

Research Insights (2024)

BENCH TO BEDSIDE

Bringing Clinicians and Researchers Together



Pakistan Kidney and Liver Institute
and Research Center



DIRECTOR'S MESSAGE

The Pakistan Kidney and Liver Institute & Research Center (PKLI&RC) has continued to advance excellence in patient care and medical innovation since its founding in 2017. The inauguration of the PKLI Research Center in January 2024 marked a transformative milestone, fostering a culture of scientific excellence focused on kidney and liver diseases, transplantation, oncology, infectious diseases and public health.

Our mission is to deliver bench-to-bedside care by uniting clinicians, researchers, and data scientists. This integrated approach drives high-impact research, enhances diagnostic capabilities, and pioneers innovative therapies tailored to the needs of our population. To support this vision, we are expanding our research infrastructure with state-of-the-art facilities, including a digital large-scale biobank, an internationally compliant Clinical Trials Unit (CTU), and specialized laboratories. By integrating cutting-edge technologies such as artificial intelligence, computational biology, and precision medicine, we aim to develop personalized treatment approaches. Through strategic collaborations with leading national and international institutions, we are adopting the best global practices to advance patient care.

Additionally, we are dedicated to nurturing the next generation of researchers through educational programs and interdisciplinary collaborations. Together, we are shaping the future of healthcare, driving innovation, and improving outcomes for patients worldwide.

Prof. Dr. Irfan Ahmed
Director Research



COLLABORATIONS AND PARTNERSHIPS

We have established strategic partnerships through MoUs with leading national and international institutions to drive innovation and tackle global healthcare challenges.

NATIONAL COLLABORATIONS: We are proud to partner with esteemed institutions such as Lahore University of Management Sciences (LUMS), the Center of Excellence in Molecular Biology (CEMB), University of Central Punjab (UCP), and the University of Veterinary and Animal Sciences (UVAS).

INTERNATIONAL COLLABORATIONS: Our global network includes collaborations with the Qatar Precision Health Institute (QPHI), Qatar Biobank (QBB), Qatar Foundation (QF), Inonu University (Turkey), and the University of Alabama (USA). These partnerships enable multidisciplinary research and the integration of cutting-edge technologies to advance healthcare solutions.



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UPCOMING COLLABORATIONS: We are actively engaged in discussions with Aga Khan University (AKU), COMSATS University Lahore, Shalamar Medical and Dental College, Habib University, Lahore Garrison University, Warwick University (UK), and Robert Gordon University (UK) to explore new opportunities for collaboration.

Research Grants

- The World Health Organization (WHO) awarded a PKR 2.6 million grant for the project titled “Identifying Innovative Solutions to Scale Up Self-Testing for Hepatitis C (HCV) in Pakistani population”.
- The International Society of Biological and Environmental Repositories (ISBER) awarded a virtual travel grant for participation in the 2025 Virtual ISBER Annual Meeting.
- A joint grant titled “Relationship of Lifestyle Factors and Gut Microbiome with Chemotherapy Response in Pancreatic Ductal Adenocarcinoma Patients” with LUMS has been submitted to the World Cancer Research Fund (PKR 20 million).
- A collaborative grant titled “Integrated Model for Hepatitis and HIV Screening in Rural Pakistan: Evaluating Feasibility and Effectiveness” with the Hepatitis Prevention and Control Program (HPTP) has been submitted to the WHO.

CURRENT RESEARCH INITIATIVES

- Development of a Data-driven Predictive Model for Improving Long-Term Survival Outcomes in Liver Transplantation.
- AI-Assisted Clinical Decision Support System (CDSS) for Multidisciplinary Liver Disease Management Using Explainable AI (XAI).
- Expectations of People from Artificial Intelligence in Healthcare.
- Global Gall Bladder Cancer Registry to collate data on epidemiology, treatment patterns and outcomes.
- Peritoneal Patch in Portal Vein Reconstruction: Evaluating Graft Material Outcomes in hepatopancreatobiliary and Liver Transplant Surgery.
- Comparative Efficacy of Preservative vs. Isotonic Fluids in Liver Transplantation.

RESEARCH FACILITIES

PKLI&RC BIOBANK: We are establishing a digital biobank to support cutting-edge scientific research. In line with our commitment to global research excellence, we have signed a MoU with the Qatar Precision Health Institute (QPHI) and Qatar Biobank (QBB) to foster collaboration and ensure adherence to international standards.

