine trials	Dr. Nusrat Shafiq , <i>Professor, Department of Pharmacology, PGIMER, Chandigarh</i>
9:30-10:00 am	Case study 2: Ethical issues in vaccine development	Chair: Dr Samir Malhotra , <i>Professor and Head, Department of Pharmacology, PGIMER, Chandigarh</i>
10:00-10:30 am	Understanding role of regulators in conducting vaccine trials	
10:30-11:00 am	Introduction to statistical aspects of vaccine trial (defining sample size: practical approaches, data analysis with examples)	
11:00-11:20 am	<i>Tea</i>	
11:20-11:50 pm	Phase I Vaccine trial: Methodology and implementation	Dr. Badri Narayan Patnaik , <i>Director, Clinical Development, Bharat Biotech International Limited, Hyderabad</i>
		Chair: Dr. Temsunaro Rongsen Chandola , <i>Senior Scientist and Director, SAS</i>
11:50-12:20 pm	Phase II Vaccine trial: Methodology and implementation	Dr. Badri Narayan Patnaik , <i>Director, Clinical Development, Bharat Biotech International Limited, Hyderabad</i>
12:20 – 1:15 pm	Group exercise 1: How to design, recruit and analyse the results of phase I/II trials of SARS-CoV-2 vaccine	
1:15 - 2:00 pm	<i>Lunch</i>	
2:00-2:30 pm	Phase III Vaccine trial: How to assess vaccine efficacy? Rotavirus vaccine	Dr. Temsunaro Rongsen Chandola , <i>Senior Scientist and Director, SAS</i>
2:30-3:20 pm	Group exercise 2: How to design, recruit and analyse the results of phase III trials of rotavirus vaccine?	Chair: Dr Rubina Bose , <i>Deputy Drugs Controller (India), CDSCO, MoHFW, Gol</i>
3:20-3:50 pm	Phase IV: Population based post licensure surveillance and pharmacovigilance (Effectiveness studies)	
3:50-4:10 pm	<i>Tea</i>	
4:10-4:40 pm	Assessing herd protection and vaccine effectiveness	Dr. John Clemens , <i>Senior Scientific Advisor to the Director General, International Vaccine Institute (IVI), Republic of Korea</i>
4:40-5:00 pm	Use of vaccine development platform technologies for Pandemic preparedness	Mr. Sourabh Sobti , <i>Head of Business Development, Coalition for Epidemic Preparedness Innovations (CEPI), New Delhi</i>
5:00-5:20 pm	Codon deoptimization technology and its application in viral vaccine development	Dr. Raju Sunagar , <i>Deputy General Manager R&D, Indian Immunologicals Ltd., Hyderabad</i>
5:20-5:40 pm	Ethical Issues in Human Challenge Trials	Dr Nithya Gogtay , <i>Professor and Head of Clinical Pharmacology, KEM Hospital, Mumbai, Member NTAGI.</i>
5:40 pm	Wrap up of the day Feedback of the sessions	Dr. Madhu Gupta , <i>Course Director</i>



Proceedings

Day 3



Session 1: Regulations and Ethical Considerations Related to Vaccine Trials

Speaker: Dr. Nusrat Shafiq, Professor, Department of Pharmacology, PGIMER, Chandigarh

Dr. Shafiq explained that India's vaccine trials are governed by the New Drugs and Clinical Trials Rules, applicable to both drugs and biologics like vaccines. Clinical trials aim to assess safety, efficacy, and immunogenicity. A "new drug" includes those approved elsewhere but not widely used in India. Dual approval from both the DCGI (Drugs Controller General of India) and the institutional Ethics Committee (EC) is mandatory before starting any trial. Academic trials of already approved products might bypass DCGI approval if the EC agrees. Approvals require detailed protocols, preclinical data, consent forms, and plans for monitoring adverse events and vaccine access. Trials must be conducted by trained teams, with Phase 1 trials needing high monitoring standards. Ongoing monitoring includes reporting protocol changes, DSMB reports, and deviations. Post-trial responsibilities involve data archiving (minimum 3 years), returning unused materials, and ensuring vaccine access. The roles of all parties (sponsors, investigators, committees) must be clearly documented. She emphasized that the DCGI handles scientific oversight and licensing, while ECs focus on ethical assessments, risk-benefit analysis, participant autonomy, justice, and scientific soundness. A scientifically flawed study is considered unethical. Regulation involves multiple layers, including DCGI, ECs, GMO committees under DBT, and SECs under CDSCO. Trials should avoid exploiting vulnerable groups and protect the environment. Placebo use is ethical only when no proven intervention exists or risks are minimal. Informed consent must be comprehensive, disclosing alternative options and risks, and guaranteeing voluntary participation. It should be context-sensitive and can use technology like e-consent without excluding the poor. Ethics Committees scrutinize interim safety, protect participants (especially the vulnerable), and ensure valid informed consent. Investigators must communicate safety concerns and be scientifically and ethically competent. Regulatory Authorities review preclinical data, monitor post-approval vaccine safety, and enforce post-trial access rules. Special ethical concerns include equipoise (placebos are unethical when better alternatives exist) and post-trial access (participants should benefit from tested vaccines). Global equity faces challenges from vaccine nationalism, and sponsors must commit to



affordability and access. During emergencies, rapid approvals must still meet rigorous ethical standards, and pharmacovigilance during COVID-19 was not fully transparent. Preparedness requires investment in surveillance, regulatory frameworks, and ethics infrastructure. The session concluded by emphasizing that good science equals ethical science, guided by trust, accountability, and transparency in all vaccine research.





Session 2: Understanding the Role of Regulators in Vaccine Trials

**Speaker: Dr. Rubina Bose, Deputy Drugs Controller (India),
CDSCO, MoHFW, GoI**

Vaccine regulations in India are governed by the Drugs & Cosmetics Act and the New Drugs and Clinical Trials Rules (NDCTR 2019), consistently treating vaccines as new drugs. Key regulatory bodies include CDSCO (central licensing and approval), SEC (clinical trial assessment), TAB (final statutory authority), CDL Kasauli (batch testing, uniquely testing early-phase batches in India), and RCGM & GEAC (for genetically modified/recombinant vaccines). Chemistry, Manufacturing, and Controls (CMC) requirements ensure identity, potency, batch consistency, and stability, adhering to WHO, Indian Pharmacopoeia, and GMP/GCP standards. Preclinical trials involve animal studies for immunogenicity, toxicity, and dose. Clinical phases progress from Phase 1 (small group safety) to Phase 2 (dose finding, immunogenicity), and Phase 3 (efficacy, safety in large populations), with merging of Phases 1/2 common for speed. During COVID-19, the regulatory response involved 11 vaccine platforms and 42 applications, leading to a dedicated Vaccine Expert Committee. Developers are expected to ensure GMP processes, batch consistency, immunogenicity/safety profiling, and compatibility with other vaccines. Post-licensure monitoring includes Phase 4 studies, AEFI (Adverse Events Following Immunization) and pharmacovigilance systems, and real-world effectiveness evaluations. Trial governance under NDCTR outlines responsibilities of investigators/sponsors, ethics approval, protocol amendments, informed consent, and compensation for injury or death. Academic trials do not require DCGI approval unless for marketing purposes and are governed by ICMR Guidelines. Fast-track approvals are possible for pandemics or unmet needs, but Phase 4 studies are mandatory post-approval. Variant-based vaccines do not need full re-approval but require bridging studies, cross-neutralization, and batch validation. Post-Marketing Surveillance (PMS) requires submitting Periodic Safety Update Reports (PSURs) every 6 months for 2 years, then annually, with defined pharmacovigilance systems. The licensing process uses the Common Technical Document (CTD) format, comprising five modules covering administrative data, summaries, CMC, non-clinical, and clinical information. Dr.



Bose concluded by highlighting India's aim for 100-day pandemic-ready vaccine delivery, fostering global regulatory partnerships while maintaining scientific rigor and public confidence.





Session 3: Introduction to Statistical Aspects of Vaccine Trials (defining sample size: practical approaches, data analysis with examples)

**Speaker: Ms. Maria Abraham, Global Executive –
Center of Excellence & Associate Director – Biostatistics, EMMES, Bangalore**

The session by Ms Maria Abraham emphasized the critical role of statisticians in ensuring that vaccine trials generate valid, reliable, and ethically sound evidence. Statisticians are integral from the study design phase, guiding sample size estimation, randomization schemes, and the prioritization of objectives to minimize bias while ensuring data quality. The selection of an appropriate control group in vaccine trials, whether a placebo where no effective vaccine exists, an active control when effective vaccines are available, or delayed vaccination comparators in specific contexts, significantly influences trial integrity and ethical compliance. The session explained key statistical concepts, including the null hypothesis, which assumes no difference between groups, and the alternative hypothesis, which assumes a significant difference, with a controlled type I error rate typically set at five percent for two-sided tests to minimize false positives. When trials involve multiple endpoints, subgroup analyses, or repeated measures, the need for multiplicity control becomes critical to prevent inflation of the type I error rate, employing strategies such as fixed-sequence testing and Bonferroni correction. Ms Maria detailed how confidence intervals are used for interpreting trial outcomes, where superiority trials require the lower confidence interval to exceed the superiority margin, equivalence trials require the interval to lie entirely within predefined margins, and non-inferiority trials require the lower interval to remain above the non-inferiority threshold. Immunogenicity analyses often involve data that are right-skewed, necessitating log transformations for accurate interpretation, with reporting typically focusing on geometric mean titers, geometric mean fold increases, and seroconversion rates. Sample size estimation must align with the analysis plan, accounting for dropouts and employing advanced software while considering power, alpha levels, effect size, and variability to ensure sufficient study power without resource wastage.

The session also discussed practical challenges in trial execution, such as differences between hospital-based studies, which typically involve smaller samples with higher event



rates, and community-based studies that require larger sample sizes with adjustments for design effects and intraclass correlations in cluster randomized trials. Maria highlighted that adaptive designs and interim analyses can allow sample size re-estimation without inflating type I error rates, enhancing efficiency in vaccine trials. Concluding the session, Ms Maria underscored that involving statisticians from the inception of a study, rather than post hoc, is crucial for achieving scientifically robust and regulatory-compliant outcomes in vaccine trials, reinforcing the principle that sound statistical planning is foundational to meaningful vaccine research.





Session 4: Phase I and II Vaccine Trial: Methodology and Implementation

Speaker: Dr. Badri Narayan Patnaik, Director, Clinical Development, Bharat Biotech International Limited, Hyderabad

Dr. Patnaik used an analogy of ice cream tasting to describe Phase 1 vaccine testing: small, precise trials free from bias. The typical 10-20 year vaccine development timeline was compressed to less than 1 year for COVID-19 vaccines, raising public concerns and regulatory dilemmas. COVAXIN, an Indian COVID-19 vaccine developed by NIV Pune and Bharat Biotech, utilized a whole virion inactivated virus platform with IMDG adjuvant and alum-based formulation. Unique challenges in vaccine trials include the lack of well-defined immune correlates of protection, making population immune response crucial. During the COVID-19 era, Phase 1 focused on safety and immunogenicity (completed in days-weeks), Phase 2 on dose optimization and expanded safety (a few months), and Phase 3 on efficacy and safety in thousands (6-8 months), with approvals fast-tracked. Emphasis was placed on self-reliance and equity in the global vaccine ecosystem, as India would have been dependent on costly imports without local vaccines. The goal for a vaccine response is a balanced TH1 (cell-mediated, e.g., viral clearance) and TH2 (antibody-mediated, humoral protection) response, with IMDG inducing TH1 and Alum inducing TH2. For COVAXIN's Phase 1, a BSL-3 facility was used, and a larger-than-typical sample size of 375 participants was included across multiple arms. Phase 1 outcomes showed high neutralizing antibody titers and other immune markers that remained high at 3 months, with no serious adverse events linked to IMDG. The Phase 2 trial involved 380 adults across two arms, showing 100% seroconversion by Day 56 and strong TH1 dominance, leading to the selection of the 6 µg dose for Phase 3. Practical challenges included public pressure, emotional burden on researchers, and ethical dilemmas regarding vaccine prioritization. Persistent immunity was observed at 3 and 6 months, though new variants (Delta, Omicron) showed reduced neutralization, which was significantly improved by boosters. A heterologous boosting strategy combining COVAXIN with an Intranasal Adenoviral booster, in collaboration with Washington University, showed strong mucosal and systemic immunity. The session concluded that India demonstrated scientific self-reliance, with COVAXIN symbolizing speed, science, and equity, and emphasized the importance of real-world collaborations and adaptive designs for pandemic response.





Session 5: Phase III Vaccine trial: How to assess vaccine efficacy? & Phase IV: Population based post licensure surveillance and pharmacovigilance (Effectiveness studies)

Speaker: Dr. Temsunaro Rongsen Chandola, Sr. Scientist & Director, SAS

This session used ROTAVAC as a case study to illustrate the operational and scientific components of Phase III and Phase IV vaccine trials in India. ROTAVAC originated from the 116E strain discovered at AIIMS, which was selected after a head-to-head trial with another strain. This marked India's first-ever full Phase III vaccine trial, necessitating extensive capacity building among researchers, regulators, sites, and the community, as regulatory and ethics review systems were evolving in 2012, requiring multilayered approvals. The Phase III primary objective was the efficacy of a 3-dose ROTAVAC regimen against severe rotavirus gastroenteritis, with secondary objectives including overall effectiveness, safety, immunogenicity, and viral shedding. Sample size planning was based on an estimated attack rate and expected dropout rate, with two years of prior disease burden surveillance used to estimate true incidence. The study was conducted in Delhi, CMC Vellore, and KEM Mumbai, using a 2:1 (Vaccine:Placebo) stratified, double-blinded randomization scheme with allocation concealment. Severe gastroenteritis was the primary outcome, confirmed via stool test and clinical signs. Data collection involved redesigned pictorial diary cards based on focus group discussions, and digital thermometers replaced mercury ones, requiring caregiver education. Implementation challenges included educating families, cold chain management, and ensuring compliance without overburdening households; field innovations included lockable metal boxes for used vials and a light signaling system for investigational product handoff. Community engagement encouraged written consent in vernacular language with family consultation, and feature phones were provided for adverse event (AE) reporting, which improved monitoring despite some misuse. Randomized Controlled Trials (RCTs) were highlighted as the gold standard for efficacy, removing bias and providing robust evidence for policy. The Phase III trial for ROTAVAC (116E) was a multicenter, double-blind, placebo RCT, with a key innovation being the pictorial cards redesigned by mothers, and implementation logistics as a main challenge. The trial underwent daily QC and audits, was paused due to a DCGI restriction, and resumed after audit clearance, becoming a model for Indian regulatory history. Its results were published in The Lancet, demonstrating safety, efficacy, and policy readiness, leading to ROTAVAC's inclusion in India's Universal Immunization Program (UIP). The session emphasized that "Implementation is Science," requiring strategy, leadership, listening, and empathy.



Phase IV, defined as post-licensure study for effectiveness and safety in a real-world setting, distinguishes from broader PMS and systematic pharmacovigilance. The ROTAVAC Phase IV study was conducted in Himachal, Maharashtra, and Tamil Nadu, using a Self-Controlled Case Series (SCCS) design across 10+ sentinel hospitals involving ~100,000 children. SCCS is ideal for rare events like intussusception as it compares each child to themselves, eliminating the need for external controls. The study found no increased risk of intussusception within



0–21 days post-vaccination, with results published in the Vaccine journal. Learning points included a slight immunogenicity advantage in healthier urban children and concerns that gut dysfunction might affect oral vaccine uptake in malnourished populations. Early doses (6, 10, 14 weeks) avoided the peak intussusception risk. Final messages highlighted that research is only impactful if well-implemented, early regulatory alignment prevents issues, teamwork is crucial, and indigenous solutions with global standards lead to equity and excellence



Session 6: Herd Protection & Vaccine Effectiveness

Speaker: Dr. John Clemens, Sr. Scientific Advisor, IVI, Korea

Herd protection is defined as the indirect protection of non-vaccinated individuals within a mostly vaccinated population. Its mechanisms include vaccine shedding (for live vaccines like OPV), passive immunity (maternal antibody transfer), and most relevant for public health, transmission reduction. Key concepts include R_0 (Basic reproduction number, e.g., Measles $R_0=15$) and R (Real-world reproduction after some immunity). The Herd Immunity Threshold is calculated as $1 - (1/R_0)$, with examples showing ~93% for Measles ($R_0=15$) and ~83% for Polio ($R_0=6$). The session differentiated between efficacy (controlled trial result), effectiveness (real-world protection), and herd protection (indirect benefit for unvaccinated). Herd protection can be measured via Cluster Randomized Controlled Trials (RCTs) which randomize communities to assess direct, indirect (herd), and total protection, assuming limited cross-cluster movement and accounting for intra-cluster correlation. An example from the Calcutta Vi Polysaccharide Trial showed direct protection of 65%, indirect protection of 45%, and overall protection of 60%. Factors affecting herd protection include vaccine type (live vaccines give more indirect protection) and population heterogeneity (behavior, contact patterns). A case study on the Cholera Vaccine (1985, Bangladesh) using natural clusters (Bari) showed a >75% reduction in risk for non-vaccinated individuals in high-coverage areas, with cholera nearly disappearing at ~58% coverage. Herd protection significantly improves cost-effectiveness. Key points reiterated were that herd effects are critical for saving lives, both CRTs and cluster analysis are valid, vaccine type and coverage matter, social structure and behavior affect transmission, and cost-effectiveness is improved by herd benefits. The final takeaway emphasized that herd protection is central to public health impact and policy success.





Session 7: Use of Vaccine Development Platform Technologies for Pandemic Preparedness

Speaker: Mr. Sourabh Sobti, Head of Business Development, CEPI, New Delhi

The session introduced "The 100-Day Mission," aiming to deliver safe, effective vaccines within 100 days of identifying a novel pathogen, a significant reduction from the traditional ~10 years or even COVID-19's 326 days. This speed could have avoided millions of COVID-19 cases if vaccines were ready by April 2020. Vaccine libraries are being built with pre-developed constructs for known viral families (e.g., paramyxo-, orthomyxo-, coronaviruses) using platforms like mRNA, viral vector, and protein subunit, with immunogen design including epitope pre-mapping. Artificial Intelligence (AI) tools such as AlphaFold, Rosetta, epitope mapping, and antibody design are being used in vaccine development. Various manufacturing platforms include mRNA (e.g., Pfizer, Moderna) for fast design and modifiability; Viral Vector (e.g., Covishield, J&J) for easy storage and often single-dose; and Protein Subunit (e.g., Novavax, Covovax) for stability and fewer side effects. Key needs for these platforms include scalable production, robust adjuvants (e.g., Alum, Matrix-M), and global supply chains. The "One Health" approach, integrating human, animal, and environmental surveillance, is crucial for addressing future threats driven by environmental changes and zoonotic spillovers like H5N1 (avian flu) and Nipah virus. Regarding concerns about vaccine safety with speed, it was clarified that no trial phases will be skipped, but rather parallelized, relying on pre-validated libraries and known safety profiles, with risk-benefit evaluated contextually. Real-world readiness gaps include underutilization of global flu vaccine capacity in LMICs like India, highlighting the need for geo-diverse manufacturing, tech transfer agreements, and early warning/genomic surveillance systems. The session concluded with the thought that investing in platforms, surveillance, AI design, and manufacturing scale-up is crucial for pandemic preparedness.





Session 8: Codon Deoptimization Technology in Viral Vaccine Development

Speaker: Dr. Raju Sunagar, Deputy GM – R&D, Indian Immunologicals Ltd., Hyderabad

Dr. Raju Sunagar focused on codon deoptimization as a rational, scalable strategy for developing safe, live-attenuated viral vaccines, using Zika virus (ZIKV) as a case study. Codon optimization typically enhances gene translation for higher protein expression, while codon deoptimization deliberately uses rare codons to reduce viral replication efficiency, leading to attenuation while maintaining immunogenicity. The Brazilian Zika virus strain was chosen due to its high virulence and link with microcephaly in newborns, with the NS3 gene targeted for attenuation because of its critical role in viral replication. In the codon deoptimization process, 354 codons in the NS3 gene were replaced with low-efficiency codons, generating a rescued virus that underwent extensive preclinical evaluation. Intracranial administration in mice confirmed complete attenuation, with no mortality or morbidity observed, in stark contrast to the wild-type virus, which caused 100% mortality, demonstrating successful neurovirulence attenuation. Efficacy studies showed that a single dose of the vaccine provided partial protection in mice and hamsters, while a prime-boost regimen achieved complete protection against viral challenge, with robust binding and neutralizing antibody responses. Toxicology studies in mice and rats confirmed an excellent safety profile, even at doses up to ten times the proposed human dose, with no adverse events, mortality, or local reactions observed. The candidate vaccine demonstrated genetic stability, absence of neurovirulence, and 90% protection against lethal challenge at a test dose of 10^5 PFU. The ICMR is funding the complete clinical development of this codon deoptimized Zika vaccine, with a Phase I clinical trial planned at SRM Chennai, although regulatory review has delayed initiation due to detailed inclusion criteria and safety protocol refinements. Dr. Sunagar highlighted that the codon deoptimization approach, already proven in the development of vaccines like nOPV2, can be adapted for various RNA viruses, making it a platform-agnostic technology with high scalability for outbreak-prone pathogens. The session concluded by emphasizing that codon deoptimization offers a promising pathway for safe, live-attenuated vaccine development, with NS3 identified as a valuable attenuation target and underlining the importance of proactive regulatory planning to translate preclinical success into clinical and public health impact.





Session 9: Ethical Issues in Human Challenge Trials

Speaker: Dr. Nithya Gogtay, Professor & Head, Clinical Pharmacology, KEM Hospital, Mumbai; Member, NTAGI

Dr. Nithya Gogtay provided a structured overview of ethics and regulatory considerations in vaccine development, tracing the journey from problem identification to applying ethical frameworks in clinical research. The session highlighted that rigorous ethical processes are essential to align scientific advancement with participant safety, emphasizing risk-benefit analysis, ensuring valid informed consent, and adhering to globally recognized guidelines. Volunteer participation in vaccine trials is motivated by various factors, with financial incentives reported in 65% of non-therapeutic studies, while early vaccine access was a primary motivator during COVID-19 trials. Dr. Gogtay emphasized that informed consent must be carefully designed to avoid over-compensation that could lead to undue inducement, should include a comprehension check to ensure participant understanding, and must clearly state that participation does not guarantee direct therapeutic benefit. The discussion compared global regulatory frameworks, noting that the UK system is more complex and layered than that of the US. Importantly, the session clarified that India currently does not permit human challenge studies due to ethical uncertainties, regulatory gaps, and the significant risk posed to healthy volunteers. Dr. Gogtay explained the Controlled Human Infection Model (CHIM), which involves intentionally infecting healthy volunteers to test vaccine efficacy, underscoring that such trials require oversight by experienced ethics committees and a Data Safety Monitoring Board to ensure participant safety. She discussed guidance documents, including the ICMR's 2023 Policy on CHIM and prior educational guidance from January 2022, which lay the groundwork for considering such studies under strict safeguards in India in the future. Using examples such as the Bharat Biotech typhoid vaccine and the Vaxchora approval process, Dr. Gogtay illustrated how human challenge studies can accelerate vaccine development while also presenting complex ethical challenges related to risk perception, societal values, and regulatory oversight. The session concluded with the key message that good science must be paired with good ethics to ensure that research outcomes are not only scientifically valid but also ethically sound, encouraging ethical-scientific partnerships in vaccine development. Dr. Gogtay noted that while CHIM studies may offer significant value in advancing vaccine research, they require specialized regulatory pathways and community trust to be feasible, reminding participants that ethical diligence is central to meaningful, safe progress in vaccinology.





Group photo Day 3





Day 4

Date: 12th June 2025

Module 4: Introduction of Vaccines in National Immunization Programs



Scientific Program Day 4

Time	Topic	Resource Faculty	
Day 4: 12/06/2025 Module 4: Introduction of Vaccines in National Immunization Programs			
8:30-9:00 am	Recap of Day 3	Dr. Madhu Gupta, Course Director	
9:00-9:30 am	Evidence to policy making	Dr. Narendra K. Arora, Executive Director, The INCLEN Trust International, New Delhi	Chair: Dr. Shankar Prinja, Professor (Health Economics), Department of Community Medicine and School of Public Health, PGIMER
9:30-10:00 am	Role of disease burden assessment in the decision-making process related to vaccines	Dr. Jacob John, Professor, Community Medicine, Christian Medical College, Vellore	
10:00-10:30 am	How to do assessment of burden of vaccine preventable disease	Dr Brian Wahl, Assistant Professor, Yale School of Public Health, USA	
10:30-11:10 am	Implementation of evidence-based vaccination policies in Indian Context: Recent updates in the National Immunization Schedule	Dr. Pawan Kumar, Additional Commissioner, Incharge (Immunization & Maternal health), MoHFW, India	
11:10-11:30 am	Tea		
11:30-11:50 pm	Newer vaccine’s introduction and health systems strengthening in India	Dr. Arindam Ray, India Country Lead, Immunization and Surveillance at Gates Foundation	Chair: Dr. Raj Shankar Ghosh, Senior Advisor, One Health & Environmental Health, Public Health Foundation of India, Former Consultant Senior Advisor, Vaccines & Immunization, South Asia, Path, Former Deputy Director, Vaccine Delivery and Infectious diseases, Gates Foundation
11:50-12:20 pm	Introduction of HPV vaccination in Nepal: Experience sharing	Dr. Abhiyan Gautam, Chief, Child Health and Immunization Services, Ministry of Health and Population, Nepal	
12:20-12:40 pm	Experience sharing/lessons learnt/Success stories in the national immunization program of Sri Lanka	Dr. Samitha Ginige, Director of Quarantine, Ministry of Health, Sri Lanka	
12:40-1:00PM	Experience sharing on How to better reach the zero-dose or under-vaccinated children in LMICs	Dr. Suresh Dalpath, National Technical Lead: Immunization Implementation Country Program- India, William J Clinton Foundation	
1:00-2:00 pm	Lunch		
2:00-2:30 pm	Innovations in immunization in the health system of India	Dr. Raj Shankar Ghosh, Senior Advisor, One Health & Environmental Health, Public Health Foundation of India	Chair: Dr Jacob John, Professor, Community Medicine, Christian Medical College, Vellore
2:30-3:00 pm	Latest technological advancements in vaccine platform and One Health	Dr. Santosh Ramesh Taur, Director Medical Affairs, Vaccines, Rare Diseases and Digital, Pfizer	
3:00-3:30 pm	Health economics as a tool in analysing vaccine policy option	Dr. Shankar Prinja, Professor (Health Economics), DCM SPH, PGIMER	
3:30-4:00 pm	Economic Perspectives on Group A Streptococcus Vaccine Introduction	Dr Jeffrey Cannon, Senior Research Officer and Health Economist, The Kids Research Institute, Perth, Australia	
4:00-4:20 pm	Tea		
4:20-4:50 pm	Vaccine Hesitancy and Advocacy	Dr. Naveen Thacker, Executive Director, International Pediatric Association	Chair: Dr. Pawan Kumar, Additional Commissioner, Incharge (Immunization & Maternal Health), MoHFW, India
4:50-5:20 pm	Procurement of vaccines: Role of GAVI, WHO, UNICEF etc.	Mr. Homero Hernandez, Senior Country Officer, GAVI Alliance, Geneva	
5:20-5:50pm	Open Discussion Forum: Addressing Challenges in introduction of newer vaccines at the national level	Panelists Dr. Raj Shankar Ghosh Dr. Pawan Kumar Dr Arindam Ray Dr. Jacob John Mr. Homero Hernandez Dr. Shankar Prinja Dr. Navneet Bichha	Chair: Dr. Naveen Thacker, Executive Director, International Pediatric Association
5:50 pm	Wrap up of the day Feedback of the sessions	Dr. Madhu Gupta Course Director	



Proceedings

Day 4



Session 1: Evidence to Policy making

Speaker: Dr. Narendra K. Arora, Executive Director of The INCLEN Trust International

Dr. Narendra K. Arora, Executive Director of The INCLEN Trust International, outlined the structured, multi-layered process of translating evidence into health policy, particularly in vaccine introduction. Dr. Narendra K. Arora, focused on the intricate process of translating evidence into policy for immunization programs, emphasizing the importance of understanding both the challenges and successes in this field. It outlined a structured approach to move from evidence to recommendations, involving various stakeholders, including policymakers, from the outset. A critical aspect discussed was the need to assess the disease burden, societal impact, and the benefits and harms of interventions, which includes evaluating the acceptability of vaccines within communities and the economic implications of vaccination programs. He highlighted that not all cost-effective interventions are implemented, stressing the importance of considering social and political costs alongside economic perspectives. The criteria for introducing new vaccines were also discussed, including disease burden, efficacy, safety, affordability, and the healthcare system's capacity to implement new antigens. Case studies on the introduction of rotavirus and pneumococcal vaccines in India illustrated the significance of data in decision-making and the phased approach to vaccine rollout. The rapid response to COVID-19 was highlighted, showcasing the establishment of working groups and the importance of evidence-based decisionmaking in vaccine rollout. Additionally, the complexities of decision-making in a federal system were addressed, noting that states may adopt different health policies, necessitating collaboration between central and state governments. The presentation concluded with a look toward the future, anticipating the introduction of new vaccines, such as the typhoid vaccine, supported by ongoing surveillance and research to enhance public health initiatives. Overall, the translation of evidence into policy is a multifaceted process that requires collaboration, effective communication, and a thorough understanding of the health landscape, with an encouragement for continued dialogue among stakeholders to improve immunization coverage and public health outcomes.





Session 2: Role of Disease Burden in Vaccine Decision-Making

Speaker: Dr. Jacob John, Professor of Community Medicine at Christian Medical College, Vellore

Dr. Jacob John, Professor at the Centre for Public Health, Christian Medical College, Vellore, delivered a thought-provoking lecture emphasizing the indispensable role of comprehensive disease burden assessment in guiding rational and evidence-based vaccine policy decisions. He began by highlighting that vaccine introduction is a long-term financial, operational, and political commitment; thus, policy choices must be grounded in robust, multi-dimensional data that go beyond simple disease counts. Dr. John explained that disease burden is inherently multi-layered, comprising epidemiological aspects such as incidence, age and geographic distribution, seasonality, endemicity, and outbreak potential; clinical consequences including the full spectrum of severity, disability, and case fatality; economic costs both direct (healthcare expenditure) and indirect (lost productivity and societal disruption); and social dimensions, such as disproportionate impact on vulnerable populations and the potential to destabilize communities.

Recognizing the practical challenges of achieving perfect, real-time datasets in resource-limited contexts, Dr. John advocated for a pragmatic approach centered on triangulating data from diverse sources. This could include hospital-based surveillance, cohort studies, sentinel sites, and laboratory networks, supported by analytical tools such as statistical modeling, meta-regression, and optimization. Through illustrative case studies, he demonstrated how actionable burden estimates can guide impactful policy even when ideal data are lacking. For pneumococcal disease, he noted diagnostic challenges like pneumonia without bacteremia and prior antibiotic use that obscure true incidence, yet evidence from IBIS data and supportive organizations enabled India to introduce pneumococcal conjugate vaccines. For rotavirus, he described it as a “democratic” pathogen—affecting children early and repeatedly—where conservative burden estimates still justified its inclusion in national programs due to high mortality and economic burden, particularly among poorer families. Regarding typhoid, he highlighted historical reliance on limited, outdated global data and the recent establishment of the Surveillance for Enteric Fever in India (SEFI) project, which integrated intensive pediatric cohort studies, hospital-based hybrid surveillance across multiple sites, and advanced



statistical calibration to produce credible, context-specific estimates. Dr. John stressed that burden data are vital not only to justify new vaccine introductions but also to prioritize finite resources, identify high-risk groups, and assess the longitudinal impact of immunization strategies. Concluding his session, he emphasized the importance of building and sustaining routine national surveillance systems, improving data quality and interoperability, and training interdisciplinary teams to analyze and interpret complex data. Importantly, he cautioned against delaying action in pursuit of unattainable perfection, stating that “perfect is the enemy of good,” and argued that timely, pragmatic, and sufficiently validated burden estimates are essential to drive equitable, effective, and sustainable vaccine policies in India and beyond.





Session 3: Assessing Burden of Vaccine-Preventable Diseases

Speaker: Dr. Brian Wahl, Assistant Professor at Yale School of Public Health

Dr. Brian Wahl, Assistant Professor at Yale School of Public Health, delivered an insightful session on estimating disease burden, underscoring its essential role in shaping evidence-based vaccine policy, cost-effectiveness analysis, and long-term immunization strategies. He emphasized that burden must be examined from both current and future perspectives and categorized it across three domains: clinical metrics (such as incidence, case fatality rates, and years of life lost), composite health measures (including disability-adjusted life years and quality-adjusted life years), and economic dimensions capturing healthcare costs and productivity losses. Dr. Wahl outlined complementary methods for burden estimation, combining empirical data from health records, surveys, and surveillance systems with mathematical models—such as risk factor attribution models, multinomial and ensemble models—to address gaps and inconsistencies where direct data are limited. Using a spectrum-based approach, he illustrated how analyses range from all-cause mortality estimates to disease-specific and pathogen-attributed burden, highlighting pneumococcal disease as a case study. *Pneumococcus*, a Gram-positive bacterium with over 100 antigenically distinct serotypes, often colonizes the nasopharynx asymptomatically, complicating direct attribution of disease. Dr. Wahl detailed challenges in relying solely on laboratory-confirmed cases, which often capture only a fraction of true disease burden due to diagnostic limitations and prior antibiotic use. To address this, he described the “counterfactual” or probe approach using randomized controlled trials comparing vaccinated and unvaccinated populations, which suggest that *pneumococcus* accounts for approximately 34% of radiologically confirmed pneumonia cases. His models further integrate indirect effects of vaccination, such as herd immunity and serotype replacement, offering more holistic burden estimates. Presenting unpublished data (2000–2021), he showed how global pneumococcal mortality has declined significantly following vaccine introduction, though over half of deaths remain concentrated in a handful of countries. In India, he discussed a cross-sectional study conducted in Haryana before PCV introduction, revealing that nearly a third of nasopharyngeal colonization in young children involved PCV13-covered serotypes—evidence supporting the phased



rollout of PCV starting in 2015. Dr. Wahl concluded by underscoring the need for sustained and strengthened surveillance systems, including tracking nasopharyngeal carriage and invasive disease, to monitor vaccine impact and guide policy adaptation over time. He also highlighted best practices for publishing burden estimates, such as sensitivity analyses, adherence to GATHER guidelines, and regular methodological updates. Through this rigorous and multi-method approach, Dr. Wahl reinforced that robust, dynamic burden estimation remains central to informing equitable and effective vaccine policies globally.





Session 4: Implementation of Evidence-Based Vaccination Policies in the Indian Context

Speaker: Dr. Pawan Kumar, Additional Commissioner (Immunization & Maternal Health), MoHFW, India

Dr. Pawan Kumar, Additional Commissioner (Immunization & Maternal Health), Ministry of Health & Family Welfare, Government of India, presented a comprehensive and data-driven overview of India's Universal Immunisation Programme (UIP)—the world's largest, reaching over 26 million newborns and nearly 29million pregnant women annually through more than 1.3 crore immunisation sessions. Established in 1985, UIP has steadily expanded its scope and strengthened infrastructure, benefiting from India's status as the world's largest vaccine producer, which meets around 60% of global GAVI vaccine demand. Dr. Kumar highlighted that each new vaccine introduction—such as PCV, Rotavirus, and MR vaccines over the last decade—has not only expanded protection but also reinforced the system's operational capacity, workforce competence, and cold chain infrastructure. Notable innovations like the Electronic Vaccine Intelligence Network (eVIN) launched in 2015 enable real-time digital stock management and temperature monitoring, enhancing transparency and efficiency. Policy translation into state-level action is supported by multiple expert bodies, including NTAGI, ensuring evidence-based, transparent decision-making.

