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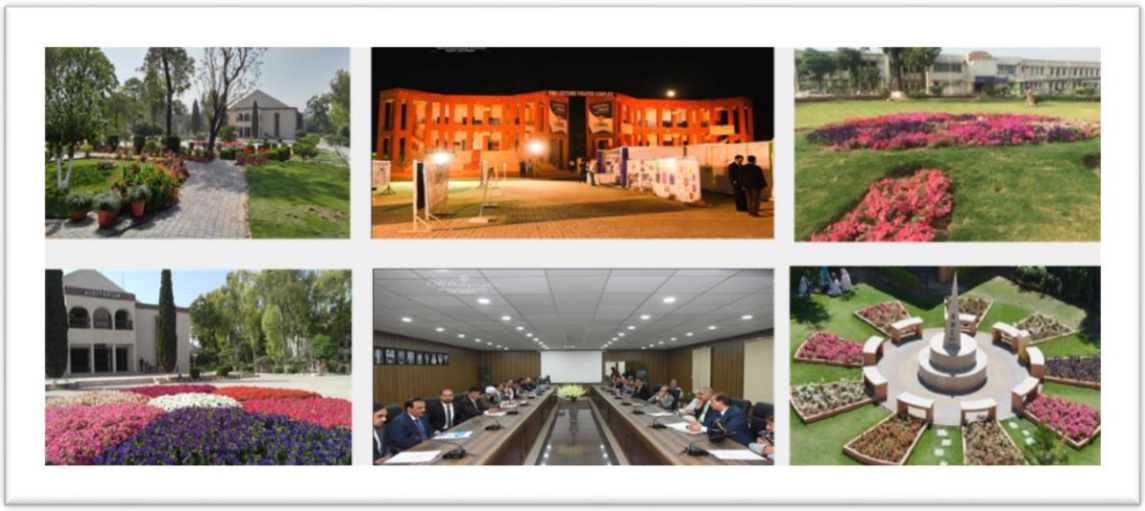
Message by the Vice-Chancellor Rawalpinid Medical University

I feel humbled to present the RMU-ORIC 1st annual Report 2019-20. Core functions of Universities incluse creation and dissemination of knowledge. They play a pivotal role provision of higher education, research, and innovation which results in the advancement of societies and economies. They foster economic growth, strengthen technological progress, and enhance job creation. In today's competitive environment, I am confident that RMU will be successful in creating a reseach based culture and develop new partnerships with other research-intensive institutions. These partnerships will not just be about transferring knowledge from lab to practice, they will provide an opportunity to the faculty and students to pursue foundational research, exchange ideas and develop into a center for social change.

Prof Muhammad Umar
Vice Chancellor
Rawalpindi Medical University

SECTION-1:

Introduction To Rawalpindi Medical University

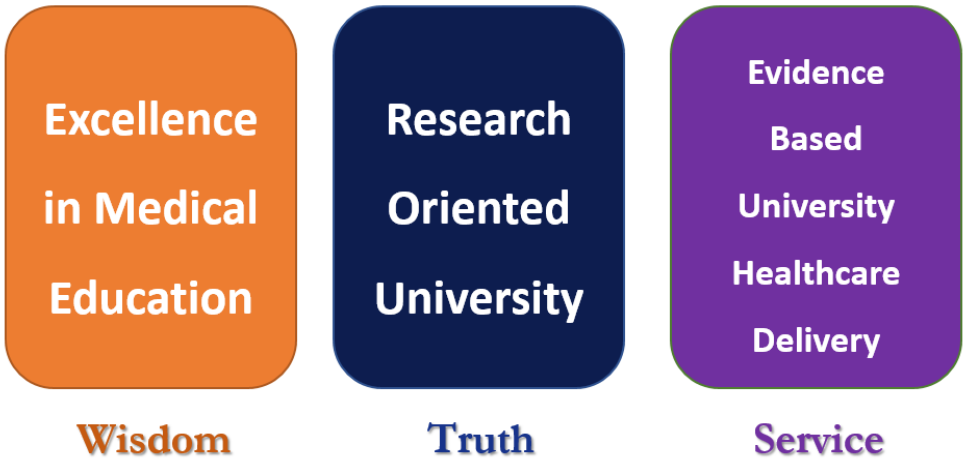


Rawalpindi Medical University has its humble beginning as the Rawalapindi medical College, established about four decades back in 1974. The college proved itself as one of the leading medical institutes of Pakistan and was later upgraded to the status of the University by the Government of Punjab in 2017. The university has its administrative offices located at the Old Teaching Block, Tipu Road and New Teaching Block, Holy Family Hospital in the beautiful city of Rawalpindi.

1.1 Vision of RMU

- To impart evidence-based research-oriented medical education
- To provide the best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine

1.2 Mission of RMU



SECTION-II:

Rawalpindi Medical University- Office of Research Innovation and Commercialisation

Office of Research, Innovation & Commercialization (ORIC) established at the University in July 2019 as per guidelines of the Higher Education Commission (HEC), Islamabad for all Universities/DAIs of Pakistan to establish "Offices of Research, Innovation & Commercialization (ORIC)".

Office of Research, Innovation & Commercialization (ORIC) provides end to end services for all matters about research & development, innovation, commercialization, patents, collaborations, arranging seminars/ symposium/ conferences/ workshops, etc and/or research publication honorarium. By and large Office of Research, Innovation & Commercialization (ORIC) is the focal point for all research-related activities of the University. ORIC facilitates the University researchers (faculty members and scholars) to promote their research work both nationally and internationally.

Research excellence in all fields of study is central to the mission of Rawalpindi Medical University and a pinnacle priority for the department of research, as the key elements to the success of the university's that need to be preserved. As technologies have grown more sophisticated and emerging industries have become more high-tech, Universities have become more important players in the process of invention, innovation, and commercialization. Universities have become more entrepreneurial and look towards technology transfer into non-traditional fields, there is a need for an alternative conceptualization of technology transfer that is more accurate and realistic than the traditional linear model.

1.3 Vision of RMU- ORIC

The office's vision is to enable and lead RMU to a To be the best medical university by promoting world-class biomedical research and creative research activities that develop knowledge-based economy depending upon innovation and entrepreneurship which contributes to improve the health care system and social advancement for the people of Pakistan and benefit humanity as a whole with a standard of excellence.

1.4 MISSION OF RMU- ORIC

Transforming Rawalpindi Medical University to drive high impact innovation, applied research and entrepreneurship.

Develop, expand, and manage the research programs and link research activities to the educational, social, and economic priorities of the university and its broader community.

1.5 AIMS & OBJECTIVES

The RMU-ORIC aims to:

1. Manage and enhance research activities at RMU which includes acting as a secretariat for the advanced studies and research board and ethical board.
2. Develop research policies and priorities which include management, administration, supervision, monitoring, and coordination of all research-related activities and explore new themes of research and research agenda of RMU.
3. Work for fundraising and acquiring grants for research and development both nationally and internationally. Increasing and diversifying external research funding.
4. Supporting the university's strategic research directions and plans.
5. Promote capacity building activities within the RMU not only in the field of research.
6. Mobilize faculty and resources to produce quality research publications.
7. Improving integration of research and education at all levels of the university.
8. Support and facilitate faculty and student's efforts to expand the area of human knowledge, creativity, and forms of expression.
9. Improve the Human Resource Development Program and explore funding for the establishment of Research Labs at various Departments.
10. Strengthen international linkages based on collaborative research proposals for international funding.
11. Hold regular scientific seminars, symposium, etc. and promote the culture of interaction and sharing of scientific knowledge with researchers around the world.

12. Improving the translation of research into public benefit.
13. Strengthening university-industry relationships.
14. Promoting entrepreneurship, technology transfer-transfer, and commercialization activities that energize and support the local and national economy.
15. Promoting and enhancing cross-cutting and multi-disciplinary research initiatives.

1.6 ORIC Team

Patron-in Chief
Professor Muhammad Umar, Vice-Chancellor

Director
Dr. Uzma Shaukat

Manager Research Operations & Development
Dr. Huma Shafique

Manager Innovation and Industrial Linkages
Dr. Asif Maqsood

Publication Specialist
Dr. Arslan Manzoor Mughal,

Manager Finance
Mr. Shahzad Muneer

Assistant Registrar
Mrs. Sundas Iqbal

Research Coordinator
Dr. Asif Maqsood

Budget & Account officer
Mr. Kashif Zaheer

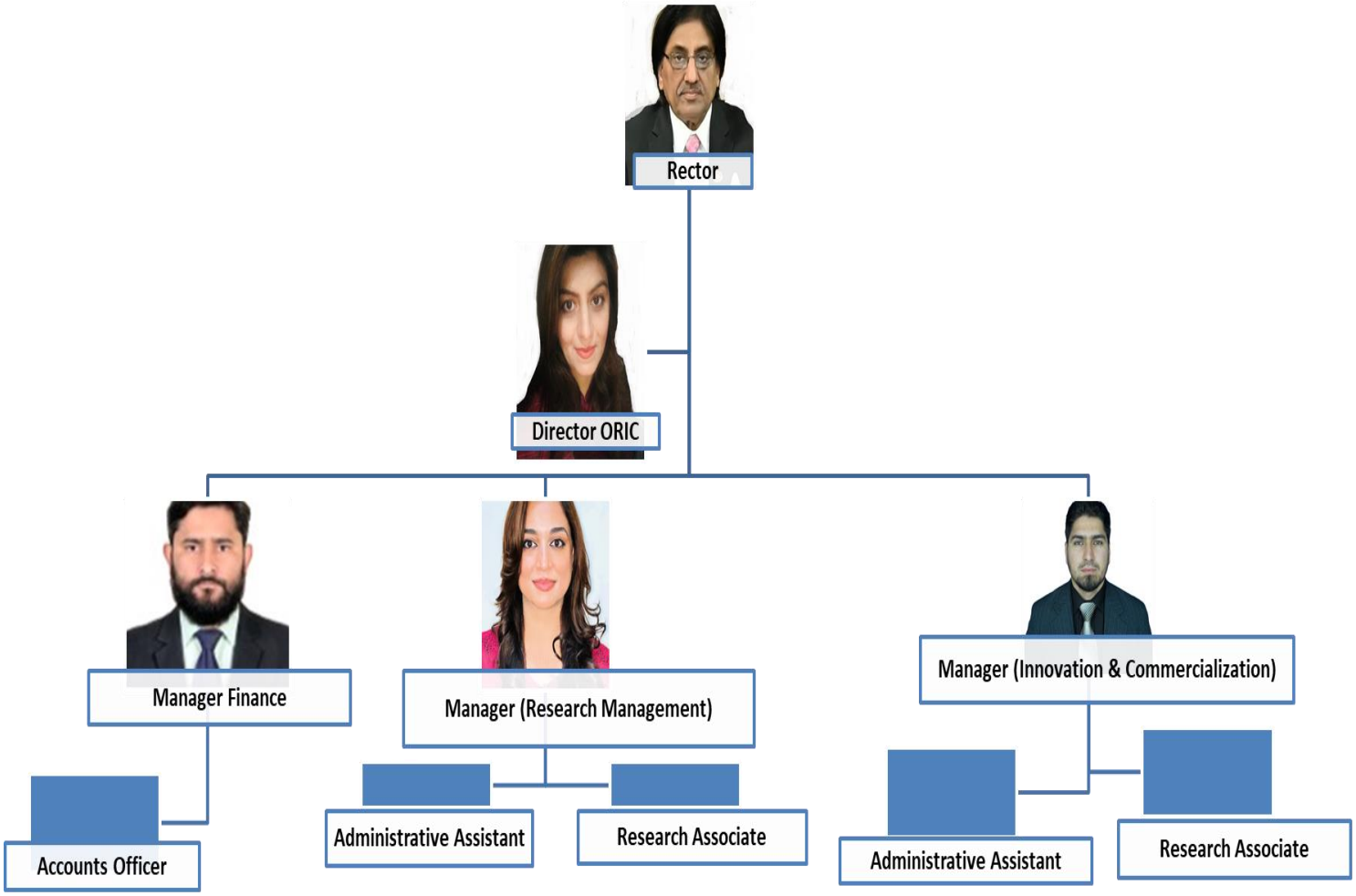
1.7 Establishment of RMU-ORIC 2019

- Office of Research, Innovation & Commercialization (ORIC) was established at the University in July 2019 as per guidelines of the Higher Education Commission (HEC), Islamabad.
- ORIC provides end to end services for all matters about research & development, innovation, commercialization, patents, collaborations, arranging seminars/ symposium/ conferences/ workshops, etc and/or research publication honorarium.
- Prof. Dr. Naeem Akhtar, Prof. Dr. Asad Tameezudin Nizami, -Dr. Shireen Rafiq, Dr. Amna Noor, Dr. Arslan Manzoor Mughal and other dedicated members laid the foundation of the office.

1.7 **MEMBERS OF RMU-ORIC, 2019**

1.8 MEMBERS OF RMU-ORIC, 2022

1.9 ORIC ORGANOGRAM, 2022



Job Description of ORIC Members

1.9.1 Director

- Manage and enhance the research activities of the university
- Develop Research policies.
- Work for fundraising for research and mobilize faculty, the business community, and industry for research commercialization.
- Work as an effective advocate for research with the university and to its broader community of stakeholders and supporters.
- He will work in close liaison with the board of advance studies and research/office of sponsored research, Business/technology Incubators and University Science & Technology.
- Draft and monitor department budget
- Oversee IP webpage, in conjunction with the web committee
- Work with Development Office to promote Institute IP success stories to leverage commercialization efforts.
- Collaborate with the Principal Liaison for Technical Marketing and Licensing.

