



CMIE HEALTHCARE INNOVATION BOOTCAMP SERIES

BOOTCAMP ON ONCOLOGY

31st Jan - 3rd Feb; 2024

Venue: CMIE, 4th Floor, Research Block

QUEST FOR NEW SOLUTIONS IN
ONCOLOGY

Jointly Organised by
CMIE - AIIMS & National Cancer Institute,
AIIMS

REPORT OF THE ONCOLOGY BOOTCAMP

Introduction:

The CMIE Healthcare Innovation Bootcamp on Oncology, held from January 31st to February 3rd, 2024, marked a transformative leap forward in oncology innovation. Jointly organized by Centre for Medical Innovation and Entrepreneurship (CMIE) and the National Cancer Institute Jhajjar campus of AIIMS New Delhi, this collaborative initiative brought together thirteen startups and aspiring entrepreneurs, fostering a diverse pool of ideas and expertise.

Bootcamp Objectives:

The carefully curated format aimed to stimulate indigenous innovations in cancer care. Participants engaged in real-time problem identification, clinician-specific inputs, and collaboration opportunities. The boot camp focused on aligning innovations with the needs of caregivers and clinicians, ensuring both groundbreaking and viable solutions.

Immersive Interaction Program:

Participants immersed themselves in technical sessions, case studies, clinical visits, and clinical discussions.

➤ **Technical Sessions:**

Participants engaged in a series of technical sessions, exploring topics such as the basics of cancer, cancer screening and epidemiology, the innovation landscape at AIIMS, Understanding the challenge of achieving a timely diagnosis and emerging technologies in cancer care, surgical oncology, and radiation oncology along with an understanding on regulatory pathways and compliances. These sessions led by the experts were designed to provide a comprehensive understanding of the technological landscape in oncology and to gain an in-depth understanding of need gap analysis, user specific profiling, regulatory compliances and scope of new product development in the oncology space.

Dr. Raja Paramanik commenced the bootcamp with an enlightening session, guiding participants from the foundational basics to the complex terrain of cancer. His session on the "Orientation of the bootcamp (Basics to Cancer)" provided a comprehensive overview of cancer biology, emphasizing its pivotal role in cancer management. He emphasized the significance of understanding cancer biology as the key to defeating cancer.

Dr. Hari Sagiraju's discussion on effective cancer prevention in the Indian population underscored the importance of bridging gaps through translational research. He emphasized the need for innovative strategies to translate research findings from clinics/labs into practical solutions for communities.

Dr. Jitendra Kr Meena emphasized the importance of creating intelligent tools for cancer education and risk assessment tailored to the Indian population. He addressed the challenges in user and supply sides of cancer screening, advocating for novel technologies to bridge these gaps and enable early cancer detection.

On the second day, Dr. Babita commenced with the technical sessions by discussing newer modalities in Medical Oncology, with a focus on precision medicine enabled by tools like Next-Generation Sequencing (NGS), targeted therapy, and immunotherapy. She also addressed the challenges and limitations associated with implementing these advanced techniques.

Dr. Supriya highlighted the significance of radiation as a major cancer treatment modality, emphasizing its precise targeting for optimal tumor control with minimal side effects. He discussed the challenges of organ motion management and the adoption of various methodologies to address them, pointing towards the potential paradigm shift with FLASH therapy. He also noted the ongoing research and advancements in software, hardware, and accessories in the field of radiation oncology.

Dr. Ritu Gupta delivered a talk on understanding the challenge of achieving a timely diagnosis. In her presentation, she explored the importance of timely diagnosis, emphasizing the significance and challenges involved, as well as the components of the diagnostic workflow and strategies to expedite diagnostic investigations.

Dr. Jyoti Sharma on day 3 of the bootcamp during the "Emerging Technology in Surgical Oncology" the journey of a patient in the Department of Surgical Oncology, emphasizing recent advances and addressing nuances such as costs, replacement of imported parts, and technological flaws.

Dr. Supriya Mallick during the "Emerging Technology in Radiation Oncology" session, delved into cutting-edge advancements, including FLASH therapy. He discussed the precision of modern radiation therapy in cancer care, highlighting its effectiveness and minimal side effects. He addressed challenges in delivering higher doses to certain tumors due to organ motion

and discussed methodologies to minimize this. He also mentioned the potential paradigm shift with FLASH therapy, which could allow delivering radiation doses of up to 100 Gy in one second. Ongoing research and development in software, hardware, and accessories in radiation oncology were emphasized.

Mrs. Rajashri Ojha, from Raaj GPRAC Pvt. Ltd., on 4th day of the bootcamp delved into the intricacies of "Regulatory and Quality Compliance in the Healthcare Industry." Her session provided valuable insights into navigating the complex regulatory landscape governing healthcare. She discussed strategies for ensuring compliance with regulations and maintaining high-quality healthcare delivery, emphasizing the importance of adhering to standards for patient safety and excellence in healthcare services.

➤ **Case Studies:**

The "Innovation Landscape @ AIIMS – Learning from our Experience" sessions served as a cornerstone for the boot camp, providing participants with a nuanced understanding of real-world challenges and innovative solutions in oncology. Real-world case studies presented by Dr. Chandrashekar, Dr. Kritika Rangarajan, Dr. Nishkarsh Gupta, Dr. Smriti Panda, and Dr. Gopishankar Natanasabapathi enriched the innovation landscape discussion. Each case study not only showcased the complexity of challenges faced in healthcare but also highlighted the diverse approaches and successful innovations implemented at AIIMS.