He emphasized focused strategies to reach zero-dose and under-immunized children, especially in marginalized areas, through microplanning, digital tools like U-WIN for permanent digital vaccination records, and targeted campaigns such as Mission Indradhanush. Initiatives like V-Shiksha integrate vaccine literacy into the school curriculum, complemented by social mapping and CSO engagement across 143 identified zero-dose districts. The UIP's governance model includes robust surveillance networks: environmental surveillance for polio across 63 sites in 14 states, sentinel site-based typhoid fever surveillance in 20 cities prior to TCV introduction, and specialized iVDPV surveillance to identify prolonged virus excretion in patients with primary immunodeficiencies. In parallel, behavioural and social drivers (BeSD) surveys explore caregivers' attitudes, religious influences, and barriers to uptake, guiding tailored communication strategies. Dr.Kumar also detailed operational platforms like iTMIS for



training over 25 categories of immunization staff and the U-Mentor app for real-time supervision and mentoring. Data-driven budgeting and systematic monitoring ensure vaccine stocks and cold chain equipment remain adequate, supporting consistent service delivery. Achievements include a marked rise in Full Immunisation Coverage, recognized internationally by awards such as the Measles & Rubella Champion Award 2024. Looking ahead, the UIP aims to sustain over 90% coverage, maintain India's polio-free status, introduce new vaccines per NTAGI recommendations, and fully digitize operations through U-WIN. Concluding, Dr. Kumar underscored that robust infrastructure, inclusive community engagement, inter-sectoral coordination, and data transparency remain central to ensuring equitable vaccine access and strengthening India's health security.





Session 5: Newer Vaccine Introduction and Health Systems Strengthening

Speaker: Dr. Arindam Ray, India Country Lead for Immunization and Surveillance at the Gates Foundation

Dr. Arindam Ray, India Country Lead for Immunization and Surveillance at the Gates Foundation, presented a compelling case study of India's Rotavirus Vaccine (RVV) rollout, illustrating how the introduction of a new vaccine can strategically strengthen broader health systems while improving equity and resilience. Dr. Ray emphasized that introducing RVV was not merely adding another antigen to the Universal Immunisation Programme (UIP), but a comprehensive process involving adjustments to service delivery, workforce capacity, health information systems, cold chain logistics, and governance frameworks. Integrated seamlessly into the routine infant schedule at 6, 10, and 14 weeks, RVV rollout leveraged culturally relevant social mobilization campaigns such as "Tiku Talk" in Bihar, engagement with local religious leaders in Tripura, and gender-sensitive health literacy initiatives to reach underserved communities and address vaccine hesitancy. Capacity building followed a nationwide four-tier cascade training model, supported by adult learning techniques like "station approach" workshops, online pre-and post-tests, and telephonic assessments to reinforce skills. Health information systems were adapted through updates to paper-based tools (e.g., MCP cards and tally sheets) and digital platforms like eVIN for real-time cold chain monitoring, complemented by GPS-enabled apps for field supervision and data-driven program reviews. Surveillance systems were expanded through the National Rotavirus Surveillance Network, which tracked disease trends and vaccine safety, while targeted studies and white papers addressed early concerns about intussusception, ultimately confirming RVV's safety.

The rollout also strengthened cold chain capacity, including procurement of over 25,000 units and creation of satellite storage points, mitigating storage deficits and ensuring efficient last-mile delivery, even through innovative solutions like bike-based cold chain transport in remote districts. Indigenous vaccine development (Rotavac and Rotasiil) ensured affordability, supply security, and interchangeability, reinforcing self-reliance. Economic evaluations underscored RVV's cost-effectiveness, demonstrating significant



reductions in hospitalizations and out-of-pocket spending for families, thereby supporting advocacy and sustained domestic funding. Dr. Ray introduced the “diagonal approach,” which integrates vertical disease-specific goals—like rotavirus prevention—with horizontal health system strengthening, ensuring that investments in new vaccines reinforce routine immunization and broader child health services. Governance was supported through a coordinated public-private partnership, leveraging the experience of NTAGI, MoHFW, WHO, UNICEF, and state health departments for phased rollout, mid-course corrections, and peer learning. Concluding, Dr. Ray highlighted that the RVV experience offers critical lessons for upcoming introductions—such as HPV and typhoid vaccines—underscoring the importance of sustainability, inclusivity, and integration to advance public health equity and build resilient, future-ready immunization systems.





Session 6: Introduction of HPV vaccination in Nepal: Experience sharing

Speaker: Dr. Abhiyan Gautam, Chief, Child Health and Immunization Services, Ministry of Health and Population, Nepal

Speaker: Dr. Abhiyan Gautam, Chief of Child Health and Immunization Services in Nepal
Dr. Abhiyan Gautam, Chief of Child Health and Immunization Services, Ministry of Health and Population, Nepal, presented a detailed account of Nepal's landmark HPV vaccine introduction in 2024, designed to combat cervical cancer—the country's leading cause of cancer-related mortality among women, claiming an average of four lives daily. The campaign adopted a mixed delivery model, combining school-based sessions and outreach at health facilities, to reach adolescent girls aged 10–14, both in and out of school, using the WHO-prequalified bivalent Cecolin vaccine. The national campaign, launched symbolically on World Cancer Day (February 4), mobilized over 27,000 trained vaccinators and 54,000 female community health volunteers, supported by robust microplanning, federal and provincial orientation sessions, and intersectoral coordination with ministries, professional societies, and civil society groups. Within two weeks, the campaign successfully vaccinated 1.66 million girls, achieving remarkable 94% coverage across diverse terrains—including Dolpa's Gho-Tarap, the world's second highest settlement at 4,080 meters.

Key strategies included comprehensive capacity building, real-time data monitoring, and systematic AEFI preparedness: every vaccination site was equipped with an AEFI kit and staff were oriented on safety protocols. Recognizing the risk of misinformation—such as rumors linking HPV vaccines to infertility or cancer—the Ministry engaged national medical associations, influential religious leaders, journalists, and celebrities to deliver consistent, evidence-based messages across 21 local languages, national media, and social media platforms. Initiatives like multimedia content with sign language, a signature campaign song, and high-profile appeals from the President, Prime Minister, and Health Minister reinforced public trust. Direct engagement with private schools, madrasas, and local influencers addressed community-specific hesitancy, while coordinated social listening tracked and countered misinformation in real time.

The campaign's success built on Nepal's strong National Immunization Program, backed



by the Immunization Act 2016 and guided by national advisory groups, and leveraged recent large-scale vaccination experiences, including COVID-19 and typhoid campaigns. Importantly, HPV vaccination was integrated into routine immunization, with plans to institutionalize full vaccination screening during school entry and extend outreach to missed populations. Dr. Gautam emphasized that multisectoral collaboration—between health, education, and finance ministries—alongside political commitment and data-driven management were critical enablers. Future priorities include strengthening digital surveillance systems, sustaining community engagement, and securing domestic funding to ensure long-term program viability. Concluding, he highlighted that Nepal's HPV rollout illustrates how evidence-based planning, cultural sensitivity, and strategic communication can overcome hesitancy, achieve high equitable coverage, and move closer to eliminating cervical cancer as a public health problem.





Session 7: Experience Sharing / Success Stories – National Immunization Programme of Sri Lanka

Speaker: Dr. Samitha Ginige, Director of Quarantine at Sri Lanka's Ministry of Health

Dr. Samitha Ginige, Director of Quarantine at Sri Lanka's Ministry of Health, presented a rich account of Sri Lanka's National Immunization Programme (NIP), highlighting its evolution, evidence-driven decision-making, and integrated primary healthcare foundation. Over the past 25 years, Sri Lanka has sustained immunization coverage exceeding 90% for all antigens nationwide, demonstrating a resilient system built on community trust and systematic adaptation. Central to this success is the country's divisional-level preventive health system, anchored by multidisciplinary teams delivering maternal and child health, vaccination, and health education through Primary Health Units. This integration ensures efficient use of resources, routine community engagement, and timely follow-up, thereby enhancing acceptance and continuity of care. Dr. Ginige emphasized Sri Lanka's commitment to a “no missed opportunity” policy, operationalized through structured catch-up programs in schools and health sub-centers. Surveillance data, regular district and regional reviews, and feedback loops shape policy adjustments—such as outbreak response immunization campaigns for zero-dose children and revisions to vaccination schedules. For instance, measles outbreaks in recent years led to targeted supplemental immunization activities and adjustments in vaccine timing to close immunity gaps. New vaccine introductions—including Hepatitis B, Hib, MR, and HPV—have been guided by comprehensive disease burden assessments, cost analyses, and technical evaluations. Notably, HPV vaccine adoption followed a multi-year process: a large-scale community burden study on HPV prevalence and genotype distribution among healthy women and cervical cancer patients in 2009, followed by economic modeling of treatment and screening costs. In 2015, an expert working group synthesized these findings, culminating in NITAG's recommendation to integrate HPV vaccination into the routine schedule.

Institutional mechanisms such as the National Immunization Summit and quarterly epidemiologist reviews ensure systematic monitoring, while divisional teams use child vaccination tracking systems to identify dropouts and counter anti-vaccine narratives



proactively. Emerging priorities include optimizing workforce deployment, streamlining logistics, enhancing digital tools, and addressing vaccine hesitancy through culturally sensitive communication. The program's adaptability is further demonstrated in its capacity to respond to safety signals and operational challenges, supported by strong coordination between national, provincial, and district levels. Dr. Ginige concluded that Sri Lanka's experience underscores the power of combining robust surveillance, responsive policy shifts, and community-centric service delivery. By grounding decisions in local epidemiology and cost data, maintaining transparent expert oversight, and integrating vaccination within a broader primary healthcare model, Sri Lanka has achieved high, equitable coverage with efficiency and resilience—providing a replicable model for other countries aiming to build sustainable immunization systems.





Session 8: Addressing Zero-Dose Children in India's Immunisation Programme

Speaker: Dr. Suresh Dalpath, National Technical Lead for Immunization Implementation at the Clinton Health Access Initiative

Dr. Suresh Dalpath, National Technical Lead for Immunization Implementation at the Clinton Health Access Initiative (WJCF), presented a data-driven exploration of zero-dose (ZD) children in India—defined as those who do not receive the first Pentavalent vaccine dose by age one, and who often remain excluded from the full benefits of immunisation. Despite proximity to immunisation sites, over 1.3 million children in India remain unvaccinated, with the highest burden among female children, migrant families, tribal communities, and socioeconomically disadvantaged groups. Dr. Dalpath's team used advanced analytical methods—machine learning—based persona archotyping combining multi correspondence analysis and K-means clustering—alongside field interviews and community workshops to identify four nuanced caregiver–child profiles shaping under-immunization: “Systemic Dropouts,” “Resource-Limited Refusers,” “Hesitant Acceptors,” and “Resistant Traditionalists.”

Findings revealed that 90% of these families do not hold ideological opposition to vaccines; rather, barriers include structural deprivation, low antenatal care uptake, cultural norms, misinformation, transport poverty, and service gaps like missed ASHA home visits. For instance, the “Systemic Dropouts” group, though delivering in institutions and owning smartphones, disengaged postnatally due to poor follow-up and fear of side effects. The “Resource-Limited Refusers” cluster faced extreme deprivation, lacking ration cards, transport, and even birth registration, making survival a higher priority than preventive care. “Hesitant Acceptors” had high service contact but lingering doubts about vaccine safety, while “Resistant Traditionalists” reflected intergenerational marginalisation, cultural decision-making, and digital exclusion. Dr. Dalpath outlined human-centered, community-informed interventions to address these barriers: ASHA flipcharts and counselling aids to tackle myths; “Shishu Suraksha Cards” for personalised vaccination calendars; migrant tracking tools; tailored communication strategies; and welcome pamphlets for newborn families. Prototype solutions were co-developed through idea camps with frontline workers, community influencers, and zero-dose families, and refined after field testing.



To close gaps sustainably, Dr. Dalpath emphasized the role of implementation science to evaluate, adapt, and scale interventions, ensuring culturally sensitive outreach complements system-level reforms. Key strategies include building community trust, integrating health and nutrition services, leveraging digital tools for reminders and follow-up, addressing gender disparities, and targeting marginalized groups through hyper-local outreach. He stressed that robust monitoring, data analytics, and intersectoral partnerships are crucial to meeting Immunization Agenda 2030's target of a 50% reduction in zero-dose children by 2030 (30% by 2026). Concluding, Dr. Dalpath underscored that the path forward lies not in one-size-fits-all solutions but in context-specific, inclusive, and data-driven approaches to truly “leave no one behind” in immunization.





Session 9: Innovations in immunization in the health system of India

Speaker: Dr. Raj Shankar Ghosh, Senior Advisor at the Public Health Foundation of India

Dr. Raj Shankar Ghosh, Senior Advisor at the Public Health Foundation of India, presented an insightful perspective on integrating innovation in immunization with the One Health framework—an approach that holistically links human, animal, and environmental health to address the fact that over 60% of emerging infectious diseases are zoonotic. Highlighting recent and potential threats such as rabies, avian influenza, COVID-19, and the hypothetical “Disease X,” Dr. Ghosh emphasized that coordinated action under India's One Health Mission, complemented by global partnerships with WHO and related agencies, is vital for early detection, response, and prevention. Vaccines play a central role in this strategy, offering scalable solutions to reduce zoonotic transmission and combat antimicrobial resistance (AMR) by limiting the need for antibiotics through prevention.

Dr. Ghosh detailed technological advances that are transforming vaccine research and development: human applications of mRNA and DNA vaccine platforms; veterinary breakthroughs such as reverse vaccinology, which uses genomic data to identify promising antigens; and self-disseminating vaccines designed to control wildlife reservoirs of zoonotic pathogens. He also highlighted India's leadership in digital vaccine delivery platforms, like eVIN and Co-WIN, which not only optimize supply chains and reduce wastage but also demonstrate how digital innovation can bridge health system gaps. The presentation underscored that innovation must extend beyond product development to include policy alignment, governance, and sustainable manufacturing. Dr. Ghosh advocated for unified policy frameworks connecting human and animal health regulatory pathways to enable rapid vaccine rollout when cross-species threats emerge. Additionally, he called for investment in climate-smart vaccine production—facilities and processes designed to reduce environmental impact and remain resilient against climate disruptions that could affect supply chains.

Drawing lessons from India's experience with large-scale vaccine introductions—such as the rollout of fractional-dose IPV to address global supply shortages, and digital tools like Co-WIN during the COVID-19 pandemic—Dr. Ghosh emphasized that innovation must



be institutionalized, evidence-driven, and integrated into existing health systems rather than viewed as parallel or temporary measures. By doing so, the health system can become agile enough to tackle current challenges and anticipate future threats. In conclusion, Dr. Ghosh's key message was clear: as zoonotic and environmental threats increasingly challenge public health security, the One Health approach, powered by vaccine innovation and supported by policy coherence and system integration, is indispensable for protecting populations. Vaccines, he noted, remain one of the most cost-effective and scalable tools to bridge the gap between human and animal health and to ensure sustainable, equitable health outcomes in a rapidly changing world.





Session 10: Latest technological advancements in vaccine platform and One Health

Speaker: Dr. Santosh Ramesh Taur, Director Medical Affairs, Vaccines, Rare Diseases and Digital, Pfizer

Dr. Santosh Ramesh Taur, Director of Medical Affairs (Vaccines, Rare Diseases and Digital) at Pfizer, delivered an insightful presentation highlighting the transformative role of technological innovation in strengthening India's Universal Immunisation Programme (UIP), the world's largest publicly funded immunization initiative. Emphasizing the principle that “diseases know no borders,” Dr. Taur showcased how innovations in vaccine delivery platforms and digital tools can help overcome geographic, social, and infrastructural barriers to ensure equitable access for all. Among the standout examples, he discussed the use of drone technology to transport vaccines to remote and underserved regions, reducing delays and preserving cold chain integrity. Complementing this, digital solutions like the Electronic Vaccine Intelligence Network (eVIN) enable real-time tracking of vaccine stocks and temperature monitoring across storage and transport points. This system has significantly reduced vaccine wastage, enhanced forecasting, and empowered frontline health workers to make informed, data-driven decisions. Dr. Taur introduced the SOIL framework—Scope, Outcome, Investment, and Leverage—as a strategic guide to integrate innovation effectively within large-scale public health programs. He stressed that introducing new technologies must go hand-in-hand with capacity-building, workforce training, and sustained policy support to ensure that digital tools are adopted, maintained, and adapted over time. He also underlined the importance of embedding innovations within the existing health system architecture to avoid duplication and ensure long-term sustainability.

Focusing on the human dimension of innovation, Dr. Taur framed future success around the “3 Ts”—Technology, Teamwork, and Trust—and the “3 Ps”—Product, Place, and People. He illustrated how relatively simple technologies, such as the Vaccine Vial Monitor (VVM)—which visually signals whether a vaccine has been exposed to excessive heat—can reinforce trust among healthcare providers and recipients alike, assuring them of vaccine potency and safety. This trust, he argued, is foundational for achieving and maintaining high coverage. Dr. Taur emphasized that innovation must always remain purpose-driven,



scalable, and contextually relevant. Rather than viewing technology as an end in itself, it should serve as an enabler to strengthen health systems, reduce inequities, and build resilient, community-centred immunization programs. He concluded by calling for continued collaboration between government, industry, and civil society to invest strategically in innovations that deliver measurable improvements in coverage, quality, and public confidence—thereby ensuring that India's immunization efforts remain adaptive, inclusive, and sustainable for generations to come.





Session 10: Health Economics as a Tool in Analysing Vaccine Policy Options

**Speaker: Dr. Shankar Prinja, Professor, Health Economics,
PGIMER Chandigarh**

Dr. Shankar Prinja, Professor of Health Economics at PGIMER Chandigarh, together with Dr. Sumit, Health Technology Assessment (HTA) expert at HTAIn, offered a comprehensive exploration of how health economics and innovation converge to guide evidence-based vaccine policy in India. Framing the discussion within the context of India's Universal Immunisation Programme (UIP)—one of the world's largest—they highlighted how integrating technologies like Vaccine Vial Monitors (VVM), eVIN, and CoWIN has enhanced vaccine delivery, real-time monitoring, and public trust, aligning innovation directly with public health outcomes. Dr. Prinja introduced the SOIL framework—Scope, Outcome, Investment, and Levers—as a pragmatic tool to guide system-compatible innovations that reinforce rather than disrupt existing health infrastructures. Delving into the role of health economics, Dr. Sumit detailed key evaluation tools such as cost-effectiveness analysis (CEA) and budget impact analysis (BIA), which help policymakers allocate limited resources efficiently among competing health priorities. They emphasized that vaccines, while often resource-intensive, generate substantial long-term health gains—including reductions in mortality, improved quality of life, and broader societal benefits such as productivity gains and reduced financial hardship from out-of-pocket spending. These benefits, they noted, should be assessed from both health system and societal perspectives, capturing direct medical costs, non-medical expenses, and indirect costs like wage loss and premature mortality.

Dr. Prinja illustrated this through examples like HPV and rotavirus vaccination, where economic evaluations revealed cost-effectiveness and positive equity impact, justifying their introduction despite significant upfront costs. They also discussed the inclusion of extended value domains in vaccine evaluations—such as herd immunity, prevention of antimicrobial resistance (AMR), and health system efficiencies (like human resources saved)—to fully capture the broader societal and economic impact. Using the incremental cost-effectiveness ratio (ICER) compared against India's per capita GDP, they showed how vaccines can be appraised for value-for-money in a transparent, data-driven manner.



Concluding, the speakers advocated for a multi-criteria decision analysis (MCDA) framework, which integrates efficiency, equity, fiscal sustainability, and financial risk protection, ensuring vaccine decisions reflect not only cost but also social impact and long-term resilience. They underscored that sustainable vaccine policy must be rooted in innovation, supported by robust economic evidence, and designed to advance community trust and equitable access. By aligning scientific, economic, and ethical considerations, India's immunization strategy can continue to deliver maximum health benefit for every rupee invested, ensuring no population group is left behind.





Session 11: Economic Perspectives on Group A Streptococcus Vaccine Introduction

Speaker: Dr. Jeffrey Cannon, Senior Research Officer and Health Economist

Dr. Jeffrey Cannon, Senior Research Officer and Health Economist at The Kids Research Institute, Perth, Australia, delivered an in-depth session on the global health and economic rationale for investing in Group A Streptococcus (Strep A) vaccine, using the Full Value of Vaccines Assessment (FVVA) framework to capture not only direct health outcomes but also broader social and economic impacts. Dr. Cannon began by contextualizing Strep A as a major yet often under-recognized public health burden: responsible for a wide range of diseases from pharyngitis and skin infections to life-threatening invasive infections and rheumatic heart disease (RHD). The latter remains a significant cause of morbidity and premature mortality, especially in low- and middle-income countries. Using recent modeling studies, he illustrated that Strep A vaccination—particularly when administered to young children—could prevent billions of infections, avert millions of deaths, and generate the highest reductions in disability-adjusted life years (DALYs) precisely where the disease burden is greatest. The traditional cost-effectiveness analysis (CEA) showed vaccines would be cost-effective across all income settings, with maximum acceptable costs per fully vaccinated individual aligning closely with thresholds based on per-capita GDP. Beyond classic CEA, Dr. Cannon highlighted how the Full Value of Vaccines framework adds depth by integrating commercial viability (attractive return on investment for manufacturers), public sector perspectives (budget impact and savings from avoided treatment costs), and the global societal perspective: trillions of dollars in long-term economic gains through lives saved, disabilities prevented, and productivity preserved.

A key dimension of value is the vaccine's potential to reduce antimicrobial resistance (AMR). Current treatment of Strep A sore throat relies heavily on antibiotics, contributing to unnecessary prescribing. Modeling predicts that an effective vaccine could avert between 32–87% of these antibiotic courses, offering a practical strategy to mitigate AMR globally. Dr. Cannon acknowledged challenges in vaccine R&D, including high upfront costs, long development timelines, and early-phase “valleys of death” where promising



candidates risk abandonment due to uncertain commercial returns. Yet, he argued, FVVA evidence demonstrating clear health impact and economic return can help secure sustained stakeholder commitment—from funders and policymakers to industry partners. Concluding, Dr. Cannon underscored that prioritizing Strep A vaccine development is ethically and economically compelling: it aligns with global equity goals, delivers significant health benefits, strengthens AMR mitigation, and offers robust societal returns—making it a critical next frontier for immunization and public health investment worldwide.





Session 12: Vaccine Hesitancy and Advocacy

**Speaker: Dr. Naveen Thacker, Executive director,
International Paediatric Association**

Dr. Naveen Thacker, Executive Director of the International Paediatric Association, delivered a compelling analysis of vaccine hesitancy, framing it as a deeply rooted, complex phenomenon shaped by emotion, social context, and cognitive bias rather than mere gaps in scientific knowledge. He described hesitancy not as binary acceptance or refusal but as a dynamic continuum, emphasizing that the greatest public health gains come from engaging the large “moveable middle” of individuals who are neither fully accepting nor completely opposed. Drawing on the WHO's Behavioural and Social Drivers (BeSD) framework, Dr. Thacker explained that vaccine decisions are influenced by four interrelated domains: thinking and feeling (risk perceptions and emotions); social processes (family, community, and cultural norms); motivation (intentions and confidence); and practical issues (accessibility, convenience, and cost). Dr. Thacker highlighted that cognitive biases—such as availability bias, where vivid anecdotes overshadow statistics, and confirmation bias, where people seek information aligning with pre-existing beliefs—can amplify the impact of misinformation, especially on emotionally charged topics. In today's digital age, misinformation spreads rapidly through social media, often delivered in emotionally resonant narratives that facts alone struggle to counter. To address this, he advocated shifting from a purely fact-based approach to empathetic, narrative-driven communication. Techniques like motivational interviewing, which centers on respectful, person-focused dialogue, can help understand hesitations and guide individuals toward confidence in vaccination.

Recognizing that healthcare providers remain the most trusted messengers, Dr. Thacker called for capacity-building of frontline health workers in risk communication, active listening, and culturally sensitive dialogue. Beyond clinical settings, he emphasized the value of community co-designed messaging—developed in collaboration with local leaders, youth groups, and trusted influencers—to ensure that messages resonate authentically. He also highlighted the responsible use of social media as a tool for credible advocacy, suggesting partnerships with local champions, visual storytelling, and positive



framing to counter misinformation. Importantly, Dr. Thacker reframed vaccine hesitancy not merely as a communication gap but as an issue of trust, identity, and belonging within communities. Building trust, he argued, is an ongoing process requiring transparency, humility, and engagement that is responsive rather than prescriptive. He concluded with a powerful reminder: “we don't win with facts alone; we walk with our communities”—underscoring that lasting progress against vaccine hesitancy comes through sustained dialogue, empathy, and partnerships rooted in shared values rather than data alone.





Session 13: Procurement of Vaccines: Role of GAVI, WHO, UNICEF etc.

**Speaker: Mr. Homero Hernandez, Senior Country Officer,
GAVI Alliance, Geneva**

The session featured a comprehensive presentation by Mr. Homero Hernandez, Senior Country Officer, GAVI Alliance, Geneva, on the pivotal role of GAVI, WHO, UNICEF, and partners in advancing global vaccine procurement and equitable immunisation. Established in 2000 with the Gates Foundation and other key donors, GAVI addresses market failures that historically limited vaccine access in low-income countries, evolving through strategic phases that have enabled the vaccination of over 1.1 billion children while averting 18.8 million deaths globally and generating over USD 250 billion in economic benefits. Mr. Hernandez highlighted GAVI's operational model, combining long-term pooled funding, market shaping, health system strengthening, and planned country transition to self-reliance, underscoring the mission of empowering countries to sustain their immunization programmes. The market-shaping approach of GAVI leverages intelligence and tools such as Advance Market Commitments, supplier diversification, and innovative procurement, working closely with UNICEF as its procurement agent to ensure stable, affordable, and diversified vaccine supply while expanding manufacturing, including in LMICs. The Healthy Markets Framework guides GAVI's efforts by focusing on supply stability, predictability of demand, innovation, and sustainability while balancing pricing with manufacturer viability. Notable outcomes include the expansion from five to nineteen manufacturers across twelve countries, significant price reductions, and diversified vaccine portfolios addressing 20 infectious diseases, including pentavalent, HPV, malaria, and COVID-19 vaccines. Innovations such as barcodes, microarray patches, drone delivery, and controlled temperature chain logistics were shared as part of GAVI's commitment to technological adoption to enhance immunisation reach, particularly for zero-dose children. Mr. Hernandez emphasised the importance of addressing challenges including maintaining affordability and supply security while mitigating geopolitical and regulatory risks in the evolving global landscape. The session underlined GAVI's collaborative, equity-driven approach to market shaping, combining demand predictability, supplier engagement, innovative financing, and country ownership to



achieve sustainable immunisation coverage. This aligns with India's commitment to strengthening vaccine delivery platforms and sustaining immunisation under Mission Indradhanush while learning from global frameworks. The session reinforced the critical need for continued collaboration between global alliances, national programmes, and technical partners to ensure that immunisation remains a resilient pillar of health systems and pandemic preparedness, supporting the overarching goal of reducing vaccine-preventable child mortality and enhancing economic resilience through healthy communities. The session concluded with an emphasis on GAVI's mission to "make itself less needed" by building country capacities, ensuring that vaccine markets are sustainable, and strengthening the immunisation landscape for long-term health security.





Group photo Day 4





Day 5

Date: 13th June 2025

Module 5: Update on Current and New Vaccines



Scientific Program Day 5

Time	Topic	Resource Faculty
Day 5: 13/06/2025 Module 5: Update on Current and New Vaccines		
8:30-9:00 am	Recap of Day 4	Dr. Madhu Gupta , <i>Course Director</i>
9:00 – 9:30 am	Life course approach in Immunization	Dr. Chandrakant Lahariya , <i>Founder, Foundation for People-centric Health Systems (FPHS), New Delhi</i>
9:30 – 10:00 am	Need for adult immunization	Dr. Suneela Garg , <i>Professor of Excellence, Chair Programme Advisory Committee, NIHFW, New Delhi, India, Ex-Director, Professor & Head Community Medicine, MAMC, Head FMC, Delhi University</i>
10:00-10:30 am	Vaccination and Anti-microbial resistance	Dr Kamini Walia , <i>Scientist G & Head, Descriptive Research Division, ICMR, New Delhi</i>
10:30-11:00 am	Update on Influenza vaccines and Experience sharing regarding adult immunization clinic	Dr. Lalit Sankhe , <i>Associate Professor, Grant Medical College, Mumbai</i> Dr. Muralidhar Tambe , <i>Professor and Head, Department of Community Medicine, BJ Medical College, Pune, India</i>
11:00-11:20 am	Tea	
11:20-11:40 am	Update on Adult Pneumococcal vaccine	Dr. Veena G Kamath , <i>Professor & Head, Department of Community Medicine, KMC Manipal, Karnataka</i>
11:40-12:00 pm	Update on Shingles and Varicella vaccines	Dr. Parvinder Kaur Chawla , <i>Senior Consultant Internal Medicine, Fortis Mohali</i>
12:00-12:20 pm	Update on Meningococcal vaccine, Cholera and Hepatitis A vaccine	Dr. Ashish Bhalla , <i>Professor, Department of Internal Medicine, PGIMER, Chandigarh</i>
12:20-12:40 pm	Update on Human Papilloma Virus Vaccine	Dr. Rashmi Bagga , <i>Professor, Department of Obstetrics & Gynaecology, PGIMER, Chandigarh</i>
12:40-1:00 pm	Update on TB Vaccines	Dr. Manjula Singh , <i>Scientist F, Delivery Research, ICMR, New Delhi</i>
1:00-1:20 pm	Update on Travel Vaccines	Dr. Swayampragyan Parida , <i>Additional Professor, DCM & FM, AIIMS Bhubaneswar</i>
1:20-2:00 pm	Lunch	
2:00-2:20 pm	Licensed vaccines in children & Adolescents: Pneumococcal and Hexavalent vaccines	Dr. Sanjay Verma , <i>Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh</i>
2:20-2:40 pm	Licensed vaccines in children: Typhoid and RSV vaccines	Dr. Unmesh Upadhyay , <i>Director and Consultant Pediatrician, Vismay child care hospital, Ahmedabad, India</i>
2:40-3:00pm	Update on Rabies vaccine	Dr. Omesh Bharti , <i>Deputy Director Health Services-cum- State Epidemiologist, Himachal Pradesh</i>
3:00-3:20 pm	Update on Dengue and Malaria vaccines	Dr. Harpreet Singh , <i>Associate Professor, Department of Internal Medicine, PGIMER, Chandigarh</i>
3:20-3:40 pm	Tea	
3:40-4:00pm	Update on HIV/AIDS vaccines	Dr. Jerome H. Kim , <i>Director General, International Vaccine Institute, Seoul, Republic of Korea</i>
4:00-4:20 pm	Update on Group A Streptococcus Vaccine	Dr. Vivek Sagar , <i>Additional Professor, Department of Community Medicine & School of Public Health, PGIMER</i>
4:20-4:40pm	Climate Change and Immunization	Dr. Ravindra Khaiwal , <i>Professor of Environment Health, Department of Community Medicine & School of Public Health, PGIMER</i>
4:40-5:00 pm	Leveraging Public-Private Partnership (PPP) to Accelerate the Vaccines R&D for LMICs	Dr. Tarun Saluja , <i>Head of Clinical Development, International Vaccine Institute, Seoul, Republic of Korea</i>
5:00 pm	Valedictory followed by High Tea	



Proceedings

Day 5



Session 1: Embracing a Life Course Approach to Immunization

Speaker: Dr. Chandrakant Lahariya, Founder, Foundation for People-centric Health Systems (FPHS), New Delhi

The session on “Life-Course Vaccination” by Dr. Chandrakant Lahariya underscored the urgent need to transition from a child-centric immunisation model to a holistic, lifespan-based approach, as advocated by WHO's Immunization Agenda 2030. Historically, vaccines like smallpox and rabies targeted all ages, but modern programmes often overlook adult populations, despite the global demographic shift where individuals aged 65+ now outnumber children under five. As life expectancy increases and non-communicable and infectious disease burdens rise, a life-course vaccination strategy is critical for sustaining health gains, addressing emerging infections, and strengthening pandemic preparedness. Since 1974, vaccine programmes have expanded from seven diseases to over thirty, including newer vaccines for dengue, RSV, and malaria, reflecting the evolving epidemiology and the need for continued protection as immunity wanes with age. Dr. Lahariya highlighted the economic rationale, with adult immunisation demonstrating a 19-fold societal return on investment by reducing morbidity, mortality, and healthcare costs while maintaining productivity, essential for healthy ageing and health system sustainability.

Integration of vaccination into primary healthcare platforms, especially for individuals with chronic conditions like diabetes, enhances efficiency and accessibility while offering touchpoints for catch-up vaccinations across the lifespan. The COVID-19 vaccination campaign, which achieved 99% global adult coverage within a year and prevented millions of deaths, demonstrated the feasibility of life-course immunisation at scale and offered critical lessons on logistics, community mobilisation, and system adaptability for future adult vaccine initiatives. However, implementation challenges persist, including policy and funding gaps, weak adult vaccine data systems, low public awareness, vaccine hesitancy, and health system limitations in many LMICs. Dr. Lahariya emphasised that effective life-course immunisation requires political commitment, sustained financing, age-inclusive immunisation schedules within national programmes, trained and motivated health workers, and robust cold chain and logistics systems, alongside



leveraging technological innovations and combination vaccines. Ultimately, adopting a life-course immunisation strategy is a cost-effective, equitable, and sustainable approach to safeguard health across all ages, prevent outbreaks, and maintain herd immunity while reducing healthcare burdens and promoting economic resilience. Building on lessons from the COVID-19 experience and aligning with India's PHC and UHC goals, life-course vaccination offers an opportunity to develop resilient, people-centred immunisation systems that protect the health and productivity of all age groups, contributing to a healthier, more equitable society.





Session 2: The Need for Adult Immunization

**Speaker: Dr. Suneela Garg, Professor of Excellence,
Chair Programme Advisory Committee, NIHFW, New Delhi, India,
Ex-Director, Professor & Head Community Medicine,
MAMC, Head FMC, Delhi University**

The session by Dr. Suneela Garg highlighted the critical gap in adult immunisation in India, contrasting the structured, large-scale paediatric immunisation programmes under the Universal Immunization Programme with the near absence of systematic adult vaccination initiatives. Despite vaccines being among the most cost-effective public health interventions, adult immunisation remains a neglected priority, compounded by low awareness even among healthcare professionals. The WHO's Decade of Healthy Ageing (2021–2030) and India's rapidly ageing demographic, with the population aged 50+ projected to exceed 400 million by 2036, underscore the urgency of implementing life-course immunisation strategies. The success of India's COVID-19 vaccination campaign, which achieved extensive adult coverage rapidly, demonstrated the feasibility and societal readiness for large-scale adult immunisation, providing a replicable model for future programmes. Vaccinating adults could prevent 2–3 million annual deaths globally from vaccine-preventable diseases like influenza, pneumonia, and hepatitis B while reducing the economic burden of illness. The financial implications are significant, with sickness-related wage losses and increased medical expenditures reducing household income by up to 19%. Healthcare workers, a key pillar of the healthcare system, are a high-risk group but remain severely under-vaccinated, with influenza vaccine coverage as low as 4.4%. Vaccinating healthcare workers would reduce nosocomial infections, improve workforce productivity, and decrease healthcare costs, while demonstrating leadership in promoting adult immunisation.