1.9.2 Manager of Research Operations & Development

- Supports the externally and internally sponsored projects.
- Provide pre- and post-award support and ensure compliance and sponsor regulations.
- Develop, maintain, and communicate pre- and post-award administrative procedures for externally sponsored projects.
- Support faculty with grant proposal submissions.
- Support faculty regarding contracts, progress reports, and sponsor-related grant actions.
- Support faculty regarding post-award grant management,
- Coordinate internal and external reporting needs and maintenance of HEI's database.
- Develop and maintain the award process web pages.
- Work with the Director of Research Strategy to set goals and responsibilities within the research office and to monitor procedural efficiencies.
- The Manager of Research Development provides an overall vision for the institute research portfolio.
- Identify a strategy for research that promotes multidisciplinary collaboration within the university.
- Develop a structure for the mentorship of junior faculty.
- Facilitate collaborations among faculty through identifying research interests and providing opportunities to communicate.
- Provide information about the grant process to faculty.

1.9.3 Manager Research Operations

- Provide inspired leadership for the organization.
- Make important policy, planning, and strategy decisions.
- Develop, implement, and review operational policies and procedures.
- Assist HR with recruiting when necessary.
- Help promote a company culture that encourages top performance and high morale.
- Oversee budgeting, reporting, planning, and auditing.
- Work with senior stakeholders.
- Ensure all legal and regulatory documents are filed and monitor compliance with laws and regulations.
- Work with the board of directors to determine values and mission, and plan for short and long-term goals.
- Identify and address problems and opportunities for the company.
- Build alliances and partnerships with other organizations.
- Support worker communication with the management team.

1.9.4 Manager of University-Industrial Linkages

- Promote the development of public-private partnerships.
- Support of university research projects and link the university's research community with the needs and priorities of the corporate sector.
- Develop opportunities for applied research.
- Explore opportunities for technology transfer.
- Commercialization of university research.

1.9.5 Manager Intellectual Property/ Legal Services

- He will work and support the university research boards and ORIC.
- Review and analyze all new invention disclosures.
- Identify and establish collaborations and licensing agreements associated with the Institute's intellectual property.
- Identify potential synergies for University with non-profit research Institutes and academic licensing offices
- Actively license university technology
- Track the success of university technology in the hands of licensees
- Conduct collaborative research agreement.
- Review for researching a contract with outside institutions
- Oversee any litigation that may arise related to Institute

1.9.6 Publication Specialist

- Assists the editor in departmental budget preparation; administers the budget daily; receives checks and insures correctness.
- Assists the editor in posting position vacancies and coordinating interviews with prospective employees; maintains confidential files on prospective employees.
- Lists manuscripts to be used in the next publication before taking to the printer.
- Estimates the number of pages from galley proof and informs the editor if all materials selected can be used in the forthcoming issue.
- Records date of proof's return to each author as well as files biographical sketch for editor's contributor column; writes authors who fail to return proof or biographical data by a designated date.
- Collates corrections on author's and proof reader's copies of galley proofs and enters corrections on editor's galley proofs.
- Collects "first page proofs" from the printer; proofreads "first-page proof"; numbers pages when the editor has determined the order in which each article, story, poem, and book review is to appear and makes up the table of contents for the printer.
- Composes correspondence for the editor's signature to contributors, calculates amounts, and sends checks to contributors for an article submitted.
- Receives requests from publishers and authors concerning the reprinting of articles that appear in publications.
- Checks monthly status reports ensuring that all charges are correct and that expenses are not exceeding budget allotment.
- Estimates the cost for printing each issue of publication as well as verifying the actual cost entered on the printer's bill, before submitting payment.
- Supervises the mailing of each publication.
- Completes and submits application forms for the copyright of each issue that is published.

SECTION -III:

RMU-ORIC Policies and Forms

2.1 External & Internal Funding For Research Projects

Rawalpindi Medical University ORIC envisions and plans to prepare a certain number of research proposals per year. The faculty will submit their proposals to ORIC for onward submission to HEC or other funding agencies. The ORIC shall provide secretarial assistance in the preparation and submission of Research Proposals and will pursue the follow-up with the HEC or other funding agencies.

2.1.1 SOPs for External Funding

1. ORIC would identify the areas of research and opportunities for potential grants or funding.
2. Research proposals should be relevant to Pakistan's Socio-Economic needs, to be achieved from the forum of RMU.
3. Faculty Members of the university shall submit their project proposals on the prescribed application form (if any) set by the relevant funding agency to ORIC for onward submission to the concerned funding agency.
4. ORIC shall provide prescribed application Performa (if any) for research funding on the university website.
5. ORIC will facilitate Faculty Member/Principal Investigator (P.I) to develop a proposal according to the requirements and prescribed forms of the concerned funding agency.
6. All the research proposals for HEC and other funding agencies shall be processed through ORIC. ORIC will assess if the proposed project fulfills the requirements of submission to the funding agency.
7. All research proposals shall be submitted to ORIC well before the deadline set by the funding agency for completion of required formalities. In case of any delay in submission, the ORIC shall not be responsible and proposals shall be turned down. Proposals completed in all respect shall only be considered for processing and endorsement of the Vice-Chancellor RMU.
8. The ORIC shall scrutinize the project proposal in the light of guidelines/procedures, specified by the concerned funding agency. If the project proposal is found complete in all respect, the same shall be sent to the concerned funding agency after completion of codal formalities.
9. ORIC shall be responsible to get the updates on a project proposal submitted to the funding agency(s) during the process of scrutiny, review, and approval of the same.
10. The Principal Investigator (P.I) of Project shall be responsible to make sure that all communication (written & oral) including replies/answers of queries/observations communicated by the funding agency should be shared/processed through/by keeping ORIC updated.

11. P.I and Co-PI are required to provide necessary documents to ORIC, as and when required by the funding agency, within the deadline period. In case of failure, ORIC shall not be responsible for the rejection of application(s).
12. In case of approval of the project from the funding agency, the PI will be responsible to complete all the documentation/follow rules and procedures through ORIC as per the requirement of the respective agency.
13. PI of the project will also be responsible to follow the rules and regulations of the concerned funding agency regarding the following:
    a. Project Financial Management
    b. Project General Administration
    c. Project Procurement Management
    d. Project Human Resource Management/Staff Hiring
    e. Project Monitoring and Evaluation

Efforts shall be made to approach the relevant funding agencies for obtaining external funding for the research projects submitted by faculty and students of RMU. However, in case of the non-availability of external funding, RMU will provide an internal grant to faculty for the research projects, on case to case basis, through the University Research Committee.

2.1.2 SOPs for Internal Funding

The research project received at ORIC shall be forwarded to at-least one reviewer within or outside Rawalpindi Medical University. The overall score for review of the research project will be 100, distributed equally on the following five scoring criteria:

A. Significance
    a. The project should address an important problem or a critical barrier to progress in the field.
    b. The project should contribute to the body of scientific knowledge.
    c. The objectives of the project should be achievable.
    d. The project should have significant practical implications for all the stakeholders of the relevant field.

B. Investigator/Researcher
    a. The investigators, collaborators, and other researchers involved in the project should be capable of executing a research project.
    b. The leadership approach, governance capability of the principal investigator should be appropriate for the execution of the project.

C. Innovation
    The project should address some novel theoretical concepts, approaches, methodologies, instrumentation, and/or interventions.

D. Approach
    The design, method, procedure, and analysis should be logical and appropriate to accomplish the objectives of the project.

E. Environment

The proposed project should be designed according to the available institutional support, equipment, and other physical resources.

The decision shall be taken on the application based on the overall score provided by the reviewer for which the criterion is as under:

Overall Score	*Decision*
70 or above	To be funded
50 to 69	To be sent back to the investigator to incorporate the changes recommended by the reviewer
49 or below	be rejected

Revision of applications: When considering a revised application, the ORIC shall ensure that proposed changes have been incorporated, based on which decision for approval or rejection of the application will be taken.

2.2 Authorship Policy

2.2.1 Policy Statement

Authorship implies accountability and responsibility for scholarly publication. He authorship policy refers to all processes related to publication processes and explicitly determines the person to be credited as author on basis substantive intellectual contributions to a paper. This policy provides a guideline to the author and helps them to understand their role in taking responsibility and being accountable for what is published. This policy is not restricted only to the author but also includes contributions of each person having participated in a submitted study, at least for original research. The purpose of developing criteria for authorship is to clearly distinguish authors from other contributors.

2.2.2 Authorship criteria

The ICMJE recommends that authorship be based on the following 4 criteria:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work
- Drafting the work or revising it critically for important intellectual content
- Final approval of the version to be published
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

In addition to being accountable for the parts of the work he or she has done, an author should be able to identify the role and contribution of co-authors and should have confidence in the integrity of the contributions of their co-authors.

ICMJE also states that: "Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. One or more authors should take the responsibility for the integrity of the work as a whole, from inception to published article."

2.2.3 Objectives

The basic purpose of this policy is to establish uniform authorship requirements

The policy should be followed by all researchers affiliated with the Rawalpindi Medical University (RMU) & allied hospitals and also by all Partner universities working in collaboration with RMU& allied hospitals.

2.2.4 Authors sequence

Author

- An author is an individual who has made substantial intellectual contributions to a scientific investigation
- Authorship sequences should be decided in the early phase of the planning of research work. Each author should be clear about his/her share of work which should be decided by a mutual understanding of all authors. Each author must be prepared to take the responsibility for the assigned task with complete ownership.

The first author (Principal investigator)

The first author (Principal investigator) is the one responsible for the conception and design of the study. The principal author should have a major contribution to the overall research process

Corresponding Author

The corresponding author will be the one affiliated with Rawalpindi Medical University & allied hospitals and should have a permanent position within the University. The corresponding author should be nominated after mutual consensus between all authors and will be responsible for all sorts of communication required during the publication process. The corresponding author will be responsible for all editing and corrections suggested by reviewers and keep all authors on board during this process.

Multiple authors

For multiple authors, the sequence of names of the author should represent the contributions made by each of them. All authors must have written documentary proof of their scholarly contribution which can be asked from them at any stage.

2.2.5 Intellectual Property of RMU & Allied Hospitals

"Work was undertaken at Rawalpindi Medical University& Allied Hospitals" should be specified even if an author submits a manuscript and publishes it after leaving RMU. This also implies a student who has left the program after graduation.

Under no circumstance should anyone affiliated with RMU& Allied Hospitals, whether as an employee, student, or volunteer; publish data owned by RMU, or RMU & Allied Hospitals faculty without permission from the owner of the data.
Research work of undergraduate students /CPSP PGTs /MD/MS students must be published under the affiliation with Rawalpindi Medical University& Allied Hospitals.
Under no circumstance should anyone affiliated with RMU& Allied Hospitals, whether as an employee, student, or volunteer; publish data owned by RMU, or RMU & Allied Hospitals faculty without permission from the owner of the data

2.2.6 Collaborative research projects

In collaborative research projects, it is mandatory that all researchers have read University Intellectual right policy carefully and agreed to all its constituents and has signed the intellectual property Performa and bound to provide written documentary evidence of it.

In such joint projects, the researcher must have read and complied University Ethical Review Policy, authorship policy, and research misconduct policy.

Every research work has to be present before the Ethical Review Board and Ethical approval should be sought before the initiation of the project.

Ghost/honorary Authorship: Ghost author is one who does not fulfill the criteria of authorship or the one whose name is included in authors without mutual consensus.

2.2.7 Dispute Resolution

To avoid dispute authorship should be determined before the initiation of research through mutual agreement between all authors.

If a dispute arises over authorship, its resolution should be sought professionally through mutual consultation with all researchers.

The principal investigator will be held responsible for dispute resolution among team members

Despite all above-mentioned measures if dispute remained unresolved then following measures then relevant departments may be approached in the following order:

- Director ORIC
- Dean of the Department
- The competent authority (whose decision will be final and binding on all parties)

If the paper is being processed and submitted for publication and all the above mentioned measures fail to resolve the dispute then journal editor may be communicated in writing.

2.2.8 Declaration of the source of funding

All sources of funding must be acknowledged appropriately, whether internal or external funding.

Sources of support for the work, including sponsor names along with explanations of the role of those sources if any in study design; collection, analysis, and interpretation of data; writing of the report; the decision to submit the report for publication; or a statement declaring that the supporting source must be mentioned in clear terms

2.2.9 Conflict of Interest

A conflict of interest exists when professional judgment concerning a primary interest (such as patients' welfare or the validity of research) may be influenced by a secondary interest (such as financial gain). Perceptions of conflict of interest are as important as actual conflicts of interest. Since scholarly writing and research publication has great influence promotion criteria of faculty and overall university ranking, so it can be a potential source conflict regarding authorship credit. Other sources may include monetary benefits like honorarium, patents, employment, and others.

It should be mandatory to declare a conflict of interest at the time of submission.

2.2.10 Ethical Approval

No manuscript can be submitted for publication if ethical approval or exemption of the study has NOT been obtained. The Principal Investigator of the study should obtain ethical approval or exemption (where applicable) for the study.

2.2.11 Alteration

These guidelines will be reviewed periodically by ORIC-RMU can be customized as and when required.

2.3 Policy on Research Misconduct

Research Misconduct policy is intended to ensure the highest level of integrity and quality in conduct, reporting, and dissemination of research.