CLINICAL TRIALS UNIT: A site license application for Phase I and II clinical trials has been submitted to the Drug Regulatory Authority of Pakistan. To ensure compliance with institutional, regulatory, and international guidelines, we have developed comprehensive SOPs for quality management and trial operations.

RESEARCH HIGHLIGHTS: ADVANCING KNOWLEDGE, BUILDING BRIDGES

COLLABORATIVE RESEARCH INITIATIVES

- Engaged with Prof. Gareth Morris (Cleveland Clinic, USA) to explore collaborative research opportunities.
- The research team engaged with Dr. Safee Ullah Chaudhary and Dr. Muhammad Shoiab from LUMS to explore potential collaborations in computational biology and molecular biology.
- Explored research partnerships with Prof. Dr. Nasir Rajpoot (Warwick University, UK) in digital pathology.
- Initiated discussions with Dr. Hammad Naveed (University of Central Punjab) on digital pathology and radiology, facilitating further meetings with pathology and radiology teams.
- Discussed potential collaborations in molecular virology with Prof. Dr. Muhammad Idrees Khan (CEMB).



- Discussions were held with Dr. Bilal Wajid from Habib University, Karachi, to identify opportunities for collaborative research initiatives.
- Engaged with Prof. Dr. Imran Rashid and his team (UVAS) for joint research in parasitology, microbiology, epidemiology, and One Health.
- Held discussions with Prof. Dr. Yar Muhammad (COMSATS) on research in biomedical materials.
- Engaged with Dr. Saad Rehman (University of Birmingham) to explore research opportunities in hepatocellular carcinoma.
- Explored collaborative projects on metabolic diseases with Prof. Giovanna Bermano and Prof. Sara Walsh (Robert Gordon University, UK).
- Engaged with Prof. Dr. K. Lenhard Rudolph (Leibniz Institute on Aging – Fritz Lipmann Institute, Germany) for potential research in regenerative medicine.
- Discussed stem cell and regenerative medicine research collaborations with Dr. Fabricio Loayza-Puch (German Cancer Research Center – DKFZ, Germany).
- The research team met with the Health Data Science Center at Aga Khan University to explore potential collaborations in health metrics research and data-driven healthcare solutions.
- Strengthened collaboration and grant initiatives with the Vice Chancellor and faculty of UVAS.
- Held discussions with Dr. Fatima M. Qafoud, Director of Qatar Biobank, for potential biobank research collaborations.
- Conducted a site visit to Qatar Biobank to gain insights into operations and explore collaborations. Key discussions included, Dr. Said Dermine (National Center for Cancer Care and Research), Dr. Medhat Z. Askar (Qatar University), Dr. Sonia Davila, Dr. Bernice Lo, and Dr. Karim (Sidra Medicine), Dr. Nehad Alajez and Dr. Julie Decock (Qatar Precision Research Institute).

CAPACITY BUILDING

- Conducted Good Clinical Practice (GCP) training sessions for researchers.
- Acquired a REDCap license to enhance data management efficiency and security.
- Launched research incubator to support aspiring researchers with technical guidance and collaborative opportunities.

ACADEMIC CONTRIBUTIONS

- Launched the PKLI Journal of Health Sciences (JHS), an open-access, peer-reviewed publication.
- Organized the 2nd Research Moot, themed “Inspiring Research Excellence for a Better Tomorrow.”
- Delivered a keynote on “Precision Surgery in the Era of AI and Robotics” at the 8th Shalamar International Conference.
- Director Research chaired a session at 23rd Shaukat Khanum Cancer Symposium.
- Director Research moderated workshops on “Role of Artificial Intelligence and Simulation in Healthcare” at Services Hospital, Lahore, and “Navigating the Biliary Maze: AI-Enhanced Strategies” at Shalamar Medical and Dental College.

CLOSING REMARKS

As we continue to advance our mission at PKLI, we are guided by a clear strategy and a well-defined roadmap that leverages our clinical strengths and builds an internationally compliant research infrastructure. Your unwavering support is the driving force behind our progress, enabling us to empower a healthier future for our local population.

Looking ahead, we are committed to expanding our collaborative networks and securing national and international research grants to further enhance our impact. Our dedication to knowledge sharing and capacity building in interdisciplinary research remains steadfast, as we strive to create a legacy of innovation and excellence in healthcare. Together, we are shaping a brighter, healthier future for all.

