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CMIE

BOOTCAMP

ON

TRAUMA & BURN CARE

7 - 9 November 2025

Jointly Organised by:

CENTRE FOR EXCELLENCE UNDER

National Programme for Prevention and Management of Trauma & Burn Injuries

@ Department of Plastic, Reconstructive & Burns Surgery & JPNA Trauma Center, AIIMS, New Delhi

AND

Centre for Medical Innovation and Entreprenuership, AIIMS, New Delhi

REPORT OF THE BOOTCAMP IN TRAUMA & BURN CARE

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Bootcamp is a flagship program of CMIE – AIIMS wherein, innovators-clinician small group interaction and immersion program to empower innovation and development of novel health care interventions.

These programs allow innovators to observe the clinical environment in order to better understand workflow processes, the context in which medical equipment is used, and identify unmet needs firsthand. The program encompasses exposure to real clinical setting on processes, policies, and procedures relating to a variety of healthcare situations.

Bootcamp in Trauma & Burn Care was organized by Dept. of Plastic, Reconstructive and Burns Surgery, JPNA Trauma Centre and CMIE – AIIMS. This event was organized under the aegis of the Centre of Excellence under the National Programme for Prevention and Management of Trauma & Burn Injuries, MoHFW, GoI.

We received nearly 33 applications of which 17 have been chosen for participation at this focused event. The event had participants from varying background of Medical Doctors, Innovators, Researchers and Entrepreneurs. The Technologies be part of the event included:

- carbon fiber foot prosthesis created under the Make in India initiative through collaboration between AIIMS Bibinagar, DRDL, and DRDO.
- **an integrated, wearable, real-time brain health management system designed for post-stroke and neurorehabilitation care.**
- **Skin Spray Gun, an innovative medical device designed to address the challenges of wound coverage in burn, trauma, and reconstructive care.**
- **AI-powered trauma imaging platform designed to accelerate and enhance emergency diagnosis.**
- **polymer based hemostatic Sponge**

  and others.

Over the 3 days, we provided an opportunity of the participants

- to engage in a conversation with clinical experts to discuss their queries,
- rounds at the OPD/IPD/Wards and other important hospital settings,
- theoretical classes covering the basics, advances and problem statements,
- Thoughts and perspectives of the regulators and investors

An interesting session was the presentations by the participants on the 3rd Day to showcase their technology and create a platform for a possible collaboration.

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:**
  Burn & Plastic Surgery Team:
  Following a brief introduction of the participants, the bootcamp commenced with a session on **"Accelerating Innovation in Trauma & Burn Care: Diagnostics, Devices & Deployable Solutions"**, delivered by **Dr. Palreddy Akshara** and **Dr. Nandini Singh**, under the guidance of **Prof. Maneesh Singhal** highlights the rapidly evolving landscape of plastic, reconstructive, and burn surgery. It emphasizes how the specialty uniquely embodies the principle that *"the present becomes the genesis of the future"*—with surgeons continually rebuilding form and function after trauma and burns. The talk positions plastic surgery as one of the most future-facing disciplines, deeply intertwined with technological advancement, research innovation, and translational science.

  The presentation outlines India's major government-funded research initiatives led by AIIMS New Delhi, including multi-crore projects supported by the **Department of Science & Technology**, **ICMR**, and **AIIMS Intramural Grants**. These projects focus on **faster diagnosis of infections**, **individualized antibiotic sensitivity testing**, **early detection of antibiotic resistance**, and **proteomic biomarker discovery (PROBESCAPE)**—all aimed at improving burn outcomes and reducing morbidity from drug-resistant sepsis.

  Cutting-edge innovations were presented, including the development of **smartphone-based cyanide detection kits** for inhalation injuries, technology to prevent unnecessary intubation, and design enhancements to improve precision in aesthetic surgery. Emerging solutions in **robotics**—particularly robotic-assisted microsurgery and brachial plexus interventions—were highlighted, accompanied by validation of the DS-Microtrainer through a major ICMR-funded grant.

  The presentation showcased transformative technologies such as **3D printing**, **virtual composite transplantation**, and **bioengineered skin**, underscoring their potential to revolutionize reconstructive surgery and donor tissue limitations. Collaborations with institutions such as **IIT**, **THSTI (Translational Health Science and Technology Institute)**, **Harvard**, and **Radiology teams** demonstrate the multidisciplinary momentum driving advancements in splintage design, imaging, and translational interventions.

  The talk also addressed public health dimensions, including community-level disaster preparedness and lymphedema—highlighting the need for scalable, accessible innovations.

Overall, the presentation reinforces that the future of burn and trauma care lies at the intersection of **clinical excellence, scientific inquiry, and technological innovation**. It concludes that those who push beyond the boundaries of current reconstructive capability—through research, collaboration, and creative problem solving—will define the next era of the specialty.