Misconduct in research is defined to include any one or more of the following acts:

- Plagiarism in all research-related matters including publications, appropriation of another's person ideas, processes, results, outputs or words without giving appropriate credit
- Inappropriate use of others' intellectual property (without reference or acknowledgment)
- Non-compliance with institutional policies on conflict of interest, intellectual property rights, and authorship guidelines
- Deliberate misuse of institutional or sponsor's funds for financial gains
- Deliberate destruction of one's own or others' research data or records
- Violation (non-compliance) of the code of ethics for research as established by the University

Reporting of Research Misconduct

- The initial report of the misconduct should be in writing or documentary evidence to the Dean / Director of a specific unit of the University who may direct it to the head of the respective academic department for verification.
- On receiving a report with evidence, the Director ORIC can initiate an investigation by requesting a Dean/Director ORIC set up for this purpose to submit a complete report of findings and advise on penalties, if any to be imposed.

Procedure of Inquiry

- Dean / Director in whose office the allegation charges are files will set up an initial inquiry to assess whether or not the matter is a breach of any of the University's policies of good conduct in research.
- The faculty member whose research or act of violation of research integrity is the subject of the investigation shall be notified about the complaint without disclosing the identity of the initiator.
- An inquiry committee shall be appointed by the Dean ORIC on request of Dean of the concerned department. Joint Committee will submit a written report of inquiry proceedings. All Inquiry proceedings must be recorded and transcribed on paper as well to fulfill legal requirements.
- If dispute remained unresolved then Competent authority (whose decision will be final and binding on all parties) will be consulted.

- If an outside sponsor/collaborator is also involved in research, the report of the inquiry committee should be shared with the concerned organization or individuals
- The whole inquiry process must be completed in 30 calendar days.
- If research misconduct is not proven, diligent efforts will be undertaken where appropriate to restore the reputation of people under investigation.
- Copies of inquiry report, supporting documents, and decision making must be retained by ORIC Director for 5 years.

2.4 Grant Dispersal Policy (RMU-ORIC)

In order to support and systematically organize research and commercialization activities in the universities, Higher Education Commission (HEC) of Pakistan has introduced and established the concept of Offices of Research Innovation & Commercialization (ORIC) in the universities (1). Researchers and academicians are envisioned to remain engaged with their research through ORIC by communicating with their respective funding bodies at national and international levels to get research funding opportunities. ORIC will assist and facilitate the departments in getting grants, its dispersal as well as sponsoring and organizing seminars/presentations on a specific subject. ORIC will going to arrange the capacity building initiatives for faculty in areas to Research, Technology, Innovation, and Academics.

RMU-ORIC Policy for Dispersal of Funds:

Research grants/fund/scholarship/fellowship allocated to Rawalpindi Medical University to support research related activities will be processed under the auspices of ORIC.

1. ORIC will be responsible for further dispersal of grants to various departments for certain aspects of research and related activities on priority basis.
2. The research funds will be distributed on the recommendations of ORIC, and quality of research will be assessed periodically. The funds will be allocated to the Principal Investigators (Deans, HODs and Faculty members) of the allocated departments to support research and innovation.
3. As per HEC rules, 5-15%, of the grants, out of total amount will be dispersed directly into the ORIC official account which in turn will be utilized to facilitate research activities either research projects, up-gradation of laboratories, conference or maintenance of equipment.
4. All faculty of the university is eligible for submitting their application for financial assistance to ORIC. All proposals will be reviewed by the ORIC Committee including Deans and finally approved by worthy Vice Chancellor.
5. To degree programs (Level of students undergraduate, MD / M. Phil, PhD) to prioritize relevance to laboratory needs and requirements and to enhance

equitable access for students in research workshops/conferences/training in collaborative institute.

6. Basic framework for dispersal fund will be
   i. Base Grant 65%
   ii. Need Grant 20%
   iii. Performance Grant 15%. Grants will be deposited in ORIC amount and will be further utilized through ORIC and after approval of VC of the university as per HEC rules.

7. Approved funds by the funding agency may be released in 2 to 3 installments. First installment of approved funds may be released within 2 to 3 weeks after submission of legal agreement. In case of international funding agency, it may take more time. However, all funds shall be released by any funding/donor agency in favor of the VC or Treasurer. If funds are released in favor of P.I, he/she is required to report/intimate ORIC immediately for further necessary action and completion of required formalities. Under no circumstances, funds received for any type of research grant be operated through personal bank account, violation may lead to legal action according to university rules.
8. Finance section, RMU shall send a copy of Funds Release Letter along with copy of cheque to ORIC, RMU for file record, reference and for future correspondence with funding agency.
9. Quarterly and annual financial statement of the project account shall be shared with ORIC and placed in the case file in ORIC for monitoring, reporting and record.
10. After receiving of funds in the university, P.I shall initiate a request to ORIC for opening of joint project account in the concerned bank and to be operated by P.I and treasurer.
11. Any fund available for indirect overhead cost in the external funded projects shall be utilized for ORIC operational expenses only (to meet the office support, utilities etc.) as per funding agency policy. In this regard, a separate bank account shall be opened in the concerned bank to be operated by Director/Head (ORIC) or his nominee and Treasurer or his nominee.
12. On completion of each phase/installment of the project, funds utilization report duly signed by the Director, ORIC, PI and university auditor shall be submitted to concerned funding agency.
13. In case of delay in release of funds (2^{nd}& 3^{rd}Installments), finance section of RMU shall make sure the availability of funds and release an advance (adjustable) from research fund/or any other budget head of RMU in lieu of 2^{nd}& 3^{rd} Installments so that ongoing project activities should neither be hampered nor stopped.

14. After completion of external funded project, balance amount if any, shall be reimbursed to the funding agency or prior approval from concerned funding agency shall be obtained for utilization of balance funds in the same project to enhance the project scope or compensate for the inflationary premium.

DETAILS OF UNIVERSITY OVERHEADS:

Higher education institution allows three levels of university overheads or institutional costs, as a percent of the total direct cost of the project: 5%, 10%, and 15% mentioned in detail as:

Basic 5%	Extra 10%	Performance 15%
Basic cost covers projects that do not require allocation of dedicated office space or dedicated secretarial or support staff. It covers the basic research support services, i.e., accounts management, project reporting, auditing, office supplies (e.g., pens, staplers, or stationery), and monitoring and evaluation. Researchers are expected to use their own offices and regular university facilities.	The higher education Institution is responsible to provide support staff (daily wage clerical or manual labor, secretariat staff), campus expenses (e.g., use of dedicated office, unit, or building), utility costs, cost of access to digital resources (e.g., Digital Library), maintenance of scientific equipment, and/or access to laboratories.	The HEI may demonstrate superior performance on behalf of the ORICs or other research management institutions

POLICY POINTS

KEY OBJECTIVES OF THE ORIC:

The core objectives of the ORIC in accordance with ORIC Policy 2022 include:

- Professional research support system to enable their Principal Investigators/faculty members to attract research funding.
- Enhance research quality, relevance, and competitiveness, and promote innovation and commercialization at HEIs.
- Capacity building activities.
- Sustain university-based research through strategic planning, rationalization of internal processes, organizing resources for research, promulgation of research achievements, identification of collaborations, and development of affiliations with key external associates.

FUNDING OBJECTIVES:

Keeping in view the above core strategic objectives, the research funds will be distributed on the recommendations of Research and Development (R & D) division of university, and quality of research will be assessed periodically.

When the funding body provides a grant to the ORIC of the university to support a research project, it is typically divisible into direct cost and indirect cost which is called as administrative cost.

Direct Cost:

Out of total cost, 67-75% of the funds are distributed directly to the researcher/Principal Investigator (Deans, HODs and Faculty members). This "direct costs" portion supports

a) Researcher salaries,
b) Degree programs (Level of students undergraduate, MD / M. Phil, PhD) to prioritize relevance to laboratory needs and requirements
c) Support and enhance equitable access for students in research training in collaborative institute by providing monthly stipend
d) Laboratory equipment and supplies

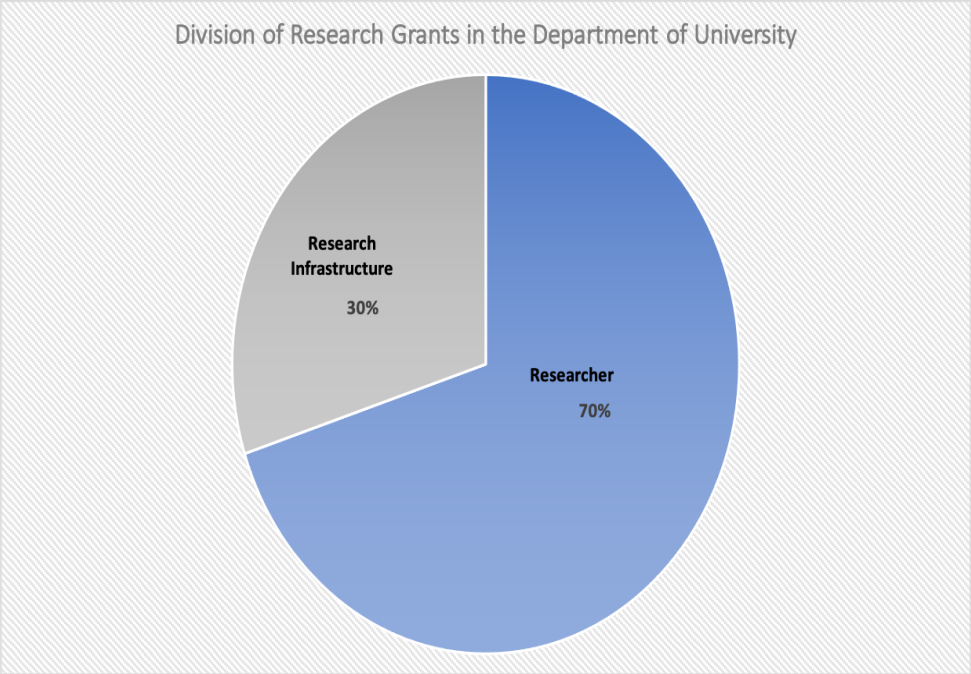
Indirect/ Administrative Cost:

Out of total, 25-33 percent covers necessary research infrastructure that the university provides to support the research. These research infrastructure costs officially called as facilities and administrative costs, which support research expenses including:

a) State of the art research laboratories
b) High-speed data processing
c) Support all biosafety levels of containments (BSL-1-BSL4)
d) Patient safety (e.g., human subjects protections)
e) Personnel required to support essential administrative and regulatory compliance work, maintenance laboratory and staff

Allowance of Direct and Indirect Cost Expenditures and Limitations

The following general conditions apply to the provision of personnel costs and limitations by Higher Education Commission (4):



Sr #	Name of a Personnel	Expenditures Costs	Limitations
1.	Principal Investigator (HODs, Deans and faculty members)	Time cost of researcher calculated on the basis of their gross salary (i.e., basic pay, admissible allowances), multiplied by the time committed to the project. For example, if a faculty member contributes 2 months to a project, and she/ he has a gross salary of Rs. 200,000 per month, the project will be able to charge Rs. 400,000 for their time.	Faculty members may allocate a maximum of 25% of their time to research projects. Personnel costs billed against a faculty member's time may be paid to them as project honorarium, provided that the total honorarium received in any year is no more than 25% of their gross salary. If a faculty member wishes to allocate more than 25% of their time to research projects, the university will have to certify in writing that their teaching duties have been reduced proportionately, and that the corresponding amount has been deducted from their salary
2.	Students/Trainees	University students may be engaged as Research Assistants at the following scales: · PhD students: Rs. 80,000 per month, full time equivalent (FTE), times the time committed to the project. · MD/ MPhil Students: Rs. 80,000 FTE per month, subject to maximum time cap of 20% (i.e., an average of one day per week). ·Undergraduate students: Rs. 60,000 FTE per month,	Subject to approval of their supervisors, and based on their course load, PhD students at the thesis stage will be allowed to allocate between up to 80% of their time to research projects; those who have to take courses may allocate up to 20%. MD/ MPhil/ students may allocate only up to 20%. However, PhD students with course loads may, with the consent of their supervisors, allocate up to 40%, provided they reduce their course load by a quarter, thereby extending the duration of the degree programs. Only the university's own students can be included. The university, in its discretion, may provide a tuition

		subject to maximum time cap of 20%	waiver to students engaged as research assistants
3.	Other project personnel	Regardless of the actual amounts paid to project staff, the billed amount would be based on normal university salaries, e.g. · Research Assistants: (BS/ MS/MPhil) equivalent to lecturer. · Research Associate: (fresh PhD), equivalent to Asstt. Prof. · Research Fellow: (PhD with 9 years' experience) equivalent to Assoc. Prof. · Senior Fellow (PhD with 15 years' experience) equivalent to Professor.	The billed amount would be the multiple of the permitted gross salary, multiplied by the time allocated for the project (as per cent of FTE). Each person appointed to project should receive a formal contract, specifying all the terms of employment, including salary, benefits, and the duration of engagement. Project employment should not create an entitlement or expectation of full-time regular employment.