Dr. Garg emphasised the role of tailored strategies for different risk groups, including frontline workers, the elderly, and individuals with chronic conditions like diabetes and hypertension, who are at heightened risk for infections and associated complications. The Indian Consensus Guidelines on Adult Immunisation (ICGAI) provide structured, evidence-based, age- and condition-specific recommendations, such as pneumococcal vaccination for adults over 50 years and shingles vaccination for those above 60 years,



alongside recommendations for healthcare workers and immunocompromised individuals. Key barriers identified include low public and provider awareness, vaccine hesitancy, financial constraints, and the absence of policy frameworks supporting adult immunisation. Addressing these barriers requires a multipronged approach, including policy reforms for a standardised adult immunisation framework, public-private partnerships, dedicated immunisation days for adults, and integrating adult vaccines into primary healthcare and workplace settings. The call to action emphasised the need for healthcare workers to adopt self-vaccination to lead by example, fostering a culture of immunisation across the health system. Systematic, data-driven, and equity-focused adult immunisation efforts are essential for advancing India's goals of healthy ageing, pandemic preparedness, and resilient health systems.





Session 3: Vaccination and Antimicrobial Resistance

Speaker: Dr Kamini Walia, Scientist G & Head, Descriptive Research Division, ICMR, New Delhi

The session led by Dr. Kamini Walia from ICMR emphasised antimicrobial resistance (AMR) as a critical, escalating public health threat, often termed the “Silent Pandemic,” responsible for an estimated 4.95 million deaths globally in 2021, with 1.27 million directly due to drug-resistant infections. AMR complicates treatments, increases mortality, prolongs hospital stays, and raises healthcare costs by 40% for resistant infections, highlighting its economic and health impacts. India faces a disproportionately high AMR burden due to unregulated antibiotic sales, overuse of broad-spectrum antibiotics, inadequate diagnostics, poor infection control, and rising self-medication. The COVID-19 pandemic further disrupted AMR containment efforts, diverting resources and attention while exacerbating antimicrobial misuse. With antibiotic development slowing and only four new antibiotic classes introduced since 2000, leveraging vaccination emerges as a vital AMR containment strategy. Vaccines prevent infections, reduce antibiotic misuse, and indirectly reduce the emergence and spread of resistant strains. Examples include the pneumococcal conjugate vaccine (PCV), which led to a 76% decline in invasive pneumococcal disease (IPD) in children and reduced multidrug-resistant pneumococcal strains in South Africa, and the Hib vaccine, which achieved a 99% decline in invasive disease and reduced β -lactamase-producing strains in Canada. Influenza vaccination reduces secondary bacterial infections, cutting respiratory antibiotic prescriptions by 64% in Canada and reducing antibiotic use in children and adults by 28%. Similarly, rotavirus vaccination in India has reduced diarrheal disease and antibiotic misuse associated with rotavirus infections, while Typhoid Conjugate Vaccine (TCV) introduction with catch-up campaigns is projected to avert millions of drug-resistant typhoid cases and deaths over a decade.

ICMR is conducting research to model vaccine impact on AMR, including trials assessing the effect of influenza and pneumococcal vaccination on mortality, hospitalisation, and antibiotic use in older adults in India. However, vaccine coverage in India, especially among adults, remains low, and vaccines are underrepresented in AMR containment



policies despite WHO recommendations. Integrating vaccination into AMR action plans, strengthening diagnostic stewardship, improving infection control, and launching targeted public awareness campaigns are critical next steps. Systematic, data-driven integration of vaccines into AMR strategies can significantly reduce antimicrobial consumption, preserve antibiotic efficacy, and advance India's goals for health security, pandemic preparedness, and sustainable development in alignment with global AMR containment efforts.





Session 4: Update on Influenza Vaccines & Experience Sharing on Adult Immunization Clinics

Speaker1: Dr. Lalit Sankhe, Associate Professor, Grant Medical College, Mumbai

**Speaker 2: Dr. Muralidhar Tambe, Professor and Head,
Department of Community Medicine, BJ Medical College, Pune, India**

The session by Dr. Muralidhar Tambe and Dr Lalit Sankhe underscored the significant public health challenge posed by influenza in India, with underreporting of mild and moderate cases masking its true burden. India predominantly faces circulation of A(H1N1, H3N2), and B(Victoria) strains, making quadrivalent influenza vaccines (QIV) the preferred option for broader protection. Despite global evidence and WHO recommendations, influenza vaccination remains excluded from India's Universal Immunization Programme (UIP). Inactivated influenza vaccines demonstrate 47-60% efficacy in Indian populations, but vaccination rates are alarmingly low, with coverage among healthcare workers below 20%, hindered by high costs (700-2500 per dose), misconceptions about vaccine efficacy, and low prioritisation in preventive care frameworks. High-risk groups, including the elderly, pregnant women, individuals with chronic conditions, and healthcare workers, require annual influenza vaccination to reduce morbidity, hospitalisation, and mortality associated with influenza and its complications, including pneumonia and cardiovascular events. Dr. Tambe highlighted that healthcare workers must lead by example, serving as role models to advocate for vaccination within the community while protecting themselves from occupational exposure to influenza. The Grant Medical College model in Mumbai, established by Dr. Lalit Sankhe, demonstrates the feasibility of integrating adult vaccination into government hospital settings. Since its inception in 2015, the centre has administered over 200,000 COVID-19 vaccine doses while expanding to influenza and travel vaccines, underscoring the potential of institutional commitment to transform adult vaccination coverage in India.

Key barriers identified include the seasonal nature of influenza requiring annual vaccination before the flu season, limited disease burden and vaccine effectiveness data in Indian adults, affordability challenges, and pervasive vaccine hesitancy. Recommendations from the session include integrating influenza vaccination into the UIP for high-risk groups, conducting operational research on disease burden and vaccine



effectiveness, and developing targeted behaviour change and awareness campaigns among healthcare workers and the public to overcome misconceptions. Additionally, there is a need to explore insurance coverage or co-financing models to reduce out-of-pocket expenditure for influenza vaccination. The success of influenza vaccination programmes requires systematic surveillance, robust vaccine effectiveness monitoring, and clear national policy frameworks to enable high coverage, especially among healthcare providers, who are essential to advocating for vaccination within the broader population. Dr. Tambe emphasised that embracing life-course immunisation, including influenza vaccination, is essential for India's preventive healthcare strategy, paralleling the role of nutritional interventions, to build a healthier, resilient society prepared for seasonal epidemics and future pandemics.





Session 5: Update on Adult Pneumococcal Vaccine

**Speaker: Dr. Veena G Kamath, Professor & Head,
Department of Community Medicine, KMC Manipal, Karnataka**

The session by Dr. Veena Kamath highlighted the significant public health burden of pneumococcal disease in India, particularly among adults over 50, driven by invasive infections such as pneumonia, bacteremia, and meningitis caused by *Streptococcus pneumoniae*. India reports the highest morbidity and mortality from invasive pneumococcal disease (IPD) among adults in this age group, with pneumonia and meningitis accounting for 39% and 24% of cases, respectively. Although over 100 serotypes of *S. pneumoniae* exist, a few (notably 1, 3, 6B, 19A) cause most infections in India, underscoring the need for targeted vaccination strategies. Two primary vaccine types are available: the polysaccharide vaccine (PPSV23) and pneumococcal conjugate vaccines (PCVs, including PCV13/15/20). PPSV23 offers 50-70% efficacy but lacks the ability to induce strong memory responses, herd immunity, or reduce nasopharyngeal carriage, and shows reduced effectiveness in older adults, limiting its public health impact. Conjugate vaccines, in contrast, demonstrate 80-90% efficacy, reduce carriage, and provide herd immunity while amplifying immune responses against vaccine serotypes. PCV13 covers India's most prevalent serotypes, while PCV20 offers broader protection and is recommended globally, although it is not yet widely available in India. Current Indian guidelines recommend administering PCV13 followed by PPSV23 after one year (or after 8 weeks in immunocompromised individuals). These strategies are aligned with global practices, emphasizing PCV administration first to enhance subsequent immune responses and cost-effectiveness, particularly in high-risk and immunocompromised populations. Vaccination not only prevents disease but also plays a critical role in reducing antibiotic resistance by decreasing the disease burden and limiting inappropriate antibiotic use.

Future directions in pneumococcal disease prevention focus on developing serotype-independent vaccines targeting conserved pneumococcal proteins to overcome serotype limitations and broaden protection across diverse strains. Dr. Kamath emphasized the need for India to prioritize expanding access to PCV13 and PCV20 for adults, harmonizing



vaccination guidelines across states, and integrating pneumococcal vaccination into life-course immunization strategies to protect high-risk groups. Ensuring proper vaccine storage (2–8°C), intramuscular administration, and co-administration with influenza, COVID-19, and herpes zoster vaccines can enhance delivery feasibility. Investing in pneumococcal vaccination for adults in India is a cost-effective, evidence-based strategy that can significantly reduce hospitalizations, mortality, and antimicrobial resistance, strengthening India's preventive healthcare framework under its broader healthy ageing and health system resilience agenda.





Session 6: Update on Shingles and Varicella Vaccines

Speaker: Dr. Parvinder Kaur Chawla, Senior Consultant Internal Medicine, Fortis Mohali

The session by Dr. Parvinder K. Chawla addressed the significant public health burden posed by Varicella Zoster Virus (VZV), which causes chickenpox (varicella) as a primary infection, typically in childhood, and shingles (herpes zoster) upon reactivation later in life due to waning cell-mediated immunity. With over 90% seropositivity for VZV in adults, there is a 30% lifetime risk of developing herpes zoster, increasing with age and often resulting in debilitating complications such as postherpetic neuralgia (PHN), which occurs in nearly 50% of cases. The incidence of herpes zoster and its complications, including PHN, meningoencephalitis, and secondary bacterial infections, rises sharply in individuals over 50, underscoring the need for targeted prevention strategies. Three vaccines address VZV-related diseases: the live attenuated varicella vaccine for childhood chickenpox prevention, the now-discontinued Zostavax due to limited efficacy, and the recombinant subunit vaccine Shingrix (HZ/su), which represents a transformative advancement in shingles prevention. Shingrix, comprising VZV glycoprotein E with the AS01B adjuvant system, demonstrates >97% efficacy sustained for over eight years, with a favourable safety profile and high immunogenicity even in immunocompromised individuals. Administered as two intramuscular doses two months apart for adults aged ≥ 50 years, Shingrix can be given irrespective of prior chickenpox or shingles history, provided there is a six-month gap post-shingles episode, while being contraindicated in pregnancy. The session highlighted Shingrix's exceptional cost-effectiveness, with a Number Needed to Vaccinate (NNV) of 6 to prevent one case of herpes zoster or PHN, making it a valuable investment for healthcare systems. WHO and Indian guidelines strongly recommend Shingrix for high-risk and older adult populations to prevent herpes zoster and its severe neurological sequelae, thereby transforming shingles from an expected consequence of ageing to a preventable condition. Future developments include nanoparticle-based vaccines such as FR-gE, which have shown 3.2-fold higher VZV neutralising antibody responses compared to Shingrix, indicating promising advancements in shingles prevention. The session underscored the need for integrating Shingrix into India's adult



vaccination framework, prioritising high-risk populations to reduce morbidity, healthcare utilisation, and economic burdens associated with herpes zoster, aligning with India's goals for healthy ageing and preventive healthcare under life-course immunisation strategies.





Session 7: Update on Meningococcal, Cholera, and Hepatitis A Vaccines

Speaker: Dr. Ashish Bhalla, Professor, Department of Internal Medicine, PGIMER, Chandigarh

The session by Dr. Ashish Bhalla highlighted the critical role of vaccines in preventing outbreaks in high-risk settings such as mass gatherings, travel, and among immunocompromised populations, with a focus on conjugate vaccines that offer superior, long-term protection compared to polysaccharide formulations. The meningococcal vaccine, particularly the conjugate MenACWY type, is essential for travelers to endemic areas, healthcare and laboratory workers, and individuals with HIV, as well as during mass gatherings. Approved for infants as young as six weeks, the vaccine requires a booster every five years to maintain protection, aligning with global guidelines for sustained immunity against *Neisseria meningitidis*. For cholera prevention, the session emphasized oral vaccines such as Shanchol (Sanofi) and Hillchol (Bharat Biotech), which provide 90% short-term efficacy and are recommended for travelers to endemic regions and during outbreak responses. Shanchol, requiring two oral doses two weeks apart, is approved for individuals aged one year and above, while Hillchol, utilizing a single Hikojima O1 strain, has demonstrated strong immunogenicity and scalable production within India. While vaccines are crucial, Dr. Bhalla stressed that sanitation, clean water, and hygiene remain foundational measures to control cholera transmission sustainably.

Hepatitis A vaccination, using either inactivated or live attenuated vaccines, is highly effective, showing >96% seroconversion with long-lasting immunity following a two-dose schedule. The vaccine is particularly important for children, travelers, individuals with chronic liver disease, and high-risk occupational groups. India's indigenous vaccine, HAVISURE, has strengthened local capacities, ensuring high coverage with cost-effective, quality-assured protection. Notably, the vaccine can be co-administered with other vaccines like hepatitis B and typhoid, supporting integrated immunization approaches. Key takeaways from the session include the need to prioritize meningococcal conjugate vaccines for travelers, outbreak settings, and high-risk groups; the use of oral cholera vaccines for rapid protection in endemic and outbreak scenarios with biennial boosters; and ensuring widespread hepatitis A vaccination, particularly in children and high-risk



adults. The session also emphasized leveraging combined strategies, such as co-administering meningococcal and cholera vaccines for mass gatherings while ensuring flexibility in vaccine type administration as clinically indicated. Dr. Bhalla underscored that vaccination must complement, not replace, foundational preventive measures like water sanitation and hygiene. Additionally, policy reforms are needed to strengthen adult immunization frameworks in India, ensuring preparedness for outbreak-prone settings while safeguarding vulnerable populations through evidence-based, life-course immunization strategies.





Session 8: Update on Human Papillomavirus (HPV) Vaccine

**Speaker: Dr. Rashmi Bagga, Professor,
Department of Obstetrics & Gynaecology, PGIMER, Chandigarh**

The session by Dr. Rashmi Bagga underscored cervical cancer as a significant public health challenge in India, accounting for nearly 25% of global cervical cancer deaths and ranking as the second most common cancer among Indian women. The WHO's 90-70-90 strategy aims to eliminate cervical cancer by 2030 through 90% HPV vaccination coverage of girls by age 15, 70% screening coverage by age 35 and again by 45, and 90% treatment of screen-positive women. India has been a key contributor to global HPV vaccine research, notably through the IARC-PGI Chandigarh cluster-randomized trial, which demonstrated that one or two doses are non-inferior to three doses, with ~95% efficacy from a single dose sustained over 10 years. The WHO's 2022 guidance supports reduced-dose schedules, endorsing a single-dose regimen for girls aged 9–14 and one or two doses for women aged 15–20, while immunocompromised individuals should receive three doses. However, India currently adheres to the traditional two- or three-dose schedules. Indigenous vaccines like Cervavac (1,450 per dose) by the Serum Institute of India provide an affordable alternative to imported vaccines like Gardasil-9 (8,500 per dose), facilitating scalable national implementation. Vaccination is recommended for girls aged 9–14, while screening through Pap smear or HPV DNA testing should begin at 25 years and continue till 65, irrespective of vaccination status, emphasizing that HPV vaccines are not substitutes for regular screening.

India is poised to transition towards single-dose HPV vaccination, leveraging robust evidence of long-lasting immunity, which aligns with global shifts towards simplified, cost-effective delivery without compromising efficacy. HPV vaccines demonstrate >95% efficacy, and reduced-dose regimens significantly improve program feasibility and cost-effectiveness, critical for India's scale and demographic needs. Interchangeability between vaccine brands is acceptable but not preferred, and special considerations may be given to vaccinating women treated for CIN2+ to prevent reinfection. The session highlighted that the success of cervical cancer elimination depends on integrating HPV vaccination, screening, and treatment within broader reproductive health services, ensuring equitable



access while addressing sociocultural barriers. Strong policy commitment, health system strengthening, and community engagement are essential for achieving India's cervical cancer elimination goals, transforming a major cause of cancer-related morbidity and mortality among women into a preventable and eventually eliminable condition.





Session 9: Update on Tuberculosis (TB) Vaccines

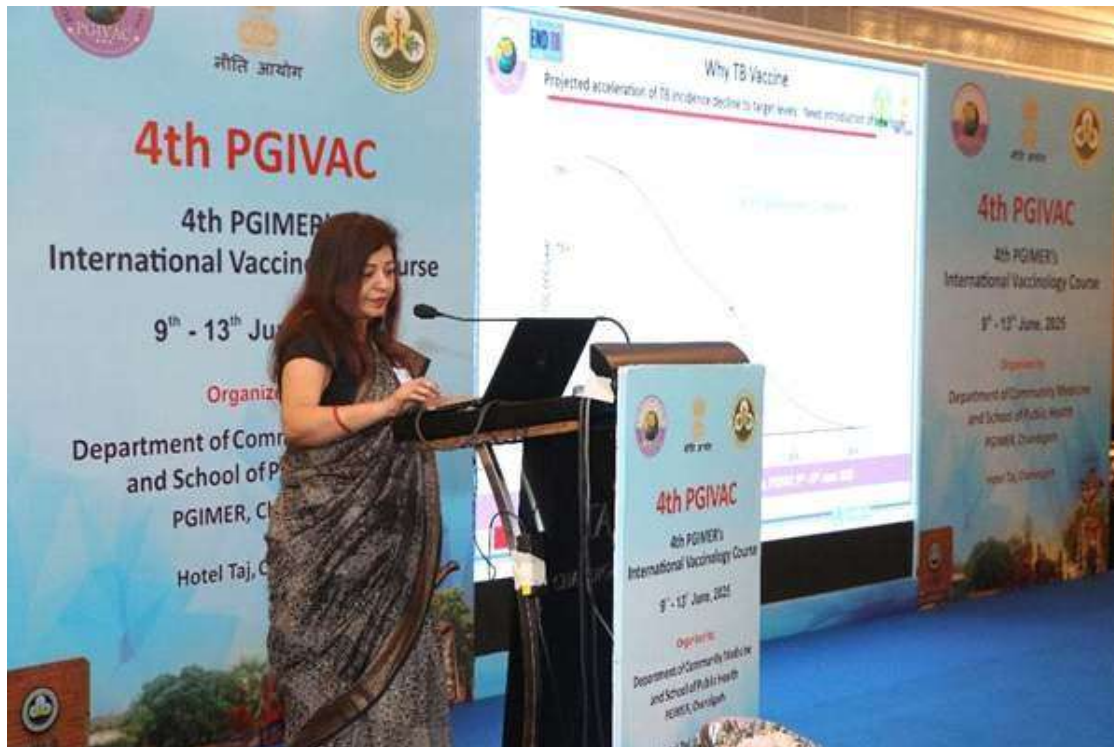
Speaker: Dr. Manjula Singh, Scientist F, Delivery Research, ICMR, New Delhi

The session by Dr. Manjula Singh highlighted tuberculosis (TB) as a persistent global health challenge, with India accounting for one-third of the world's TB cases and BRICS nations representing 50% of infections and 60% of the global multidrug-resistant TB burden. While current strategies reduce incidence by only 5% annually, introducing effective vaccines could accelerate progress to a 17% reduction, addressing the limitations of BCG, whose protection wanes over time and is largely ineffective in adults. India has emerged as a global leader in TB vaccine research through the ICMR-TB Vaccine Consortium, which has maintained a 97% trial follow-up rate during the COVID-19 pandemic while advancing pivotal candidates. Key vaccines under investigation include M72/AS01E (a fusion protein with 50% efficacy over three years), VPM1002 (a recombinant BCG in Phase 3 trials on over 18,000 participants), and India's indigenous MIP (*Mycobacterium indicus pranii*, also known as Immuvac), which has shown promise as both a preventive and therapeutic vaccine with long-term protection.

BCG revaccination strategies for adults have shown 36% protection in vulnerable groups such as the elderly and individuals with diabetes, reflecting a potential interim solution while advanced vaccines complete trials. New approaches are exploring pre- and post-exposure preventive vaccines alongside therapeutic vaccines for active TB, aiming for integrated protection across different stages of infection. The M72/AS01E vaccine has demonstrated efficacy against pulmonary TB, while VPM1002 and MIP vaccines are positioned as strong candidates for India's TB elimination roadmap. Despite these advances, challenges remain, including vaccine hesitancy (estimated at 25%) and the need for effective public communication strategies to increase acceptance and uptake. The integration of novel TB vaccines with existing diagnostics and treatment protocols within India's National TB Elimination Programme is essential for maximising impact. India's dual role in developing and testing vaccines positions it to transform TB control strategies through combined immunisation approaches, crucial for achieving TB elimination targets under the End TB Strategy and the Sustainable Development Goals.



The session underscored that the future of TB control requires a comprehensive approach, combining novel vaccine deployment with improved treatment regimens, expanded adult vaccination programmes, and social protection interventions, enabling India to tackle this evolving pathogen while reducing morbidity, mortality, and transmission in high-burden settings.





Session 10: Update on Travel Vaccines

Speaker: Dr. Swayampragyan Parida, Additional Professor, DCM & FM, AIIMS Bhubaneswar

The session by Dr. Swayam Pragyan Parida emphasized the critical role of travel vaccines in preventing vaccine-preventable diseases (VPDs), ensuring safe travel, and reducing the burden on healthcare systems. Vaccines for travellers are categorized into routine vaccines (e.g., DTP, MMR, influenza), destination-specific vaccines (e.g., Hepatitis A, Typhoid, Rabies, Japanese Encephalitis), and mandatory vaccines (e.g., Yellow Fever, OPV, Meningococcal for Hajj pilgrims). Travel vaccines help prevent infections in regions with high disease transmission, ensure compliance with international travel regulations, and promote long-term protection, thereby reducing the need for costly medical interventions during travel and ensuring a safe return for travellers. Ideally, travellers should seek pre-travel consultation 4–6 weeks before departure, with special emphasis on high-risk groups such as the elderly, immunocompromised individuals, and those with chronic diseases. However, in India, awareness and uptake remain low, with only 20–30% of travellers seeking pre-travel consultations and vaccinations, often due to lack of awareness and reliance on self-medication. This contrasts sharply with Western travellers, where over 50% seek pre-travel health advice.

The field of Travel Medicine, or Emporiatrics, extends beyond vaccination to comprehensive pre-travel risk assessment, health screening, counseling on food and water safety, vector-borne disease prevention, and emergency preparedness. Dr. Parida highlighted the importance of dedicated Travel Health Units, which should provide immunization services, health alerts, destination-specific advisories, and documentation, including vaccine certificates, to ensure seamless travel. Special considerations are needed for mass gatherings like Kumbh Mela and destination-specific travellers categories (students, tourists, seafarers, job seekers), requiring tailored vaccination strategies based on the destination, duration, season, activities, and individual health status. Missing vaccination records should be addressed through revaccination or serologic testing where appropriate. Multisectoral collaboration among public health authorities, immigration, tourism sectors, and healthcare providers is essential to improve



vaccination coverage, reduce risks of disease transmission, and enhance travellers preparedness. The session underscored that pre-travel vaccination and health planning are critical not only for individual protection but also for maintaining global health security, especially in the context of increasing international travel and emerging infectious diseases.

Ultimately, vaccination must complement foundational preventive measures like water sanitation and hygiene while supporting safe, responsible, and disease-free travel, reinforcing India's preparedness for travel-related public health challenges.





Session 11: Licensed Vaccines in Children & Adolescents – Pneumococcal and Hexavalent Vaccines

Speaker: Dr. Sanjay Verma, Professor, Department of Pediatrics, Advanced Pediatric Centre, PGIMER, Chandigarh

The session by Dr. Sanjay Verma highlighted significant strides in India's immunization programme through the introduction and expansion of pneumococcal conjugate vaccines (PCV), hexavalent vaccines, typhoid conjugate vaccines (TCV), and upcoming RSV immunizations, addressing critical childhood health challenges. PCV was introduced nationwide under the Universal Immunization Programme (UIP) in 2021 using a 2+1 schedule (6, 14 weeks + booster at 9–12 months), balancing operational feasibility with high efficacy. PCV13 remains most effective against India's prevalent serotypes (6A, 19A), while new formulations like PCV15 and PCV20 are under evaluation for expanded serotype coverage. Evidence shows that PCVs not only protect against invasive pneumococcal disease but also reduce nasopharyngeal carriage, offering indirect protection through herd immunity. Continuous serotype surveillance is essential to optimize vaccine strategies in the context of emerging serotypes like 22F and 33F. Hexavalent vaccines, combining DTP-Hib-HepB-IPV, streamline immunization by reducing the number of injections while providing comprehensive protection. Whole-cell pertussis (wP) formulations are utilized under UIP for their durable immunity despite higher reactogenicity, while acellular pertussis (aP) combinations are often preferred in private practice for their lower side-effect profiles. The transition to Tdap boosters in adolescents and adults ensures continued protection against pertussis across the lifespan, aligning with life-course immunization principles.

The session emphasized maintaining PCV13 in UIP for optimal serotype coverage, prioritizing TCV in endemic areas, and expanding the use of hexavalent vaccines to enhance coverage while reducing injection burden. Integration of RSV immunization will further strengthen India's efforts against major childhood illnesses. These advancements collectively reinforce India's immunization programme, supporting reductions in child morbidity and mortality while underscoring the need for robust implementation, monitoring, and periodic review to expand coverage with newer vaccines.





Session 12: Licensed Vaccines in Children – Typhoid and RSV Vaccines

**Speaker: Dr. Unmesh Upadhyay, Director and Consultant Pediatrician,
Vismay child care hospital, Ahmedabad, India**

The session by Dr. Unmesh Upadhyay highlighted the critical role of Typhoid Conjugate Vaccine (TCV) and Respiratory Syncytial Virus (RSV) prevention strategies in strengthening childhood immunization and reducing early childhood morbidity.

TCV, a 4th-generation vaccine, links the Vi polysaccharide antigen to carrier proteins such as tetanus toxoid or CRM197, inducing a T-cell-dependent immune response with strong IgG memory. Unlike earlier polysaccharide vaccines, TCV is effective in infants under 2 years and allows for booster dosing. WHO and IAP recommend a single intramuscular dose after 6 months of age with catch-up vaccination up to 15 years, especially in typhoid-endemic regions. Indian studies have demonstrated ~84% efficacy, comparable to results from Pakistan (95%) and Malawi (80.7%). While initial protection is robust, antibody levels may wane after 3–5 years, with data indicating reduced efficacy in high-transmission settings, particularly when the primary dose is administered in infancy. As a result, a booster at 4–5 years (school entry) is advisable to extend protection, particularly in regions with a high typhoid burden. Brands available in India include Typbar-TCV, Zyvax-TCV, and TyphiBEV, all showing high immunogenicity and safety profiles, though real-world effectiveness may vary.

RSV, a leading cause of bronchiolitis and pneumonia in infants, contributes to significant hospitalizations in early childhood, yet India lacks comprehensive RSV surveillance. New prevention strategies include Nirsevimab, a long-acting monoclonal antibody, administered as a single intramuscular dose at birth or during RSV season with ~80–90% efficacy in preventing hospitalizations. Additionally, maternal vaccination using RSVPreF (Abrysvo) in the third trimester has shown 70% efficacy against severe RSV lower respiratory tract infections in infants through transplacental antibody transfer. While these are not yet part of India's national immunization schedule, WHO and global guidelines recommend RSV immunization in high-risk infants to reduce severe disease burden.

The session emphasized that early TCV administration with planned boosters and the



phased introduction of RSV immunization strategies can significantly reduce early childhood morbidity and mortality. Integration with India's immunization programme, improved surveillance, and targeted high-risk protection will be critical for achieving sustainable child health outcomes under life-course immunization frameworks.





Session 13: Update on Rabies Vaccine

Speaker: Dr. Omesh Bharti,
Deputy Director Health Services- cum- State Epidemiologist, Himachal Pradesh

Dr. Omesh Bharti underscored rabies as a 100% preventable yet fatal disease, requiring urgent intervention within seven days of exposure to avert death. India accounts for 30% of global rabies deaths, with children constituting 40% of these cases. Despite shifts to affordable intradermal (ID) vaccination and free PEP initiatives, mortality has remained stagnant due to persistent challenges, including inadequate wound care, RIG shortages, and lack of pre-exposure prophylaxis (PrEP) in national immunization programs. Effective rabies prevention hinges on three pillars: thorough wound washing with soap and water for at least 15 minutes, appropriate vaccination, and timely rabies immunoglobulin (RIG) or monoclonal antibody infiltration for Category III exposures. Rabies virus is neurotropic, spreading via nerves (not blood), with no viremia during infection, emphasizing the necessity of local virus neutralization at the wound site. The "Spirit Test" (checking for tingling on alcohol application) can help classify minor abrasions as Category III exposures, ensuring appropriate PEP initiation.

The WHO classifies exposures as Category I (no PEP), Category II (vaccine only), and Category III (vaccine + RIG/monoclonals). India employs ID schedules (0.1 ml at 2 sites over 3 days) or IM schedules (4-dose Essen regimen), with RIG given only once, ideally with the first vaccine dose. For pre-exposure prophylaxis, high-risk groups (veterinarians, animal handlers, travelers) receive two doses (day 0, 7), reducing the need for RIG during subsequent exposures. Notably, there have been no treatment failures when protocols, including wound infiltration with RIG, were followed correctly, as also reflected in the speaker's personal clinical experience. Key challenges include large stray dog populations, financial and logistical barriers to RIG access, and insufficient clinician training in RIG administration and wound management. Dr. Bharti emphasized treating all animal exposures as potentially serious, implementing mandatory wound management, and training healthcare workers comprehensively on rabies PEP and PrEP. The session concluded that rabies deaths are entirely avoidable with correct, timely intervention. Recommendations included scaling up public education, clinician training on RIG



infiltration, and considering PrEP inclusion in India's universal immunization program to advance towards rabies elimination goals under the National Action Plan for Dog Mediated Rabies Elimination (NAPRE).





Session 14: Update on Dengue and Malaria Vaccines

**Speaker: Dr. Harpreet Singh, Associate Professor,
Department of Internal Medicine, PGIMER, Chandigarh**

The session by Dr. Harpreet Singh highlighted the persistent global and national burden of dengue and malaria, emphasizing the critical role of vaccines alongside vector control for sustainable prevention. Dengue, with 390 million infections annually worldwide, remains a significant threat in India, which reported over 2 lakh cases in 2024. Vaccine development for dengue is challenging due to four serotypes and the risk of antibody-dependent enhancement (ADE). Dengvaxia (CYD-TDV), a live attenuated vaccine using a yellow fever backbone, is WHO-recommended only for seropositive individuals aged 9–16 years due to safety concerns in seronegative individuals. QDenga (TAK-003), a newer live-attenuated tetravalent vaccine, demonstrates 61% efficacy against dengue and 84% efficacy against hospitalization with a good safety profile, and is approved in multiple countries, with Indian Phase 3 trials underway. It has shown early protection within three months of the first dose, making it promising for outbreak control and travel-related prophylaxis. Future dengue vaccines under development include mRNA, inactivated, and virus-like particle platforms, aimed at improving safety and serotype coverage.

Malaria, causing 263 million cases and 597,000 deaths globally in 2023, primarily affects children under five in sub-Saharan Africa. Two key vaccines have advanced prevention efforts:

- RTS,S/AS01 (Mosquirix), WHO-approved in 2022, offers 55–60% protection against clinical malaria.
- R21/Matrix-M (Serum Institute of India), approved in 2023, demonstrates 70–75% efficacy with a simplified schedule, making it more operationally feasible for endemic regions.

Both vaccines target the circumsporozoite protein of *Plasmodium falciparum*, and co-administration with routine childhood vaccines (e.g., DTP, Hib, pneumococcal) is under evaluation. Adverse events such as fever and febrile seizures have been reported but typically resolve without long-term effects. India actively participates in global vaccine



trials, including the ongoing Phase 3 QDenga study across 18 states and plans for future R21 integration. The session emphasized that vaccines are not standalone solutions; they must complement vector control, surveillance, community engagement, and chemoprophylaxis to achieve meaningful reductions in morbidity and mortality. Overall, the promising efficacy of QDenga and R21, along with operational learnings from current implementation, underscores India's readiness to integrate these vaccines strategically within its public health system, advancing the goals of dengue and malaria elimination in line with global targets.





Update on HIV/AIDS Vaccines

**Speaker: Dr. Jerome H. Kim, Director General,
International Vaccine Institute, Seoul, Republic of Korea**

The session addressed the formidable scientific challenge of developing an effective HIV vaccine, which remains one of modern medicine's greatest unmet needs despite over four decades of global efforts. HIV's extreme genetic diversity, rapid mutation rate, immune evasion tactics, and integration into host DNA undermine the development of durable vaccine-induced immunity. The virus destroys CD4+ T-cells while establishing latent reservoirs, and high rates of viral recombination generate countless quasi-species within a single host, complicating vaccine design. Multiple vaccine platforms have been explored, including DNA vaccines, viral vectors, protein subunits, and mRNA technologies, but with limited success in achieving robust protection. The RV144 Thai trial remains the only study demonstrating partial efficacy (31–60%), revealing protective antibody responses primarily targeting the V2 loop of the HIV envelope protein gp120, but with waning immunity over time. Recent trials, including Ad26 mosaic vaccines, have failed to show meaningful efficacy in preventing HIV acquisition.

Broadly neutralizing antibodies (bNAbs) such as VRC01 offer promise in blocking diverse HIV strains, but eliciting these through vaccination has proven challenging due to the complexity of stimulating rare precursor B-cells capable of maturing into bNAb-producing cells. Innovative germline-targeting strategies and sequential immunization approaches are being explored to guide B-cell maturation toward bNAb development, providing a potential pathway to effective immunization. Emerging technologies, including mRNA vaccine platforms, are under investigation for their potential to deliver complex antigens with precision, while CMV-based vectors, successful in animal models, are being evaluated for their ability to induce durable, broad immune responses. Monoclonal antibody therapies are also being considered as adjuncts to antiretroviral therapy (ART) to enhance control of viral replication and prevent infection. Key hurdles remain, including the lack of natural protective immunity models, HIV's latency and persistence in reservoirs, and its capacity to evade immune detection. Future HIV vaccine development efforts are focusing on combining innovative delivery platforms, antibody engineering, and



therapeutic vaccination strategies alongside ART to enhance prevention and control.

The session emphasized that while an effective, globally deployable HIV vaccine remains elusive, it is critically necessary to end the HIV epidemic. Continued investment in basic science, clinical trials, and novel immunogen design will be essential to overcome these scientific barriers and achieve durable, scalable HIV prevention.