Trauma Care:

Dr Zenith, SR trauma surgery gave a brief introduction to the role, domain, intricacies and nuances of trauma surgery by giving a talk on the importance of protocol based approach in the management of acute trauma patients. He also highlighted the specific areas where innovations can be designed to be of a synergistic role in line with existing algorithms.

Dr Mohit , SR trauma surgery continued the program by giving an insight into an astounding array of facts and figures highlighting the cliff hanging statistics regarding the sheer burden of the trauma epidemic.

Dr Ram and Dr Piyush , SR trauma surgery thereafter took on to delve deeper into the intricacies of Primary and Secondary survey respectively, both simplifying the medical language enough for our innovators as well as breaking down the trauma algorithm bit by bit allowing our innovators to amalgamate their ideas into current practices.
All the speakers also shared their shadow ideas at an exceptionally designed common platform to help shape them into realities.

Regulatory Session:

Bootcamp in Trauma & Burn Care hosted a session on regulatory sciences which was conducted by Mr. Subhash Sugathan. The session covered an important topic on preparing the dossiers and documents as a pre-requisite for conducting the clinical trials. The session followed by an interaction with Smt. Swati Srivastava, DDC (I), CDSCO (HQ). The queries of participants were clarified by both Smt. Srivastava and Mr. Sugatha.

Investor's Session:

As one of the unique platform, the bootcamp organised a session with Mavin Ventures LLP. Dr. Gopinathan, the partner at Mavin Ventures LLP shared his views on what the investor's look at while investing in new technologies. To keep the session engaging, he avoided the presentation and was interacting directly with the participants and answering their queries. Similar approach was taken by dr. Vijendra Jeph from IPE Global.

- **Case Studies:**

  The bootcamp also hosted a series of case studies by innovators who have previously worked with the faculty members of Burns and Plastic Surgery Team and Trauma Care. This included presentation by:

a. Dr. Suchi Gupta – Exosome based wound care management in collaboration with Prof. Maneesh Singhal, BPS and Prof. Sujata Mohanty, Stem Cell Centre
b. Shivangi Gupta – NPWT device co-developed under the mentorship of Prof. Sushma Sagar, Trauma Centre at the School of International Biodesign.
c. Asis Mohandas – Solution for reposition of patients with pressure sores co-developed under the mentorship of Prof. Sushma Sagar, Trauma Centre at the School of International Biodesign
d. Satyam Chaturvedi – Innovation in Splints for trauma and burn care developed by Cre-AID.
e. Dr. E. Santhini – Discussed on developing a haemostatic dressings. She shared her insights on working with eminent clinician like Prof. Singhal and what steps were taken during the course of development of the product.
f. Prof. Aasheesh Srivastava – Prof. Srivastava had previously participated at bootcamp in Burn Care organised by CMIE – AIIMS in 2023. Following the participation he engaged in close conversation and development of this bio-adhesive glue with Prof. Singhal which has received the 2nd round of funding from ICMR. Through his talk, he shared his views and opinions on having a right team, right collaborator for successful development, implementation and commercialisation of a product.

- **Clinical Visits:**

  The participants were taken near to Intensive Care Unit (ICU) environment, Burn & Plastic Surgery Department (BPS), and Trauma Centre, AIIMS, New Delhi. The surgeons demonstrated the procedures required to manage different kinds of wounds and gave them critical insights into the problems in wound care and management on the ground. After such an exhilarating experience straight away, the participants were taken to the board room for interactive talks
  - Demonstration of different kinds of wounds
  - Practical demonstration of wound AIIMS dressings
  - Demonstration of the best practices of wound care and management

- **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.

Bootcamp reinforced how critical rapid decision-making, teamwork, and protocol-driven care are in trauma and burn management. The exposure to real-world scenarios, simulation-based training, and multidisciplinary learning highlighted the importance of preparedness and precision during emergencies. It also emphasized that effective trauma care isn't just about technical skill—it's about communication, coordination, and staying composed under pressure.

The takeaway include the current challenges face for treating patients in trauma and burn including the pre-surgery, surgery and post-surgery phase.

Interaction with doctors where I got insight about where our research should be headed to get product useful for patients.

The visit to the OT to watch skin graft and wound dressing procedures also the close interaction with the clinicians who were so kind, generous with knowledge sharing. Overall it has been a truly amazing, inspiring experience .

This bootcamp has been very impressive and helpful. It has given me more ideas to think upon and understand how my product can be modified to fit the needs of the clinician. Moreover the insights into the current developments and their limitations have given enough food for thought. Overall it has been a great experience and looking forward for more such boot camps in other fields such as stem cells and the associated product needs.

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