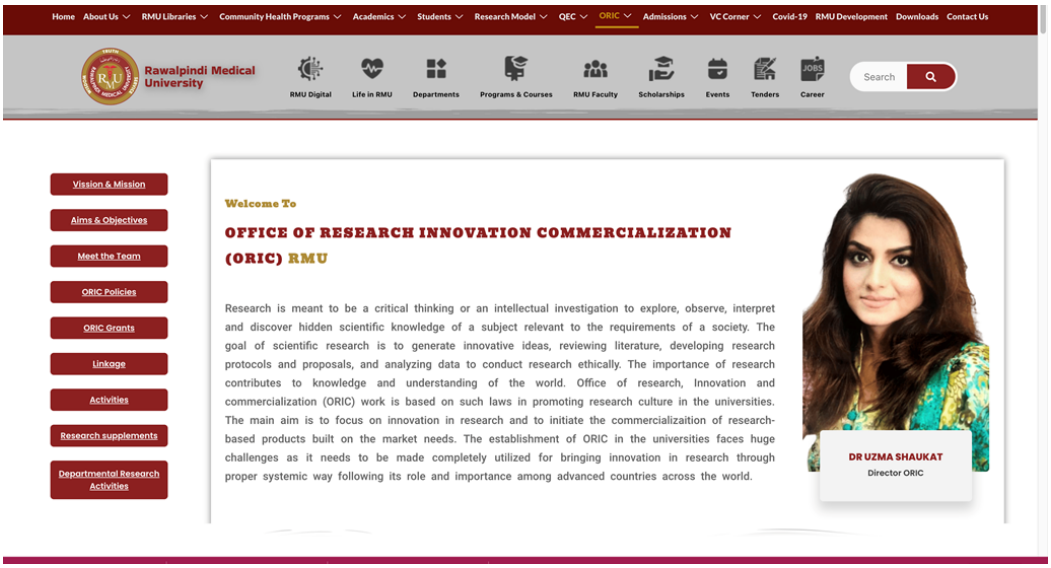
The following general conditions apply to the provision of equipment, consumables and services costs:

Sr #	Items	Description
1.	Equipment	· Scientific lab Equipment: tools and equipment used in laboratories for research work relevant to the project. Some examples are DNA sequencers, electrometers, or spectrometers. · IT equipment: E.g, servers, network equipment, routers, or communication equipment. · Office Equipment: laptops, desktops, scanners, printers. · Specialized Software/ IT Applications: e.g., LabView, AutoCAD, MATLAB.

2.	Consumables	· Lab Chemicals: e.g., chlorates, persulfates, peroxides, oxidizing acids, methanol, ethanol, or reagents. · Glassware: e.g., beakers, flasks, or test tubes. · Plastic wares: e.g., pipettes. · Expendable supplies: e.g., preserving and cleaning material, fuel, medicines, personal protective equipment, i.e., gloves, masks, or surgical caps. · Accessories: small accessories used routinely in labs, e.g., kits, PCR plates, ladders, sealers, magnetic stands
3.	Services a) Travel Cost	Access to scientific equipment: cost of access to sophisticated lab or research equipment not available in host institution. · Service contract for repair/ maintenance of purchased scientific equipment: The service cost should not exceed 25% of the cost of current price of the similar model · Subscription to open access journals or publications: · Management Cost for organizing national level conferences, workshops, or seminars: in cases, where such dissemination of research results are outsourced to external professional bodies. Travel Cost covers expenses of project team (faculty and students) related to field work, participation in project meetings, attending national or international conferences or workshops to present research results from the project. a. Prior authorization must be obtained for each project-related travel. b. Travel budget must be justified by providing purpose of visit, the city, the country, the number of travelers, and estimated costs per visit.

2.5 RMU-ORIC Web Page

Officially RMU-ORIC website has been established. Contact information and email addresses of all ORIC members have been placed on the ORIC webpage**.** Visit RMU ORIC web page to search departmental Research Activities **https://rmur.edu.pk/oric/**



2.6 ORIC Steering Committee (ORIC-SC)

Office of research, Innovation and Commercialization (ORIC) has established the ORIC steering committee for provision and research direction management of the research method to develop quality medical education system and to demonstrate excellence in teaching, learning and research.

The administrative set up and the functions of the department is as under:

Sr No	Name	Designation
01	Prof. Dr. Mohammad Umar	Vice Chancellor & Chief Executive, Rawalpindi Medical University (RMU) & Allied Hospitals, Rawalpindi
02	Prof. Jahangir Sarwar Khan,	Principal, Rawalpindi Medical University (RMU), Rawalpindi
03	Prof. Dr. Shahid Mahmood Baig	Chairman, Pakistan Science Foundation (PSF), Islamabad
04	Ms. Noshaba Awais	Director (Research for Innovation), Higher Education Commission (HEC), Islamabad
05	Lt Gen (R) Mohammad Asghar	Member of the Commission, Higher Education Commission (HEC), Islamabad
06	Maj Gen(R) Saleem Ahmed Khan	Pro-Vice Chancellor, National University of Medical Sciences (NUMS), Rawalpindi
07	Mr. Amjad Hussain	Director R & D, Higher Education Commission (HEC), Islamabad
08	Dr. Mohammad Akhtar Abbas Khan	Director Licensing Division, Drug Regulatory Authority of Pakistn, (DRAP) ISlamabad

09	Dr Kamran Siddiqui	Professor in Public Health, Department of Health Sciences, University of York, UK
10	Dr. Uzma Shaukat	Director RMU-ORIC Post Doc, PhD Medical Genetics
11	Dr. Huma Shafique	Manager Research Operations and Development PhD, Molecular Genetics
12	Mr. Shahzad Muneer	Manager University Industrial Linkages and Technology Transfer, Chartered Accountant
13	Dr. Abid Hassan	Manager Intellectual Property/Legal Services Sr Demonstrator, Department of Pathology
14	Dr. Arsalan Manzoor Mughal	Publication/Communication Specialist Assistant Professor, Department of Anatomy
15	Dr. Ifra Saeed	Research Associate Associate Professor, Department of Anatomy
16	Dr. Saima Ambreen	Research Associate Associate Professor, Department of Medicine
17	Dr. Khola Naureen	Research Associate Assistant Professor, Department of Community Medicine
18	Dr. Sidra Qaiser	Research Associate Assistant Professor, Department of Physiology
19	Dr. Rizwana Shahid	Research Associate Assistant Professor, Department of Community Medicine
20	Dr. Osama PGT	Research Associate Department of Nephrology
21	Mr. Kashif Zaheer	Accountant Budget and Account Officer

2.7 Establishment of Innovation & Technical Committee (ITC)

Rawalpindi medical university has established Innovation & Technical Committee (ITC). Committee is directed for compliance of fortnightly meetings physical or online to review the progress of innovation projects.

The members are as follows

1. Prof Muhammad Umar	Vice Chancellor, Rawalpindi Medical University
2. Dr Uzma Shaukat	Director ORIC
3. Prof Bushra Khaar	Professor, Rawalpindi Medical University
4. Dr Akram Randhawa	Professor of Pharmacology, RMU
5. Dr Nasir Khan	Head of Radiology Department, RMU
6. Mr Adnan Siddique	CSO, EZ SHIFA
7. Dr Tahir Sharif	Senior Advisor EZ Shifa
8. Dr Asma Khan	CTI RMU
9. Dr Huma Shafique	Manager R & D
10. Dr Asif Maqsood Butt	Coordinator (Commercialization and Innovation)

2.8 Centre for Clinical Artficial Intelligence (CCAI)

CCAI use of data and technology will enables us to provide the best possible health care services, and the purpose of the center is to ensure full utilization of artificial intelligence to benefit patients and staff of the hospital.

Focal Persons of RMU
Opthalmology: Dr Saira Bano
Gastroenterology: Dr Tayyab Saeed
Radiology: Dr Maria Khaliq
Pathology: Dr Tayyaba Ali
ORIC: Dr Uzma Shaukat

Focal Person of NCAI-NUST
Prof. Yasar Ayaz
CPD/Chairman at National Center of Artificial Intelligence (NCAI), Pakistan & Professor of AI & Robotics @ NUST

Patron in Chief;

Vice Chancellor; Prof. Dr. Muhammad Umar

Director CCAI;

Prof. Dr Fuad Ahmed Khan Niazi

2.9 Collaborative Projects based on Artficial Intelligence with National Centre of Artificial Intelligence NCAI-NUST and Neurocare AI Academy

S#	Project Titles	PI and Co-PI	University/institution and Collaboration	Proposed Budget	Start Date
7.	Decentralized AI Video Surveillance System	Prof Yasir Ayaz	RMU and NCAI-NUST	Rs. 14971756	2023
8.	Pancreatic Cancer Detection using Deep Learning for ROSE during EUS guided FNAC	Prof Yasir Ayaz and Dr Umer Asghar Dr Tayyaba Ali	RMU and NCAI-NUST	Rs. 13,549,804	2023
9.	Innovative imaging Artificial Intelligence (AI) based diagnostic tools for detection of stroke paradigm with clinical validation on local datasets	Prof Nasir Khan and Dr Ume Kalsoom	RMU and Institute of Health Innovation and Education, Neurocare AI Academy	Rs. 1.1 Million	2023

S #	Project Titles	PI and Co-PI	University/institution and Collaboration	Proposed Budget	Start Date
1.	Medical Aid Teaching Rescue emergency support system	DR ASIF MAQSOOD BUTT DR OMAIMA ASIF	RMU & EZ SHIFA + IST	6.0 Million	2023
2.	Pre, Post and Epidemic Communication, Strategies to Improve Patient's Health Care, Surveillance and Tracking System in Pakistan: An Integrated Model	DR ASIF MAQSOOD BUTT Dr Omaima Asif & Humna Asif, Prof Muhammad Umar Prof Muhammad Iftikhar Adnan Siddique	RMU & EZSHIFA + IST	3.5 Million	2023
3.	SDGS 2030 HEALTH CARE DELIVERY MODEL	DR ASIF MAQSOOD BUTT Dr Omaima Asif & Humna Asif, Prof Muhammad Umar Prof Muhammad Iftikhar Adnan Siddique	RMU & EZSHIFA + IST	3.5 Million	2023
4.	E^3MC^2 Management of climate, environment, energy & economy waste auto treatment machine supported by combined source of energy	DR ASIF MAQSOOD BUTT Dr Omaima , Prof Muhammad Umar , Dr Huma Shafique, Dr Omaima Asif , Humna Asif	RMU & NUST	In progress	2023
5.	THIRD GENDER HEALTHCARE INITIATIVE ''	MINAHIL HASSAN DR ASIF MAQSOOD BUTT	RMU % RCAP	HEC SAEED GRANT	2023

2.10 Projects Submitted based on Artificial Intelligence

2.10.1 University Post Graduate Research Lab Complex (PC-1 is submitted to HEC)

In the Rawalpindi Medical University, while a lot of development work has already been carried out within just span two years, the RMU is already laying the foundations for further development to meet the needs of the future, especially in the fields of research, academics as well as patient care facilities.

The RMU is envisioned to be a research-intensive university providing evidence-based healthcare services, with the core focus to develop indigenous models of research and education to inform the development of equitable (accessible, quality, and cost-effective), comprehensive, integrated, locally responsive, and sustainable evidence-based services.

In this context, with up-gradation of RMC to RMU, the need for a state-of-the-art research lab, capable of meeting the needs of all sorts of medical research even at doctoral level was realized and the planning work was immediately started under the guidance and with personal efforts of the Vice-Chancellor, Professor Muhammad Umar and his team as one of the very first projects under the flag of the Rawalpindi Medical University as part of IDP-1of RMU Vision 2033.

The research lab will also be accompanied by an animal house and residential arrangements for the post-graduate students to facilitate that the research work can be done round the clock.

The project has been proposed to provide all sorts of state-of-the-art technologies under one roof enabling the researchers to carry out the research activities without any hindrance or limitation. The PC-1 of the project has been submitted to the HEC, with an estimated cost of 1.5 billion rupees.

The project will include well-equipped research laboratories including

- Anatomy & Histology Research Laboratory
- Physiology
- Biochemistry
- Hematology
- Chemical Pathology
- Histopathology
- Microbiology
- Molecular Biology & Immunology
- Pharmacology & Animal House
- Forensic & Toxicology Research Laboratory
- Advanced Skill Lab
- Information Technology Resource Center
- Biomedical Engineering Lab


Smile Photo Desk
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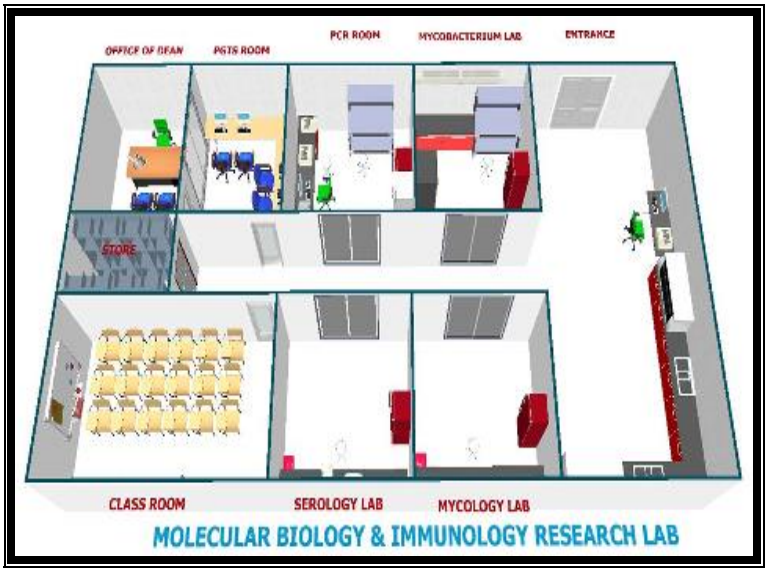
OFFICE OF DEAN
PGTS ROOM
PCR ROOM
MYCOBACTERIUM LAB
ENTRANCE
STORE
CLASS ROOM
SEROLOGY LAB
MYCOLOGY LAB
MOLECULAR BIOLOGY & IMMUNOLOGY RESEARCH LAB

Section VI:
Memorandum of Understanding & Linkages

6.1 **MOU signed with International Universities**

In the current age of development, an institution needs to develop partnerships and linkages with global institutions for knowledge sharing and mutual development. With dedicated efforts, during the last one year, we have extended partnership with different leading institutions across the globe to work on research, patient care, and human development.