Session 15: Update on Group A Streptococcus Vaccine

**Speaker: Dr. Vivek Sagar, Additional Professor,
Department of Community Medicine & School of Public Health, PGIMER**

The session by Dr. Vivek Sagar emphasized Group A Streptococcus (GAS) as a critical yet under-recognized global and Indian public health concern, causing over 800 million infections annually, including pharyngitis, severe sepsis, necrotizing fasciitis, and autoimmune complications such as acute rheumatic fever (ARF) and rheumatic heart disease (RHD). GAS contributes to 517,000 deaths annually, with RHD alone accounting for 639,000 deaths globally, particularly affecting socioeconomically disadvantaged children in India, where RHD prevalence ranges between 1–11 per 1,000 children. Despite the availability of benzathine penicillin prophylaxis, challenges in adherence, rising antimicrobial resistance, and the long-term burden of ARF/RHD underscore the urgent need for effective GAS vaccines. However, vaccine development is challenging due to molecular mimicry (risk of autoimmunity from M protein similarity to human tissues), diverse circulating strains, and the lack of suitable animal models. M protein-based vaccines are the most researched, with multivalent formulations such as the 30-valent and 26-valent StreptAvax, MJ8VAX (J8-DT), and StreptInCor demonstrating safety and immunogenicity in Phase 1 trials without triggering autoimmunity. Non-M protein candidates, including Streptolysin O (SLO), SpyCEP, and SpyAD, are also under development, with combination vaccines like Combo4, Combo5, VAX-A1, and TeeVax showing preclinical promise. Reverse vaccinology and structural biology advances have accelerated antigen discovery and vaccine design, with the Strep A Vaccine Global Consortium (SAVAC) playing a pivotal role in establishing surveillance sites in LMICs to inform vaccine trials and deployment.

While most candidates are still in Phase 1 trials, region-specific genomic and epidemiological data are essential for developing vaccines that adequately cover predominant Indian emm types, ensuring relevance and effectiveness in local contexts. The session highlighted opportunities for maternal immunization strategies to prevent early childhood GAS infections and the need for policy prioritization, surveillance, and advocacy to accelerate GAS vaccine development. Dr. Sagar emphasized that



collaborative efforts, including Indian participation in clinical trials and genomic surveillance, are critical for advancing GAS vaccine development, offering a sustainable pathway to reducing the burden of streptococcal infections and associated complications like RHD in India and globally under the WHO's 2024 reaffirmation of GAS as a priority pathogen.





Session 16: Climate Change and Immunization

**Speaker: Dr. Ravindra Khaiwal, Professor of Environment Health,
Department of Community Medicine & School of Public Health, PGIMER**

The session by Dr. Ravindra Khaiwal underscored how climate change is reshaping disease patterns and threatening immunization delivery systems in India and globally. Rising temperatures (0.7°C increase in India over 50 years), erratic rainfall, and extreme weather are expanding vector habitats, increasing dengue transmission by 8–12% per 1°C rise, typhoid risk by 30–45% with precipitation anomalies, and cholera incidence by 2–4 times per 1°C sea surface warming. Diseases like malaria and dengue are moving to higher altitudes (300–700m) and latitudes, pushing vectors into previously cooler regions, including parts of Himachal Pradesh.

Climate change also disrupts vaccine cold chains, with floods, heatwaves, and cyclones causing 14–21 day interruptions in immunization services, while power outages and last-mile delivery challenges compromise the 2–8°C storage essential for vaccines. Freeze-sensitive vaccines (e.g., HepB, HPV, DTP) lose 35–50% potency if frozen, while heat-sensitive vaccines (e.g., OPV, BCG) degrade rapidly above 8°C, increasing wastage. Emerging adaptations include solar-powered cold storage, advanced passive cooling, real-time temperature monitoring, GIS-based logistics tracking, and climate-smart vaccination calendars aligned with seasonal forecasts, improving coverage by 15–25% in vulnerable areas. Integrated surveillance systems linking meteorological and epidemiological data enhance early warning capabilities for climate-sensitive outbreaks, improving prediction accuracy by 30–45%.

Zoonotic spillover risks are amplified by climate-induced habitat disruptions, while air pollution exacerbates respiratory infections like pneumococcal pneumonia and RSV, demanding integrated approaches for respiratory vaccine deployment. The carbon footprint of immunization programs highlights a need for sustainable logistics, with cold chain emissions accounting for 6–8 kg CO₂ per child and outreach delivery adding 10–15 kg CO₂ per session. India's participation in global networks like the Heat Health Information Network and WHO's climate-health initiatives underscore the need for



aligning immunization with SDGs and climate resilience goals. Key actions proposed include risk-based geographic targeting, eco-friendly logistics using renewable energy, outbreak forecasting integration, and investment in next-generation thermostable vaccines.

Dr. Khaiwal emphasized that climate change is rewriting disease geography while straining health infrastructure, requiring proactive, climate-resilient immunization strategies to safeguard hard-won gains. Integrated action across health, environment, and disaster management sectors, backed by policy frameworks and budgetary support, will be essential to maintain and expand immunization coverage in a rapidly changing climate.





Session 17: Leveraging Public-Private Partnership (PPP) to Accelerate Vaccine R&D for LMICs

Speaker: Dr. Tarun Saluja, Head of Clinical Development, International Vaccine Institute, Seoul, Republic of Korea

The session by Dr. Tarun Saluja highlighted the critical role of Public-Private Partnerships (PPPs) in accelerating vaccine research and development (R&D), particularly in low- and middle-income countries (LMICs) like India, which shoulder 90% of the global infectious disease burden while having limited infrastructure for vaccine innovation and delivery. PPPs enable resource pooling, risk-sharing, and equitable vaccine access, bridging gaps between academia, industry, and funding agencies. Typically, academic institutions lead discovery and early-phase research, while industry partners manage Phase II/III trials, manufacturing, and distribution. Successful models include GAVI, which has strengthened global immunization, and the Developing Countries Vaccine Manufacturers Network (DCVMN), whose 40+ members (including India) produce over 80 WHO-prequalified vaccines, supplying 170 countries with essential vaccines against polio, cholera, measles, and COVID-19. Notably, DCVMN members contributed over 60% of global COVID-19 vaccine production, showcasing LMIC capacity to deliver vaccines at scale.

The International Vaccine Institute (IVI), a UN-chartered body, exemplifies effective PPP through Product Development Partnerships (PDPs), advancing vaccines like the oral cholera vaccine (OCV), Vi-DT typhoid conjugate vaccine, and pan-Salmonella vaccines with local manufacturers, ensuring affordability and regional relevance. IVI's cholera vaccine work has led to WHO-prequalified vaccines now used in global stockpiles, illustrating how PPP-led PDP models can develop and deliver vaccines tailored for LMIC needs.

The COVID-19 pandemic catalyzed adaptive and accelerated trial models, overlapping phases, and global collaboration, shortening development timelines while maintaining safety standards. These lessons underscore the need to build local biomanufacturing capacity, enable technology transfer, and align intellectual property policies to strengthen LMIC vaccine ecosystems. Key challenges in LMICs include regulatory barriers, underdeveloped clinical trial infrastructure, limited funding, and the need for community



engagement and political commitment for sustainable PPPs. Expanding local trial capacity is critical for generating context-specific safety and efficacy data, guiding policy, and building public trust in vaccines.

Dr. Saluja emphasized that preparedness for future pandemics requires policies fostering fair, effective collaboration and knowledge-sharing while leveraging the momentum from COVID-19. Long-term commitment across stakeholders is essential for scaling up vaccine development, ensuring LMIC participation in global R&D, and promoting equitable access to life-saving vaccines, thereby strengthening health security under India's immunization and health system goals.





Valedictory

Valedictory Program

Time	Event Description	Faculty
5:00 – 5:05 PM	Welcome Address	Dr. Arun Kumar Aggarwal , Organizing Chairperson, PGIVAC, Professor and Head, DCM & SPH, PGIMER
5:05 – 5:15 PM	Valedictory Address	Guest of Honour Dr. Sanjay Jain , Dean Research, PGIMER
5:15 – 5:55 PM	Certificate Distribution Ceremony	
5:55 - 6:00 PM	Vote of Thanks	Dr. Madhu Gupta , Course Director, PGIVAC, Professor, DCM & SPH, PGIMER
Followed by Group Photo and High Tea		



Valedictory Address

Dr Sanjay Jain, Dean Research, PGIMER, Chandigarh

The Dean (Research), PGIMER highlighted the successful completion of the five-day workshop, recognizing it as one of only three such national-level vaccinology initiatives in India. The Dean commended the Department of Community Medicine and School of Public Health for organizing a course that covered comprehensive aspects of vaccinology, including vaccine development history, immunology, regulatory and ethical considerations, phases of vaccine development, the introduction of new vaccines into India's National Immunization Programme, and updates on current and pipeline vaccines such as RSV, HIV/AIDS, and GAS.

The address emphasized that the course aimed to generate awareness and interest in vaccinology, build participant capacity in vaccine research from development to delivery within LMIC contexts, and strengthen confidence in introducing new vaccines into national immunization programs. The Dean expressed confidence that the course had successfully met these objectives and encouraged participants to apply their learnings to advance vaccine-related research and program implementation in their respective states and institutions. The session concluded with best wishes for the participants' continued contributions to public health and a safe journey home.





Closing Remarks by Dr Arun K Aggarwal, Course Director, PGIVAC

Dr. Arun K. Agarwal, in his closing remarks, expressed pride in the timely and seamless execution of the 4th PGIMER International Vaccinology Course, noting that the event successfully combined rich academic content with practical insights tailored to the needs of India's immunization landscape. He appreciated the Scientific team for curating a comprehensive, structured programme that balanced foundational vaccinology principles with updates on emerging vaccines, regulatory frameworks, and real-world programmatic challenges. Dr. Agarwal highlighted that courses like PGIVAC not only build technical capacity but also foster lifelong professional networks among public health managers, clinicians, researchers, and policymakers across states, facilitating collaborative approaches in addressing immunization challenges. Underscoring the importance of collaboration, Dr. Agarwal reminded participants that true collaboration is built on mutual interest, shared goals, and respect for each other's expertise. He encouraged participants to carry forward the spirit of collaboration experienced during the course into their institutional and field work, actively engaging with stakeholders at local, national, and global levels to improve immunization outcomes. He concluded by reiterating PGIMER's dedication to supporting capacity-building efforts in vaccinology and public health, emphasizing that the collective knowledge and commitment of participants will play a critical role in addressing current and future challenges in vaccine introduction and delivery. Dr. Agarwal extended his best wishes to all delegates for their professional journeys and expressed hope to welcome them again in Chandigarh for future academic collaborations.





All Rounder PGIVACer

Dr. Narayan Santuka was recognized as the **All-Rounder PGIVACer** for his exceptional engagement, consistent participation, and enthusiastic spirit demonstrated throughout **PGIVAC 2025**. His selection for this recognition was based on multiple criteria, including active involvement in all academic sessions, meaningful participation in discussions, timely completion of assigned tasks, and contribution to interactive activities. Dr. Santuka stood out for his punctuality, preparedness, and eagerness to learn, which set a positive example for fellow participants. He not only attended all lectures and workshops with dedication but also shared thoughtful insights and constructive feedback, enriching the overall learning experience for the cohort. His approachable nature and collaborative attitude fostered a spirit of camaraderie among participants, enhancing group activities and discussions. The recognition also reflects the collective appreciation of his peers, as participant voting acknowledged his role as an engaged, dependable, and inspiring colleague. Through his proactive approach, academic diligence, and genuine enthusiasm, Dr. Santuka truly embodied the essence of an all-rounder, making him a deserving recipient of this honor.





Certificate distribution to the participants





Felicitation of Organizers





Vote of Thanks by Dr. Madhu Gupta

Dr. Madhu Gupta delivered the Vote of Thanks on behalf of the organizing team, expressing gratitude to all contributors to the successful completion of the 4th PGIMER International Vaccinology Course (PGIVAC 2025).

She thanked the Chief Guest, Dr. Sanjay Jain, for his inspiring valedictory address, emphasizing the importance of research and evidence-based approaches in vaccinology and public health. She expressed appreciation to the Organizing Chairperson, Dr. Arun Kumar Aggarwal, for his leadership and vision in guiding the department and PGIVAC towards academic excellence.

Dr. Gupta extended sincere thanks to all distinguished speakers, facilitators, and experts for their valuable time and contributions, which enriched the course with high-quality content and practical insights. She acknowledged the enthusiastic participation of delegates from across India, whose active engagement made the course vibrant and impactful.

She expressed gratitude to PGIVAC's partners and collaborators, including NITI Aayog, Gates Foundation, Bharat Biotech, Pfizer, Serum Institute of India, Indian Immunologicals, Panacea Biotech, and GCCPL, for their support in making this academic initiative possible at scale.

A special note of appreciation was given to the PGIVAC organizing team and course coordinators—Dr Adarsh, Nupur, Manjeet, Aprajita, Diksha, Narinder, Shyam, Radhika, Priyanka, Shubham, and Lovepreet—whose tireless efforts over the past seven months ensured the smooth conduct of the course.

In closing, Dr. Gupta encouraged participants to carry forward the spirit of learning, inquiry, and collaboration fostered during PGIVAC into their professional environments, applying the knowledge and connections gained to advance immunization and public health efforts in their regions. She welcomed all participants as part of the PGIVAC Alumni family, emphasizing that their collective journey in advancing vaccinology begins here.



PGIVACers 2025





Annexures



Annexure I

Bio sketches of Resource Faculty



Bio-sketches of Faculty Day 1



Dr. Stanley A Plotkin

Professor Emeritus, *University of Pennsylvania, Philadelphia, USA*

Professor Adjunct, *International Health*

Division Global Disease Epidemiology and Control, Johns Hopkins

Bloomberg School of Public Health, USA

Dr. Stanley A. Plotkin is Emeritus Professor of the University of Pennsylvania, and adjunct Professor of the Johns Hopkins University. Dr. Plotkin has obtained his Doctor of Medicine (M.D.) from the State University of New York. He was a Professor of Paediatrics and Microbiology at the University of Pennsylvania, a Professor of Virology at the Wistar Institute, and served as the Director of Infectious Diseases and Senior Physician at the Children's Hospital of Philadelphia, and Medical Director of Sanofi. Dr. Stanley A. Plotkin has been instrumental in the development of several paediatric vaccines, including the globally used rubella vaccine and the recently licensed pentavalent rotavirus vaccine. Additionally, he has contributed to the creation of vaccines for anthrax, oral polio, rabies, varicella, and cytomegalovirus. Dr. Plotkin developed the RA27/3 strain of the rubella virus, leading to the creation of the rubella vaccine, which has been instrumental in preventing congenital rubella syndrome worldwide. He has been involved in the development of several other vaccines, including those for rotavirus, anthrax, oral polio, rabies, varicella, and cytomegalovirus. Dr. Plotkin has received numerous accolades, such as the Albert B. Sabin Gold Medal Award (2002), the Maxwell Finland Award for Scientific Achievement (2009), and the French Legion of Honor. Dr. Stanley A. Plotkin is an esteemed member of several prestigious scientific institutions. He was elected to the National Academy of Medicine in 2005, the French Academy of Medicine in 2007, and the French National Academy of Pharmacy. Dr. Stanley A. Plotkin has authored nearly 900 scholarly articles and edited eight editions of the authoritative textbook *Vaccines*. As the principal of Vaxconsult, LLC, he serves as a consultant to vaccine manufacturers, biotechnology firms, and nonprofit research organizations. These honours reflect his significant contributions to the field of vaccinology and public health.



Dr. Nirmal Kumar Ganguly

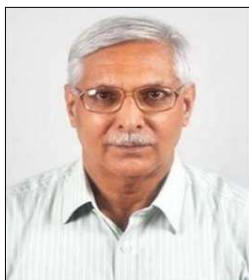
Former Director General

Indian Council of Medical Research

Senior Scientific Advisor *Global Health Strategies,*

President, *Apollo Hospitals Educational & Research Foundation*

Prof. N. K. Ganguly is a distinguished Indian microbiologist and global health expert, widely recognized for his contributions to biomedical research, public health policy, and international scientific collaboration. He holds an MBBS from R. G. Kar Medical College, Calcutta University, and an MD in Microbiology from PGIMER, Chandigarh. He served as the Director General of the Indian Council of Medical Research (ICMR) and has held leadership roles in over sixteen scientific societies, including as President of five international bodies. A prolific academician, Prof. Ganguly has published more than 800 scientific papers and mentored 158 Ph.D. scholars. He was instrumental in developing India's National Vaccine Policy and has contributed significantly to global health initiatives through his involvement with the WHO Global Vaccine Research Forum, the Asian AIDS Vaccine Network, and the International Vaccine Institute (IVI), Seoul. In 2025, he was appointed Chairman of the Domain Expert Group under DG-CSIR for a national mission on microbial dysbiosis and joined Next Frontier Advisors as an Advisory Group Expert Member. Recipient of numerous honours, including the Padma Bhushan (2008), Prof. Ganguly has received nine international and 113 national awards. His legacy continues to shape the fields of infectious diseases, vaccine research, and global health policy.



Dr. Rajesh Kumar

Senior Consultant, *Indian Council of Medical Research, New Delhi*

Director, *Health Equity Action Research Foundation, Chandigarh*

Adjunct Faculty, *University Institute of Public Health Sciences, MDU, Rohtak*

Former Dean Academics, Prof and Head, *DCM & SPH, PGIMER, Chandigarh*

Dr. Rajesh Kumar is an accomplished public health expert with over four decades of experience in academic leadership, research, and health system strengthening. He completed his Bachelor of Medicine and Bachelor of Surgery from Medical College, Rohtak in 1981, followed by an MD in Social and Preventive Medicine from the same institution in 1984. He later pursued a Master of Science in Epidemiology from the London School of Hygiene & Tropical Medicine in 1992. Dr. Kumar's career spans from early clinical and academic positions at Medical College, Rohtak and PGIMER, Chandigarh. Eventually he rose to the position of Professor and Head of Community Medicine at PGIMER. He was Dean (Academic) at PGIMER from 2017 to 2019. He also held key roles, such as Executive Director of the State Health Systems Resource Centre, Punjab, and Technical Advisor to the Health Systems Transformation Platform, New Delhi. He worked with WHO on multiple assignments as a Temporary International Professional between 2007 and 2012. His academic contributions are substantial, having published 476 scientific papers and book chapters with h-index of 77 and over 37,000 citations. As visionary academic leader, he was instrumental in launching MD (Community Medicine) in 1996, establishing a School of Public Health in 2004, and initiating MPH and BPH programs at PGIMER. He also conceptualized fellowship programs in health economics, occupational and environmental health, and short courses in public health informatics. Dr. Kumar has received numerous prestigious awards. His advisory work includes membership in national steering committees on NCD monitoring, and public health standards and chairing committees on rural health research and TB certification. His innovations include development of verbal autopsy tools, HIV surveillance, designing digital health systems for primary care, evaluation of the National Health Mission and health equity-related policies. Dr. Rajesh Kumar's life work reflects a deep and sustained contribution to improving public health in India and beyond.



Dr. Jayaprakash Muliyl
Retired Professor and Head

Department of Community Health, Academic Officer, Christian Medical College, Vellore

Dr. Jayaprakash Muliyl completed his undergraduate studies in Medicine and Postgraduate studies in Community Medicine from Christian Medical College, Vellore and joined the faculty of Community Health there. CMC has a Community Health and Development (CHA D) programme with a secondary care hospital as the base hospital covering a population of >3,00,000. Dr. Jayaprakash Muliyl was specifically in charge of the Leprosy control programme. In 1985 he went to John Hopkins University at Baltimore from where he completed MPH & Dr PH in Epidemiology. He became a professor of Community Medicine in 1990. The first formal course in Epidemiology in India was started at CMC, Vellore in 1992. From 2002 he served a 5-year term as the Principal of Christian Medical College, Vellore. He is closely working with the Government of India on various health projects and was also a member of the scientific advisory or strategic committee of several national and international institutions. Prof. Muliyl have published over 175 papers in international and national journals



Dr. Arun Kumar Aggarwal

Professor and Head

*Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh*

Dr. Arun Kumar Aggarwal is a renowned public health expert with over 30 years of experience in community medicine. He is currently Professor and Head of the Department of Community Medicine and School of Public Health at PGIMER, Chandigarh. He holds an MD in Preventive and Social Medicine and a DNB in Hospital Administration. Over the years, Dr. Aggarwal has held key administrative roles at PGIMER, including Additional Medical Superintendent, Officiating Financial Advisor, and Deputy Director of Administration. He has served on numerous institutional, state, and national committees and was a member of the Governing Board of the National Health Systems Resource Centre and the Technical Advisory Board of the Public Health Foundation of India. His core interests include implementation research, health systems strengthening, and quality of care. He played a pivotal role in developing India's national guidelines for Child Death Reviews and led training programs nationally and internationally, including introducing IMNCI guidelines in the Maldives. Dr. Aggarwal founded the Association for Health Systems Analysis and Strengthening (AHSAS) and is the founding Chief Editor of the *International Journal of Health Systems and Implementation Research*. He has authored a book on Health Management published by Oxford University Press and has over 200 publications, with an H-index of 33. He has received numerous honors, including Fellowships from the Indian Association of Preventive and Social Medicine (FIAPSM), Indian Public Health Association (FIPHA), National Academy of Medical Sciences (FNAMS), and Royal College of Physicians (FRCP). He was also awarded a WHO Fellowship on Health Care Financing at Chulalongkorn University, Bangkok, and an Australian Leadership Award Fellowship at Sydney University. Dr. Aggarwal's leadership and contributions continue to shape public health systems in India and globally.



Dr. Ananda Bandyopadhyay
Deputy Director Polio
Gates Foundation, U.S.A

Dr. Ananda Bandyopadhyay grew up in Kolkata, India and completed his medical graduation from Calcutta National Medical College & Hospital (2005) with a gold medal and several honors certificates. He received his Master of Public Health (MPH) degree in Global Health from Harvard T.H. Chan School of Public Health (2010). In his professional career spanning more than two decades, Dr. Ananda Bandyopadhyay worked in diverse settings and led disease control initiatives across the globe. He worked as a Surveillance Medical Officer with National Polio Surveillance Project, WHO and contributed to India's historic polio elimination effort and measles surveillance initiatives. Subsequently, Ananda coordinated public health response activities as a medical epidemiologist at Rhode Island State Department of Health in the United States. In his current role as a Deputy Director at the Gates Foundation Ananda has been providing leadership and direction to global research initiatives aimed at achieving and sustaining polio eradication. Ananda has led numerous research initiatives and clinical studies to generate data on vaccine choices and directly contributed to global policy formulation on polio immunization. In recent years, Ananda played a pivotal role in the accelerated development and rollout of novel oral polio vaccine type-2 (nOPV2) – the first vaccine that received WHO Emergency Use Listing (EUL) authorization, paving the way for other life-saving vaccines to use the same regulatory pathway during the COVID-19 pandemic and beyond. Dr. Ananda is associated with advanced degree programs in vaccinology and global health at teaching venues across the world as a guest faculty and is passionate about training and nurturing the next generation of public health professionals to take on the pressing global health challenges. He has published nearly 100 peer-reviewed articles in leading medical journals, and written book chapters on polio. He has received many accolades in his career, including the highest recognition from the Harvard School of Public Health - the award of merit, and more recently the prestigious Park Man Hoon award from International Vaccine Institute for his contributions to global health and vaccine development.



Dr. Shivani Gupta
Surveillance Medical Officer
World Health Organization

Dr. Shivani Gupta is a seasoned public health epidemiologist with over 22 years of experience in immunization and disease surveillance. Currently serving as a Surveillance Medical Officer with the WHO-National Public Health Surveillance Project (formerly Polio Surveillance), she works in close collaboration with the State Governments of Haryana and Chandigarh UT to strengthen routine immunization and public health systems. Her expertise spans key areas including the Global Polio Eradication Initiative, implementation of the Polio Endgame Strategy, Measles-Rubella Elimination (SEAR MRE goal 2026), and New Vaccine Introduction (NVI) such as IPV and Typhoid Conjugate Vaccine. She has led initiatives in case-based surveillance, outbreak preparedness, and lab containment exercises. Dr. Gupta has provided technical support for AEFI surveillance, COVID-19 response and vaccination, and implementation of Sustainable Development Goal 3 (Good Health and Well-being) strategies. She has led operational research projects in partnership with PGIMER, including polio virus excretion in immunodeficient individuals and the first environmental surveillance for SARS-CoV-2 in wastewater in Chandigarh. She is a US CDC-WHO-trained epidemiologist and a mentor for the FETP program. Recognized with the Haryana State Award (2020) and a state citation for her outstanding contributions, Dr. Gupta serves on multiple high-level state immunization and advisory committees.



Dr. Madhu Gupta

Professor

*Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh*

Dr. Madhu Gupta is a Professor of Community Medicine in Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India. She graduated as a Bachelor of Medicine and Bachelor of Surgery (MBBS), and post graduated as a Doctor of Medicine (MD in Community Medicine) from Indira Gandhi Medical College, Shimla, Himachal Pradesh, India. She did her PhD work at the School of Public Health and Primary Care (CAPHRI), Maastricht University, The Netherlands, on ascertaining 'Effectiveness of multiple strategy intervention to reduce maternal and child health inequalities in Haryana', in 2016. She is a trained vaccinologist, having completed IVI vaccinology course, Seoul, South Korea, (2011), CHF-INCLIN ADVAC (2016), and the prestigious ADVAC course at Les Pensieres Center for Global Health, France (2024). She has been working in the field of vaccinology for nearly 17 years and experience of conducting 17 vaccine trials (Phase I, II, III, IV vaccine trials). She was a member of the sub-committee of maternal immunization under the National Technical Advisory Group on Immunization in India, a member of the State Technical Advisory Group on Immunization (STAGI), Haryana, State Expert Committee on Adverse Events Following Immunization in Haryana, Data safety and monitoring board at PGIMER, Chandigarh, and Chairperson of Covid-19 Vaccination Committee, PGIMER. She was appointed as an advisory board member of COVID-19 Asia Pacific Regional Advisory, Janssen Asia Pacific, 2021, at the international level. She chaired a national committee on Adult Immunization in India under the banner of the Indian Association of Preventive and Social Medicine (*IAPSM*). *She conducts* a one-week national vaccinology course, which is known as 'PGI's Vaccinology Course (*PGIVAC*)' in India. She has published more than 200 publications and out of which nearly 50 specifically focused on vaccines related research in reputed national and international journals of high impact factor. Two of such publications are published in New England Journal of Medicine on estimating the burden of typhoid and assessing the safety of rotavirus vaccine with intussusception, respectively.



Dr. Kapil Goel

Associate Professor

*Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh*

Dr. Kapil Goel is currently working as Associate Professor of Epidemiology at Department of Community Medicine & School of Public Health, PGIMER, Chandigarh. He is graduated from KMC Mangalore (1997-2003). He is specialized in Epidemiology field. He holds a master's degree (MD) in community medicine from Manipal University, India (2005-2008) and graduated from the India Epidemic Intelligence Service (EIS), National Centre for Disease Control, India, in collaboration with the Centers of Disease Control and Prevention, USA (2012-2014). He has over 20 years of experience in implementing public health programs. His areas of interest are epidemiology of communicable and non-communicable diseases, infectious diseases, public health emergencies including outbreaks and disaster management, disease surveillance, COVID-19, vaccinology, maternal and child health, data analysis and biostatistics. He holds life memberships of prestigious associations like IAPSM, IPHA, EFI, IEA, ISMOCD, IAAH, ISAI etc. He is a Fellow of Academy of General Education. He has a rich experience of working with top international organizations like WHO, UNICEF and CDC. He holds more than 85 scientific publications in high impact journals of national and international repute. He has more than 30 research projects on his name as PI or Co-PI. He is faculty and mentor to many prestigious programs like India EIS, WHO-AEP and American Thoracic Society MECOR program.



Dr. Prasad Suryakant Kulkarni

Executive Director

Serum Institute of India, Pune

Dr. Prasad S. Kulkarni is an accomplished clinical pharmacologist and a well-known vaccine expert, currently serving as the Executive Director of Serum Institute of India Pvt. Ltd. (SIIPL), the world's largest vaccine manufacturer. He earned his MBBS and MD in Clinical Pharmacology from B.J. Medical College, Pune, and holds prestigious fellowships from the American College of Clinical Pharmacology (FCP) and the Royal College of Physicians, London (FRCP). Since joining SIIPL in 2000, Dr. Kulkarni has played a pivotal role in the clinical development, medical advisory, and pharmacovigilance of numerous vaccines and biologics, many of which are now widely used around the world. His significant contributions include the development of COVISHIELD and COVOVAX vaccines during the COVID-19 pandemic. He has authored over 85 publications in top-tier journals such as *The New England Journal of Medicine*, *The Lancet*, and *The Lancet Infectious Diseases*, and has delivered lectures at various national and international platforms. A dedicated educator, Dr. Kulkarni has been a core faculty member of the Indian Vaccinology Course (INDVAC) at Christian Medical College, Vellore, since 2010. He also serves as a peer reviewer for leading international journals and has mentored numerous students in clinical research.



Bio-sketches of Faculty

Day 2



Dr. Sanjay Verma

Professor

Advanced Pediatric Centre, PGIMER, Chandigarh

Dr. Sanjay Verma is the Chief of Pediatric Infectious Diseases at PGIMER, Chandigarh, and has been with the institute since 2008. With over 20 years of experience, he specializes in managing infectious diseases in children, with a key focus on vaccinology and the epidemiology of vaccine-preventable diseases. He is a trained vaccinologist, having completed INDVAC (2011), CHF-INCLIN ADVAC (2016), and the prestigious ADVAC course at Les Pensieres Center for Global Health, France (2019). He received the ESPID Mauriex Foundation Fellowship (2019) and the RCPCH Visiting Fellowship (2014), which included training at the Royal Children's Hospital, Bristol, UK. He also serves as an overseas examiner for the RCPCH, UK. Dr. Verma has actively contributed to academic collaborations with institutions in India and abroad, including the Mayo Clinic, USA. He was a member of the Indian Academy of Pediatrics Advisory Committee on Vaccines and Immunization Practices (ACVIP) for 2020–2021 and played a key role in the COVID-19 vaccination drive at PGIMER. He is part of state NTAGIs for Chandigarh, Punjab, and Haryana. His research focuses on vaccine-preventable diseases such as typhoid, pertussis, and tuberculosis. He has led several sero-epidemiological studies and serves as the site principal investigator for ICMR's Congenital Rubella Syndrome Surveillance and typhoid surveillance projects. Dr. Verma has published 171 articles in national and international journals, contributed 24 book chapters, and presented 43 abstracts at conferences. He has guided 20 MD theses, 1 PhD, 2 MSc, and 1 BSc student and examined for various universities. He has delivered 62 guest lectures, chaired scientific sessions, and served on the editorial boards of *Indian Pediatrics* and the *Journal of Tuberculosis and Other Mycobacterial Diseases*.



Dr. Biman Saikia

Professor and Head

Department of Immunopathology, PGIMER Chandigarh

Dr. Biman Saikia is a distinguished physician-scientist specializing in immunopathology, with a career spanning over two decades. He obtained his MBBS from Assam Medical College, Dibrugarh (1992), and completed his MD in Pathology from PGIMER, Chandigarh (1997). He joined the faculty at PGIMER in 2002 and currently serves as Professor and Head of the Department of Immunopathology, and Head of the Department of Telemedicine. Dr. Saikia's research focuses on Inborn Errors of Immunity (IEI), particularly Hyper-IgE Syndrome and immune mechanisms of transplant rejection. He played a pivotal role in establishing the Centre for Advanced Research in Primary Immunodeficiency Diseases at PGIMER. He has mentored 7 PhD and 8 MD scholars and has authored over 100 scientific publications and 9 book chapters. He is a founder member and past President of the Indian Society for Primary Immune Deficiency (ISPID), Joint Secretary of ISHI, Vice President of SLI, and Secretary of the Telemedicine Society of India, Chandigarh Chapter. In addition to his academic pursuits, Dr. Saikia is also a passionate painter, singer, and YouTuber, exemplifying a rare blend of scientific excellence and artistic expression



Dr. Ritu Aggarwal

Professor

Department of Immunology, PGIMER Chandigarh

Dr. Ritu Aggarwal is a senior academican and clinician, serving as a Professor in the Department of Immunopathology at PGIMER, Chandigarh, for over a decade. Trained as a pathologist, she combines patient care with advanced research in immunogenetics, human papillomavirus (HPV), cervical cancer, and pediatric tumors. She received specialized training in immunogenetics at an ASHI-accredited laboratory at the University of Calgary, Canada. In 2009, she was awarded membership in the National Academy of Medicine. In 2012, she received an ICMR fellowship to pursue training in proteomics and bioinformatics at the Institute of Bioinformatics, Bangalore. Dr. Aggarwal has guided numerous MD and PhD students and served as co-guide for several DM and MCh theses. She has successfully led and received grants from ICMR, DBT, CSIR, and DHR. Notably, she was the Principal Investigator of a collaborative Indo-Swedish project with the Karolinska Institute on CNS infections in pediatric patients, establishing a high-throughput Luminex facility at PGIMER. Her research on HPV and infectious disease immunology has led to several original publications and national recognition. She has presented award-winning work at major conferences, including studies on HPV in retinoblastoma, herpes simplex virus in pediatric oncology patients, and Toll-like receptor transcriptomics in cervical cancer and bacterial meningitis. Dr. Aggarwal has authored over 70 peer-reviewed publications in reputed national and international journals and continues to contribute significantly to the field of immunopathology and translational research in pediatric and infectious diseases.



Dr. Vipin Vashishtha

Director and Consultant Pediatrician

Mangla Hospital & Research Centre, Bijnor, UP

Dr. Vipin Vashishtha is a distinguished pediatrician and director of Mangla Hospital & Research Center, Bijnor, since 1992. A Fellow of the Indian Academy of Pediatrics (FIAP), he has made outstanding contributions to pediatric care, immunization, and public health. He served as Co-chair and Convener of the IAP Immunization Committee (2011–15, 2016–17), and was actively involved in India's polio eradication efforts through IAP and collaborations with WHO, UNICEF, and the Government of India. Dr. Vashishtha has authored over 250 publications in indexed journals, contributed 70 chapters to books, and edited 15 authoritative titles including the IAP Textbook of Vaccines and a comprehensive book on COVID-19 vaccines. He is an Associate Editor of Human Vaccines & Immunotherapeutics and on editorial boards of journals like Expert Review of Vaccines. His research contributions include studies on rotavirus, tuberculosis, childhood meningitis, and a landmark investigation of acute encephalopathy outbreaks in North India, resulting in the recognition of Acute HME Syndrome. An internationally recognized vaccinologist, he received the prestigious ADVAC Fellowship (France, 2008) and the Anilendra Varshney Memorial Gold Medal. He regularly teaches vaccinology courses (ADVAC, INDVAC, IAPVAC) and contributes to WHO's Vaccine Safety Net. His advocacy has been pivotal in raising awareness on pneumonia, breastfeeding, vaccine safety, and public health preparedness. Through his quarterly publication Pediascene and extensive involvement in policy and community-level work, Dr. Vashishtha continues to shape India's child health and immunization landscape.



Adam Finn

Professor of Pediatrics

Bristol Medical School, U.K.

Professor Adam Finn is a leading figure in paediatric infectious diseases and vaccinology. He serves as Professor of Paediatrics at the University of Bristol and Honorary Consultant in Paediatric Infectious Diseases and Immunology at the Bristol Royal Hospital for Children. He leads the Bristol Vaccine Centre and the Bristol University COVID-19 Emergency Research (UNCOVER) group. Internationally, he served as Chairman of the WHO European Technical Advisory Group of Experts (ETAGE) on Immunization from 2011 to 2022 and has been a member of the WHO SAGE working group on COVID-19 vaccines. He was also a longstanding member of the UK Joint Committee on Vaccination and Immunisation (JCVI) until 2024. Professor Finn earned his PhD in Immunology at the Institute of Child Health, Great Ormond Street, London, and began his academic career at the University of Sheffield in 1992, where he established research on mucosal immune responses to paediatric conjugate vaccines and pneumococcal disease pathogenesis. He joined the University of Bristol in 2001, where he currently serves as Theme Leader for Infection & Immunity. He held the role of Clinical Research Lead for the NIHR West of England Clinical Research Network until 2022. His research focuses on mucosal immunity, indirect effects of vaccines, disease burden estimation, and vaccine effectiveness. He leads numerous paediatric clinical trials and supports the development of novel virus-like particle vaccines. Professor Finn has published over 270 peer-reviewed papers and served as President of the European Society for Paediatric Infectious Diseases (ESPID) from 2015 to 2019. His work continues to shape global vaccine policy and advance child health research.