Dr. Chandrashekhara presented a unique case study on "Telerobotic Ultrasound," sharing his team's experience in turning challenges into opportunities. The collaboration with IIT Delhi and Addverb led to the development of a groundbreaking telerobotic ultrasound, showcasing the vast landscape of innovative healthcare research at AIIMS.

Dr. Krithika Rangarajan shared insights into her extensive experience in devising and implementing AI networks for oncology. She guided participants through critical aspects such as identifying need areas, designing networks, conducting studies, data curation, and AI validation.

Dr. Gopishankar presented his roadmap for achieving innovation in Radiation Oncology, elaborating on two patented AIIMS innovations. The discussion encompassed global cancer status, the imperative for innovations in RO, inspirational aspects, encountered challenges, and the successful realization of innovation goals.

The Department of ENT at AIIMS New Delhi, in collaboration with IIT Delhi, developed a novel tracheo-esophageal voice prosthesis (TEP) through three phases, involving literature review, baseline establishment, and mechanical testing; the polyurethane prosthesis is presently undergoing clinical trials.

➤ **Clinical Visits:**

The program covered diverse hospital settings, including orientation to hospital settings, visits to OPD, OT, Post OP settings, Radiology Intervention Lab, Core Lab, Nuclear Medicine, and the Blood Bank. These clinical visits were designed to bridge the gap between theoretical knowledge and practical application.

➤ **Special Camp Visit-Preventive Oncology:**

A special camp visit addressed preventive oncology as a part of cancer screening and epidemiology, creating a holistic understanding of cancer care.

This visit, unlike any other and one of its kind, facilitated a groundbreaking interaction among patients, clinicians, and participants. Addressing cancer screening and epidemiology, it provided a unique, comprehensive understanding of cancer care. The event's innovative approach allowed patients to share their experiences, clinicians to offer insights into preventive strategies, and participants to gain firsthand knowledge of cancer prevention challenges and advancements. This one-of-a-kind interaction highlighted the importance of early detection and emphasized the collaborative efforts essential for effective cancer management.

➤ **Clinical Discussions:**

Daily clinical discussions with the experts facilitated reflection and knowledge exchange. Participants shared observations and engaged in discussions with clinicians, deepening their understanding of the clinical applications discussed during the boot camp.

Innovation Facilitation:

The boot camp aimed to create a conducive environment for clinician-innovator-researcher groups to explore and contribute to need-based innovation. Emphasis was placed on user-specific profiling, aligning innovations with commercial success.

DBT BIRAC and AIIMS Leadership Interaction:

The closing session on day 4 witnessed the gracious presence of dignitaries, including Dr. Jitender Kumar-MD BIRAC, Dr. Shrishendu Mukherjee-Mission Director,

PMU, BIRAC, and Dr. Chayya Chauhan-Sr Manager- Incubation from DBT-BIRAC, and AIIMS leadership represented by Prof. M Srinivas-Director, AIIMS, New Delhi, Prof. Kaushal K Verma-Dean (Academics), AIIMS New Delhi, Prof. Dinda- Chief coordinating Officer, CMIE and Emeritus Scientist, ICMR, and Prof. Alok Thakar, Project Head CMIE and Head of NCI.

They collectively reflected on the collaborative efforts of CMIE, AIIMS, and the National Cancer Institute, AIIMS New Delhi. Emphasizing the collective impact achieved, they highlighted the power of uniting diverse expertise for the advancement of cancer care through innovation. They also underscored the critical role of collaboration between government initiatives and industry in fostering healthcare innovation. DBT BIRAC Leadership highlighted the importance of bridging gaps for transformative change in the healthcare landscape. They articulated their commitment to providing robust support systems that nurture innovative ideas. This support encompassed funding, infrastructure, mentorship, and a conducive ecosystem for healthcare innovators to thrive. AIIMS leadership shared a visionary perspective on integrating cutting-edge innovations into mainstream healthcare and also emphasized the seamless translation of innovations from the laboratory to clinical practice. AIIMS was positioned as a catalyst for healthcare innovation, not only as a center for cutting-edge research and medical care but also as a driving force propelling transformative changes in healthcare delivery. The state-of-the-art infrastructure at AIIMS was showcased as a pivotal asset in supporting and nurturing healthcare innovation.

The closing session encapsulated the collaborative spirit, strategic vision, and commitment to innovation from esteemed dignitaries. It symbolized the collective dedication to advancing cancer care and fostering a transformative impact on the healthcare landscape.

Conclusion:

The CMIE Healthcare Innovation Bootcamp on Oncology served as a dynamic platform that united diverse stakeholders in a shared mission to advance cancer care through innovation. The immersive program, featuring clinical visits, technical sessions, case studies, and expert interactions, successfully bridged the gap between theory and practical application. The collaborative efforts of CMIE, supported by DBT BIRAC, and the National Cancer Institute, AIIMS, New Delhi demonstrated a commitment to fostering transformative change in healthcare. The closing session reinforced the collective dedication to innovation, emphasizing the pivotal role of collaboration between government, academia, and industry in propelling healthcare advancements. This transformative leap forward symbolizes a promising trajectory for the future of oncology care and healthcare innovation.



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NCI - AIIMS, Jhajjar Campus