The prestigious institutions/bodies of the medical community around the world with whom RMU has established international linkages by signing MOUs include

No.	**University/institution**	**Avenue of Cooperation**
1.	University of Liverpool, UK	Global Mental Health Program
2.	The Hull York Medical School, University of York, UK	Medical Education, Population Health, Research, Health Sciences, joint academic programs including MS Clinical Anatomy, MHPE, M.Sc. Clinical Research Methods

3.	Xian Jiaotong University, China	Research, chronic disease prevention and control, maternal and child health, health policy
4.	National Health Service, Northern Lincolnshire, and Goole, UK	Training of Postgraduate trainees
5.	Georgia State University, USA	Collaboration and research in the field of Infectious Diseases
6.	Wrightington, Wigan and Leigh NHS Foundation Trust, UK	Research Collaboration
7.	Digestive Diseases Centre, Beijing Friendship Hospital, Capital Medical University, Beijing	Research Collaboration
8.	Association of Physician of Pakistani Descent of North America (APP NA)	Research Collaboration
9.	MASHA University, Malaysia (22.3.2019)	Research Collaboration
10	Department of Microbiology, Dalian Medical University, China.	Research Collaboration
11.	John Hopkins School of Public Health, America	Research Collaboration
12.	London School of Hygiene and Tropical Medicine (LSHTM)	Research collaboration in order to study and to improve quality of health among the population of Pakistan
13.	University of York, UK	Research Collaboration
14.	Rawalpindi Medical College Alumni Australia & New Zealand	Collaboration of scientific and technical collaboration for theexchange of ideas, skills and techniques on problems of mutual interest

6.2 MOU signed with National Universities:

Understanding the need for a relationship with the medical, educational, and professional communities for further development, cooperation, and knowledge sharing, the Rawalpindi medical university has signed several memorandums of understanding (MOUs) with several national universities and institutes. These include

an agreement between the universities for providing training to the students of Rawalpindi medical university, where required, providing technical assistance in the avenues of expertise, and providing a platform for research to each other. Some of the important MOUs signed included.

University/institution	Avenue of cooperation
Shaheed Zulfiqar Ali Bhutto medical university	Training of postgraduate residents in cardiology and pediatric surgery
Global institute of human development, Islamabad	Professional development courses
Pakistan scientific and technological information center (PASTIC)	Joint ventures for research and training
The Indus hospital	Technical support and development of the pediatric oncology unit at the holy family hospital
Fatima Jinnah Medical University, Lahore	
Post Graduate Admission 2018 (in collaboration with the University of Health Sciences, Lahore)	
Nishtar Medical University Multan	Research as well as academics
Faisalabad Medical University, Faisalabad	Research as well as academics
Terms of the Partnership between RMU & ILE, Islamabad	Technical support and Training

MOU Signed between RMU and Institute of leadership Excellence December1, 2019.

6.3 National Collaborations For Student's Research (Institutional Research Level)

1. College of Medical Lab Technology, NIH, Islamabad.
2. Department of Biosciences, COMSATS University, Islamabad.
3. Pakistan Medical Research Council, Islamabad.
4. PMRC-CRC-NIH, Islamabad.
5. Institute of Biomedical & Genetic Engineering (IBGE), Islamabad
6. Department of Pharmacy, COMSATS Abbottabad.
7. Department of Pharmaceutics, RIPHAH International University.
8. Department of Rehabilitation Sciences, RIPHAH International University, Islamabad/Department of Physiotherapy, RIPHAH International University Islamabad.
9. National Institute of Laser and Optronics, Islamabad.
10. Department of Environmental Sciences, Fatima Jinnah Women University, Rawalpindi.
11. Department of Biotechnology, Fatima Jinnah Women University, Rawalpindi.
12. Psychology Department, Foundation University Rawalpindi Campus.
13. Department of Microbiology, Quaid-e-Azam University, Islamabad.
14. Department of Pharmacy, Quaid-e-Azam University, Islamabad.
15. Department of Animal Sciences, Quaid-e-Azam University Islamabad.
16. School of Applied Biosciences, NUST Islamabad.
17. Department of Industrial Biotechnology, National University of Science and Technology Islamabad.
18. Department of Healthcare Biotechnology, Atta-ur-Rehman School of Applied Biosciences, National University of Sciences and Technology, Islamabad.
19. ISRA Institute of Rehabilitation Sciences, ISRA University Islamabad Campus.
20. Human Development Research Foundation, Islamabad.
21. Shifa College of Medicine, Shifa Tameer-e-Millat University.
22. Department of Pathology, Al-Nafees Medical College, and Hospital Islamabad.
23. Department of Medical Education, Islamic International Medical College, RIPHAH International University Rawalpindi.
24. Department of Obstetrics and Gynecology, Shifa College of Medicine, Islamabad.
25. Azmat Rashid Hospital, Rawalpindi.
26. PHRC Research Centre, NIH Islamabad.
27. Department of Management, Swinburne University Melbourne Australia.
28. Department of Biochemistry, Arid Agriculture University, Rawalpindi.
29. BHU, Sodi Gujjar, Pind Dadan KHAN.

30. Department of Community Medicine, University Kebangsaan Malaysia.
31. Department of BS Vision Sciences, Isra University Islamabad.
32. Department of Computer Science, Bahria University Islamabad.
33. Health Services Academy, Quaid-e-Azam University Islamabad.
34. Department of Radiological Sciences, University of Lahore.
35. Shifa College of Medicine, Islamabad.
36. Sight Savers Pakistan, Royal Common Wealth Society for the blinds (Sight Savers) Pakistan.
37. Maternal, Neonatal, and Child Health Research Network Islamabad.
38. Department of Masters of Public Health, Health Services Academy, Islamabad.
39. Department of Electrical Engineering, National University of Computer and Emerging Sciences, Islamabad.
40. Center for Global Public Health Pakistan.
41. Higher Education Commission. Islamabad.
42. PASTIC, Islamabad.
43. Khyber Medical University, Peshawar.
44. National Centre of Artficial Intelligence/ NCAI-NUST.

FUNDING AGENCIES

5.1 List of Funding Agencies

- Higher Education Commission www.hec.gov.pk
- Pakistan Science Foundation www.psf.gov.pk
- National ICT R&D Fund www.ictrdf.org.pk
- Pak-US Joint Academic & Research Program www.publisher.hec.gov.pk
- TWAS-COMSTECH Joint Research Grants www.twas.ictp.it/prog/grants/
- Human Frontier Science Program www.hfsp.org
- International Foundation for Science www.ifs.se
- Research & Advocacy Fund www.rafpakistan.org
- Talented Researcher Exchange Program (TRXP) www.britishcouncil.org/inspire
- Academy of Finland www.aka.fi/en-gb/A/
- Alexander von Humboldt Foundation www.avh.de/en/index.htm
- Australian Agency for International Development (AusAID) www.ausaid.gov.au
- East WEST center
- European Research Council (ERC) www.erc.europa.eu
- EU Funding and Grants www.ec.europa.eu/index_en.htm
- International Development Research Center www.idrc.ca
- Japan International Cooperation Agency (JICA) www.jica.go.jp
- Sigma Xi – The Scientific Research Society www.sigmaxi.org
- The Asia Foundation: www.asiafoundation.org
- UN Economic and Social Commission for Asia and Pacific www.unescap.org
- The Islamic Educational, Scientific & Cultural Organization (ISESCO – Scientific Research Grant) www.icpsr.org.ma
- Pakistan US Science and Technology Cooperation Program
- DAAD Research Grants for young Faculty of Pakistani Universities(Ph.D. students and Post Doc)

Section VII:
RESEARCH PROJECTS

International Linkages and MOUs

National Linkages and MOUs

Completed Projects

Approved Projects

Submitted Projects

Patent Projects

Miscellaneous Projects

5.2 International Linkages and MOUs

S.No	University/institution	Avenue of Cooperation
1	University of Liverpool, UK	Global Mental Health Program
2	The Hull York Medical School, University of York, UK	Medical Education, Population Health, Research, Health Sciences, joint academic programs including MS Clinical Anatomy, MHPE, M.Sc. Clinical Research Methods
3	Xian Jiaotong University, China	Research, chronic disease prevention and control, maternal and child health, health policy
4	National Health Service, Northern Lincolnshire, and Goole, UK	Training of Postgraduate trainees
5	Georgia State University, USA	Collaboration and research in the field of Infectious Diseases
6	London School of Hygiene and Tropical Medicine (LSHTM)	Improve quality of health among the population of Pakistan
7	Rawalpindi Medical College Alumni Australia & New Zealand	scientific and technical collaboration for the exchange of ideas, skills and techniques on problems of mutual interest
8	Wrightington, Wigan and Leigh NHS Foundation Trust, UK	Research Collaboration
9	Digestive Diseases Centre, Beijing Friendship Hospital, Capital Medical University, Beijing	Research Collaboration
10	Digestive Diseases Centre, Beijing Friendship Hospital, Capital Medical University, Beijing	Research Collaboration
11	MASHA University, Malaysia (22.3.2019)	Research Collaboration
12	Department of Microbiology, Dalian Medical University, China.	Research Collaboration
13	John Hopkins School of Public Health, America	Research Collaboration
14	University of York, UK	Research Collaboration

5.3 National Linkages and MOUs

S. No	University/institution	Avenue of Cooperation
1	Shaheed Zulfiqar Ali Bhutto Medical University , Islamabad	Training of postgraduate residents in cardiology and pediatric surgery
2	Global Institute of Human Development, Islamabad	Professional development courses
3	Pakistan Scientific and Technological Information Center (PASTIC), Islamabad	Joint ventures for research and training
4	The Indus Hospital, Karachi	Technical support and development of the pediatric oncology unit at the Holy Family Hospital
5	Nishtar Medical University, Multan	Research and academics
6	Faisalabad Medical University, Faisalabad	Research and academics
7	Institute of Leadership Excellence, RIPAH University, Islamabad	Technical support and Training
8	Peoples University, Nawabshah, Sindh	University Residency Programs and Research Collaboration
9	Qamand Enterprises-RMU	Vetted and signed
10	National Center Of Artificial Intelligence NCAI-NUST-RMU	Vetted and signed
11	Chughtahi Labs-RMU	Vetted and signed
12	COMSATS-RMU	Vetted and signed

5.4 Completed Projects

ORIC Reg. No	Project Titles	Principal Investigator	Starting	Status
1	(SMI Study)	Dr Asad Tamizzudin	Jul-19	Published
2	BEACON	Dr Asad Tamizzudin	Jan-19	Published
3	S4 Study	Dr. Asad Tamizzudin	Jan-19	Published
4	Diagnostic accuracy of stool expert MTB/RIF for pulmonary TB in children	Prof. Rai Asghar	2020	Published
5	Happy Mother Healthy Baby	Dr. Atif Rehman, Dr. Abid Malik	Aug-2019	Published
10	PROTECT TRIAL	Prof. Muhammad Umar	6th April 2020	Published
11	Experimental use of COVID-19 convalescent plasma for the purpose of passive immunization, in current covid-19 pandemic in Pakistan in 2020	Dr Tahir Shamsi, Dr Lubna Meeraj	2020	Published
12	An enabled preliminary diagnosis for covid-19 from cough samples via A mobile application	DR. Umair Sajjid Hashmi	June-2020	Published
13	Computational modelling for COVID-19 epidemic in Pakistan	Prof. Dr. Aamer Ikram	Apr-2020	Published

14	**COVID-19 Detection from chest X-rays using deep learning**	**Dr. Hana Mahmood**	**Sep-2020**	**Published**
15	**Effects of COVID-19 on pregnant women, and their new borns, a prospective cohort study**	**Dr. Hana Mahmood**	**Aug-2020**	**Published**
17	Evaluation of risk of infectivity of SARS-COV2 virus via tears and conjuctival secretion of COVID-19 patients	Dr. Ambreen Gul	2020	Published
19	Investigating immunological markers of covid-19 patients in association with co morbidities	Prof. Dr. HABIB BOKHARI/Dr Aftab	20th August till 28th February 2021	Published
20	Treatment regimens used for management covid-19 and their effectiveness	Dr. Hashaam Akhtar	June 2020 till 1st September 2021	Published

5.5 Approved Projects

ORIC Reg. No	Ongoing projects titles	Principal Investigator	Starting	Status
00	Rehabilitation tools for flood affected patients	Dr Uzma Shaukat	2022	Approved by HEC
00	Risk factors associated with placental abruption: a cross-sectional study.		Aug-2022	
00	Health and Need Assessment Survey for Individuals in Flood Affected Areas of Pakistan	Dr Uzma Shaukat	2023	Approved by HEC (Rs 0.5 million)
00	Genetic predisposition to dementia for early diagnosis, treatment and risk prediction in Pakistani population.	Dr Uzma Shaukat	2023	Funded by HEC (Rs 5.0 million)
00	Genetic linkage association studies for breast cancer susceptibility in Pakistani population for early detection and prognosis	Dr Uzma Shaukat	2023	Funded by PSF (Rs 2394500)
00	Health Survey For Individuals In Flood Affected Areas Of Pakistan For Envisioning Health Emergency Model	Dr Uzma Shaukat	2023	Funded by PSF (Rs 0.5 million)