Dr. Vikas Suri

Professor

*Department of Internal Medicine
PGIMER, Chandigarh*

Dr. Vikas Suri is a Professor in the Department of Internal Medicine at the Post Graduate Institute of Medical Education and Research (PGIMER) in Chandigarh, India. He is recognized among the top internal medicine specialists at PGIMER. Dr. Suri completed his MBBS from Dayanand Medical College and Hospital, Ludhiana, affiliated with Panjab University, Chandigarh, between 1991 and 1996. He pursued his MD in Medicine under Baba Farid University of Health Sciences, Faridkot. In March 2003, he obtained the Diplomate of National Board (Medicine) from the National Board of Examination, Delhi. He is a life member of several national medical societies, including The Association of Physicians of India, the Hypertension Society of India, and the Indian Society of Haematology and Transfusion Medicine. Internationally, he is associated with the Infectious Disease Society of America, the International Society on Thrombosis and Haemostasis, and the International Society for Infectious Diseases. Dr. Suri has also been a governing council member of the Academic College of Emergency Experts in India and a special invitee member of the national executive for the INDUS EM Summit 2011 held in New Delhi. Throughout his career, Dr. Suri has received numerous awards and fellowships. Notably, he was awarded the Commonwealth Fellowship in Infectious Diseases for the year 2015–2016 and successfully completed the fellowship under the mentorship of Dr. Matthias Schmid at the Royal Victoria Infirmary, Newcastle Upon Tyne, United Kingdom, from November 2016 to April 2017. In 2018, he was conferred the Fellow of the Indian College of Physicians (FICP) award during APICON 2018 in Bangalore. Dr. Suri has contributed to various research publications in the field of internal medicine. His notable works include studies on lupus myocarditis, osseous sarcoidosis with lytic lesions in the skull, and acute febrile encephalopathy in adults from Northwest India. He has also been involved in research on imaging techniques in adult patients with acute febrile encephalopathy.



Dr. Rimpi Singla

Additional Professor

Department of Obstetrics and Gynecology, PGIMER, Chandigarh

Dr. Rimpi Singla is a distinguished academic and clinician with over a decade of experience in Obstetrics and Gynaecology. She completed her MBBS from University College of Medical Sciences and GTB Hospital, Delhi, and pursued her MD from Maulana Azad Medical College and LNJP Hospital, Delhi. Her core areas of expertise include colposcopy, preventive oncology, micronutrient management in pregnancy, hypertension in pregnancy, antibiotic stewardship, and vaccination in women. She currently serves on the Executive Committees of both AOGIN-India and the Indian Society of Colposcopy and Cervical Pathology (ISCCP), and is an accredited ISCCP Colposcopy Trainer since October 2022. She is also an annual member of the American Society of Clinical Oncology (ASCO). Dr. Singla has authored over 50 scientific publications in reputed national and international journals and has contributed chapters to leading textbooks. She was recently honoured with the Best Paper Award at the 36th AICC-RCOG Annual Conference (2023) and the First Prize in the Senior Category of the Women's Researchers Award by FOGSI (2024) for her work on the development of the SAHELI device. She is certified in colposcopy by IFCPC and IARC, reflecting her commitment to advancing women's health.



Dr. Harpreet Singh
Associate Professor

Department of Internal Medicine, PGIMER, Chandigarh

Dr. Harpreet Singh is currently serving as Associate Professor in the Division of Clinical Infectious Diseases, Department of Internal Medicine at the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. His areas of clinical and academic interest include infectious diseases with a focus on tropical infections, opportunistic infections in HIV, and adult vaccination. Dr. Singh has developed a special interest in the surveillance, diagnosis, and management of tropical diseases, particularly dengue fever. He has been an integral part of several disease surveillance programs and national research initiatives addressing vector-borne diseases. He also served on the expert committee that developed the consensus statement for the management of dengue in ICU settings under the aegis of the Indian Society of Critical Care Medicine (ISCCM). With over 60 publications in reputed national and international journals, Dr. Singh has made significant contributions to the field of infectious diseases. His academic work has focused on the clinical spectrum, diagnostic challenges, and therapeutic strategies related to tropical infections and emerging pathogens, particularly in immunocompromised populations. Dr. Singh continues to pursue research in tropical infections and neglected tropical diseases, aiming to address the public health burden of these conditions through evidence-based approaches. His future research endeavors are aligned with advancing understanding of disease epidemiology, improving diagnostic modalities, and formulating effective treatment protocols in resource-limited setting.



Dr. Vishal Guglani

Professor and Head

Department of Paediatrics, GMCH 32, Chandigarh

Dr. Vishal Guglani is Professor and Head of the Department of Paediatrics at Government Medical College & Hospital (GMCH), Sector 32, Chandigarh. With over 25 years of experience in paediatric medicine, education, and research, he is recognized for his leadership in advancing paediatric healthcare services and academic excellence. Dr. Guglani completed his MBBS from Maulana Azad Medical College, University of Delhi, in 1994, followed by an MD in Paediatrics from Vardhman Mahavir Medical College & Safdarjung Hospital, Delhi, in 2000. He continued his training as a Senior Resident until 2003, laying the groundwork for a distinguished academic and clinical career. At GMCH-32, Dr. Guglani has been pivotal in strengthening paediatric services, including neonatology, paediatric endocrinology, adolescent medicine, and general paediatrics. The department under his leadership houses a neonatal intensive care unit (NICU) and a human milk bank, providing comprehensive, evidence-based care for infants and children. Dr. Guglani has published over 72 scientific papers in reputed national and international journals, with research interests spanning paediatric endocrinology, adolescent health, and general paediatrics. He has served as Principal Investigator and Co-Investigator in various research projects, furthering the scope of paediatric research and innovation. He was honoured with an Award of Appreciation and Recognition by the Indian Medical Association (IMA) Chandigarh and the Rotary Club on July 1, 2023, for his outstanding service and dedication to the field. His contributions continue to influence paediatric care, education, and policy at regional and national levels.



Dr. Deepak Polpakara

Senior Team Lead-AEFI

*Immunization Technical Support Unit
(JSI-MOHFW)*

Dr. Deepak Polpakara is a physician with a Master's degree in Public Health and over 22 years of experience in public health, with specialization in vaccine safety surveillance, polio eradication, and routine immunization. His expertise spans across disease surveillance, Adverse Events Following Immunization (AEFI) surveillance, pharmacovigilance, and implementation of quality management systems within immunization programs. Since 2017, Dr. Polpakara has been leading India's AEFI Secretariat as Senior Team Lead. Under his leadership, the national AEFI surveillance system transitioned from an email-based model to an electronic software-based reporting and monitoring platform. His efforts have led to the institutionalization of electronic recording of minor AEFIs, establishment of a signal management system for vaccines, and the rollout of a robust quality management framework across states. He introduced key innovations such as adrenaline-equipped anaphylaxis kits for frontline workers and the transition from paracetamol tablets to syrup formulations at immunization sessions, both now being scaled in other countries. He led the development of the 2024 National AEFI Surveillance Operational Guidelines. As a National Consultant for Immunization Trainings for UNICEF at NIHF, he organized and evaluated large-scale immunization training programs and contributed to updating national training modules. He also played a pivotal role in setting up the National Cold Chain and Vaccine Management Resource Centre and led India's first Effective Vaccine Management (EVM) assessment in 2012. Dr. Polpakara has represented India in international vaccine safety meetings and is an alumnus of the Advanced Vaccinology Course (ADVAC), Annecy, France (2015). He has authored chapters and publications on AEFI surveillance in national and international forums.



Dr. Madhava Ram Balakrishnan
Medical Officer-Pharmacovigilance
WHO-HQ, Geneva

Dr. Madhava Ram Balakrishnan is a global health expert and leading vaccine safety specialist currently serving as Medical Officer at the World Health Organization (WHO) Headquarters, Geneva. With over 30 years of experience in global public health, Dr. Balakrishnan has dedicated his career to advancing vaccine safety, strengthening health systems, and fostering public trust in immunization programs. At WHO, he leads global initiatives in vaccine pharmacovigilance, having developed key frameworks such as the Global Vaccine Safety Blueprint and WHO's causality assessment methodology. He has played a central role in managing vaccine safety crises in diverse settings, from Sri Lanka to Brazil, and coordinated the global safety response during the COVID-19 pandemic. He also helped design surveillance tools like VAEIMS and VigiMobile, which are now integral to global vaccine safety monitoring. Prior to his role at WHO Geneva, Dr. Balakrishnan served at WHO's South-East Asia Regional Office and WHO India, where he was instrumental in supporting polio eradication efforts and establishing one of the world's largest acute flaccid paralysis (AFP) surveillance networks. Dr. Balakrishnan holds an MD in Community Health from Christian Medical College, Vellore, a DNB in Social and Preventive Medicine, and formal training in biostatistics and disaster preparedness. He has published in high-impact journals including *Vaccine*, *The Lancet*, and *BMJ Global Health*.



Dr. Manjeet Singh
District Immunization officer cum
District Family Welfare Officer, Chandigarh

Dr. Manjeet Singh serves as the District Immunization Officer-cum-District Family Welfare Officer under the Chandigarh Administration. He oversees a comprehensive portfolio that includes Immunization, Adverse Events Following Immunization (AEFI) surveillance, Vaccine-Preventable Disease (VPD) surveillance, cold chain management, maternal and child health, family planning, PC-PNDT program, surrogacy regulation, and clinical establishment oversight in the Union Territory of Chandigarh. Dr. Singh has been widely recognized for his leadership and innovation in public health. He received the State Award for Meritorious Services during the COVID-19 Crisis (2021) and the National Award for Achievements in COVID-19 Vaccination (2022). His exceptional contribution during the pandemic also earned him a National Appreciation (2023) and a commendation from the Parliamentary Standing Committee on Health and Family Welfare (2023). Additionally, he has been honored with the SKOCH Awards for Innovation in Immunization and Oxygen Management (2023) and the State Award for Commitment to Healthcare in Chandigarh (2025). Under his leadership, Chandigarh consistently earned the title of "Excellent Performing State" in AEFI Surveillance from 2022 to 2025 and achieved NQAS eligibility in the same domain. Dr. Singh's contributions to academic and policy literature include co-authorship in the National Coffee Table Book "OXYGEN – An Initiative for Hope," articles in JPMER, and entries in India Immunization Update, showcasing Chandigarh's best practices. He is also involved in clinical research as a Co-Investigator in studies on the Hexavalent vaccine and the impact of influenza and pneumococcal vaccination on elderly mortality and hospitalization. Dr. Manjeet Singh continues to be a pillar of public health leadership in India, driving innovation and excellence in immunization and healthcare systems.



Dr. Manmeet Kaur

Former Professor, DCMSPH, PGIMER, Chandigarh

Adjunct Faculty, UIPHS, Maharshi Dayanand university, Rohtak

Dr. Manmeet Kaur is a distinguished social scientist whose career in public health and academia spans over two decades, marked by a steadfast commitment to systemic change and health equity. As an Adjunct Faculty member at the University Institute of Public Health Sciences, Maharshi Dayanand University, Rohtak, she mentors emerging public health professionals, preparing them to lead transformative initiatives. Her professional journey includes pivotal roles such as Professor of Health Promotion at PGIMER Chandigarh, where she emphasized advocacy, evidence-based interventions, and community engagement. Holding honorary fellowships at The George Institute for Global Health, Australia, Manmeet has contributed to international research on health promotion and policy effectiveness. Manmeet's expertise extends across continents and institutions. She served as a Consultant for Process Change at the European Commission, enhancing health program efficiency, and managed reproductive health initiatives at Haryana's Directorate of Health Services. Her technical coordination at CARE INDIA and contributions to the United Nations Population Fund further demonstrate her leadership in grassroots health programs. Her research has directly influenced national strategies, including projects on stunting reduction funded by Gates Ventures and an ICMR-supported randomized control trial on HIV testing behaviour. She has also contributed critical policy assessments such as the National Multi-sectoral Action Plan for NCDs in collaboration with WHO and the Ministry of Health. With over 150 publications, a book, and multiple chapters, Manmeet's academic output is substantial. Recognized by WHO and The George Institute through prestigious fellowships, she continues to advance capacity building and health system strengthening, forging a lasting legacy in public health.



Bio-sketches of Faculty

Day 3



Dr. Samir Malhotra

Professor and Head

Department of pharmacology, PGIMER, Chandigarh

Dr. Samir Malhotra is a distinguished academic and clinician in the field of Clinical Pharmacology, currently serving as Professor in the Department of Pharmacology at the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India. He holds an MD in Pharmacology from DMC Ludhiana and a DM in Clinical Pharmacology from PGIMER. He is also a Fellow of the American College of Clinical Pharmacology (FCP, 2004), underscoring his international recognition in the field. With over two decades of post-doctoral teaching and research experience, Dr. Malhotra has made significant contributions to medical education, pharmacological research, and policy development. His academic career at PGIMER has spanned various roles from Assistant Professor to Professor, and he has held numerous administrative and advisory positions including Convener of the Institutional Ethics Committee, PGIMER, and Member of the Board of Studies in Medicine, Punjab University. Dr. Malhotra's research has been pivotal in areas such as clinical trials, drug utilization, pharmacoeconomics, and the safety and efficacy of various therapeutic agents. He has authored over 200 peer-reviewed publications in high-impact journals including The New England Journal of Medicine, JAMA, BMJ, and Cochrane Reviews, with a strong citation record (h-index 28, i10-index 65). He has also co-authored several textbooks and manuals on pharmacology and clinical research. A member of numerous national and international scientific societies, Dr. Malhotra actively contributes to the global pharmacological community through editorial responsibilities, ethics oversight, and capacity-building workshops on Good Clinical Practice and bioethics. His work has been recognized with several awards including the UK Seth Prize, Major Amir Chand Silver Medal, and accolades for mentoring award-winning PhD students. Dr. Malhotra continues to influence the field through his roles in faculty selection committees, regulatory inspections, and healthcare policy initiatives, embodying a commitment to academic excellence, ethical research, and public health impact.



Dr. Nusrat Shafiq

Professor

Department of pharmacology, PGIMER, Chandigarh

Prof Nusrat Shafiq is working as a Professor in Clinical Pharmacology Unit of Department of Pharmacology, PGIMER, Chandigarh after finishing her DM in Clinical Pharmacology from PGIMER, Chandigarh. She is member-secretary, IEC for clinical trials and Bioavailability /Bioequivalence Studies, PGIMER, Co-Chair, IEC, AIMS, Mohali and member of Institute's Ethics Committee for Biomedical Research, PGIMER, Chandigarh. Having served in various capacities for Institute Ethics Committee she has operationalized the system for SAE reporting, monitoring and compensation in line with GoI regulations for the same and IEC oversight. Along with her colleagues she has conducted workshops and trained on GCP and Ethics Workshop of various organizations. She has authored on various issues related to ethics in biomedical research with comprehension of information for consent process being primary. She is adjunct faculty in telemedicine center of PGIMER and Faculty of Cochrane India Evidence Synthesis Unit. Her main domain of work is preventive strategies and therapeutics for infections with a special focus on therapeutics for Multidrug Resistant Organisms. She is PI for ICMR network of Phase I Clinical trials at PGIMER and India Hub for International Network for Antimicrobial Optimization (CAMO Net, Wellcome Trust) She was past president of Society of Antimicrobial Stewardship Practises in India and is currently heading their training and guidelines committee. She is member of expert group consultation on National Action Plan on AMR, India Innovation Summit for Tb, WHO panel for introduction of novel antimicrobials. She is reviewer and assessor for some prestigious International Grants. In her career spanning nearly two decades she has been earnestly working in the domains of training, research and patient care. She is one of the founder members of Consortium for Dose Optimization wherein she works with ACTREC, Mumbai and MAHE, Manipal. She has publications in high impact journals with considerable citations. Currently my team of research fellows, MD and DM residents are undertaking several key studies. She has authored two books on clinical research.



Dr. Rubina Bose

Deputy Drugs Controller (India)

CDSCO, MoHFW, GoI

Dr. Rubina Bose holds a Doctorate in Pharmacy, along with Master of Pharmacy (M.Pharm) and Bachelor of Pharmacy (B.Pharm) degrees from Jadavpur University, Kolkata—a premier institution in pharmaceutical sciences. She has over 25 years of extensive experience with the Central Drugs Standard Control Organization (CDSCO), India's National Regulatory Authority, where she has served in diverse leadership roles across zonal offices and central divisions. Her expertise spans new drug approvals, import registrations, vaccine regulation, and the oversight of biologicals, including recombinant DNA products and regenerative medicines. Currently, Dr. Bose heads the Vaccine Division at CDSCO Headquarters, New Delhi, leading national regulatory activities related to vaccines. She has also served as a Technical Officer at the World Health Organization (WHO) Headquarters in Geneva, contributing to dossier assessments and inspections under the WHO Prequalification Programme. Beginning her career in injectable drug production, she later joined CDSCO as a Drug Inspector, conducting GMP, GCP, and GLP inspections. Dr. Bose represents CDSCO in global forums such as WHO, ICH, and ICMRA, and regularly contributes as a temporary advisor and expert member on international guideline development committees, advancing regulatory science and harmonization efforts worldwide.



Ms. Maria Abraham

Global Executive and Associate Director

Centre of Excellence & Biostatistics, EMMES, Bangalore

Ms. Maria Abraham is an accomplished biostatistician with over 13 years of experience in clinical trials and biostatistical research, currently serving as the Global Executive – Centre of Excellence (CoE) and Associate Director – Biostatistics at Emmes Company, Bengaluru, India. She has made significant contributions to the field of biostatistics, playing key roles in the design, execution, and oversight of early- to late-phase clinical trials across diverse therapeutic areas. Maria earned her BTech in Biotechnology from Vellore Institute of Technology, India, in 2009. Her passion for statistical sciences led her to pursue a ScM in Biostatistics from the prestigious Johns Hopkins Bloomberg School of Public Health, USA, which she completed in 2011. This robust academic foundation laid the groundwork for her career in clinical research and data science. Maria began her professional journey at Statistics Collaborative, Inc. in Washington, DC, where she worked as Biostatistician I and II from 2011 to 2014. In 2014, she joined Emmes Company in India, where she has steadily risen through the ranks, taking on roles including Biostatistician II, Manager, and Senior Manager before her current leadership position. At Emmes, Maria leads the Centre of Excellence for vaccine trials in India, providing strategic direction, oversight, and leadership across multiple projects. Her work involves coordinating multidisciplinary teams, ensuring methodological rigor in trial design and data analysis, and engaging in business development to expand the organization's research footprint. She has served on the Data and Safety Monitoring Board (DSMB) for a COVID trial. She has extensive experience as an independent statistician reporting to DSMBs and the lead biostatistician for several clinical trials, including those focusing on ophthalmology, hepatology, and hematology. Maria's scholarly contributions include numerous peer-reviewed publications in high-impact journals such as JAMA Ophthalmology, Nature Bone Marrow Transplantation, and Hepatology. She has also presented her research at major scientific conferences, including ARVO, the Society for Clinical Trials, and the IASCT Conference. In recognition of her leadership and excellence, Maria has received multiple awards, including the President's Leadership Award (2021), Morale and Collaboration Award (2019), and a Spot Award (2016).



Dr. Badri Narayan Patnaik

Director

*Clinical Development, Bharat Biotech International Limited,
Hyderabad*

Dr Badri Narayan Patnaik is the director of Clinical Development of Vaccines at Bharat Biotech International, working to drive the development and commercialization of new vaccines and therapeutics of the organization. Before Bharat Biotech, he was the head of Global Development of the Pneumo & Meninge vaccine at Sanofi Vaccines HQ, Lyon, France. Badri is a trained Physician and an infectious disease specialist. I have obtained a Diploma in Vaccinology from the Institute of Pasteur, Paris. As director of Global Development for vaccines, I have consulted and advised various research groups in vaccine development. Over time, my work in vaccine development encompasses various types of vaccines: Bacterial, viral, protozoal and so on. I have worked in vaccine development in India, the US and France for Sanofi Vaccines. I have worked in the development of pertussis- containing DTP vaccines, Enteric fever and pneumococcal vaccines.



Dr. Temsunaro Rongsen Chandola

Senior Scientist and Director

Society for Applied Sciences, New Delhi

Dr. Temsunaro Rongsen-Chandola is a distinguished physician-researcher with an MSc in Epidemiology from the London School of Hygiene and Tropical Medicine, UK, and a PhD in Vaccinology from the University of Bergen, Norway. She serves as a Senior Scientist and Director at the Society for Applied Studies, New Delhi. Dr. Chandola played a pivotal role in the development of the ROTAVAC® vaccine, including serving as Principal Investigator of the highest-recruiting site in its Phase III trial. She also led her organization's support in the vaccine's rollout in Himachal Pradesh. Her work has significantly influenced India's national immunization program. She has led major public health studies on possible serious bacterial infections (PSBI) in infants, including collaborations with the Government of Himachal Pradesh. She is experienced in establishing surveillance in both community and hospital for infectious diseases including typhoid, shigella and dengue and chikungunya. Dr. Chandola contributed to the WHO growth reference charts, demonstrating that Indian infants can achieve global growth standards. An ADVAC alumni and a Women Lift Health Global Fellow, she is committed to mentoring and capacity building. She has designed training curricula, served on advisory committees at CDSA-THSTI, and mentors' young researchers under the PRERNA program.



Dr. John Clemens, icddr's new Executive Director

Dr. John Clemens

Senior Scientific Advisor to Director General

International Vaccine Institute (IVI), Republic of Korea

Prof John Clemens is an infectious disease epidemiologist with over 30 years of experience designing, conducting, and analysing large, population-based epidemiologic studies and vaccine field trials in low-income countries and developing new methodologies for the clinical evaluation of vaccines. A graduate of Stanford (B.S.) and Yale (M.D.) Universities, Dr. Clemens is U.S.-Board Certified in Internal Medicine, and received his post-doctoral research training in clinical epidemiology at Yale. From 1983-88, he served as a research scientist at the International Centre for Diarrhoeal Disease Research, Bangladesh where he led the first efficacy trial of an oral vaccine against cholera (OCV), and where he conducted additional research on measles vaccine. After returning to the U.S., he served as Chief of the Epidemiology Section of the Center for Vaccine Development of the University of Maryland, and then as Chief of the Epidemiology Branch of the National Institute of Child Health and Human Development, U.S. National Institutes of Health (NIH). While at NIH he was the Director of the first WHO Collaborating Centre for Vaccine Evaluation in Developing Countries. In 1999 he became the first Director-General of the International Vaccine Institute (IVI) in Korea. While at IVI he led the team that developed a killed OCV (Shanchol) that achieved licensure in India in 2009 and WHO prequalification in 2010 and was the first OCV to be included in the global OCV stockpile funded by Gavi. In 2011 he moved to UCLA to become the Founding Director of a new Center for Global Infectious Diseases, and from 2013-21 Dr Clemens served as the Executive Director of the International Centre for Diarrheal Disease Research, Bangladesh (icddr,b). He has worked as the Senior Scientific Advisor to the Director General of the International Vaccine Institute in Seoul since 2021. Dr. Clemens is the author of over 500 peer-reviewed publications. He was the recipient of the 2010 Sabin Gold Medal and the 2018 Prince Mahidol Award in Public Health.



Mr. Sourabh Sobti

Head of Business Development

Coalition for Epidemic preparedness Innovations (CEPI), New Delhi

Mr. Sourabh Sobti is a Biochemical Engineer by training and currently serves as the Head of Business Development at the Coalition for Epidemic Preparedness Innovations (CEPI). In this role, he leads the Access and Business Development team, overseeing the structuring of CEPI's strategic investments and global partnership agreements. Mr. Sourabh has led investment transactions exceeding USD 500 million across innovative technologies including artificial intelligence, vaccine platform technologies, and manufacturing innovations. His work has been pivotal in advancing vaccine candidate development, scaling up regional manufacturing capacity, and promoting CEPI's mission of equitable access, pandemic preparedness, and strengthening regional health systems. Prior to joining CEPI in 2021, Mr. Sourabh held the position of Vice President – Strategy & Operations at MSD Wellecome Trust Hilleman Laboratories. There, he played a critical role in steering strategic collaborations, managing the R&D portfolio, and leading India operations. With a strong foundation in science and strategy, Mr. Sobti brings extensive experience in strategic advisory, portfolio management, and life science leadership. He holds a Master of Science in Biochemical Engineering from University College London.



Dr. Raju Sunagar

Deputy General Manager

R&D, Indian Immunological Ltd. Hyderabad

Dr. Raju Sunagar is a senior immunologist and vaccinologist with a rich background in both academic research and industrial vaccine development. With a Ph.D. in Medical Microbiology from Gulbarga University, India, Dr. Sunagar has developed an impactful career focused on translational research in infectious diseases, mucosal immunology, and vaccine innovation for both human and veterinary applications. Currently serving as Lead – Process Development at Indian Immunological Ltd., Hyderabad, Dr. Sunagar oversees the development and implementation of clinical and preclinical research strategies for a wide range of vaccine candidates. His role involves directing vaccine process development from concept through clinical evaluation, with a focus on high-priority public and animal health concerns. Previously, he held the position of Senior Scientist at the Ella Foundation, Bharat Biotech, where he played a pivotal role in the development of iNCOVACC™, the world's first intranasal COVID-19 vaccine. His contributions extended to several other human vaccine candidates, exemplifying his strength in bridging laboratory science with real-world clinical application. Dr. Sunagar's international experience includes postdoctoral research at Albany Medical College, USA, where he investigated adjuvant-free vaccines for *Francisella tularensis*, a BSL3 pathogen. His work revealed key insights into the influence of host genetics and gender on vaccine efficacy. He also contributed to streptococcal vaccine development and antimicrobial research during his tenure at IISc Bangalore and QIMR in Australia. His doctoral research focused on bacteriophage therapy for *Staphylococcus aureus* bacteremia, including the isolation of a novel lytic phage, GRCS, which is now publicly available through BEI Resources. Dr. Sunagar has authored over 25 peer-reviewed publications and regularly reviews for leading journals such as NPJ Vaccines, Frontiers in Microbiology, and the Journal of Medical Microbiology. He is actively involved in scientific networks including the BactiVac Network (UK), VALIDATE Network (Oxford), the Indian Science Congress Association, Association of Microbiologists of India (AMI), American Association of Immunologists (AAI), and the International Veterinary Vaccinology Network.



Dr. Nithya Gogtay

Professor & Head

Clinical pharmacology, KEM Hospital, Mumbai, Member NTAGI

Dr. (Mrs.) Nithya Gogtay is a medical doctor specializing in Pharmacology, Clinical Pharmacology, clinical trials, and Pharmacovigilance. She currently serves as the Professor and Head of Clinical Pharmacology at King Edward Memorial Hospital (KEM), Mumbai. Dr. Gogtay completed her M.D. degree at KEM Hospital and Seth GS Medical College in Mumbai. She then obtained a DNB (Diplomate of National Board) in Clinical Pharmacology in New Delhi, followed by a PhD and a Fellowship of the Royal College of Physicians (FRCP) from the Royal College of Physicians in London. Dr. Gogtay has received advanced training in clinical research, research methodology, biostatistics, pharmacogenetics, pharmacovigilance, medical writing, bioethics, and good clinical practices. She possesses extensive experience in technical writing, training, and mentoring undergraduate and postgraduate students, as well as conducting Phase I-IV clinical trials. Additionally, she has some experience in field-based research studies and has authored two Cochrane reviews on *P. vivax* malaria. Throughout her career, Dr. Gogtay has published over 275 research and review articles in the fields of Therapeutic Drug Monitoring, Pharmacovigilance, vaccine trials, and infectious diseases, focusing particularly on malaria. Her work aims to shape clinical practices and policies in India. She has also written two books on research methodology and contributed chapters to medical textbooks. Since joining KEM Hospital in 1991, Dr. Gogtay has built a diverse skill set that includes clinical, laboratory, field, and technical expertise. She has a deep understanding of various aspects of vaccine trials, their study designs, and has conducted two COVID-19 vaccine studies during the pandemic. Furthermore, she serves as the Chair of two ethics committees in Mumbai—the Tata Memorial Hospital Ethics Committee and the PD Hinduja Hospital and Research Center Ethics Committee. Dr. Gogtay is particularly interested in bioethics and equitable access to medicines, including vaccines, and is committed to facilitating the introduction of new vaccines in India and contributing to immunization policies.



Bio-sketches of Faculty

Day 4



Raj Shankar Ghosh

Senior Advisor, One Health & Environmental Health, PHFI

Former Consultant Advisor, Vaccines and Immunization, South Asia, PATH

Former Deputy Director, Vaccines Delivery and Infectious Disease, Gates Foundation

Dr. Raj Shankar Ghosh is a public health professional trained in public health. Over the past three decades, Dr Ghosh has been involved with healthcare strategy, vaccine delivery, and climate-resilient health systems. Dr Ghosh completed his medical degree from Calcutta National Medical College. He obtained a Fellowship in Public Health from the Indian Public Health Association, for his contribution to public health in India and South Asia. Currently Dr Ghosh is Senior Advisor, One Health and Environmental Health, Centre for Environmental Health, Public Health Foundation of India. In this work Dr. Ghosh is focused on building sustainable healthcare services, particularly in the realms of climate resilient health systems for addressing infectious and non-communicable disease management and advanced health information systems. Prior to this, Dr. Ghosh held senior advisory positions with leading organizations such as PATH, the Gates Foundation, and the World Health Organization. His leadership has been instrumental in strengthening immunization systems, managing vaccine delivery initiatives, and advancing global health partnerships. Notable accomplishments include guiding India's routine immunization efforts and scaling up new vaccine introductions in collaboration with Gavi and other international stakeholders.



Dr. Narendra K Arora

Executive Director

The INCLEN Trust International, New Delhi

Prof. (Dr.) Narendra Kumar Arora, is a distinguished Indian pediatrician, clinical epidemiologist, and global health expert, currently serving as the Executive Director of The INCLEN Trust International, New Delhi. With over four decades of experience in medicine and public health, Dr. Arora has been a pioneering force in shaping immunization policy and practice in India and internationally. Trained in Pediatrics and Clinical Epidemiology, Prof. Arora began his academic career at the All India Institute of Medical Sciences (AIIMS), New Delhi, where he served on the faculty in Pediatric Gastroenterology, Hepatology, and Nutrition from 1983 to 2007. He later assumed the position of President of AIIMS Deoghar in 2018. His academic rigor is matched by his deep involvement in large-scale public health programs, particularly in immunization and child health. Dr. Arora has played a vital role in India's immunization initiatives, including the Pulse Polio Immunization Program, where his research directly informed the introduction of house-to-house immunization and the use of auto-disable syringes. He has led national and international studies on vaccine safety, cold chain infrastructure, injection practices, and adverse event following immunization (AEFI) surveillance. These efforts have contributed significantly to policy shifts in India's immunization program. He chairs the COVID-19 Working Group of India's National Technical Advisory Group on Immunization (NTAGI) and has overseen crucial activities related to vaccines, diagnostics, and therapeutics during the pandemic. Internationally, he has held prominent advisory roles, including Vice-Chair of the WHO Strategic Advisory Group of Experts (SAGE) on Immunization, and currently serves on WHO's Global Advisory Committee on Vaccine Safety (GACVS) and Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC). Prof. Arora has also led major multi-centric research projects such as the World Bank-funded study on India's COVID-19 response and the Global Vaccine Data Network's vaccine safety surveillance program.



Dr. Jacob John

Professor

Christian Medical College, Vellore

Dr. Jacob John is a public health physician and Professor of Community Medicine at the Christian Medical College, Vellore, India where he teaches infectious disease epidemiology and vaccinology. He received his MD in Community Medicine from CMC Vellore and his PhD from the Imperial College London. His research and public health focus are on the prevention and control of infectious diseases. Having previously supported the introduction of Hemophilus Influenza B, Rotavirus, and inactivated poliovirus vaccines in India through disease burden and vaccine evaluations, he currently leads the surveillance for enteric fever in India and typhoid vaccine impact assessment in India where typhoid conjugate vaccine introduction in the universal immunization programme is being actively considered. He is a member of the NTAGI and WHO SAGE working groups related to Salmonellosis and Respiratory Syncytial Virus and supports policy decisions related to vaccines.



Dr. Brian Wahl

Assistant Professor

Yale School of Public Health, USA

Dr. Brian Wahl, is an epidemiologist and global health researcher with extensive expertise in infectious diseases, vaccine policy, and health systems research. He currently serves as Assistant Professor in the Department of Epidemiology of Microbial Diseases at the Yale School of Public Health and holds an adjunct faculty appointment at the Johns Hopkins Bloomberg School of Public Health. Dr. Wahl earned his BS in Microbiology from Clemson University, followed by an MPH in Epidemiology and Biostatistics and a PhD in International Health from Johns Hopkins University. His doctoral and postdoctoral work laid a strong foundation for his research career, focusing on global disease burden estimation, vaccine-preventable diseases, and public health strategies in low- and middle-income countries (LMICs). From 2017 to 2024, Dr. Wahl held progressive academic positions at Johns Hopkins, where he was actively involved in large-scale epidemiological studies, including modeling COVID-19 dynamics, assessing vaccine efficacy, and leading research on childhood pneumonia and meningitis. His work has directly informed health policy in India and other LMICs through collaborations with the World Health Organization, Gavi, and India's National Technical Advisory Group on Immunization (NTAGI). He has authored over 50 peer-reviewed publications in top-tier journals, including *The Lancet*, *Science*, *BMJ Global Health*, and *Vaccine*. Dr. Wahl is also a member of multiple editorial boards and serves as an academic editor for *PLOS Global Public Health*. In recognition of his contributions to education, he received the Excellence in Teaching Award from Johns Hopkins multiple times. Beyond academia, Dr. Wahl is a sought-after expert and science communicator. He has been featured in major media outlets including BBC, CNN, *The Hindu*, and *Scientific American*, offering expert insights on vaccine strategies and pandemic preparedness. He also contributes opinion pieces on public health issues and policy recommendations. Through a combination of rigorous research, policy engagement, and public communication, Dr. Brian Wahl has become a prominent voice in global health, advancing evidence-based solutions to improve population health, particularly in resource-constrained settings.



Dr. Pawan Kumar

Additional Commissioner

In charge (Immunization & Maternal Health)

MoHFW, Government of India

Dr. Pawan Kumar currently serves as the Additional Commissioner-in charge of Immunization Division & Maternal Health Division at the Ministry of Health & Family Welfare, Government of India. A seasoned public health professional, he brings over 25 years of experience in healthcare management, encompassing planning, policy development, implementation, monitoring, and supervision at National, State & District levels. Throughout his career, Dr. Kumar has successfully published and presented over 95 research papers in prestigious national and international journals and conferences and executed more than 30 major projects at both the national and state levels, significantly contributing to India's public health landscape. Moreover, he is also the Life member of many professional bodies like IAPSM, IPHA, IMA, AGI, ISHWM, ACHHA, AHA, IEA, EFI and IAE. Dr. Kumar's outstanding contributions have been widely recognized. He is the recipient of more than 30 awards at the national and state levels, including the prestigious "Excellence in Public Health" Award in 2017. Further, he has also been awarded as an "Ambassador for Peace" by the Universal Peace Federation, an affiliated body of the United Nations Economic and Social Council, in 2021. Presently, Dr. Pawan Kumar is driving the implementation of zero dose implementation plan of India to meet the goal of reducing 30% burden of zero dose children in the country by 2026 with the support of concerned States and implementing partners. Dr. Kumar is steering the development of new National Vaccine Policy & National Immunization Strategy for the country. Some of his recent achievements include launch of the world largest electronic immunization registry (U- WIN), roll out of V-Shiksha project (vaccine education) for the school children, revision of revised National AEFI Surveillance Guidelines 2024, Routine Immunization Manual for Medical Officer (2024) and Health Workers Manual 2024.



