RESEARCH

Innovation is integral to CMC,
and this millennium has witnessed significant breakthroughs.

Some discoveries that have transformed the management of several common problems:

The Department of Neonatology has used simple coolant jelly packages to treat asphyxia at birth, drastically cutting down on the cost of therapy and making such therapy accessible to the remotest parts of the country, where sophisticated neonatology facilities are unavailable.

The Gastroenterology department has conducted path-breaking research on the rotavirus and tested low-cost vaccinations to prevent the onset of viral diarrhoea.

For hand amputees, the Bioengineering department has devised the low-cost Vellore Hand, while the Department of Paediatric Orthopaedics and the Indian Institute of Science have invented the Padmapada, an electronic chip-based device to improve compliance in children with club foot deformity.

Endocrinology has used next-generation sequencing to arrive at novel methods to identify the cause of maturity onset diabetes

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of the young (a hereditary form of diabetes) and several other diseases, including osteogenesis imperfecta and porphyrias.

Rural Unit for Health and Social Affairs (RUHSA) is evaluating a feasible model for Cervical Cancer screening for all women in low resource settings

In different departments, surgeons are testing devices and prostheses used in treating diseases that need operative procedures.

Using a Geographic Information System (GIS), the Community Health department has mapped the topography, soil and water in the Vellore area to disease patterns. The index source of a diarrhoeal epidemic could be identified using this technique.

At the Centre for Stem Cell Research (CSCR), Vellore, work is on the gene therapy programme for haemophilia and musculoskeletal regeneration. CSCR is also engaged with creating an induced pluripotent stem cell, haplobank. Progress is being made in research on human mesenchymal stromal cells, vascular biology and tissue engineering using scaffolds as well..

A number of Phase II and Phase III clinical trials involving several pharmacological agents are underway at various CMC departments. More important, many of these trials involve known drugs in diseases and have been designed by doctors at CMC and not supported by the industry.

Recognitions

Current Medicine Research & Practice, a peer-reviewed bimonthly journal, brought out by Sir Ganga Ram Hospital, Delhi, rated CMC seventh in the world with regard to research publications in public health and clinically relevant problems in 2016. The Clinical Development Services Agency recognised CMC as one of the five centres of excellence in the country in 2014.

Facilitatory factors

A number of factors foster a fertile research environment:

- A voluminous patient population with varied and complex diseases
- World-class labs and four animal houses for important animal studies
- An Institutional Review Board that helps enhance the quality of research proposals
- An intensive three-step programme for post-graduates on how to conduct meaningful research
- A Data Safety Monitoring Board for in-house clinical trials and an Institutional Biosafety Committee for biosafety surveillance
- An Intellectual Property Rights Committee initiating and supporting patenting
- International and National organisations that support CMC's research

Annually more than 800 proposals are presented at CMC's monthly Institutional Review Board meetings.

Research meetings

The Winter Symposium is an annual event that blends basic science and clinical research.

Cognitio, is another annual event at which medical students from CMC and other colleges presented their undergraduate research.

The Annual Research Day is the third event at which CMC faculty and students from all disciplines present their research.