S#	Project Titles	PI and Co-PI	University/institution and Collaboration	Funding Agency	Proposed Budget	Start Date
1.	Clinical utility of PIVKA II in the diagnosis of Hepatocellular Carcinoma alone or in combination of alpha-fetoprotein (AFP) in Pakistani population	Dr Sadia Ahmed	RMU and Chughtahi Labs	HEC	Rs. 0.4 Million	2023
2.	Development of laser devices at 405 & 1064nm along with optical fiber based light delivery probes for the diagnosis and treatment of gastrointestinal, rectal, and diabetic disease disorders	Dr Muhammad Saleem and Dr Tayyab Saeed Akhter	National Institute of laser and optronics, Nilore, Islamabad and Centre for liver and digestive diseases, Holy Family Hospital	HEC	Rs. 5 Million	2023
3.	Establishment of breath testing facility by patients diagnostic lab, PINSTECH at Rawalpindi Medical University and Allied Hospitals	Dr Faisal Rasheed	PINSTECH and RMU and Allied Hospitals	PINSTECH	Rs. 48,98,856	2023
4.	Behavioral cost effective interventions to improve outpatient antibiotic prescribing for acute respiratory infections in Pakistan	Dr Muhammad Salman	RMU and Allied Hospitals and WHO	WHO		2023
5.	Estimation of economic burden of Antimicrobial Resistance on Patients	Dr Muhammad Salman	RMU and Allied Hospitals and WHO	Health Services Research		2023

S #	Project Titles	PI and Co-PI	University/institution and Collaboration	Funding Agency	Proposed Budget	Start Date
1.	Development of laser systems and light delivery probes for treating oncological and non-oncological disease conditions through photodynamic therapy and photo biomodulation therapy	Dr Muhammad Saleem	National Institute of laser and optronics, Nilore, Islamabad and Centre for liver and digestive diseases, Holy Family Hospital	Pakistan Science Foundation (PSF)	Rs. 14231250	2023
2.	Local Hepatitis Elimination Prevention (LHEAP)	Dr Nida Ali				
3.	Pancreatic Cancer Detection using Deep Learning for ROSE during EUS guided FNAC	Prof Yasir Ayaz and Dr Umer Asghar Dr Tayyaba Ali	RMU and NCAI-NUST	HEC Shortlisted	Rs. 13,549,804	2023
4.	Combo Diet Plate . Auto regulatory device for routine screening, early diagnosis, prompt T.P.E with Voice control Communication to improve Quality Adjusted Life Years in Pakistan	Dr Asif Maqsood Butt Dr Omaima Asif & Humna Asif	RMU & NUST		In Progress	2023
5.	HEALTH PIVOT : Your one stop health assistant	Khadijah Sahi, Ahmad Aziz Dr Asif Maqsood Butt	RMU & RCAP	HEC	HEC SAEED GRANT	2023
6.	Innovative imaging Artificial Intelligence (AI) based diagnostic tools for detection of stroke paradigm with clinical validation on local datasets	Prof Nasir Khan and Dr Ume Kalsoom	RMU and Institute of Health Innovation and Education, Neurocare AI Academy	Neurocare AI Academy	Rs. 1.1 Million	2023

5.6 Submitted Projects

S#	Project Titles	PI and Co-PI	University/institution and Collaboration	Proposed Budget	Start Date
1.	Medical Aid Teaching Rescue emergency support system	Dr Asif Maqsood Butt Dr Omaima Asif	RMU & EZ SHIFA + IST	6.0 Million	2023
2.	Pre, Post and Epidemic Communication, Strategies to Improve Patient's Health Care, Surveillance and Tracking System in Pakistan: An Integrated Model	Dr Asif Maqsood Butt Dr Omaima Asif & Humna Asif, Prof Muhammad Umar Prof Muhammad Iftikhar Adnan Siddique	RMU & EZSHIFA + IST	3.5 Million	2023
3.	SDGS 2030 Health Care Delivery Model	Dr Asif Maqsood Butt Dr Omaima Asif & Humna Asif, Prof Muhammad Umar Prof Muhammad Iftikhar Adnan Siddique	RMU & EZSHIFA + IST	3.5 Million	2023
4.	E^3MC^2 Management of climate, environment, energy & economy waste auto treatment machine supported by combined source of energy	Dr Asif Maqsood Butt Dr Omaima , Prof Muhammad Umar , Dr Huma Shafique, Dr Omaima Asif , Humna Asif	RMU & NUST	In progress	2023
5.	THIRD GENDER HEALTHCARE INITIATIVE ''	Minahil Hassan Dr Asif Maqsood Butt	RMU % RCAP	HEC SAEED GRANT	2023
6.	Decentralized AI Video Surveillance System	Prof Yasir Ayaz	RMU and NCAI-NUST	Rs. 14971756	2023

5.7 Patent Projects

S#	Project Titles	PI and Co-PI	University/institution and Collaboration	Proposed Budget	Start Date
1.	Anterior Cervical Discectomy and Fusion (ACDF)				
2.	Cervical disc and dynamic cervical disc				
3.	Expandable cage for cervical corpectomy				
	Research and Prototype Development of Biliary/Pancreatic Stents	Dr Tayyab Ali	RMU and Qamand Enterprises	Qamand Enterprises	Rs 1.2 Million	2023

5.8 Miscellaneous Projects

ORIC Reg. No	Projects titles	Principal Investigator	Start Date	Status
1	Assessment of knowledge, attitude and practices followed by healthcare professionals in handling biomedical waste during the covid-19 pandemic in pakistan and way forward for improvement and better compliance with current legislation	Dr. Hashaam Akhtar	Aug-2022	In Progress
2	Treatment Regimens used for Management of COVID-19 & their effectiveness	Dr, Hashaam Akhtar		In Progress
3	Impact of high-resolution manometry on achalasia diagnosis, classification and treatment	Sameen Abbas	Aug-2022	In Progress
4	Evaluation of maternal "near miss" events in tertiary care hospitals of Rawalpindi.		Feb, 2022	In Progress
5	Assessment of knowledge/awareness about radiation risk among healthcare workers.		Feb, 2022	In Progress
6	Bedside blood transfusion knowledge: "what health care workers know and perform? A cross sectional study from a tertiary level hospital, Rawalpindi.		Feb, 2022	In Progress
7	Association of CAMK4 Gene polymorphism Rs 2300782 in diabetic retinopathy in Pakistani population.		Feb, 2022	In Progress
8	Genblip: genetics of bipolar in Pakistan		Feb, 2022	In Progress
9	Importance of the helmet use in motorbike riders in road traffic accidents (RTA) a mixed methodology research study at allied hospitals of Rawalpindi medical university (RMU) Rawalpindi		Feb, 2022	In Progress
10	Retention and clinical application of basic science by students during clinical clerkship		Mar, 2022	In Progress
11	To assess prevalence of unplanned pregnancy and associated factors in pregnant women attending antenatal clinics in holy family hospital Rawalpindi Pakistan		Mar, 2022	In Progress
12	To determine the genetic risk factors for stroke and database establishment for personalized medicine in Pakistan		Jun, 2022	In Progress
13	Association of family satisfaction level with care and participation in decision-making at adult intensive care units of public sector hospitals		Jun, 2022	In Progress

5.9 Project 1

Title: Mathematical modeling to study Transmission Dynamics of Infectious Diseases in Pakistan:

Collaboration: Rawalpindi Medical University, Pakistan and Georgia State University, USA
Principal investigator: Dr. Shireen Rafiq Department of Pathology, RMU
Co-Investigator: Dr. Naeem Akhtar, Prof. of Pathology & Dean Basic Sciences, RMU
Dr. Muhammad Umar, Vice-Chancellor, Rawalpindi Medical University, Rawalpindi
Dr. Gerardo Chowell, Prof. School of Public Health, Georgia State University
Dr. Amna Tariq (Ph. D Scholar) Infectious diseases, Georgia State University
Approved by: The Institutional Research Forum of GSU, USA, and RMU, Pakistan (27th Oct 2018)
MOU: Signed between the two universities (3rd May 2019)
Name of the Funding agency: Nill
Total Funds Allocated: Non -Funded Technical Assistance.

5.9.1 Summary

Infectious diseases are causing the deaths of millions of people in Pakistan. This study will help to intervene and strategize policies and response measures in the required time frame to be able to control the epidemics. Mathematical and phenomenological modeling of infectious diseases in spatiotemporal (time and space) dimensions will allow us to model, forecast, predict, and map disease and disease clusters. It will provide tools and skills for a timely response to disease outbreaks
This project will benefit us in understanding the dynamics of infectious diseases in our area. We will better understand the variables involved in the disease transmission, which if controlled can lead to a mitigation of these diseases. It will identify and help prevent future outbreaks in Pakistan
It will help in research development, validation, and translation of infectious disease modeling in the spatiotemporal dimensions for infectious diseases. To make recommendations to the health care professionals in Pakistan for the implementation of population-level interventions to mitigate the future epidemics of these diseases. To predict the upcoming epidemics of diseases in Pakistan

5.10 Project 2

Title: IMPACT smoking cessation support for people with severe mental illness in South Asia (IMPACT 4S): a protocol for a randomized controlled pilot and feasibility trial for a combined behavioral and pharmacological support intervention.

Short title: IMPACT 4S pilot and feasibility trial

Collaboration: the University of York and all other collaborating institutions and organizations of India, Pakistan, and the UK

Principal Investigators

1. Prof Asad Tamizuddin Nizami, Chairperson, Institute of Psychiatry, WHO Collaborating Centre for Mental Health and Research. Rawalpindi Medical University, Rawalpindi Pakistan
2. Dr. Noreen Mdege. Department of Health Sciences, Faculty of Science, University of York, UK
3. Professor Simon Gilbody. Department of Health Sciences, University of York, UK
4. Prof Pratima Murthy. Department of Psychiatry, National Institute of Mental Health and Neuro Sciences (NIMHANS), India

Co-investigators from Pakistan: Dr. Faiza Aslam (country lead), Ms. Maryam Noor.

International Co-investigators:

University of York, UK: Dr. Gerardo Zavala, Prof. Kamran Siddiqi, Dr. Najma Siddiqi, and Prof.Catherine Hewitt

National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, India: Dr. Krishna Prasad, Prof. Santosh Kumar Chaturvedi, Dr. Arun Kandasamy

University of Leeds, UK: Dr. Ian Kellar, Dr.Tolib Mirzoev

Valid Research UK: Dr. Cath Jackson

London School of Economics, UK: Assoc. Prof. David McDaid

Approved by: Ref #: R-48/RMU, dated 24th August 2019

MOU:

The Contract of IMPACT program had been signed between IOP RMU and the University of York and all other collaborating institutions and organizations of India, Pakistan, and the UK in October 2019 that encompasses all the activities of IMPACT and no individual MOU'S for the studies is available.

Total Funds: 5521175 PKR

5.10.1 Summary

To adapt evidence-based, combined behavioral and pharmacological support intervention for smoking cessation among people with severe mental illness; and test the feasibility of delivering and evaluating it in India and Pakistan. Primary outcomes (feasibility and acceptability)Recruitment rates: Quantitative assessment of the acceptability of the research will be assessed by numbers screened, number eligible, and those agreeing to participate.For Reasons for ineligibility/non-participation/non-consent of participants, the length of time required to achieve the required sample size. Retention in the study will be assessed as a proportion of those enrolled in the study who are successfully followed-up at six months. Retention in treatment will be evaluated by several study intervention sessions attended as one measure of the feasibility and acceptability of the trial interventions to participants. Intervention

fidelity during the delivery of the behavioral support within the IMPACT 4S intervention, as well as for brief advice (BA) will be assessed as one measure of feasibility of intervention delivery.

Smoking cessation pharmacotherapy adherence: For those in the IMPACT 4S arm, adherence to smoking cessation pharmacotherapy will be assessed as one measure of the feasibility and acceptability of the smoking cessation pharmacotherapies to participants. Data will be checked for completeness as another measure of acceptability and feasibility of data collection methods, and to identify problem areas and solutions. For secondary outcomes, Self-reported or family/career reported continuous smoking abstinence for at least six months (only five instances of smoking allowed during the total six months) which is biochemically verified by CO concentration (CO concentration <7ppm) at six months follow-up. Point abstinence, defined as a self-report or family/career report of not smoking in the previous 7 days, assessed at one, three, and six months follow-up. Cost of delivering the IMPACT 4S and the BA interventions. Number of participants will be included 172 in total (86 in India; 86 in Pakistan)

5.11 Project 3

Title: Progress of Impact SMI Survey Under Top

Investigating Mental And Physical Comorbidity: A Survey In People With Severe Mental Illness In South Asia (Impact Smi Survey)

Collaboration: the University of York and all other collaborating institutions and organizations of India, Pakistan, and the UK

Principal Investigator

Prof. Asad Tamizuddin Nizami, Chairperson, Institute of Psychiatry, WHO Collaborating Centre for Mental Health and Research. Rawalpindi Medical University, Rawalpindi Pakistan

Co-Investigators: Dr. Kamran Siddique and Gerardo Zavala Gomez, Department of Health Sciences, Faculty of Science, University of York, UK.