Dr. Shankar Prinja

Professor (Health Economics)

*Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh*

Dr. Shankar Prinja is a Professor of Health Economics at the PGI Chandigarh. His research interests include methodological and applied research on methods of costing and cost-effectiveness analysis, as well as evaluation of health financing policies. He has contributed to various important methodological guidelines of India's HTA agency. He has formerly served as the Executive Director at India's National Health Authority. At the NHA, he was responsible for designing policies for health benefit package, pricing, and quality assurance of India's national insurance scheme – *Ayushman Bharat Pradhan Mantri Jan Arogya Yojana* (AB PMJAY), as well as set up the Health Financing and Technology Assessment unit. He has been a member of several high-level technical Government of India's expert groups including the Health Ministry's Screening Committee, National Technical Advisory Group on Immunization, chairs the Vaccine Cost Effectiveness Analysis Working Group of the NTAGI, Topic Prioritization Committee of the HTAIn, and the Research Advisory Council of the Public Health Foundation of India. He also established 3 Centers of Excellence at the PGI – including the Regional Resource Hub of the HTAIn, Innovation and Learning Centre for PHC, and the Centre for Health Insurance and Financing. He is a recipient of prestigious Prof MK Seshadri award & the Prof. BC Shrivastav Foundation Award by the Indian Council of Medical Research. He has also authored more than 280 research papers in leading national and international peer-reviewed scientific journals. He has featured in the list of the top 2% scientists globally in the field of public health research (Stanford University), as well as in the top 20 global researchers working in the field of universal health coverage (bibliometric study).



Dr. Arindam Ray
India Country Lead
Immunization and Surveillance
Gates Foundation

Dr. Arindam Ray is a medical epidemiologist with about 30 years of experience in public health management particularly in urban health care, population studies, disease surveillance and immunization. Following his tenure under Government of West Bengal, he joined World Health Organization in 2000. He was National Monitoring and Evaluation Focal Person at WHO country office, India before joining Bill & Melinda Gates Foundation in 2014. At the Foundation, India office he looks after new vaccine initiatives, immunization systems, disease surveillance and modelling, Gavi projects and polio legacy work. He represents the Foundation at the global urban immunization workgroup, GAVI Asia-Pacific Regional Work Group, WHO SEAR RITAG, India Expert Committees on Rota Viral Vaccine, Pneumococcal Conjugate Vaccine, HPV vaccine, Typhoid conjugate vaccine and Polio & MR India Expert Advisory Groups.



Dr. Abhiyan Gautam

Chief, Child Health and Immunization services

Ministry of Health and Population, Nepal

Dr. Abhiyan Gautam is the Manager of Nepal's National Immunization Program and serves as the Member Secretary of both the National Immunization Technical Advisory Group (NITAG) and the Adverse Events Following Immunization (AEFI) Investigation Committee. He has led several of Nepal's largest immunization initiatives, including the introduction of key vaccines. Notable campaigns under his leadership include the COVID-19 vaccination drive (30 million doses, 2021–2025), HPV vaccine rollout for 1.5 million adolescent girls (2025), Typhoid Conjugate Vaccine (7.2 million children, 2022), Measles-Rubella campaigns (6.1 million children, 2019–20 and 2024), and IPV coverage (1.4 million children, 2024). Dr. Gautam plays a key role in outbreak response immunization and surveillance of vaccine-preventable diseases such as Acute Flaccid Paralysis, Acute Encephalitis Syndrome, Neonatal Tetanus, Measles, Rubella, and Congenital Rubella Syndrome. With six years of experience as a New Vaccine Officer and Surveillance Medical Officer with WHO, he was instrumental in strengthening Nepal's immunization strategies and public health systems, particularly during the post-earthquake health system revitalization in 2015. He previously led Nepal's Social Health Security and Female Community Health Volunteer (FCHV) programs, contributing to equitable, community-based healthcare delivery across the country.



Dr. Samitha Ginige
Director of Quarantine
Ministry of Health, Sri Lanka

Dr Samitha Ginige is a medical doctor with a public health background currently working as the Director of Quarantine at the Ministry of Health of Sri Lanka. As a Chief Epidemiologist, he served as the National Immunization programme manager and national communicable disease surveillance (including vaccine-preventable disease) coordinator. He completed his M.D. degree in Community Medicine and M.Sc. in Community Medicine from the Post Graduate Institute of Medicine, University of Colombo, Sri Lanka. He has obtained MPH (Biosecurity) from Massey University New Zealand and MBBS basic degree from the University of Colombo. He has extensive experience in technical writing, training, field-based research studies, and evaluation of health programs. He has published more than 30 research and review articles on communicable disease epidemiology, vaccinology, and non-communicable disease epidemiology. Dr Ginige carries a mix of field experience and technical expertise in the field of immunization programme planning & implementation, AEFI surveillance, outbreak investigation, Vaccine preventable disease surveillance, and new vaccine introduction.



Dr. Suresh Dalpath

National Technical Lead: Immunization Implementation Country Program-India

William J Clinton Foundation

Dr. Suresh Kumar Dalpath is a medical doctor with a Master's in Public Health and PG Diplomas in MCH, Public Health Nutrition, and Health Economics & Policy. He is extensively trained in Advanced Vaccinology, Vaccine Economics, WHO-ICCM, a facilitator and trainer for WHO-MLM training in immunization. A Fellow of the National Neonatology Forum, Dr. Dalpath brings over 25 years of rich experience in Public Health Management and Health System Strengthening. Currently, Dr. Dalpath is the National Technical Lead for Immunization Implementation at the W.J. Clinton Foundation, where he provides technical support in data and review system strengthening, generating insights around zero-dose children, and developing mitigation strategies. His previous roles include Deputy Director-MCH, FW and State EPI Officer for Haryana and Deputy Director State Health System Resource Center Haryana, where he provided techno-managerial leadership in RMNCAH, immunization, nutrition, community processes, M&E, and PHP. He established networks of newborn care units, KMC units, NRCs and vaccine stores in Haryana, and also supported other states as a technical resource person. Dr. Dalpath has led the introduction and scale-up of seven newer vaccines in India and spearheaded several large immunization campaigns. He conceptualized and led the initiative to introduce and scale up the PCV vaccine from the state's own budget. His contributions include designing micronutrition supplementation programs, large scale food fortification initiatives, the newborn and child Screening program (IBSY), the referral transport systems, and RI concurrent monitoring, which have been replicated by many states and incorporated into national policies and public health programs. He has made significant contributions to global and regional eradication, elimination, and control goals for diseases such as Polio, Maternal and Neonatal Tetanus, Measles, and Rubella. Dr. Dalpath, has led multiple implementation studies, RCTs, EVM and RAPID assessments, evaluations, and strategic planning initiatives. He has authored over 35 papers in reputed journals and helped draft national CDR and NNF accreditation guidelines. As WHO-NPSP's Routine Immunization Officer, he contributed in developing training modules for health workers, RI monitoring tools, MYSP, and National AEFI guidelines. He actively promotes cost-effective healthcare and policy adaptation across all levels.



Dr. Santosh Ramesh Taur

Director Medical Affairs, Vaccines, Rare Disease and Digital

Pfizer

Dr. Santosh Ramesh Taur is a distinguished clinical pharmacologist and medical affairs leader with extensive experience in clinical research, pharmacology, and vaccine development. Currently serving as Director of Medical Affairs for Vaccines, Rare Diseases, and Digital at Pfizer Ltd. India, Dr. Taur brings a unique blend of academic rigor, scientific innovation, and strategic leadership to the pharmaceutical and public health sectors. Dr. Taur holds a DM in Clinical Pharmacology from Seth GS Medical College and KEM Hospital, Mumbai, and an MD in Pharmacology from Government Medical College, Aurangabad. He further enhanced his global medical expertise with a Certified in Medicines Development (CMD) credential from IFAPP Academy and King's College London in 2021, and most recently, completed a Post- Graduate Certificate in Digital Health from IIM Raipur in 2024. He is also a recipient of a prestigious Fellowship in Clinical Sciences awarded by the Department of Biotechnology, Government of India. Throughout his career, Dr. Taur has played pivotal roles in advancing drug development and regulatory science. Before joining Pfizer, he held key positions at Galderma India and served as Assistant Professor at BYL Nair Hospital and TN Medical College. His research interests span from early-phase clinical trials to real-world evidence, pharmacogenetics, and therapeutic drug monitoring. He has authored over 40 scientific publications and contributed chapters to academic books. Dr. Taur's outstanding contributions have earned him numerous accolades, including the OPPI Medical Excellence Award (2025), National Award for Research Scholar by NAPTICON (2021), and the ISCR Hall of Fame Award (2021). He was recognized as a 'Champion of Health' at the India Vaccine Leaders' Conclave in 2024 for his leadership in clinical research.



Dr. Jeffery Canon

Senior Research Officer and Health Economist

The Kids Research Institute, Perth, Australia

Dr Jeffery Cannon is a health economist at The Kids Research Institute Australia in Perth, Western Australia. With a PhD in Health Economics from the University of Western Australia and undergraduate degrees in mathematics and finance, Jeff specializes in utilizing statistical and mathematical modelling to understand and estimate the health, economic, and social impacts of disease, particularly diseases affecting children and Indigenous communities. His work bridges health economics, disease burden, policy development, and health equity. Dr Cannon's research in understanding the burden of disease caused by group A Streptococcus (Strep A) has had a global influence. He led the development of the first full epidemiological economic model for all Strep A clinical manifestations; work that has informed global investment, surveillance methods, and vaccine policy, including Australia's national Strep A Vaccine Initiative. His modelling was the first to show that skin infections like cellulitis are key drivers of health and economic burden caused by the pathogen, shaping international vaccine development strategies. Beyond Strep A and RHD, Jeff provides health economics expertise across a wide range of projects within the Institute and externally, supporting research and policy translation in areas such as child health, infectious disease, and Indigenous health.



Dr. Naveen Thacker

Executive Director

International Pediatric Association

Dr Naveen Thacker is a distinguished pediatrician and global health leader, currently serving as Executive Director of the International Pediatric Association. Dr. Thacker served as President of the Asia Pacific Pediatric Association (2016-18) and the Indian Academy of Pediatrics (2007). He is an active member of the Scientific Committee and faculty for ADVAC in France. He is also Vice-chair of Steering Committee of the International Collaboration on Advanced Vaccinology Training. He is a member of India's Expert Advisory Group on Measles and Rubella and co-chair of 30th and 31th India Expert Advisory group on Polio Eradication. He served on the Gavi board and the PMNCH board. UN listed him as Top Most Influencer of Polio Eradication in the World in 2017. Dr. Thacker has played a key role in polio eradication, pneumonia prevention, and routine immunization efforts, particularly in South Asia. His leadership continues to drive improvements in pediatric care, medical education, and vaccine access globally. His area of interest is in Global Health, Vaccine Hesitancy, and Vaccinology



Mr. Homero Hernandez
Senior Country Office
GAVI Alliance, Geneva

Mr. Homero Hernandez has over 20 years of experience in public health in his various roles starting with the Global Drug Facility of the Stop TB Partnership in 2005. In 2010 he took up a position in the Immunization and Vaccine Development (IVD) unit of the WHO's South-East Asia Regional Office (SEARO), based in New Delhi, India. In his role, he provided technical support to India, Indonesia, Myanmar, Nepal, Bangladesh, and Bhutan as part of the regional team focused on priority countries of the WHO Southeast Asia Region. In 2014, Homero started a new position in the Gavi Alliance as Senior Country Officer responsible for managing Gavi support to eligible countries in the Americas (Bolivia, Cuba, Guyana, Honduras, Haiti, Nicaragua). Homero's role was critical in Haiti as part of development partners' efforts to improve its health system's performance with a focus on cholera and improving performance and sustainability of the immunization programme. In 2020, Homero became the new Senior Country Manager responsible for India, focusing on evolving priorities related to India's manufacturing role and critical partner for Covax Facility as well as developing a new strategic partnership between Gavi and India for the period 2022-2026. This support involved managing a funding envelope of \$250 million dollars to implement innovative strategies supporting to reduce zero-dose children and introduce HPV and TCV vaccines. Homero has a bachelor's degree in international business from the European University and a master's in health systems management from the University of Liverpool.



Dr. Navneet Bichha

Senior Program Officer

INCLIN Trust International, New Delhi

Dr. Navneet Bichha holds an MBBS from B.P Koirala Institute of Health Sciences, a Master of Public Health (MPH) in Tropical Disease and Implementation Research under the WHO-TDR Scheme from Indian Institute of Health Management Research (IIHMR University), a Postgraduate Diploma in Infectious Disease and Vaccinology from Institute Pasteur, and fellowship in Advanced Vaccinology and COVID-19 Recovery for childhood immunization from Christian Medical College and Sabin Vaccine Institute. With a strong foundation in clinical medicine and public health, Dr. Bichha has over a decade of experience in vaccine research, policy implementation, and global health partnerships. He currently serves as a Senior Program Officer at The INCLIN Trust International, New Delhi, where he leads international vaccine safety studies, in collaboration with CEPI-DCVMN, GVDN (Global Vaccine Safety Network) and Phase 4 post-marketing surveillance of CERVAVAC, India's indigenous HPV vaccine. His work focuses on strengthening vaccine safety and pharmacovigilance systems in low- and middle-income countries. Dr Bichha is also a member and clinical advisor for the Brighton collaboration clinical advisory group for emerging pathogens. Dr. Bichha has collaborated with leading global health organizations such as WHO-TDR, the International Vaccine Institute, Sanofi Pasteur, EuBiologics, and Serum Institute of India. He has contributed significantly to new vaccine development and implementation research, with notable involvement in the introduction of COVID-19 and typhoid conjugate vaccines in Nepal and polio eradication efforts in India. He played a key role in clinical trials for WHO-prequalified vaccines like SKYTYPHOID and EUVICHOL-S as well as various COVID-19 vaccines in Nepal.



Bio-sketches of Faculty

Day 5



Dr. Chandrakant Lahariya

Founder

Foundation for People-Centric Health System (FPHS), New Delhi

Dr. Chandrakant Lahariya is one of India's leading medical doctors specializing in infectious diseases, preventive medicine, and vaccines and immunization. He has extensive experience in child health, school health, early childhood development, and the issues surrounding preterm and stillbirths. Dr. Lahariya has over 15 years of international experience working with the World Health Organization (in India, Africa, and at the headquarters in Geneva), as well as with UNICEF and the World Bank. He has published extensively in reputable medical journals and has received several prestigious awards, including the Dr. BC Shrivastava Foundation Award from the Indian Council of Medical Research in 2012. In 2020, 2021, and 2022, he was listed among the top 2% of global researchers in the fields of Pediatrics and Public Health by Stanford University research. His writings appear regularly in leading newspapers, and he contributes columns for publications such as The Hindu, The Asian Age, and Dainik Bhaskar. Dr. Lahariya is also the lead co-author of the bestselling book "Till We Win: India's Fight Against the COVID-19 Pandemic." In 2015, he became the youngest person ever elected as a fellow to the Indian Public Health Association.



Dr. Suneela Garg

Professor of Excellence

Chair Programme Advisory Committee, NIHFW, New Delhi, India, Ex-Director, Professor and Head Community Medicine, MAMC, Head FMC, Delhi University

Dr. Suneela Garg currently serves as Professor Emeritus at MM Medical College & Hospital, Solan, Himachal Pradesh, and Professor of Excellence in Community Medicine. She is Chairperson of the Programme Advisory Committee and a Member of the Governing Council. Dr. Garg has played a pivotal role in strengthening immunization programs in India, including the development of immunization training modules for medical officers through PHFI. She has chaired multiple national-level meetings on immunization and cold chain management and is an expert committee member at NIHFW and on the National Adult Immunization Committee. She has served as a resource person for institutions such as NIHFW, NHSRC, ICMR, the Ministry of Health and Family Welfare, and the Union Public Service Commission. Internationally, she is a member of the Lancet Commission on Hearing Loss and the Lancet Covid-19 India Task Force. Dr. Garg has received numerous accolades, including the NAMS Fellowship (2023), WHO Biennium Fellowship (1992–93), ODA Fellowship (1996), and multiple fellowships from IPHA, IAPSM, and IMA. She has been consistently ranked among the top 2% scientists globally by Elsevier (2022–2024) and has received prestigious awards such as the Double Helical National Award (2015), KN Rao Memorial Oration (2018), Harcharan Oration (2019), and INDUSEM FLAME Award.



Dr. Kamini Walia

Scientist G & Head

Descriptive Research Division, ICMR, New Delhi

Dr. Kamini Walia is a distinguished microbiologist and public health expert with over 20 years of experience in medical research and health systems strengthening. She holds a PhD in Experimental Medicine from PGIMER Chandigarh, an MPH from Johns Hopkins University, and an M.Sc. in Microbiology from Panjab University. Her academic foundation is complemented by advanced training in vaccinology, AMR, diagnostics, and clinical research from institutions including NIH (USA), WHO, and the International Vaccine Institute. Dr. Walia has led several national and international projects funded by ICMR, WHO, FAO, DFID, and Pfizer, focusing on AMR, HIV-malaria co-infection, diagnostics, and infection control. She played a pivotal role in formulating India's National Essential Diagnostics List (NEDL) and evidence-based antibiotic use guidelines and was instrumental in banning irrational fixed-dose antibiotic combinations. As former Director of R&D at PATH, she led initiatives including zinc formulation policy. She has collaborated with NIH, GARDP, FIND, PATH, and others and contributed to Indo-US HIV research programs.



Dr. Lalit Sankhe

Associate Professor

Grant Medical College, Mumbai

Dr. Lalit R. Sankhe is an accomplished public health expert with extensive academic and research credentials. He currently serves as an Associate Professor in the Department of Community Medicine at Grant Medical College & Sir J.J. Group of Hospitals, Mumbai. With postgraduate qualifications in Health and Family Welfare Management (PGDHFWM from NIHFW-New Delhi), Health Economics and Policy (PGDHEP from IIPH-Delhi), and a specialized program in HIV (SIPP, University of Sydney), Dr. Sankhe brings multidisciplinary expertise to the field of community health. He is a Fellow of the Indian Public Health Association (FIPHA) and the Indian Association of Preventive and Social Medicine (FIAPSM). He currently holds the position of Joint Secretary (West) of the Indian Public Health Association (2023–2025) and has previously served as the President of the IAPSM Maharashtra Branch (2021–2024). Dr. Sankhe actively contributes to academic publishing as a member of the editorial boards of the Indian Journal of Public Health and Frontiers in Public Health. His commitment to research is reflected in his active association with various national and international organizations on several public health research projects. Over the course of his career, Dr. Sankhe has published more than 40 research articles in reputed national and international journals. His scholarly contributions span a wide array of topics in public health, preventive medicine, health systems management, and epidemiology. With a strong foundation in both practice and research, Dr. Sankhe continues to influence public health education, policy, and service delivery in India. His professional journey exemplifies dedication to improving health outcomes through evidence-based interventions, capacity building, and collaborative research.



Dr. Muralidhar Tambe

Professor and Head

Department of Community Medicine, BJ Medical College, Pune, India

Dr. Muralidhar P. Tambe is a senior public health expert with over 35 years of service and currently serves as Professor and Head of the Department of Community Medicine at B.J. Government Medical College (BJGMC), Pune. An MBBS and MD in Community Medicine, he has made significant contributions to health policy, outbreak preparedness, academic leadership, and research. As Dean of BJGMC during the COVID-19 pandemic, he led Sassoon General Hospital's frontline response and chaired the District COVID-19 Task Force, as well as the district Influenza (H1N1) Action Plan. In 2025, he was appointed Chairman of the State Guillain-Barré Syndrome (GBS) Task Force. Dr. Tambe has authored 106 scientific papers and led 28 research projects, including collaborations with ICMR, CDC, and Johns Hopkins University. He has been a resource person in 49 national training programs and contributed to ICMR and IGNOU training modules. He serves as Vice-President of the Indian Public Health Association (2023–2025), and has received prestigious awards including the Dr. Pathak and Dr. D.N. Pai Oration Awards. Dr. Tambe continues to shape India's public health landscape through strategic leadership, research, and health systems strengthening.



Dr. Veena G Kamath

Professor and Head

Department of Community Medicine, KMC Manipal, Karnataka

Dr. Veena G. Kamath is a distinguished public health expert and academic leader specializing in Community Medicine. She serves as a Professor and Head of the Department of Community Medicine at Kasturba Medical College (KMC), Manipal.). Her research interests cover a broad spectrum of public health issues, including adolescent health, non-communicable diseases, women's health, and tobacco control. She is the recipient of the Technical Transfer Award granted by International Agency for Research on Cancer, Lyon and Certificate of Appreciation for contribution to research and research excellence in Industry grants by Kasturba Medical College Manipal Her research portfolio includes over 100 publications, with significant contributions to topics like non- communicable diseases, adolescent health, and epidemiology. Her work has garnered over 2,900 citations, reflecting her influence in the field Through her academic career, she has been involved in a number of research projects funded by national and international agencies in the capacity of Co-investigator and as a Principal Investigator. She has also been involved actively in conducting regulatory vaccine trials. She has a deep interest in community-based research and has been instrumental in carrying out a number of investigator-initiated community-based studies in the area of Non communicable diseases and adolescent health.



Dr. Parvinder Kaur Chawla

Senior Consultant

Internal Medicine

Fortis Hospital, Mohali, Punjab

Dr. Parvinder K. Chawla is a Senior Consultant in Internal Medicine at Fortis Hospital, Mohali, with over 20 years of clinical experience. She completed her MBBS from Christian Medical College, Ludhiana in 1997 and earned her MD in Internal Medicine from Government Medical College, Patiala. Her early clinical work spanned emergency care and preventive medicine, forming the foundation of her versatile clinical practice. Since 2001, Dr. Chawla has been an integral part of Fortis Hospital, managing a wide range of medical conditions with diagnostic precision and patient-centered care. She has developed a focused interest in infectious diseases and adult vaccination, recognizing their growing relevance in modern healthcare. To strengthen her expertise, she pursued a Fellowship in General Infectious Diseases at CMC Vellore (2019–2020) and attended several advanced training programs, including the International Short Course in Clinical Tropical Medicine (2018), the Advanced Vaccinology Course (2019), and the Infectious Disease Intensive Course for Primary Care (Johns Hopkins, 2024). She also completed the Antimicrobial Stewardship Program jointly conducted by IDSA, CIDS, and CMC Vellore.

A strong advocate of preventive medicine and rational therapeutics, Dr. Chawla emphasizes a holistic approach centered on lifestyle modification, fitness, mindfulness, and spiritual well-being—encapsulated in her philosophy of “a toned body, a trained mind, and a tuned-in soul.” Academically, she co-authored a chapter on fever in Textbook of Emergency Medicine (Wolters Kluwer) and contributed to journals including the Journal of Clinical Infectious Disease Society and Journal of Antimicrobial Stewardship Practices and Infectious Diseases. Beginning January 2025, she has been privileged to serve her alma mater, Christian Medical College, Ludhiana, as a visiting consultant in Infectious Diseases.



Dr. Ashish Bhalla

Professor

Department of Internal Medicine, PGIMER, Chandigarh

Dr. Ashish Bhalla is a renowned physician, clinical toxicologist, and infectious disease specialist, currently serving as Professor and Head of the Infectious Diseases Division within the Department of Internal Medicine at the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. With over three decades of distinguished service in medicine, he is widely respected for his clinical expertise, academic leadership, and seminal contributions to internal medicine, clinical toxicology, emergency care, and infectious diseases. Born on February 4, 1969, Dr. Bhalla obtained his MBBS and MD (General Medicine) from Nagpur University. Since joining PGIMER in 2002, he has been a pivotal figure in advancing academic and clinical excellence. As a dedicated educator and mentor, he has guided countless postgraduate students over 25+ years of teaching. At PGIMER, he leads a specialized team managing complex infectious diseases such as HIV/AIDS, scrub typhus, dengue, chikungunya, and human rabies. During the COVID-19 pandemic, he chaired the PGIMER COVID-19 Management Committee and served as Nodal Officer of the dedicated COVID hospital (2020–2022), effectively overseeing critical care, dialysis, and operative services. Dr. Bhalla has published over 500 scientific papers—200 in national and 250 in international peer-reviewed journals—with an H-index of 58 and an i10 index of 184. He holds memberships in key professional bodies, including ISCCM's Research and Tropical Medicine Committees and the International Toxicology Collaborative. He also serves on the Executive Board of ACEEI and is a Fellow of the Royal College of Physicians (FRCP, UK). Nationally, he contributes to medical education as an expert on faculty selection panels at institutions like AIIMS and JIPMER and as an examiner for MD and DNB programs. Dr. Bhalla exemplifies excellence in academic medicine, evidence-based care, and mentorship, continuing to shape India's internal medicine and infectious disease landscape.



Dr. Rashmi Bagga

Professor

*Department of Obstetrics and Gynecology
PGIMER, Chandigarh*

Dr. Rashmi Bagga is a distinguished Professor in Obstetrics and Gynecology with extensive clinical and academic experience. She is actively engaged in advancing women's health through research, teaching, and service. Dr. Bagga holds memberships in several esteemed scientific bodies, including the Federation of Obstetric & Gynecological Societies of India (FOGSI - NOR 0154), Indian Medical Association (IMA), Indian Society of Perinatology and Reproductive Biology (ISOPARB), Association of Gynecologic Oncologists of India (AGOI - No. 636), Indian Menopausal Society (IMS - L-570), and the Society of Fetal Medicine (SFM - 1326). Her contributions to these professional bodies reflect her dedication to improving reproductive health and fostering clinical excellence. She is actively involved in clinical research and recently served as a key investigator in a Phase IV, single-arm, multicentric, post-marketing surveillance study evaluating the safety of SIPL's quadrivalent HPV vaccine (CERVAVAC®). The study focused on the two-dose schedule in boys and girls aged 9–14 years, and the three-dose schedule in individuals aged 15–26 years, contributing valuable evidence to national immunization efforts. Dr. Bagga continues to be a leading voice in gynecologic research, education, and policy, committed to the advancement of women health in India and beyond.



Dr. Manjula Singh

Scientist F

Delivery Research, ICMR, New Delhi

Dr. Manjula Singh, Scientist F (Deputy Director General) at ICMR, New Delhi, is a medical doctor with DNB in Dermatology and Ph.D. in Immunology. With over 18 years of experience in tuberculosis, leprosy, and HIV research, she has led numerous national and international research programs, including the Indo-US TB collaboration and clinical trials. She is the key coordinator of the India TB Research Consortium (ITRC), a flagship initiative of ICMR aimed at advancing TB diagnostics, therapeutics, vaccines, and implementation research through interdisciplinary and global partnerships. Under her leadership, ITRC has developed critical tools and strategies to combat TB and was awarded the prestigious Kochon Prize in 2017 for accelerating TB R&D in India. Dr. Singh has overseen studies on new drug regimens, diagnostics, and implementation models, and has significantly contributed to strengthening research infrastructure and human resource capacity. Her initiatives include the development of an AI tool for TB screening in chest X-rays, now incorporated into the National TB Elimination Programme (NTEP). She successfully led one of India's largest Phase III TB vaccine trials and validated handheld X-rays and community-based models for active case finding in remote and tribal areas. Dr. Singh's work has earned national and international recognition, including the BMJ Infectious Disease Initiative of the Year (2018) and the National e-Governance Award (2019) for citizen-centric mobile TB diagnostics in tribal regions. She has served on the National Technical Resource Group of NTEP, the WHO Global Task Force on TB Research, and coordinated the BRICS TB research network from ICMR. Currently, she serves as Programme Officer in the Division of Delivery Research at ICMR Headquarters, leading multiple implementation and clinical research projects under the ITRC banner.



Dr. Swayampragyan Parida

Additional Professor

DCM & FM

AIIMS Bhubaneswar

Dr. Swayam Pragyan Parida is a distinguished medical professional currently serving as Additional Professor in the Department of Community & Family Medicine at AIIMS Bhubaneswar. A founding faculty member since the institute's inception in 2013, she has significantly contributed to its academic and clinical development. Dr. Parida holds an MD in Community Medicine from VSS Medical College, Burla, along with postgraduate diplomas in Geriatric Medicine and Family Medicine. Her early career included clinical training at SCB Medical College, Cuttack, followed by public health service in remote, underserved tribal districts of Odisha, including Mayurbhanj. As a medical officer, she led efforts to control diseases such as malaria, cholera, and tuberculosis, and successfully implemented national health programs including Polio Eradication and Leprosy Elimination campaigns. At AIIMS Bhubaneswar, she established key immunization services, including the Immunization Clinic, Anti-Rabies Vaccination Centre, and Odisha's only Yellow Fever Vaccination Centre. She is the nodal officer for Yellow Fever, routine immunization, and COVID-19 vaccination, and founded the institute's first Travel Health Clinic. Dr. Parida is actively engaged in public health research with over 80 publications in national and international journals. Her research focuses on immunization, geriatrics, and public health nutrition. She has led numerous projects in collaboration with UNICEF, NHM Odisha, ICMR, and AIIMS New Delhi. She coordinates the Fellowship in Public Health Nutrition and serves as Assistant Editor of the *Indian Journal of Community & Family Medicine*. Her leadership roles include Team Leader at the Rural Health & Training Centre, and master trainer for ICD-10 coding and immunization programs. Awarded a Fellowship by the International Medical Sciences Academy, Dr. Parida's career reflects her deep commitment to public health, medical education, and service to marginalized communities.

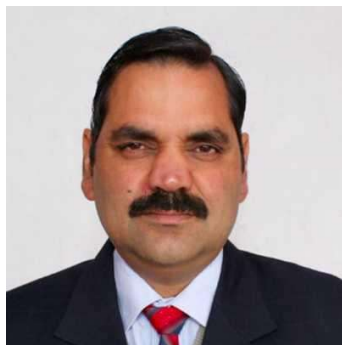


Dr. Unmesh Upadhyay

Director and Consultant

Pediatrician, Vismay child care hospital, Ahmedabad, India

Dr. Unmesh Upadhyay is an experienced paediatrician with over 15 years of clinical expertise and leadership in child healthcare. He currently serves as Director and Consultant Paediatrician at Vismay Childcare Hospital, where he has been instrumental in advancing paediatric care, particularly in immunization and preventive medicine. His dedication has made him a key figure in the regional paediatric community. In 2024, Dr. Upadhyay was appointed President of the Paediatric Association of Ahmedabad for the 2024–25 term, reflecting his active role in promoting education, research, and evidence-based practices among paediatricians in Ahmedabad and nearby areas. He completed his MD in Paediatrics from NHL Medical College (2004–2007) and enhanced his expertise in vaccinology by completing the prestigious Advanced Course of Vaccinology (ADVAC) from the University of Geneva in 2024. Additionally, he completed the IPA Vaccine Trust Course – Level 1 in 2020, focusing on vaccine safety, immunization schedules, and public health. Dr. Upadhyay has contributed significantly to vaccinology literature, authoring key chapters such as “IAP TB of Vaccine” (2020), “FAQ on Vaccines & Immunization Practices” (2021), and “COVID-19 Vaccines – A Comprehensive Overview” (2021). He also contributed to “Adult Immunization in Office Practice” (Jaypee, 2022), bridging paediatric and adult immunization strategies. Known for integrating clinical excellence with public health initiatives, Dr. Upadhyay’s work has enhanced immunization coverage and paediatric care in India. His leadership, scholarship, and advocacy continue to influence paediatric healthcare policies and practices, ensuring better health outcomes for children nationwide.



Dr. Omesh Bharti

**Deputy Director Health Services- cum- State
Epidemiologist**

Himachal Pradesh

Dr. Omesh Bharti is a globally recognized expert in rabies prophylaxis and tropical disease control whose pioneering research has shaped international and national rabies prevention guidelines. His clinical studies provided critical real-time evidence that influenced the World Health Organization's (WHO) 2018 revision of rabies immunoglobulin (RIG) use, significantly improving prophylaxis protocols worldwide. Serving on the WHO South-East Asia Regional Technical Advisory Group on Dog-Mediated Human Rabies (2023–2025), Dr. Bharti advises on strategies to eliminate dog-mediated rabies in one of the world's most affected regions. Nationally, he led the implementation of WHO's 2018 rabies guidelines in Himachal Pradesh—the only Indian state to fully adopt them—supporting efforts to align India's rabies protocols with international standards. Dr. Bharti's expertise extends to neglected tropical diseases, contributing to the WHO panel developing a strategic plan for snakebite envenoming prevention. Since 2023, he has served on India's National Technical Advisory Committee on Rabies and contributed to key national documents including the Rabies Post-Exposure Prophylaxis Guidelines (2019) and National Snakebite Management Guidelines. As a core member of the committee drafting the National Action Plan for Rabies Elimination in India (NAPRE), Dr. Bharti's innovative research on cost-effective rabies prophylaxis and animal vaccination is vital to India's goal of a rabies-free status by 2030. He also mentors future global health researchers through WHO/TDR postgraduate programs. His significant contributions earned him the prestigious Padma Shri award in 2019 for outstanding service in medicine. Through research, policy advocacy, and education, Dr. Bharti continues to lead efforts to control rabies and tropical diseases, advancing public health and safety.



Dr. Jerome H. Kim

Director General

International Vaccine Institute, Seoul, Republic of Korea

Dr. Jerome H. Kim is a globally recognized expert in vaccine development and currently serves as the Director General of the International Vaccine Institute (IVI). With over three decades of experience, Dr. Kim has successfully translated scientific innovation into public health impact by engaging national and international stakeholders, fostering partnerships, and driving strategic growth. Under his leadership, IVI expanded from a Korea-based institute to a globally influential organization. IVI-developed vaccines are making a global impact: its oral cholera vaccine is widely used to combat diarrheal disease, and its typhoid conjugate vaccine, transferred to SK bioscience and PT BioFarma, has received national approvals—with SK's version prequalified by the WHO. Before joining IVI, Dr. Kim was Program Manager for the U.S. Army's Advanced Development Program for HIV Vaccines, where he led the groundbreaking RV144 HIV vaccine trial, the first to demonstrate protection against infection. His work identified key correlates of protection and informed future vaccine strategies. He also served as Principal Deputy of the U.S. Military HIV Research Program and Chief of the Laboratory of Molecular Virology and Pathogenesis at the Walter Reed Army Institute of Research. Dr. Kim holds academic appointments as a Distinguished Visiting Professor at Seoul National University, Adjunct Professor at the Uniformed Services University (USA) and Yonsei University, and Honorary Professor at the University of Rwanda and the University of Hong Kong. He earned his B.A. with highest honors in Biology and History from the University of Hawaii and received his M.D. from Yale University School of Medicine. He completed his residency and fellowship at Duke University Medical Center. Author of over 350 scientific publications, Dr. Kim's awards include the U.S. Army's R&D Achievement Award and Korea's Medal of Honor for Civic Merit.