Dr. Krishna. Department of Psychiatry, National Institute of Mental Health and Neuro Sciences (NIMHANS), India Deepa Barua and Asiful Haider ARK Foundation, Dhaka, Bangladesh Ms. Sonia Mansoor (country lead), Dr. Faiza Aslam IOP, BBH, RMU, Pakistan Siham Sikandar Public Health, Health Services Academy, Islamabad, Pakistan Other members of IMPACT team at IOP: Nida Afsheen, Rubab Ayesha, Zaheen Amin, Aneeqa Maryam, Najma Hayat

Approved by: RMU and University of York

MOU: has been signed between RMU and University of York, the UK in October 2018

Total Cost: 2799577PKR

5.11.1 Summary

This cross-sectional study aims to determine the prevalence and determinants of physical disorders in people with SMI attending specialist mental health facilities in South Asia.

It is a multi-country survey, 1500 Patients with SMI attending IOP will be recruited throughout one year however total sample is n=4,500 from all three countries Bangladesh, India, and Pakistan). The diagnosis of SMI will be confirmed using the MINI V-6.0. We will collect information about: physical health and related health-risk behaviors (WHO STEPs); severity of common mental disorders (PHQ-9 and GAD-7); and health-related quality of life (EQ-5D-5L). We will measure blood pressure, height, weight, and waist circumference according to WHO guidelines. We will also measure glycated hemoglobin (HbA1c), lipid profile, thyroid function, liver function, creatinine, and hemoglobin. Prevalence rates of physical health conditions and health-risk behaviors will be presented and compared with the WHO STEPs survey findings in the general population. Regression analyses will explore the association between health-risk behaviors, mental and physical health conditions.

5.12 Project 4

Title: Behavioral activation for depression in people with the non-communicable disease in low- and middle-income countries in South Asia: Protocol for intervention design and randomized controlled feasibility trial
Short title: Behavioral Activation for Comorbid Depression in Non-communicable Disease (BEACON) study

Collaboration: the University of York and all other collaborating institutions and organizations of India, Pakistan, and the UK
Principal Investigator: Prof. Asad Nizami, IOP, RMU
Co-investigators: Prof. Jerome, Department of Health Sciences, Faculty of Science, University of York, UK
2. Dr. Najma Siddiqi, Department of Health Sciences, Faculty of Science,
University of York, UK.
3. Dr. Siham Sikandar, Health Services Academy, Pakistan
Co-investigators from Pakistan: Ms. Rusham Rana (country lead), Dr. Faiza Aslam, IOP, Pakistan.
Funding source: 2992000 PKR
Approved by: IRF
MOU: A contract was signed between IOP RMU and all collaborators in Oct 2018,

5.12.1 Summary

We aim to adapt and test the feasibility of brief psychological therapy, behavioral activation, delivered by non-specialist health workers for people with depression in non-communicable diseases in LMIC in South Asia.
Projects of Obstetrics and Gynecology Department

Projects of Collaboration of Rawalpindi Medical University (RMU) and London School of Hygiene and Tropical Medicine (LSHTM)

Pakistan National Coordinating Centre (PNCC)

In 2014, an Academic Research Collaboration was established between Rawalpindi Medical University and the London School of Hygiene and Tropical Medicine (RMU-LSHTM Research Collaboration). PNCC is established as a result of a Memorandum of understanding signed between these two prestigious universities.

The sole purpose of this collaboration is to bring quality academic trials to the country and hence promote the research culture. Under the Umbrella of this collaboration we have ventured into following four research Projects:

5.13 Project 5

WOMAN Trial:

Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with post-partum hemorrhage (WOMAN): an international, randomized, double-blind, placebo-controlled trial

Lead Investigators: Prof. Ian Roberts, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London

Co-Investigator: Prof. Haleema Shakur, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London

National Coordinator: Prof. Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynecology, Rawalpindi Medical University.

Co-Investigator: Dr. Aasia Kayani, Research Coordinator RMU – LSHTM Collaboration.

Dr. Kiran Javaid, Assistant Research Coordinator RMU – LSHTM Collaboration.

Approvals Obtained:

DRAP: Ref # F.No.3-5/2010-ADC (CT)

National Bioethics: Ref # No.4-87/14/NBC-64/RDC/818

Funds Allocated: There was no fund allocated to the trial. The establishment of the Pakistan National Coordinating Centre was funded by Crash3 Trial. The Research Coordinator employed for Crash 3 Trial also coordinated Woman Trial.

5.13.1Summary

In this randomized trial women aged 16 years and older were recruited with a clinical diagnosis of postpartum hemorrhage after vaginal birth or cesarean section. The total sample size was set at 20,000 participants. Pakistan was the second-highest recruiter in the trial with 5282 of 20,060 patients enrolled in the trial. A total of fifty two hospitals across the country participated in the Woman Trial. All these hospitals were managed and coordinated by the coordinating team of PNCC. PNCC team was involved in the initial training of each participating hospital team along with day to day coordination of trial-related activities. These activities encompass the provision of trail drugs,

uploading trial-related data, verification of data provided by trial sites from the source documents, monitoring visits to the site, and ensuring all the trial-related activities to be conducted in line with trial protocols.

Woman Trial successfully concluded in March 2016. Woman Trial results were very promising and showed a significant reduction in death due to bleeding in Tranexamic Acid arm as compared to placebo. The result of this trial was published in April 2017, in The Lancet, which is among the world's oldest, most prestigious and peer-reviewed, indexed medical journal. As a result of Woman Trial, TXA is included among the essential drugs of WHO, for the treatment of obstetrical hemorrhage.

5.14 Project 6

CRASH 3 Trial:

Tranexamic Acid for the Treatment of Significant traumatic brain injury: An International Randomized, Double-Blind, Placebo-Controlled trial

Lead Investigators: Prof Ian Roberts, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London
Prof Haleema Shakur, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London
National Coordinator: Prof Rashid Jooma, Consultant Neurosurgeon, Aga Khan University Hospital, Pakistan.
Director PNCC: Prof Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynaecology, Rawalpindi Medical University.
Co-Investigator: Dr. Aasia Kayani, Research Coordinator RMU – LSHTM Collaboration.
Dr. Kiran Javaid, Assistant Research Coordinator RMU – LSHTM Collaboration
MOU signed on 20-04-15
Approvals Obtained:
DRAP: Ref # F.No.2-11/2014-ADC (CT)
National Bioethics: Ref # No.4-87/14/NBC-140/RDC/4700
Local ethical Approval: RMU Ref # R-21/RMU
Total Allocated Budget as per MOU=£384780
Funding Agencies=UK Medical Research Council
Status: Completed, Published in the Lancet Oct 2019

5.14.1Summary

This is the largest trial of traumatic brain injury (TBI) ever conducted in history with a sample size of 13000 patients. Crash three was conducted to provide reliable evidence about the effect of tranexamic acid on mortality and disability in patients with traumatic brain injury. Adults with TBI who were within 3 h of injury, had a Glasgow Coma Scale

(GCS) score of 12 or lower or any intracranial bleeding on CT scan, and no major extracranial bleeding was eligible.

Crash Three started recruitment in July 2012, and it was conducted in 175 hospitals across 29 countries.

Pakistan joined the Crash three late due to issues faced at the local level, in obtaining approval from Drug Regulatory Authority (DRAP), which was itself in the process of establishment. PNCC played a pivotal role in obtaining DRAP approval. The trial started in Pakistan in February 2015 and has concluded on 31st January 2019. Fourteen hospitals, which include all major neurosurgical departments of the country, participate in the trial. Out of a total of 12,737 patients enrolled worldwide, 4567 patients were from Pakistan, making Pakistan the top recruiter of Crash Three.

The results of Crash three were published in **The Lancet, in October 2019.** The PNCC team has the honor of being part of the writing committee of Crash Three.

5.15 Project 7

HALT AT TRIAL:

Tranexamic Acid for the Treatment of Gastrointestinal Bleeding: An International Randomized, Double-Blind, Placebo-Controlled Trial

Lead Investigators: Prof. Ian Roberts, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London

Prof. Haleema Shakur, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London

National Coordinator: Prof Matiullah Khan, Prof Of Medicine, Holy Family Hospital Unit 2, Rawalpindi, Medical University.

Director PNCC: Prof Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynaecology, Rawalpindi Medical University.

Dr. Aasia Kayani, Research Coordinator RMU – LSHTM Collaboration.

Dr. Kiran Javaid, Assistant Research Coordinator RMU – LSHTM Collaboration

MOU signed on 14.12.2018

Approvals Obtained:

DRAP: Ref # F.No.3-4/2015-DDC (PS)

National Bioethics: Ref # No.4-87/15/NBC-185/RDC/814

Local ethical Approval: RMU Approval taken on 09.06.2015

Total Allocated Budget as per MOU = £87500

Funding Agencies= National Institute of Health Research UK

Status: Completed (Analysis in Progress)

5.15.1 Summary

This trial was conducted to determine the effect of early administration of tranexamic acid on mortality and morbidity in patients with acute gastrointestinal bleeding. This trial was conducted in 81 hospitals from 15 countries, of which 30 hospitals were from Pakistan, with a target sample size of 12000 patients. The trial was started in Pakistan

in March 2016 and has concluded in June 2019, with Pakistan as the second-highest recruiter in this trial.

5.16 Project 8

Woman 2 Trial

Tranexamic Acid for the Prevention of Postpartum Bleeding in Women with Anemia: An International Randomized, Double-Blind, Placebo-Controlled trial

Lead Investigators: Prof Ian Roberts, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London
Prof. Haleema Shakur, Prof of Epidemiology, London School of Hygiene and Tropical Medicine, University of London
National Coordinator: Prof Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynaecology, Rawalpindi Medical University.
Dr. Aasia Kayani, Research Coordinator RMU – LSHTM Collaboration.
Dr. Kiran Javaid, Assistant Research Coordinator RMU – LSHTM Collaboration
MOU signed on 11.05.2019
Approvals Obtained:
DRAP: Ref # F.No.03-03/2019-DD (PS)
National Bioethics: Ref # No.4-87/NBC-340/18/204
Local ethical Approval: RMU ref # R-38/RMU
Total Allocated Budget as per MOU = £99848
Funding Agencies: Welcome Trust Limited and Bill and Melinda Gates Foundation
Duration: 2019-2022
Status: Ongoing

5.16.1 Summary

This is a new research project of collaboration with a sample size of 10000 Women. About 50 hospitals across the country have expressed their interest to participate in the trial. We have already received the National Bioethics and Drug Regulatory Authority of Pakistan Approval to start the trial in Pakistan. The trial has started in August 2019 and has currently recruited more than 1000 patients across 18 hospitals in Pakistan.

5.17 Project 9

Title: Factors behind the growing rate of unnecessary caesarian sections in three tertiary care hospitals of Rawalpindi, Pakistan

Principal Investigator: Prof Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynecology, Rawalpindi Medical University.
MOU signed on 2018
Approval Obtained:
Local ethical Approval: RMU ref # R-01/RMU/19

Total Allocated Budget as per MOU = 8000USD
Funding Agencies: WHO
Status: Completed (Analysis in Progress)

5.17.1 Summary

This research project was started in collaboration with Centre for Global Public Health Pakistan (CGPH-Pakistan), which is the local arm of the Centre for Global Public Health (CGPH), University of Manitoba, Canada and World Health Organization (WHO). The purpose of the trial was to increase knowledge about associated factors leading to the un-necessary cesarean sections and provide recommendations to avoid them. The trial was started in the Obstetrics and Gynecology departments of all three teaching hospitals of RMU on 13 June 2019. A total of 1800 patients were recruited and the trial concluded on **31st July 2019.**
Determining the risk factors and proportion of cesarean section using Robson classification to reduce the cesarean rate in the public hospital of RWP.

5.18 Project 10

Sti Transmission In Antenatal Patients
Title: Determination of the acceptability and feasibility of genital Chlamydia trachomatis, Neisseria gonorrhoeae, and Trichomonas vaginalis screening in routine antenatal care in Rawalpindi, Pakistan
Principal Investigator: Prof Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynecology, Rawalpindi Medical University.
Collaboration: This project started at the end of August 2019 in collaboration with Cepheid and UCLA David Geffen School of Medicine and Fielding School of Public Health, California.
MOU signed on 11.03.2019
Approval Obtained:
Local ethical Approval: RMU Ref # R-69/RMU
Total Allocated Budget as per MOU = 43037 USD
Funding Agencies = Cepheid and UCLA David Geffen School of Medicine and Fielding School of Public Health, California.
Status: Ongoing

5.18.1 Summary

This is a cross-sectional study of 1000 pregnant women to determine the uptake and prevalence outcomes for *Chlamydiatrachomatis*, *Neisseriagonorrhoeae*, and *Trichomonasvaginalis* screening among pregnant women receiving care at Holy Family Hospital, Rawalpindi. This project started at the end of August 2019 in collaboration with Cepheid and UCLA David Geffen School of Medicine and Fielding School of Public Health, California.

5.19 Project 11

Title: Gloss, The Global Maternal Sepsis Study

Principal Investigator: Prof Rizwana Chaudhri, Dean and Head of Department, Obstetrics and Gynaecology, Rawalpindi Medical University.

Approved by IRF

MOU signed between the two universities

Name of funding Agency: WHO

Total Funds Allocated: Nil

Status: Completed and Submitted in Lancet (under review)

5.19.1 Summary

This study is part of the "Global Maternal and Neonatal Sepsis Initiative" which has the overall goal of accelerating the reduction of preventable maternal and newborn deaths related to sepsis. The latest estimates suggest that infections are the underlying cause of 11% of maternal direct deaths, but the true burden of maternal infection and its complications is not well known. The Global Maternal Sepsis Study (GLOSS) and awareness campaign were implemented in 53 countries

The primary objectives of the Global Maternal Sepsis Study (GLOSS) are:

1) To develop and validate a set of criteria for identification of possible severe maternal infection (presumed maternal sepsis) and maternal sepsis (confirmed sepsis);

2) To assess the frequency and the outcomes of maternal sepsis in LMIC and HIC countries;

3) To assess the frequency of use of a core set of practices recommended for prevention, early identification, and management of maternal sepsis. Through evaluation of the campaign, we aim 4) To explore the level of awareness about maternal and neonatal sepsis among health care providers, policymakers, and the general public, including pregnant women, mothers, and their families.