Vivek Sagar

Additional Professor

*Department of Community Medicine and School of Public Health
PGIMER, Chandigarh*

Dr. Vivek Sagar is currently serving as Additional Professor of Public Health Laboratory Sciences at the Department of Community Medicine & School of Public Health, PGIMER, Chandigarh, a role he has held since January 14, 2017. He holds an M.Sc. in Biotechnology and a Ph.D. from PGIMER, Chandigarh, where his doctoral research focused on the molecular epidemiology of Group A Streptococcal (GAS) strains. He completed his postdoctoral fellowship at the Helmholtz Centre for Infection Research, Braunschweig, Germany (2007–2012), under the mentorship of renowned microbiologist Prof. G.S. Chhatwal. Dr. Sagar's research interests include the molecular diversity of *Streptococcus pyogenes* and its relevance in diagnostics, pathogenesis, treatment, and vaccine development. He also works on point-of-care molecular diagnostics to enhance primary healthcare delivery. He is currently associated with the Strep A Vaccine Global Consortium (SAVAC), an international initiative to accelerate the development of a GAS vaccine. His research career spans several significant roles in ICMR- and DBT-funded projects on rheumatic fever, streptococcal infections, and infectious disease surveillance. He served as Senior Research Scientist in an Indo-German project on RHD biomarkers and worked on the PURE study, examining urban-rural differences in cardiovascular risk. Dr. Sagar has authored 44 peer-reviewed publications, is a member of the Lancefield Society, and has presented his research at multiple international conferences including the Lancefield Symposia and American Society for Microbiology (ASM). He has led or collaborated on over 15 funded projects, including grants from ICMR, Pfizer, and the Wellcome Trust. His recent Wellcome Trust-funded project, in collaboration with SAVAC and IVI (South Korea), focuses on GAS surveillance in community and hospital settings in preparation for future vaccine trials.



Dr. Ravindra Khaiwal

Professor

Environment Health, Department of Community Medicine & School of Public Health, PGIMER, Chandigarh

Dr. Ravindra Khaiwal is a distinguished environmental health scientist with over 25 years of research at the nexus of environmental sciences and public health. Renowned for his pioneering work on air pollution, climate change, and environmental monitoring, Dr. Ravindra has significantly advanced scientific understanding and influenced public health policies nationally and globally. With an impressive publication record of over 170 peer-reviewed articles and more than 17,000 citations, he holds an h-index of 61. He ranks 1st in India and within the top 0.05% worldwide in atmospheric sciences according to Stanford–Scopus, and is ranked 1st in North India and 21st globally for environmental monitoring in the 2024 ScholarGPS rankings. Dr. Ravindra has led 21 major research projects, serving as Principal Investigator on 15, securing funding exceeding INR 70 Crore. His research focuses on air quality management, health impacts of environmental exposures, and community-based climate health interventions. Dr. Ravindra plays a key policy role as the Nodal Officer for the Centre for Excellence on Air Pollution and Climate Change under India's National Health Mission and the Prime Minister's Council on Climate Change. He is also Nodal Faculty for the National Clean Air Programme (NCAP) under the Ministry of Environment. He contributed to India's Health Adaptation Plan for pollution- and climate-related diseases adopted by the Ministry of Health.

Internationally, he is a WHO-nominated Country Consultant on Air Pollution and WaSH, Fellow of the Higher Education Academy (UK), and IVLP Fellow (U.S. Department of State). Among his awards is the prestigious P.N. Raju Oration Award by ICMR. Committed to public outreach, Dr. Ravindra co-created the VAAYU comic series to raise awareness of environmental health. As a Scientific Advisory Member of ICMR–NIREH, he continues to guide national research and policy. Through multidisciplinary leadership and advocacy, Dr. Ravindra shapes environmental health's future in India and beyond.



Dr. Tarun Saluja
Head of Clinical Development
International Vaccine Institute
Seoul, Republic of Korea

Dr. Tarun Saluja is Head of Clinical Development at IVI, overseeing a group of scientists responsible for designing phase 1-3 clinical trials, regulatory submissions, medical monitoring, site trainings, subject enrolment, medical writing, manuscripts writing and capacity-building in low- and middle-income countries. Tarun joined IVI in 2017 as a research scientist. Prior, he worked as an Assistant General Manager at Sanofi Health Care India Pvt Ltd, as a Medical Advisor at Jagsonpal Pharmaceuticals Ltd and a Medical Officer at JCD Medical Centre in India. He has more than 17 years of experience working on clinical development paths for various vaccine candidates for diseases such as cholera, rotavirus, typhoid, pentavalent, clostridium difficile, dengue, chikungunya, and COVID-19. Dr. Tarun holds a Doctor of Medicine (MD), and professional diplomas in Clinical Research (PDCR), Business Administration (PGDBA), and Health Economics.



Annexure II

Bio sketches of Participants



Dr. A S V Chalapathi Rao

Senior Manager

Indian Immunologicals Limited (IIL), Hyderabad

Dr. A S V Chalapathi Rao is currently serving as Senior Manager in the Research and Development department at Indian Immunologicals Limited (IIL), Hyderabad. His primary responsibility lies in developing economical and scalable downstream processes for both bacterial and viral vaccines. He played a pivotal role in the successful process development and commercial production of the Covid-19 vaccine at IIL. Mr. Rao completed his Ph.D. in 2011 at the University of Hyderabad, where his research focused on *"Njavara rice bran: Antiproliferative and other medicinal properties."* Since joining IIL in the same year, he has made substantial contributions to the process development of various target molecules. Throughout his tenure at IIL, he has led process development efforts for a wide spectrum of vaccines and biologics, including Covaxin (Covid-19), Chikungunya, Japanese Encephalitis Virus (JEV), Hepatitis A, Dengue, Zika, Foot-and-Mouth Disease Virus (FMDV), recombinant epsilon toxin, tetanus toxoid, diphtheria toxoid, r-CRM197, pneumococcal polysaccharides, Equine Rabies Immunoglobulin (ERIG), and monoclonal antibodies for post-exposure prophylaxis (PEP) to rabies. In addition to leading scientific projects, Mr. Rao has guided several study initiatives and delivered invited lectures at prestigious institutions, including the University of Hyderabad and Central Tribal University, Andhra Pradesh. His research work has been published in peer-reviewed journals such as the Journal of Plant Biology, BMC Complementary and Alternative Medicine, and the Journal of Plant Physiology. He is also a co-inventor on patents related to scalable purification methods for diphtheria and tetanus toxoids. His contributions to science and research have been recognized through fellowships from DBT, ICMR, and DST, along with top national rankings in GATE and other competitive entrance examinations. He has also completed professional training in plant biotechnology and participated in various international conferences and recruitment activities. Mr. Rao's career embodies a compelling combination of academic excellence, research innovation, and industrial leadership, with significant contributions to vaccine development and bioprocess engineering in India.



Dr. Abhijit Modak

Assistant Professor

West Bengal Medical Education Service

Dr. Abhijit Modak is a dedicated paediatrician with over a decade of clinical and academic experience. He completed his early schooling in his hometown of Madhya gram and pursued his MBBS from NRS Medical College and Hospital, Kolkata (2003–2008). He went on to complete his MD in Paediatric Medicine from PGIMER, Chandigarh (2016–2018), where he was awarded a Bronze Medal in 2020 for his outstanding research titled *"An Ambispective Cohort Study to Assess Seizure Recurrences in Children with Calcified Neurocysticercosis."* Currently, Dr. Modak serves as an Assistant Professor in Paediatrics at the College of Medicine and Sagore Dutta Hospital, Kolkata. His professional journey includes 10 years of service as a Medical Officer under the West Bengal Health Service and 4 years as RMO cum Clinical Tutor under the West Bengal Medical Education Service. He is also a state-level mentor for SNCU and a certified trainer for F-IMNCI and FBNC programs. He is an instructor for both basic and advanced Neonatal Resuscitation Program (NRP) under IAP-NNF and has coordinated and taught in over 20 NRP courses. Inspired by his mentor, Prof. Dr. Sanjay Verma of PGIMER Chandigarh, Dr. Modak is now pursuing advanced training in vaccinology with a special focus on immunization in under-five children.



Dr. Aditya Kochar

Junior Resident

Postgraduate Institute of Medical Education and Research

Dr. Aditya Kochar is currently working as a Junior Resident in the Department of Paediatrics at the Advanced Paediatrics Centre, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. He holds an MBBS and MD in Paediatrics, having undergone rigorous academic and clinical training in paediatric medicine. His core interests lie in paediatric cardiology, paediatric infectious diseases, and immunization practices in children with special healthcare needs. These include children with chronic systemic illnesses, immunocompromised conditions, and those undergoing organ transplants. Dr. Kochar is particularly focused on optimizing immunization strategies for vulnerable paediatric populations. He is actively involved in clinical research and strives to integrate evidence-based medicine into his daily practice to improve child health outcomes. With a commitment to academic excellence and compassionate care, Dr. Kochar continues to contribute meaningfully to the field of paediatrics through both service and scholarship.



Alan Noble John

Senior Program Manager

John Snow India

Dr. Alan Noble John is a clinician-turned-public health specialist currently working with JSI | John Snow India Pvt. Ltd. (JSIPL) in Delhi. With a focus on health systems strengthening, immunization equity, and inclusive urban health strategies, Alan brings deep expertise in implementation science, monitoring & evaluation (MEL), and strategic planning. His work spans applied research, proposal design for global donors, and community-focused interventions that prioritize underserved populations. A strong advocate for trust-building in public health, he has been actively involved in initiatives like the Zero-Dose Learning Agenda (ZDLA) across Uttar Pradesh and Bihar. He is also a vocal champion for human-centered approaches to immunization and equitable vaccine access.



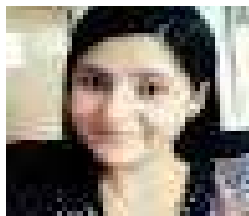
Dr. Anand Ranjan

Associate Professor

Department of Community Medicine

Autonomous State Medical College, Sultanpur

Dr. Anand Ranjan, is a committed public health professional and academician with over two decades of experience in clinical practice and medical education. He currently serves as Associate Professor in the Department of Community Medicine at Autonomous State Medical College, Sultanpur, Uttar Pradesh, a position he has held since June 2024. Dr. Ranjan completed his MBBS-equivalent degree, M.D. (Physician), from Almaty State Medical Institute, Kazakh State University, in 1999. He later pursued an M.D. in Community Medicine from Sikkim Manipal Institute of Medical Sciences (2014–2017), accredited by Sikkim Manipal University. He holds valid registrations from the Medical Council of India, Sikkim Medical Council, and Uttar Pradesh Medical Council. His early professional experience includes junior residencies at Dr. Ram Manohar Lohia Hospital (2001–2002) and ESI Hospital, Basaidarapur (2003–2004), followed by service as a Medical Officer with Uttarakhand Health Services (2004–2005) and the Jharkhand Government (2005–2011). Dr. Ranjan has enhanced his teaching and research capabilities through professional development programs, including the Basic Course in Biomedical Research (ICMR-NIE, 2023), the Basic Course in Medical Education, and the Curriculum Implementation Support Program (CISP-III) at SRMS-IMS, Bareilly.



Dr. Anita Chauhan

Rapid Response Team

World Health Organization

Dr. Anita currently serves as a WHO-designated Rapid Response Team (RRT) Consultant for routine immunization in Jalore, Rajasthan. With prior experience in introducing COVID-19 and routine immunization programs in Meghalaya and West Bengal, she specializes in district-level immunization strategy, microplanning, and outreach in underserved areas. Her work includes supporting vaccine-preventable disease surveillance, coordinating outbreak responses, and facilitating District Task Force meetings. Committed to improving public health outcomes, she integrates evidence-based practices into immunization programs and advocates for strengthened vaccination systems. Dr. Anita is passionate about expanding her expertise in vaccinology and immunology to enhance impact in low-resource settings.



Dr. Anupama Dhiman

Associate Professor

Department of Community Medicine

Autonomous State Medical College, Sultanpur

Dr. Anupama Dhiman is currently working as an Associate Professor in the Department of Community and Family Medicine at the All-India Institute of Medical Sciences (AIIMS), Bilaspur, Himachal Pradesh. She is a dedicated public health professional with a strong background in medical education, clinical services, and community health. She holds an MD in Community Medicine from Government Medical College & Hospital (GMCH), Chandigarh, under Panjab University, and an MBBS from Dr. Rajendra Prasad Government Medical College, Tanda, affiliated with Himachal Pradesh University. She also holds a Diploma in Applied Epidemiology from the National Institute of Health & Family Welfare, New Delhi. Dr. Dhiman's professional experience includes positions as Assistant Professor at AIIMS Bilaspur and Shri Lal Bahadur Shastri Government Medical College, Mandi, and as a Demonstrator at GMCH Chandigarh. She has also served as a Medical Officer under the Government of Himachal Pradesh. At AIIMS Bilaspur, she played a key role in setting up the COVID-19 Vaccination Centre and Immunization Clinic. Dr. Dhiman is Co-Principal Investigator on six funded research projects and Co-Guide to four postgraduate students. As a member of the Medical Education Unit, she has contributed to various faculty development workshops. She has presented her research at national conferences and published in peer-reviewed journals. She is a life member of IAPSM and IPHA.



Dr. Anuradha Nadda

Assistant Professor

Department of Community Medicine

Dr. B.R. Ambedkar State Institute of Medical Science, Mohali

Dr. Anuradha Nadda is a public health physician with over a decade of academic and research experience. She completed her MBBS, MD in Community Medicine, and Senior Residency from PGIMS, Rohtak. She has held faculty positions at MMIMSR, Mullana, and PGIMER, Chandigarh, and is currently serving as Assistant Professor at Dr. B.R. Ambedkar State Institute of Medical Sciences, Mohali. Dr. Nadda has been Principal Investigator and Co-Principal Investigator on several vaccine-related research projects funded by reputed agencies including ICMR, WHO, Serum Institute of India, and Pfizer Global Medical Grants. Her work spans clinical trials, operational research, and surveillance studies on pneumococcal disease, COVID-19 vaccine interchangeability, and life-skill interventions for adolescents. With over 40 publications, including multiple national position papers on adult immunization (HPV, Typhoid, PCV, Influenza), Dr. Nadda has contributed significantly to India's vaccine policy landscape. She has authored original research on COVID-19 breakthrough infections, seroprevalence studies, and measles campaign assessments. Her ongoing interest lies in strengthening community-based interventions, immunization strategies, and public health education. She brings a strong blend of field-based research and academic insight, committed to evidence-based improvements in population health.



Dr. Anusha Gupta
Area Medical Advisor
Pfizer Vaccines

Dr. Anusha Gupta is a seasoned Medical Affairs professional with experience in strategic planning, team leadership, and creative problem-solving. She earned her BDS degree from Manipal University (Udupi Campus) between 2010 and 2015, and her MDS in Pediatric and Preventive Dentistry from Bapuji Dental College and Hospital, Davangere (RGUHS) from 2016 to 2019. Dr. Gupta's professional journey is marked by her roles at Pfizer Ltd. India, where she has served as Area Medical Advisor for Vaccines since 2022. Her achievements include strategic leadership in Pneumococcal Vaccines, development of Adult Vaccination Centers across south, and impactful content development and stakeholder engagement. She also contributed to the customization of the Global Insights Shaping platform and led training sessions for the India medical team. Prior to her role at Pfizer, Dr. Gupta worked at Abbott India Ltd. as Senior RMA from 2020 to 2022. She demonstrated expertise in Vaccines, Women's Health and Metabolic teams, developing comprehensive medical education programs and leading therapy-shaping initiatives. Her impressive leadership skills were showcased during her tenure as interim manager for the RMA team vaccines at Abbott. Dr. Gupta is certified in Medical Writing from Stanford University (Coursera), holds a Professional Diploma in Clinical Research from Catalyst Clinical Services, and has undergone training in powerful presentation skills and conflict management through Abbott Learning Academy. She is currently pursuing Vaccitutor, a vaccines course, from Pfizer. Her academic accomplishments include top ranks in national entrance exams and recognition for exceptional contributions and performance in her professional roles. Dr. Gupta is highly adaptable, with strong skills in public relations, teamwork, time management, leadership, effective communication, and critical thinking. Dr. Anusha Gupta is committed to leveraging her extensive expertise to advance medical affairs strategies and contribute to business objectives.



Mr. Arpit Datey
Surveillance Medical Officer
NPSN, World Health Organization, India

Dr. Arpit Datey is an accomplished public health professional with over eight years of progressive experience in health systems strengthening, immunization, disease surveillance, and primary healthcare in India. Currently affiliated with the World Health Organization (WHO) as a Surveillance Medical Officer under the National Public Health Support Network (NPSN), Dr. Datey has been at the forefront of implementing vaccine-preventable disease (VPD) surveillance, supporting the introduction of new vaccines, Zero Dose Implementation Plan (GAVI-ZIP) and coordinating national immunization campaigns, including polio SIAs and measles-rubella elimination efforts. His earlier tenure at JHPIEGO as Program Officer – CPHC involved leading the operationalization of Health and Wellness Centres (HWCs) in Odisha, contributing significantly to India's rollout of Comprehensive Primary Health Care under the Ayushman Bharat mission. He has also served in technical and programmatic leadership roles at IHAT- UP TSU and the National Health Mission, Madhya Pradesh, where he focused on maternal and child health, non-communicable diseases, and early childhood interventions.



Dr. Arunjeet Singh

Ph.D. Scholar

Postgraduate Institute of Medical Education and Research

Dr. Arunjeet Singh is a dedicated public health professional with over 15 years of experience in the Government of India, currently pursuing a doctoral degree in Community Medicine at PGIMER, Chandigarh. He holds an MBBS, MD (Community Medicine) from Armed Forces Medical College (AFMC), and a DNB in Community Medicine. A first-division MD graduate and 5th rank holder in the university, Dr. Singh topped the AFMC empanelment exam for Senior Resident and served as faculty at AFMC (2017–2018). Subsequently, he was appointed as Assistant Director of Health at an Intermediate Headquarters in Mathura, overseeing the health and preventive services for over 50,000 Army personnel. In this role, he advised senior government officials on health policy, planning, and implementation of preventive health strategies. He played a key role in a multi-centric seroprevalence study for COVID-19 antibodies, contributing to improved implementation of pandemic protocols in his jurisdiction. Dr. Singh's core competencies include health policy formulation, outbreak investigation, community outreach, pedagogical training, and program planning for communicable and non-communicable diseases. Recognized twice with Certificates of Appreciation for his exemplary service, he has consistently demonstrated commitment, discipline, and leadership across diverse assignments—including in operational military areas. Currently on academic deputation at PGIMER, he continues to build expertise in research and public health systems, aligning practical field experience with academic rigor to influence policy and improve health outcomes at scale.



Dr. Athulya V. Ajith

Senior Resident

PGIMER Chandigarh

Dr. Athulya V. Ajith is a committed community medicine specialist with over 1.5 years of experience spanning clinical practice, academic engagement, and public health research. She completed her early education in Kerala and obtained her MBBS degree from Silchar Medical College, Assam. She subsequently pursued her MD in Community and Family Medicine at AIIMS Rishikesh (2021–2024). Presently, she is serving as a Senior Resident in the Department of Community Medicine at PGIMER, Chandigarh. Dr. Athulya was a finalist for the 'Pyarelal Sharma Best Young Female Researcher Award' at the Golden Jubilee National Conference of the Indian Association of Preventive and Social Medicine (IAPSM), held in Hyderabad, for her research titled "Proportion of late presenters among PLHIV attending ART Clinic in a tertiary care centre in Uttarakhand, India: A cross-sectional study". She secured first place in the research paper presentation at the 6th National Conference of Family Medicine and Primary Care. In addition, she was awarded first prize in the debate competition at 50th IAPSMCON (2023) and the 1st PHASECON (2023). She also topped the quiz competitions at both the 2nd TECOM and the 1st PHASECON. Her academic interests lie in the domain of vaccinology, and she has contributed a chapter titled "Approaches to Measuring Vaccine Efficacy and Effectiveness" in the IAPSM Textbook of Vaccinology.



Dr. Bisny T Joseph
Manager Medical Affairs
Bharat Biotech International Limited

Dr. Bisny T. Joseph is a medical doctor with over eight years of experience in various sectors of medical affairs, including roles as a physician, medical reviewer, and medical writer. Currently, she is working as a Manager of Medical Affairs at Bharat Biotech International in Hyderabad. In this role, she evaluates and assesses the safety and efficacy of vaccines both during clinical trials and after they are approved for public use. Previously, Dr Bisny has authored over 100 health and wellness articles for Momjunction.com, which have been referenced and translated by various healthcare institutions and websites worldwide. She has also received a President's Award for her outstanding achievements in scouting.



Dr. Chandramouli Bhattacharya
Senior Consultant in Tropical and General Medicine with Infectious Diseases
Peerless Hospitex Hospital

Dr. Chandramouli did his MBBS from Calcutta National Medical College in 2000 and subsequently MD in Tropical Medicine from the School of Tropical Medicine, Kolkata in 2008. He then went on to obtain his MRCP (Ireland) in 2009 and FRCP (Ireland) in 2021. He passed the Specialty Certificate Examination in Infectious Diseases conducted by the Royal Colleges of UK in 2016. He has also done an MSc in Infectious Diseases from the London School of Hygiene and Tropical Medicine which he completed in 2022. He is currently working as Senior Consultant in Tropical and General Medicine with Infectious

Diseases and Clinical Lead, Department of Medicine at Peerless Hospital, Kolkata. He has been working here as a consultant from 2011. He is also visiting consultant in Tropical and Infectious Diseases at Ruby General Hospital, Kolkata. His areas of interest are tropical infectious diseases, tuberculosis, the history of medicine, immunology and vaccinology.

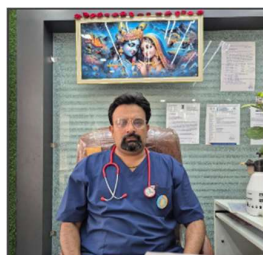


Dr. Dasi Hajibabu Rao

Professor

Lok Manya Tilak Municipal Medical College, Mumbai

Dr. Dasi Hajibabu Rao is a dedicated public health professional who purposefully chose a career in teaching Preventive and Social Medicine (Community Medicine) over private medical practice to create a broader impact on population health. Coming from a socially oppressed background, he advanced through hard work and perseverance, earning his medical degree and postgraduate qualification from one of western India's top medical colleges in 1995. With over three decades of academic experience, Dr. Rao has taught diverse subjects to various cadres of health personnel under the Maharashtra University of Health Sciences and other reputed institutions such as AIILSG and FWRTC. He has also contributed to national health programs through fieldwork with grassroots organizations and a deputation to the National Leprosy Eradication Program under the WHO and the Government of India. Dr. Rao has received formal training in Health Economics from NIHFV and currently teaches MPH students at the National Institute of Public Health Training and Research, Mumbai. His academic accolades include a Commonwealth Academic Fellowship at the London School of Economics (2005–06) and a Fulbright Lecturing Fellowship at the University of South Florida (2013–14). He has also led workshops on research methodology and bioethics and served as a scientific judge at state-level conferences.



Dr. Deepak Singh

Consultant Neuro Oncologist

Raj Neuro Centre, Uttar Pradesh

Dr. Deepak Singh is a Consultant Neuro Oncologist at Raj Neuro Centre, Uttar Pradesh, specializing in the diagnosis and treatment of brain and spinal tumors. With expertise in managing both adult and pediatric neuro-oncology cases, he offers comprehensive, evidence-based care. Dr. Singh is actively involved in academic discussions and awareness initiatives related to neurological cancers. His approach integrates surgery, chemotherapy, and radiation with patient-centered support. Dedicated to advancing neuro-oncology services in the region, he strives to improve patient outcomes through clinical excellence, research involvement, and compassionate care.



Dr. Devi Prasad Sahoo

Medical Monitor/ Safety Reporting head Indian

Human Biologicals Institute

A division of Indian Immunologicals Limited

Dr Devi Prasad Sahoo is currently heading the Pharmacovigilance department at Human Biologicals Institute, a division of Indian Immunologicals Limited.

He works/ worked as the Medical Monitor/ Safety Reporting head in many clinical trials on vaccines. He has experience in Clinical Trial, Regulatory Writing, Medical Affairs and Medical Writing. Earlier he worked as an Independent Clinician/ Medical Officer in both government and private sector. As a Medical Officer he has handled different national level programs and also worked as a district level trainer. In private sector he has taken care of patients with different diseases requiring skills in many specialties including that of critical care and oncology. He has 9 publications in international as well as national journals including publications on vaccines, rabies and molecular haemato-oncology.



Dr. Durgesh Prasad Sahoo

Associate Professor

AIIMS Bibinagar

Dr. Durgesh Prasad Sahoo is a distinguished public health professional and currently serves as Associate Professor at the All-India Institute of Medical Sciences (AIIMS), Bibinagar. With over nine years of robust experience spanning academics, clinical service, public health practice, and institutional management, Dr. Sahoo has made significant contributions in the domains of immunization, health systems strengthening, and administrative leadership. He holds an MBBS, an MD in Community Medicine, and a Fellowship in Public Health Nutrition, with academic training from premier institutions such as IGMCI Nagpur, AIIMS Bhubaneswar, and AIIMS Bibinagar. He heads the Immunization Clinic at AIIMS Bibinagar and served as the institutional in-charge for the COVID-19 vaccination program, effectively managing operations, logistics, and public communication during the national health emergency. Additionally, he serves as the Nodal Officer for the Yellow Fever Vaccination Clinic, underscoring his proficiency in travel-related and adult immunization services. Apart from his clinical and academic engagements, Dr. Sahoo plays a pivotal role in overseeing general administration at AIIMS Bibinagar. His strategic vision, organizational capability, and decision-making acumen have been instrumental in streamlining institutional workflows and enhancing service delivery efficiency. His professional interests encompass tobacco control, public health nutrition, adult vaccination, and health communication. He has led or collaborated on several high-impact extramural projects funded by leading national and international agencies, including UNICEF, NCHADS, ICMR, NIH (USA), and the International Union Against Tuberculosis and Lung Disease. Dr. Sahoo is an active member of professional bodies such as the IAPSM, IPHA, EFI, NMO. His blend of academic rigor, administrative excellence, and commitment to public health continues to impact institutional development and community health outcomes positively.



Dr. Foulisa Pyrbot
Assistant Professor

Autonomous State Medical College, Sultanpur

Dr. Foulisa Pyrbot is a committed public health physician with over a decade of diverse clinical and academic experience in community medicine. She completed her MBBS from B.P. Koirala Institute of Health Sciences (2002–2010) and subsequently pursued her MD in Community Medicine from the All-India Institute of Hygiene and Public Health, Kolkata (2018–2021). Currently serving as an Assistant Professor at Autonomous State Medical College (ASMC), Sultanpur, since September 2024, Dr. Pyrbot has previously worked as Assistant Professor and Senior Resident at Saraswati Medical College, Unnao, Uttar Pradesh. Her MD training included hands-on work in preventive and social medicine, community outreach campaigns, surveillance of infectious diseases such as COVID-19 and influenza-like illness in collaboration with Swasthya Bhawan, and presentation of original research at various national forums. In the early stages of her career, she gained valuable clinical experience as a Resident Medical Officer at premier institutions including LNJP Hospital, Tirath Ram Shah Hospital, Kalawati Saran Children's Hospital (LHMC), and Jeevan Hospital, all based in Delhi. She also served the Government of Meghalaya as a Medical Officer from 2014 to 2016, enhancing her understanding of health systems in rural and underserved areas. Dr. Pyrbot has a strong academic interest in child health, immunization, health systems research, and digital health tools. Her research contributions include publications in reputed journals such as JCDR, IJMEDPH, and IJCMPH, covering topics like undernutrition, vaccine awareness, and barriers to medical research.



Dr. Gaurav
Senior Resident

Charaks Clinic, Mohali

Dr. Gaurav Gupta is a distinguished medical professional with a profound interest and expertise in Artificial Intelligence in Medicine and Vaccines. As the Founder of Charak Clinics in Mohali since 2002, he has dedicated his career to advancing pediatric care. Dr. Gupta's leadership is evident through his role as President of AOP Chandigarh in 2021 and Co-Chairperson of NZ Pedicon 2021. His contributions to medical literature include 39 papers presented and 3 books edited. He has been a Contributing Editor for CLIPPINGS in INDIAN PEDIATRICS from July 2000 to December 2015 and a contributing author for MDcurrent.in and the American Academy of Pediatrics Society for International Child Health Newsletter. Furthermore, Dr. Gupta is recognized as an Expert Resource Person for Vaccines, having completed the IAP Advanced Vaccinology Course. His online presence through the "Babydoc" YouTube channel (17K subscribers, 2M+ views) and "Your Personal Child Specialist" podcast (Top 5 Child Health Podcasts) showcases his commitment to broader health education.



Dr. Ghansham Singh Katoch

Assistant Professor

Government Medical College, Doda

Dr. Ghansham Singh Katoch is currently serving as an Assistant Professor, contributing significantly to academics, clinical care, and research. With a strong foundation in medical education and public health, Dr. Katoch has been actively involved in teaching undergraduate and postgraduate students, while also participating in national and institutional health initiatives. His professional interests include infectious disease control, epidemiology, and health systems strengthening. A dedicated academican, he has co-authored research publications in peer-reviewed journals and has been part of collaborative public health projects. Dr. Katoch is known for his disciplined work ethic and commitment to improving population health outcomes.



Dr. Isha Chalotra

State Lead

United Nation Development Program

Dr. Isha Chalotra is currently serving as the State Project Officer for UNDP in Jammu & Kashmir and Ladakh. A native of J&K, she completed her BDS from Jammu University and holds a Master's in Public Health from PGIMER, Chandigarh. With over 7.5 years of experience in public health, Dr. Chalotra has worked with NHSRC and leading international organizations such as IPE Global, NIPI (Norway India Partnership Initiative), JSI (John Snow Inc.), and UNDP. Her work spans across health system strengthening, maternal and child health, quality assurance, and immunization programs. At UNDP, she leads initiatives such as eVIN, U-WIN, One Health, Adult BCG Vaccination, and Co-WIN in J&K and Ladakh. She has also provided technical support during the COVID-19 pandemic and led efforts to improve vaccine supply chain management. She has conducted in-person trainings across several states and UTs including Uttarakhand, UP, Delhi, Jharkhand, Rajasthan, Maharashtra, J&K, and Ladakh. At NHSRC, she contributed to key national operational guidelines under the Ayushman Bharat program, including on oral health, mental health, and emergency care. Dr. Chalotra is a certified internal assessor and remains committed to strengthening primary healthcare systems across diverse regions of India.



Dr. Jalaj Khare
Surveillance Medical Officer
World Health Organization

Dr. Jalaj Khare is a seasoned public health professional with over 11 years of experience across disease surveillance, immunization, maternal and child health, program monitoring, and health systems strengthening. He holds a Master of Public Health (Health Management) from SRM University and has additional postgraduate qualifications in Hospital and Health Care Management, Medico-Legal Systems, and Public Health Nutrition. Currently, he serves as a Surveillance Medical Officer with the World Health Organization, where he provides technical and operational leadership in vaccine-preventable disease surveillance, outbreak response, routine immunization strengthening, and capacity building of public health staff. He has previously worked with renowned organizations including PHFI, CHAI, FHI 360, and NHM in various strategic roles involving monitoring and evaluation, project implementation, and quality assurance. Dr. Khare is adept in epidemiological data analysis (SPSS, SAS, Epi Info), strategic planning, field epidemiology, and digital dashboards. His professional interests include immunization and surveillance, maternal and child health, nutrition, family planning, and communicable and non-communicable disease control.



Dr. Kondagunta Nagaraj
Professor and Head
Department of Community Medicine, Sri Padmavati Medical College for Women, Tirupati

Dr. Kondagunta Nagaraj is presently working as Vice Principal and Professor & Head of Community Medicine in SVIMS-Sri Padmavathi Medical College for Women in Tirupati. He is also working as NIRF Nodal Officer & UBA Coordinator. Dr. Kondagunta Nagaraj has graduated (MBBS) from Osmania Medical College in Hyderabad in 1987. He has completed MD (Community Medicine) from Gandhi Medical College, Hyderabad in 1992. He has completed PG Diploma in Family Medicine (CMC Vellore), Fellowship certificate in Diabetology (IMA), Fellowship in Palliative care (CHAI), Diploma in Community Mental Health (NIMHANS). He has more than 33 years of experience in teaching undergraduate and post graduate medical students, in conducting research, in providing community health services, in working in administration, in training of medical officers and auxiliary health personnel, in working for national health programmes. He has worked for 30 years as faculty in various medical colleges which include Kasturba Medical College, Manipal, SV Medical College, Tirupati, Kasturba Medical College Mangalore, Kamineni Institute of Medical Sciences, Narketpally and in SVIMS, Sri Padmavathi Medical College for Women, Tirupati where he is currently working. He has earlier worked as State Task Force Chairman in Telangana State (2016 – 2018) for RNTCP. He worked as Organizing Secretary of Telangana State TB Conference (2017) He was awarded UAB-AITRP Fogarty international fellowship to receive advanced public health training at the Sparkman Centre International Public Health Summer Institute at the UAB School of Public Health, Birmingham, USA in 2003.



Mr. Kundan Wakchaure
Research and Development
Indian Immunologicals

Mr. Kundan Wakchaure is currently working as an Executive in the Research and Development department at Indian Immunologicals Ltd., Hyderabad. With a Master's degree in Virology from the National Institute of Virology (NIV), Pune, and over five years of experience in the field, he has played an integral role in various stages of vaccine research and development. Mr. Wakchaure's expertise includes experimental design, immunogenicity testing, and formulation for both human and animal vaccines. At Indian Immunologicals, he is actively involved in advancing new vaccine candidates through scientific experimentation and quality control measures. His previous tenure at NIV included pivotal contributions during the COVID-19 pandemic, participating in research on SARS-CoV-2 variants and contributing to high-impact publications in peer-reviewed journals such as iScience and Frontiers in Microbiology. His hands-on experience in both preclinical research and translational science reflects a strong foundation in virology and public health. Kundan is committed to enhancing vaccine innovation through scientific rigor, collaboration, and continuous learning. Participation in advanced vaccinology training aligns with his goal of contributing meaningfully to global immunization efforts and driving innovation in vaccine development for emerging infectious diseases.



Dr. K. Vaishnavi
Consultant
Shree Meenaakshi Health Centre, Chennai

Dr. K. Vaishnavi is a dedicated General Physician with an MD in General Medicine from Nizam's Institute of Medical Sciences (NIMS), Hyderabad, and an MBBS from Kurnool Medical College, Andhra Pradesh. With a strong foundation in clinical medicine and a passion for academic excellence, she began her career as a Senior Resident at NIMS, where she gained significant experience in managing a wide range of medical conditions. Currently serving as an Assistant Professor at ESIC Medical College and Hospital, Sanathnagar, Dr. Vaishnavi is actively involved in teaching and mentoring undergraduate medical students and residents, combining clinical acumen with a commitment to medical education. Her academic contributions include original research and case reports published in reputed national journals. As the first author, her notable publication on serum magnesium as a prognostic indicator in intensive care has been well received. She has also co-authored unique case reports on rare presentations of gastric adenocarcinoma and stroke in young adults, reflecting her keen interest in internal medicine and clinical reasoning.



Dr. Mandar Shivputra Kannure
Senior Manager-Immunization
William J Clinton Health Initiative

Dr. Mandar Shivputra Kannure is a seasoned public health professional with over 14 years of leadership experience in immunization program management, digital health innovation, and health systems strengthening across South Asia and Africa. Currently serving as Senior Manager for Routine Immunization at the Clinton Health Access Initiative (CHAI), he leads Gates Foundation-funded initiatives in Bihar, managing a multidisciplinary team to enhance vaccination coverage and health outcomes. He has pioneered advanced digital solutions such as GIS-based microplanning and the Zero Dose Learning Agenda to target underserved populations more effectively. His previous global role as Program Manager at AIffluence Inc. involved implementing AI-driven behavior change campaigns across 11 countries, generating \$1.2M in program revenue within the first year. He has held key positions with PATH, Novartis Healthcare, John Snow India, UNICEF, and the National Health Mission, contributing to successful initiatives in vaccine introduction, hypertension management, NCD outreach, and RMNCH+A program enhancement. His work has been instrumental in forming strategic government partnerships and improving child health service delivery. A thought leader in immunization systems research, he has published in reputed journals such as BMC Health Services Research and the Journal of Clinical Hypertension, with contributions focused on supply chain optimization and strategies to achieve 90% full immunization coverage. Dr. Kannure holds an MBA in Hospital and Healthcare Management from Symbiosis International University and a BDS from Pravara Institute of Medical Sciences. His career reflects a strong commitment to public-private collaboration, scalable innovation, and data-driven program improvement.



Dr. Manoj k
Junior Resident
Postgraduate Institute of Medical Education and Research

Dr. Manoj K is currently serving as a Junior Resident in MD Pediatrics. He is undergoing postgraduate training with a focus on evidence-based pediatric care and holistic child health. His key areas of interest include pediatric infectious diseases, neonatology, and immunization strategies. Dr. Manoj has participated in academic forums and training programs aimed at enhancing clinical acumen and research aptitude. With a strong foundation in clinical pediatrics, he is committed to improving child health outcomes through compassionate care and continuous learning. He aspires to contribute meaningfully to pediatric healthcare delivery and public health initiatives.



Dr. Mary Dello Rebello
Senior Resident
Kasturba Medical College, Manipal

Dr. Mary Dello Rebello is a dedicated public health professional currently serving as a Senior Resident in the Department of Community Medicine at Kasturba Medical College, Manipal. With a strong academic foundation and a commitment to improving community health outcomes, Dr. Rebello has developed a wide range of interests including vaccine-preventable diseases, non-communicable diseases, mental health, occupational health, substance abuse, and behavior change communication. She completed her M.D. in Community Medicine from Pushpagiri Medical College and Research Centre, Thiruvalla, Kerala, and her M.B.B.S. from Sri Manakula Vinayagar Medical College, Puducherry. Throughout her academic journey, she has consistently demonstrated excellent organizational skills, teamwork, and effective communication—traits essential for successful community-based interventions and multidisciplinary collaboration. Dr. Rebello has actively contributed to research that addresses pertinent public health issues. Her work includes studies on mental and physical health among vulnerable populations, such as female cashew workers, as well as mental health challenges faced by medical students and residents. Her notable projects include research on exam-related anxiety, perceived stress among junior doctors, and physical activity patterns among medical students. These studies reflect her commitment to addressing both the social and behavioral determinants of health.



Dr. M.K. Snigdha
Assistant Professor
ESIC Medical College, Sanathnagar

Dr. M.K. Snigdha is a committed physician and academician, currently serving as an Assistant Professor in General Medicine at ESIC Medical College and Hospital, Sanathnagar, Hyderabad. She holds an MBBS and MD in General Medicine from the prestigious Osmania Medical College, under NTRUHS and KNRUHS respectively. With prior experience as a Senior Resident at Government Medical College, Sangareddy, Dr. Snigdha is passionate about medical education, clinical care, and mentoring future physicians. Her work emphasizes comprehensive patient care, and she is fluent in Telugu, Hindi, and English, facilitating strong communication with diverse patient populations. Dr. Snigdha has contributed to research in cardiology and infectious diseases, with publications on ECG, 2D-Echo, and angiographic findings in myocardial infarction, as well as cardiac complications in cirrhosis. Her MD thesis explored the clinical profile of tuberculosis in HIV-positive patients and its association with CD4 counts. She holds professional registration with the Telangana State Medical Council and the KNRUHS Examination Board, and has participated in workshops on curriculum revision in undergraduate teaching.



Dr. N. Mareeswaran
Consultant

Shree Meenaakshi Health Centre, Chennai

Dr. Mareeswaran completed his MBBS and MD in Community Medicine from Bharath University, Chennai. Following his postgraduation, he began private medical practice in 2020 in Madurai, Tamil Nadu. He has also completed a Fellowship in Diabetology from Apollo and a Fellowship in Mental Health from Christian Medical College (CMC), Vellore. Dr. Mareeswaran's key area of clinical focus is diabetes management. He has a growing interest in preventive healthcare and wishes to join this course to actively promote adult vaccination as part of comprehensive chronic disease care.



Dr. Narayan Santuka
Assistant Professor

Dharanidhar Medical College, Keonjhar

Dr. Narayan Santuka, MD, DNB (Pediatrics), is a dedicated pediatrician with specialized training in pediatric asthma, allergy, and life support. He completed his MBBS and MD in Pediatrics from SCB Medical College, Cuttack, and earned his DNB (Pediatrics) from the National Board of Examinations, New Delhi, in 2023. Currently, he serves as Assistant Professor of Pediatrics at Government Medical College, Keonjhar, Odisha. Dr. Santuka has previously worked as a Senior Resident in Pediatrics at SCB Medical College, Cuttack, and Government Medical College, Balangir. He is a Life Member of the Indian Academy of Pediatrics, the National Neonatology Forum, and the IAP National Respiratory Chapter. Fluent in English, Hindi, and Oriya, he offers both in-person and online consultations and is known for his patient-centric and evidence-based approach to pediatric care.



Dr. Neeraj Aggarwal
Professor & Head
AIIMS Bibinagar

Prof. Neeraj Aggarwal is the Professor & Head of Community and Family Medicine and Ex-Dean and Ex-Medical Superintendent at AIIMS Bibinagar. With an MBBS and MD in Community Medicine, he has held key academic and administrative positions at premier institutes including AIIMS Patna, AIIMS New Delhi, and GMCH Chandigarh. He has led several ICMR and MoH&FW supported projects and has over 45 publications in reputed national and international journals. Recognized with awards like the MoH&FW Innovation Award, he has contributed significantly to public health education and research. He is a life member of IAPSM, IPHA, IMA, and the World NCD Federation.



Dr. Pranita Priyadarshini Nayak
Senior Resident
Seoni Medical College

Dr. Pranita Priyadarshini Nayak is a passionate and dedicated public health professional currently working as a Senior Resident in the Department of Community Medicine at Government Seoni Medical College, Seoni, Madhya Pradesh. She has recently completed her MD in Community Medicine from Netaji Subhash Chandra Bose Medical College, Jabalpur (2022–2025). During her postgraduate training, Dr. Nayak gained extensive exposure across various departments, including paediatrics, psychiatry, internal medicine, microbiology, chest medicine, obstetrics and gynaecology, and emergency care. Her commitment to community health is reflected in her active participation in outbreak investigations, HIV Sentinel Surveillance, sub-national certification (SNC) for TB elimination, cold chain assessments, and radiological impact dietary surveys conducted under the Nuclear Power Corporation of India Limited (NPCIL). She has a strong academic interest in maternal and child health, adolescent health, and health behavior interventions. Dr. Nayak has presented her work at national and state-level conferences and has undergone several advanced trainings and workshops, including in adolescent health, gender sensitization, research methodology, qualitative research, epidemiology (SPSS and Epi Info), and diagnostic updates in malaria. She has also completed certifications in Basic and Advanced SPSS, BCBP, GCP, BLS, and ACLS.



Dr. Puneet Kalra
Therapy Area Lead Vaccines
Takeda Biopharmaceuticals India Limited

Dr. Puneet Kalra is a trained pediatrician with over 7 years of clinical experience and more than 12 years of dedicated involvement in the field of vaccines. He has worked extensively with leading global vaccine manufacturers including MSD Vaccines and Sanofi Pasteur, making substantial contributions to immunization strategies across the life course—from infants to the elderly. His areas of expertise include a wide range of vaccines such as Rotavirus, HPV, Pneumococcal, Varicella Zoster, DTP combination vaccines, Polio, Hib, Hepatitis, Meningococcal, and Influenza. Dr. Kalra has played a key role in the promotion of adolescent and adult immunization, and in advocating for vaccines among special population groups with chronic or immunocompromised conditions. He has co-authored several scientific publications focusing on Rotavirus, HPV, and Dengue vaccines. Notably, he served as an editor for the South Asia chapter on DTP vaccines in Plotkin's Vaccines, a globally renowned reference in vaccinology. An alumnus of the Advanced Vaccinology Course (INDVAC, 2011) from CMC Vellore, Dr. Kalra continues to actively participate in national and international scientific forums as a speaker, moderator, and chairperson, contributing to informed immunization policies and evidence-based vaccine advocacy.



Dr. Rajesh De
Assistant Professor
Malda Medical College

Dr. Rajesh De is an accomplished public health physician and geriatrician with over 12 years of experience in preventive healthcare, community medicine, and geriatric services. He holds an MBBS and MD in Community Medicine from West Bengal University of Health Sciences and is currently pursuing a Postgraduate Diploma in Geriatric Medicine from Indira Gandhi National Open University. Currently serving as Assistant Professor at Malda Medical College and Hospital, West Bengal, Dr. De is engaged in teaching, mentoring trainee physicians, promoting health education, and conducting public health research. He previously held a similar position at Santiniketan Medical College, where he contributed to both academic and clinical services. Dr. De serves as the Joint Secretary of the Indian Public Health Association – WB State Branch, where he actively organizes CME programs, workshops, and community-based public health initiatives. With over 20 publications in national and international journals, his research primarily addresses non-communicable diseases and elder care. He is a member of several professional bodies, including the Indian Association of Preventive and Social Medicine, the Epidemiology Foundation of India, and the Indian Society of Adult Immunization. Dr. De is widely recognized for his dedication to sustainable, patient-centered healthcare in both academic and field settings.



Dr. Rashmi Aggarwalla
Associate Professor
AIIMS Guwahati

Dr. Rashmi Aggarwalla is an Associate Professor in the Department of Community and Family Medicine at AIIMS, Guwahati. She holds an MBBS from Assam Medical College (2009), an MD in Community Medicine from Gauhati Medical College (2014), and a DNB in Community Medicine (2017), along with a Diploma in Hospital Management from NIHFV. With over 10 years of post-PG experience in teaching, research, and healthcare program management, Dr. Aggarwalla has contributed significantly to public health education and service delivery. She has published 55 research articles in indexed journals and has been recognized with four best paper awards. Her research portfolio includes two completed extramural projects and six ongoing projects as Principal Investigator or Co-Investigator. She has also authored or contributed to 10 book chapters. At AIIMS Guwahati, she serves in key public health roles including Nodal Officer for Drone Services, the National Program for Climate Change and Human Health, and the Child and Adult Immunization Clinic. She also serves as Co-Nodal Officer for the Traveller's Clinic and is a District AEFI Committee Member. Additionally, she is a member of the Ethics Committee at INCLEN Trust, Mawphlang, Meghalaya. Dr. Aggarwalla's work reflects a strong commitment to advancing public health practice, education, and policy implementation.



Dr. Ria Chhabra
Global Medical Expert
Sanofi

Dr. Ria Chhabra is a Global Medical Expert and Team Lead in Medical Regulatory Writing at Sanofi (Hyderabad, India), where she is responsible for key regulatory documents and performs benefit-risk assessments for Sanofi medicinal products and vaccines. Her responsibilities also include reviewing requests for compassionate use of Sanofi drugs and supporting Health Authority responses and expert statements for products. Her key research and therapeutic area interests include vaccine safety and immunogenicity, with a specific focus on Meninge, Rabies, Polio & Pertussis, and Flu. Prior to joining Sanofi, Dr. Chhabra served as a Senior Drug Safety Physician at Parexel (2015-2022). In this role, she was the lead medical reviewer and safety physician for an assigned portfolio, contributing significantly to key regulatory documents such as PBRER/PSUR, BRE, Safety Evaluation Reports (SERs), and Clinical Overviews (COs). Her therapeutic experience spans Neuropsychiatry, Immunology & Autoimmune disease, Pulmonary artery hypertension, rare diseases, and COVID-19. Dr. Chhabra also actively participated in safety management team (SMT) activities and conducted thorough literature reviews. Dr. Chhabra's clinical experience includes working as a Medical Officer in the Coronary ICU at Max Hospital (2014-2015), where she managed cardiac emergencies, made critical decisions under pressure, and supervised patient care activities. She holds a Bachelor of Medicine and Bachelor of Surgery (MBBS) degree and is BLS-ACLS certified.



Dr. Rohit Kumar Garg

Assistant Professor

Amrita Institute of Medical Sciences and Research Centre, Faridabad

Dr. Rohit is currently working as a Consultant and Assistant Professor in the Department of Infectious Diseases at Amrita Institute of Medical Sciences and Research Centre, Faridabad. He completed his DM in Infectious Diseases from AIIMS, New Delhi, following a six-year integrated residency in Internal Medicine and Infectious Diseases. He is a Fellow of the Royal Society of Public Health (FRSPH), a certified Infection Control professional (CIC, CBIC), and an active member of IDSA, ESCMID, SHEA, and RSTMH. His clinical interests include the management of tuberculosis (including drug-resistant TB), HIV, fungal infections, healthcare-associated infections, and the infectious complications of immunocompromised hosts and transplant recipients. He has been actively involved in Antimicrobial Stewardship Programs (AMSP) and serves as a core member of the Hospital Infection Control Committee. Dr. Rohit also manages patients with complex critical care infections and has had significant clinical experience in managing COVID-19 during the pandemic. Dr. Rohit has contributed to national-level guidelines including the AIIMS antimicrobial guidelines, India's COVID-19 management protocol, and the WHO–NTEP extrapulmonary TB training manual. He has several publications in national and international journals. He is passionate about teaching and has delivered invited talks at national CME events, institutional workshops, and webinars. Dr. Rohit has represented India at the ESCMID Summer School in Rome and has received recognition for his contributions through quiz wins and poster presentations at national infectious diseases forums.



Dr. Sagar K.S.

Senior Resident

ESIC Medical College

Dr. Sagar K.S. is a dedicated public health physician with a strong foundation in preventive medicine, vaccination, and health management. He completed his MD in Community and Family Medicine from AIIMS Raipur, where his thesis focused on "Assessment of Knowledge, Attitude, and Practices regarding Road Safety at Blackspots in Raipur, Chhattisgarh." This work addressed critical behavioral and infrastructural factors related to injury prevention, underscoring his commitment to community-centered, evidence-based public health action.

He is currently serving as a Senior Resident in the Department of Community Medicine at ESIC Medical College, KK Nagar, Chennai. He earned his MBBS from Mysore Medical College and Research Institute. During his postgraduate training, Dr. Sagar was actively involved in immunization outreach efforts in both rural and urban health training centers. His responsibilities included microplanning, cold chain logistics, health education, community mobilization, and session monitoring under the Universal Immunization Programme (UIP). His academic interests span vaccination, non-communicable diseases, health economics, health policy, and health management. He has presented a scientific poster at the IAPSM National Conference in Mangalore (2024) and delivered an oral presentation at the WONCA South Asia Regional Conference in Bangalore (April 2025), reflecting his engagement in public health research and dissemination.



Dr. Sahithi Mandava
Assistant Professor
ESIC Medical College and Hyderabad

Dr. Sahithi Mandava is an Assistant Professor in the Department of Community Medicine, Hyderabad, with a strong passion for public health. Her key areas of interest include preventive oncology, integrative medicine, nutrition, geriatrics, and public health administration. During her academic journey at SV Medical College, Tirupati, Dr. Sahithi presented numerous papers at national conferences, earning the Best Paper Award at the Prevencon Conference in Pondicherry and the Best Poster Award at various events. She also excelled in multiple quiz competitions throughout her postgraduate studies. Committed to academic excellence, she has conducted several research methodology workshops tailored for postgraduate and dental students, fostering research skills across disciplines. To broaden her expertise, Dr. Sahithi has completed certificate courses in research methodology, nutrition, and communicable diseases. Her recent participation in the World Health Summit enriched her understanding of global health challenges and priorities. Dr. Sahithi is dedicated to advancing preventive care through interdisciplinary collaboration and impactful contributions in both academic and public health domains.



Mr. R Sairam
Country Brand Lead-Vaccines
Pfizer

Mr. S Sairam is a seasoned healthcare professional with over 24 years of experience in Marketing, Sales, and Training across specialties such as Vaccines, Cardiology, Diabetes, and Pediatrics within the pharmaceutical industry. Currently serving as CBL – Vaccines at Pfizer India, he leads the national marketing strategy to enhance vaccination uptake among pediatric and adult populations, driving the mission of healthier living through preventive care. Known for his passion for innovation, execution excellence, and impact-driven leadership, Sairam has received multiple prestigious accolades. These include the Marketing Icon of the Year 2024–25, presented by Union Minister Shri Prof. S.P. Singh Baghel and felicitated by Asia One (Singapore), the OPPI Award for Marketing Excellence (2021), and recognition from e4m Impact Influencer Awards for transformative campaigns promoting liver health. He has also been honored with both Indian and global marketing excellence awards within his current organization. A qualified pharmacist and ISTD-certified trainer, Sairam has further honed his skills through executive education at IIM Indore and Symbiosis. His professional vision is to be a value creator in the healthcare ecosystem, transforming the journey from illness to wellness through innovative vaccination and preventive health solutions.



Dr. Samrat Badhyopadhyay
ENT Surgeon
Manipal Hospitals

Dr. Samrat Bandyopadhyay, ENT Surgeon is from Vill Dwipa, Haripal, Hooghly. He did his MBBS course from Calcutta National Medical College (1995-2001). Thereafter he finished one year Junior Residency in the department of General Surgery. He did MS in ENT from J.N. Medical College, Belgaum (2003-2006) under RGUHS, followed by Senior Residency at Department of ENT, Calcutta National Medical College. After a short spell in West Bengal Health Service, he left the government job and started his own private practice from 2011. Apart from the private practice he is also attached as a visiting consultant at AMRI Hospital, Dhakuria and Narayana Superspecialist Hospital, Howrah. Within this span of practice, he specialized and started cochlear implantation surgery since 2013. He also got trained in Airway Surgery from Chuv, Switzerland in 2017 and started this specialized kind of surgery in a proficient manner.



Dr. Sangeeta Dureja
Assistant Professor
Kalpana Chawla Government Medical College, Haryana

Dr. Sangeeta Dureja, MBBS, DGO, MD, is an Assistant Professor in the Department of Community Medicine at Kalpana Chawla Government Medical College (KCGMC), Karnal. A graduate of PGIMS Rohtak, she brings deep expertise in public health, maternal and child health, and immunization program management. Currently, Dr. Dureja serves as the Immunisation Clinic In charge at KCGMC, where she leads the Universal Immunization Programme and Mission Indradhanush, ensuring the delivery of vaccines to infants, children, and pregnant women. She played a pivotal role as the COVID-19 Vaccination Coordinator during the pandemic, coordinating logistics, public outreach, and frontline team supervision. With over eight research publications and two authored books, Dr. Dureja has contributed significantly to areas such as vaccination utilization and maternal healthcare. She also actively mentor's undergraduate students, leads research initiatives, and participates in community outreach. Her dedication was recognized with a Certificate of Appreciation from the District Administration, Karnal, for her exceptional service during the COVID-19 pandemic, where she was also the first female volunteer for vaccination at her institution.



Dr. Sachin Rajkumar Choudhari

Medical Advisor

Pfizer Vaccines

Dr. Sachin Rajkumar Choudhari is a pharmaceutical physician with an MD in Pharmacology and a solid clinical background. He currently serves as a Medical Advisor in the Vaccine Division at Pfizer, where he is at the forefront of strategic and scientific execution for upcoming vaccine launches. In his role, Dr. Choudhari leads medical strategy and launch readiness while collaborating with cross-functional teams across marketing, regulatory affairs, and sales to ensure successful rollouts. He actively engages with key opinion leaders (KOLs) and healthcare professionals (HCPs) to foster scientific advocacy and supports evidence generation, training programs, and compliant medical communications. His contributions extend to lifecycle management and post-launch activities as well. Prior to joining Pfizer, Dr. Choudhari held significant roles in medical affairs across leading pharmaceutical companies. At Alkem Laboratories, he led multiple division-level launches—including over a dozen new products—and played a key role in a Phase 1b clinical trial for a novel antifungal compound, along with regulatory interactions with the DCGI. At Zydus Healthcare, he was instrumental in launching Avanafil, India's first, while also supporting medical training and evidence generation. During his tenure at Cipla Ltd, he managed 17 brands in Acute Care and Respiratory therapy areas, launched two products, and collaborated with global teams to develop digital engagement strategies for HCPs. Dr. Choudhari earned his MBBS from RGMC & CSMH, Kalwa, followed by an MD in Pharmacology from SVNGMC, Yavatmal.



Dr. Satnam Singh

Professor

Adesh Medical College and Research, Adesh University

Prof. (Dr.) Satnam Singh is a distinguished researcher and professor specializing in pharmacology, phytomedicine, and antimicrobial resistance. Currently serving as Professor of Pharmacology at Adesh Institute of Medical Sciences and Research, Adesh University, he has made significant contributions to the study of multidrug-resistant pathogens and natural therapeutic agents. Dr. Singh's research spans the evaluation of antimicrobial potentials of medicinal plants such as *Gloriosa superba* and *Ficus religiosa*, with a focus on combating multidrug-resistant bacterial strains including *Acinetobacter baumannii* and *Staphylococcus aureus*. His work also covers the pharmacology of polyphenolic compounds, emphasizing their clinical significance and therapeutic value. He has authored numerous peer-reviewed articles and book chapters on phytopharmacotherapeutics, drug delivery systems, and cancer cell line studies. His recent publications explore the anticancer potential of traditional medicinal plants against human breast and lung cancer cells. He is also the co-author of a textbook on novel drug delivery systems published in 2024. A committed academic, Dr. Singh has actively contributed to advancing knowledge on infectious diseases and natural pharmacological interventions, fostering interdisciplinary research that bridges traditional medicine and modern pharmacology.

**Dr. Shilpi Malhotra****Scientific Consultant**

Indian Council of Medical Research, New Delhi

Dr. Shilpi Malhotra is a Scientific Consultant at the Indian Council of Medical Research (ICMR), specializing in antimicrobial resistance (AMR). Her work focuses on developing and implementing interventions to combat AMR, with a particular emphasis on the role of immunization in prevention. She is currently coordinating a national immunization study that evaluates the impact of vaccines in reducing mortality and hospitalization among the elderly—highlighting how vaccination can serve as a key strategy to reduce infection-related antibiotic use and slow the emergence of drug resistance. With over 14 years of research experience, Dr. Malhotra's current interests span genomic surveillance of drug-resistant pathogens, regulatory approaches to curb antimicrobial misuse, and the integration of immunization strategies into broader AMR control frameworks. Through her work at ICMR, she actively supports initiatives aimed at preventing antimicrobial resistance and enhancing the effectiveness of immunization programs, particularly among vulnerable populations such as the elderly. She holds a Ph.D. in Biochemistry and spent seven years at the All India Institute of Medical Sciences (AIIMS) as a research associate and scientist, where she focused on aptamer selection and its applications in diagnostic platforms. Outside of her scientific work, Dr. Malhotra enjoys baking and traveling, with a passion for exploring diverse cultures and cuisines.

**Dr. Shivesh Devgan****Assistant Professor**

Department of Community Medicine and Medical Incharge of Rural health and training centre in Government Medical College, Amritsar

Dr. Shivesh Devgan is an Assistant Professor in Department of Community Medicine and Medical Incharge of Rural health and training centre in Government Medical College, Amritsar. He joined his postgraduation (MD) in the field of Community Medicine in Government Medical College, Amritsar in 2012. In the duration of his postgraduation, he got the opportunity to undergo training for cold chain management and vaccine logistics which included a certified course in immunization practices. He actively surveyed Tarn Taran block as an external monitor under Pulse Polio campaign. He also holds a PG Diploma in Family Medicine (CMC Vellore). Apart from immunization, he has been trained for managing de-addiction services and his own thesis research work was based on prevalence of substance abuse in urban slums of Amritsar city. He imparted training to Anganwadi workers on maternal health and child rearing practices. He started his teaching journey in the field of Community Medicine as Assistant Professor at SGRD Medical College, Amritsar in 2016, from where he got attached with academics for undergraduate and postgraduate students. During COVID pandemic, he served as Nodal officer for COWIN platform, creating an opportunity to assess the impact of COVID-19 in continuity of essential health services. He has been a state and national assessor for UNICEF/NCCVMRC sponsored effective vaccine management (EVM) assessment for MP(National), North-East (Regional) and UP, Rajasthan and Assam (State). He significantly contributed in compilation of EVM assessment report for the state of Assam and in 2nd National Improvement Plan workshop for EVMA 2022 under NCCVMRC/NIHFW. Dr Shivesh is presently a co-investigator in 2 projects- one by ICMR and NIN Hyderabad each. He has more than 15 publications to his name and a couple of editorial sections in indexed peer reviewed journals. He is a life member of various professional associations i.e. IAPSM, IPHA, AHSAS.



Ms. Suhani Mankotia
Senior Medical Regulatory Writer
Sanofi Business Operations, Hyderabad

Ms. Suhani Mankotia is a Senior Medical Regulatory Writer at Sanofi Business Operations, Hyderabad, with over 10.5 years of experience in pharmacovigilance and medical writing. She holds a Master's degree in Pharmacy with specialization in medicinal chemistry. Since 2014, Suhani has been engaged in authoring regulatory documents for vaccines, including Periodic Benefit-Risk Evaluation Reports (PBRERs), Aggregate Case Overviews (ACOs), and other safety reports. At Sanofi, she leads the development of key sections such as benefit evaluation, baseline efficacy and effectiveness, and integrated benefit-risk analysis for Market Authorization Holder (MAH) vaccine submissions. Her work contributes directly to ensuring regulatory compliance and supporting public health safety decisions. Although her academic research was in the domain of xanthine oxidase inhibitors, Suhani's professional expertise has firmly centered on vaccine safety documentation. She has also pursued certifications in research methodology and continues to stay updated with global health priorities. Driven by a passion for scientific accuracy and impactful communication, Suhani is committed to strengthening public health through evidence-based medical writing. Her long-term goal is to become a domain expert in vaccine safety and contribute meaningfully to global immunization strategies through high-quality regulatory science.



Dr. Vijay Bade
Pediatrician
Vighanharta Sai Hospital, Pune

Dr. Vijay Bade is a distinguished Consultant Pediatrician and Neonatologist, currently serving as the Medical Director at Vighanaharta Sai Hospital and Laboratory, Pune. With qualifications including MBBS, DCH, PGPN (Boston University), and certifications in Hyperbaric Medicine and Adolescent Health, he brings diverse expertise to clinical and academic domains. Dr. Bade is a recognized trainer for the VAC Module 2025 and serves as a member of ACVIP (2024–2026, Central Zone). An accredited speaker with the Maharashtra Medical Council, he is also an international examiner and first aid trainer. He is affiliated with Late Atal Bihari Vajpeyi Medical College, Pune.



Dr. Yashik Bansal

Associate Professor

Manipal Tata Medical College, Jamshedpur

Dr. Yashik is currently serving as an Associate Professor at Manipal-TATA Medical College, Jamshedpur. He completed his MBBS and MD in Microbiology from the Government Medical College and Hospital, Chandigarh, and brings with him a decade of academic and clinical experience post-MD. Dr. Yashik is a nationally recognized expert in antimicrobial resistance (AMR) and has been nominated to expert groups of the National Medical Commission (NMC) for developing the curriculum under the Government of India's National Action Plan on AMR (NAP-AMR). He is a key contributor to both the prescriber and non-prescriber training modules released by the NMC and has been appointed as the Regional Coordinator for NAP-AMR activities since July 2024. His academic contributions include over 40 publications in peer-reviewed indexed journals and book chapters, including works published with Springer Nature. His research spans antimicrobial resistance, vaccine hesitancy, and epidemiology of vaccine-preventable diseases, with notable studies on Hepatitis A virus infection. As a Fellow of the Royal Society for Public Health (FRSPH), Dr. Yashik is dedicated to advancing public health education, evidence-based research, and medical curriculum reform in India. He continues to play a pivotal role in national health policy development and infectious disease control initiatives.



Dr. Y Jyotsna

Senior Project Officer

UNDP, Hyderabad

Dr. Y. Jyotsna is a Dentist and Public Health Professional from Hyderabad, Telangana—popularly known as the Pearl City of India. With over five years of experience in public health and three years in the clinical sector, she brings a dynamic and multidisciplinary approach to healthcare systems strengthening. She holds a Bachelor of Dental Surgery (BDS) and a Master's in Public Health (MPH), both completed in her home state. Dr. Jyotsna began her public health journey with the Public Health Foundation of India (PHFI), where she worked as a Programme Coordinator (Training and Research) for the Ayushman Bharat initiative under Karnataka State NHM. Her portfolio includes notable contributions to immunization programs, having served as an external assessor for Effective Vaccine Management (EVN) in September 2022 and participating in the Rotavirus Vaccine Post Introduction Evaluation in March 2022. Since July 2021, she has been serving as the State Project Officer for Telangana with the United Nations Development Programme (UNDP), where she is instrumental in implementing and managing digital health innovations including eVIN, CoWIN, UWIN, and TBWIN under the Universal Immunization and One Health Programmes. Dr. Jyotsna plays a key technical and coordination role in vaccine supply chain management, digital system rollout, and multi-stakeholder engagement, contributing significantly to health systems strengthening.



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Government Medical College and Hospital, Chandigarh

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Dr. Anjali Modi

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Annexure III

Bio sketches of Organizing Team



Dr. Adarsh Bansal

Research Scientist III

Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Dr. Adarsh Bansal is currently serving as a Project Research Scientist–III at the Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. Dr. Adarsh has submitted his Ph.D. work in on the effectiveness of a multi-pronged intervention to reduce irrational antimicrobial prescriptions in primary healthcare settings, reflecting his deep commitment to tackling antimicrobial resistance (AMR) through evidence-based approaches. With a strong academic and research background in public health and infectious diseases spanning over 12 years, Dr. Adarsh has contributed significantly to large-scale public health initiatives and clinical studies particularly in vaccines and infectious disease surveillance. He has been a part of many peer-reviewed publications and has presented his research in national and international conferences. Prior to his current role, Dr. Adarsh was actively involved in the planning, coordination, and implementation of randomized controlled trials and observational studies focusing on infectious disease epidemiology, antimicrobial stewardship, and health system strengthening with a strong focus on translational public health research. At PGIMER, Dr. Adarsh continues to generate critical evidence for health policy, disease prevention and surveillance to strengthen primary healthcare systems in India.



Ms. Nupur Vats

**Project Research Scientist III-cum-
Ph.D. Scholar**

Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Ms. Nupur, is a dedicated public mental health professional, holds a master's degree in sociology and has been actively contributing to the field for the past three years. Currently pursuing her PhD at PGIMER Chandigarh, she focuses on adolescent mental health, particularly within school environments. Nupur has been invited as a resource person for school health programs, delivering workshops that address the growing issue of digital stress and its impact on the mental well-being of adolescents. Her expertise and passion for enhancing adolescent mental health make her a valuable contributor to the field.



Dr. Aprajita Mehta

Ph.D. Scholar

Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Dr. Aprajita Mehta, is currently pursuing a PhD in Public Health at the Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. Her doctoral research focuses on the development and evaluation of a digital health intervention for Type 2 Diabetes management. She holds a Master of Public Health (MPH) degree from AIIMS Rishikesh. Later, she coordinated the MPH program in AIIMS Rishikesh as a Tutor in the Department of Community and Family Medicine. During this period, she played a key role in academic coordination, research planning, and organizing technical workshops and training programs. She has completed various certified courses in research methodology, digital health, and palliative care, and has participated in numerous national conferences and workshops.



Ms. Manjeet

Ph.D. Scholar

Department of Community Medicine and School of Public Health, PGIMER, Chandigarh

Ms. Manjeet is currently pursuing her Ph.D. in Public Health at the Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. She holds a Bachelor of Science in Nursing from AIIMS, New Delhi (2017-2021) and Master of Science in Nursing with a specialization in Community Health Nursing from AIIMS Rishikesh (2021–2023). Her primary research interests include **adult vaccination**, health literacy and community-based public health interventions. She is currently working on uptake of Pneumococcal and Influenza vaccine among elderly individuals. A passionate scholar, Manjeet continues to contribute to evidence-based practice and capacity-building in public health.



Dr. Indrakshi Sharma

Project Research Scientist III

*Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh*

Dr. Indrakshi Sharma is a dedicated public health professional with nearly a decade of multifaceted experience in vaccinology research, epidemiology, and health systems strengthening. She brings in-depth expertise in project coordination, strategic planning, and implementation of multi-centric research studies across India, with a strong focus on vaccinology. Academically, Dr. Sharma holds a Master of Public Health (MPH) and a Bachelor of Dental Surgery (B.D.S.), which together have laid the foundation for a career dedicated to advancing public health through research and programmatic leadership. Over the years, she has led and coordinated public health initiatives across diverse healthcare settings in India. Dr. Sharma gained hands-on experience in vaccine trial management at PGIMER during the Covishield Vaccine Trial, where she was responsible for participant recruitment, staff supervision, ethical documentation, and ensuring strict protocol adherence. Prior to this, she served as a Program Manager at MAMTA Health Institute for Mother and Child (MAMTA-HIMC), where she managed the Care Companion Program in Himachal Pradesh. Her work is characterized by a strong integration of field-based insight, academic knowledge, and disciplined project management. Dr. Sharma has contributed to peer-reviewed publications, particularly in the areas of COVID-19 vaccine safety and immunogenicity.



Dr. Diksha Thakur

Project Research Scientist III

*Department of Community Medicine and School of Public Health,
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Dr. Diksha Thakur is currently serving as a Project Research Scientist III (Medical) in the Department of Community Medicine and School of Public Health at PGIMER, Chandigarh. She holds a Bachelor's degree in Dental Surgery (BDS) and a Master of Public Health (MPH) with a specialization in Epidemiology from Manipal Academy of Higher Education. Her professional background includes over two years of experience in clinical research and observational studies, with key responsibilities in patient screening, patient recruitment, patient randomization, informed consent, data management, and regulatory compliance. She has previously worked at AIIMS Bilaspur, where she contributed to several multicenter trials in stroke and demyelinating conditions, and at PGIMER on community-based public health studies. She has completed certified training in Good Clinical Practice, clinical trial design, and epidemiologic methods from leading institutions including Johns Hopkins University and Imperial College London.



Ms. Radhika Aggarwal
Statistician cum Data Manager

*Department of Community Medicine and School of Public Health,
PGIMER, Chandigarh*

Ms. Radhika Aggarwal Currently serving as a Data Manager cum Statistician at the School of Public Health, Radhika supports projects related to adolescent mental health, disease surveillance, and behavioural studies. Previously, she worked as an Assistant Research Officer in the District Statistical Office, Chamba (2018–2023), where she led the "Reverse Migration during COVID-19" study and ensured rigorous data quality control in district-level statistical reporting. Radhika holds a Master's Degree in Statistics from Kurukshetra University and a Bachelor's in Computer Applications. Her training includes programs at ICMR Delhi, covering SPSS, R, and Power BI. She has also conducted diverse projects on malnutrition, migration, and predictive modelling.

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Partners & Collaborators



नीति आयोग

Gates Foundation





PGIVAC Editions



1st PGIVAC 2016



2nd PGIVAC 2018



3rd PGIVAC 2019