As a part of the Gloss initiative, research was conducted at the Department of Obstetrics of RMU and Allied hospitals to assess the true burden and the current management of maternal and neonatal sepsis. The Study has determined at how women with infection during pregnancy, childbirth or postpartum, or post-abortion are identified and treated in participating hospitals. The duration of the research was from September 2017 to May 2018. The research was submitted for publication in the Lance and is under review.

5.20 Project 12

Title: Feeding Practice and Gut Comfort in Healthy Full-term Infants: a Multi-country, Cross-sectional Observational Study

Sponsor of the Study: Nestec Ltd Switzerland, Study Management by International Contract Research Organization Covance, USA and Local representative Dimension Research, Pakistan

Principal Investigator: Prof Rai Asghar
Co-Investigator: Dr. Muhammad Hussain
Approved by: The Institutional Research Forum of Pakistan
MOU: Signed between the
Name of the Funding agency: Nill
Total Funds Allocated: Nill

5.20.1 Summary

As a means of addressing the issues of GI tolerance in formula-fed infants, alterations to both formula fat blends and carbohydrate composition have been useful. Although efficacies of such modifications have been demonstrated in clinical study settings, large-scale real-world effectiveness evidence (i.e., suitability, acceptability, and tolerability) of these formulas compared to breastfeeding is scarce. Additionally, large-scale effectiveness studies in diverse populations comparing formulas with different compositions are needed to help identify improved formula characteristics associated with desirable GI outcomes

Primary Objective

- An index score of overall GI symptom burden measured by a validated, standardized Infant Gastrointestinal Symptom Questionnaire (IGSQ-13)

Secondary Objectives

- GI tolerance indicators including GI symptoms and related behaviors
- Stool characteristics
- Prevalence of colic
- GI symptoms as well as GI-related behaviors collected by the IGSQ-13
- Stool characteristics collected via a one-day recall in the Feeding Practice and Gut Comfort Questionnaire
- Physician-reported and parent-reported colic collected in the Feeding Practice and Gut Comfort Questionnaire
- Multi-country, cross-sectional, observational study in diverse geographic locations all over the world

5.21 Project 13

Title: Safe Childbirth Check List

Collaboration: Rawalpindi Medical University, Fatima Jinnah Medical University, Rawalpindi and Health Services Academy, Islamabad
Principal investigator: Professor Saima Ameen
Co-investigator: Prof. Rizwana Chaudhry, Dean, and Head of Department, Obstetrics and Gynaecology, Rawalpindi Medical University.
Name of funding Agency: Nill
Total Funds Allocated: Nil
Status: Suspended due to change of Head of Department

5.21.1Summary

The research is purely academic. Safe Childbirth Checklist is a set of proven interventions designed to improve maternal and neonatal outcomes at birth. However, although time tested the provider resistance to practice them was identified as main hurdles in their implementation
This project is carried in collaboration with Health Services Academy to practice the various modalities of Implementation Science to improve the uptake of the checklist by Provider. The research was carried out between March 2019 to October 2019.

5.22 Project 14

Title: Classification of Liver Diseases using Neural Network

Principal Investigator: Syed Moiz Hussain, Rabia Samad Afridi, Hadia Rahna
Co-Investigator: Dr. Shahzad Saleem
Department of Electrical Engineering, National University of Computer and Emerging Sciences, Islamabad
Approved by FAST and IRF-RMU
MOU signed between the two universities in August 2019
Name of funding Agency: Nill
Total Funds: Nill

5.22.1 Summary

The liver is the most vital organ of the human body. Liver diseases are detected with the aid of clinical information, including blood tests, imaging techniques such as magnetic resonance image (MRI), and magnetic resonance elastography (MRE). However, such methods have limitations, and a liver biopsy is usually required to diagnose liver diseases like cirrhosis, hepatocellular carcinoma, and hepatitis. The MRI and MRE technique is the earliest non-invasive techniques. The related procedures are time-consuming and expensive. However, these techniques usually do not detect disease at its early stages. To address these issues, we propose a solution in the form of a device that detects liver stiffness and scarring using ultrasonic sensors. This can help to detect diseases such as fibrosis, cirrhosis, etc. The device classifies a person's liver as healthy or disease- affected by processing the reflected pulse of an ultrasonic sensor. For this purpose, it uses a trained neural network. In this way, an initial warning is generated for a person so that he/she can consult a physician for a detailed checkup and diagnosis.

5.23 Project 15

Title: To evaluate parameters used in different scoring systems for severity of acute pancreatitis and formulate a new scoring system to assess the severity of acute pancreatitis

Principal Investigator: Dr. Muhammad Umar
Co- Investigator: Dr. Muhammad Hanif, Dr. Tanvir Hussain
Department of Medicine, Holy Family Hospital, Rawalpindi
Approved by: IRF
Name of funding Agency: Nill
Total Funds: Nill

5.23.1 Summary

Acute pancreatitis is a sudden inflammatory condition of the pancreas. AP has varying etiology with an overall mortality of 5-10%. Our aim is to prospectively compare different parameters used in Acute Physiology and Chronic Health Evaluation (APACHE-II), Ranson's score, Bedside Index of Severity in Acute pancreatitis(BISAP) and modified computed tomography severity index (MCTSI) for predicting the severity of acute pancreatitis at Rawalpindi medical university allied hospitals admitted patients with acute pancreatitis and formulate a new scoring system to assess the severity of acute pancreatitis based on their prognostic severity index. The rationale of this study is to compare different parameters used in APACHE II, Ranson's, BISAP, and MCTSI for the severity of acute pancreatitis and design new criteria to assess the severity of AP based on their prognostic significance at a local population which may be cost-effective.

The first meeting was held on 12-4-2019 and Final approval was taken in 27-6-2019 (Dean meeting for project and structured proforma).

Registration (data collection) of AP cases was started on 2-7-2019 on structured proforma and up till now, 43 cases have been registered. Project submitted for approval in the coming Ethical Committee. The total duration of the project is one year. The focal person of all concerned departments has been nominated and trained. Initially, a fortnightly meeting of the focal person held and now from the onward once-monthly meeting of focal person will be held. Data analysis will be present after 100 cases and then after every three-month analysis of cases will be executed.

5.24 Project 16

Title: Digital library of medical apps, a medical professional support system

Principal Investigator: Prof. Muhammad Umar
Co-investigator: Prof. Iftikhar Hanif, Prof. Riaz Shaikh, Dr. Muhammad Osama, Dr. Syed Muhammad Ali
Approved by: Applied for Approval and Patenting

MOU signed: Between RMU and PASTIC in March 2019
Name of funding Agency: Nill
Total Funds: Nill

5.24.1Summary

This system set-ups and aligns online medical knowledge sources for healthcare professionals. All these sources will then be gathered and composed into one single source named "medhut".

This system will be based on indexation, citation, and color grading with the recommended algorithm. Varying colors will represent sources of knowledge for different levels of healthcare professionals, ranging from students to medical experts. It is unique in the fact that it also categorizes the medial apps according to the specialty that will bring a new life for learners and trainers.

5.25 Project 17

Title: Changing Antimicrobial Resistance Pattern of Bacterial isolates from intensive care units of tertiary care hospitals

Principal investigator: Prof. Naeem Akhtar
Co-investigator: Dr Shireen Rafiq
Approved by: will be submitted to ORIC, RMU
Name of funding Agency: Apply for funds
Total Funds: Till not

5.25.1Summary

Antibiotic resistance is when bacteria develop the ability to defeat the drugs designed to kill them. It is a top threat to the public's health and a priority across the globe. According to WHO, antibiotic resistance could cause 10 million death each year by 2050. AMR threatens our progress in healthcare and life expectancy. Antibiotic resistance is found in all regions of the world. International health organizations, including ECDC and CDC, have used terms such as "**crisis**," "**catastrophic consequences**" and "**nightmare scenario**" to highlight the rapid emergence and spread of antibiotic resistance
The intensive care unit (ICU) is the epicenter of infections because of extremely vulnerable populations owing to multiple procedures, use of invasive devices (intubation, mechanical ventilation, vascular access, etc.) and use of several drugs. To identify causative bacterial organisms for infections in Medical, Surgical, and Pediatric ICUs. To determine the antimicrobial resistance patterns of bacterial isolates and to

compare the changing patterns of bacterial isolates and AMR with previous data of 2010, 2013, 2018, 2019, and 2020.

5.26 Project 18

Title; Emergence of MDR and XDR *Salmonella typhi* in Rawalpindi region and their current treatment options; A MULTICENTER STUDY

Principal investigator: Prof Naeem Akhtar
Co-investigator: Dr. Kiran Ahmad
Approved by: Approval from IRF will be taken
Name of funding Agency: Nill
Total Funds: Nill

5.26.1 Summary

Salmonella typhi is a gram-negative bacillus (Enterobacteriaceae) that causes enteric or typhoid fever. Spread is through the fecal-oral route. Typhoid fever is a major health hazard and caused plenty of death in developing countries. 200000 deaths each year. XDR typhoid outbreak in Pakistan was reported in November 2016 in Hyderabad, Sindh. In Karachi, 2000 cases have been confirmed. The emergence and to determine current trends in antibiotic resistance pattern of MDR and XDR Salmonella typhi in the Rawalpindi region and to look for better treatment options to reduce the morbidity and mortality. Strengthen the evidence base knowledge through research

5.27 Project 19

Title: **Lab Diagnostic of Dengue in Current 2019 outbreak/**
Drawing a model to predict the Dengue outbreak in Pakistan

Principal investigator: Prof. Muhammad Umar
Co-investigator: Dr. Shazia Zeb, Dr. Haroon Rashid
Name of funding Agency: Nill
Total Funds: Nill

5.27.1 Summary

Pakistan is facing a drastic dengue outbreak menace since 2005. Propagation and survival of 4 serotypes of Aedes mosquito in Pakistan are mainly attributed to climatic conditions, urbanization, communication gap, and poor surveillance, thus paving the way towards the emergence of peak incidence of this disease.

Approximately 50% of the global population is residing in dengue prone regions and 100 million dengue cases are reported annually. High mortality and morbidity are mainly attributed to dengue hemorrhagic fever and dengue shock syndrome that is considered to be the most severe form of this ailment[3]. Even no internationally authorized vaccine is available for its prevention.

Pakistan is a hotspot for numerous vector-borne diseases in addition to dengue fever and this disease is attributed to the circulation of all four serotypes of dengue virus. WHO regional office is seriously concerned with the outbreak of dengue in Pakistan during 2019. Aim of the study is to mitigate the chances of dengue epidemic in future by focusing on the number of previous dengue cases, population size / Population at risk, characteristics (demographic & C/F) of patients, geographic/climatic conditions (Relative humidity, rainfall, sea surface temperature, and air temperature, etc.). Data of each patient is entered on software including demographic, symptomatic, diagnostic, co-morbidity data under the supervision of Doctors. Then files were coded according to software entry. Each file was saved in a separate envelope. Patient data is collected from RMU & Allied Hospitals (HFH, BBH, and DHQ)

5.28 Project 20

Title: determination of diagnostic and prognostic criteria for Dengue virus infection in hospital-based Pakistani population in Rawalpindi, A retrospective and prospective cohort study

Principal investigator: Prof. Naeem Akhtar
Co-investigator: Dr. Shireen Rafiq
Name of funding Agency: Nill
Total Funds: Nill

5.28.1Summary

The dengue virus and their mosquito vectors had a wide distribution across many tropical countries on three continents for more than 200 years. Significant outbreaks occur and the populations at risk include those in urban tropical and subtropical areas and constitute 40% of the world population. Annually, 100 million cases of dengue fever, and half a million cases of dengue hemorrhagic fever (DHF) occur globally. The average fatality rate is around 5%. Up to 90% of patients with DHF are children less than 15 years of age. Pakistan reported its first outbreak of dengue hemorrhagic fever in 1994. Dengue virus is now endemic in Pakistan, circulating throughout the year with a peak incidence in the post-monsoon period. Monsoon rains and floods in Pakistan made the situation worse. During 2010–2011, the dengue outbreak had occurred in many districts of Punjab province including Lahore, Sheikhupura, Gujranwala, Faisalabad, Attock, and Rawalpindi. 2013–2014 outbreaks in Rawalpindi, Swat, and Mansehra. The latest epidemic of 2019 affecting mainly Rawalpindi, Peshawar,

Karachi, and other cities. The project is initiated on the already available data from 2015 onwards from the patients' files; all the diagnostic and prognostic criteria including the symptoms, radiological, and laboratory findings will be analyzed. Big data and multivariate analysis will help in early diagnosis and prognosis of dengue fever.

5.29 Project 21

Title: Hepatitis Free Rawalpindi City Initiative, From Cure to control: A Project under Patron ship of Vice-Chancellor Rawalpindi Medical University

Principal investigator: Prof. Muhammad Umar
Co-investigator: Dr. Affifa Kulsoom
Name of funding Agency: Nill
Total Funds: Nill

5.29.1 Summary

- Awareness and prevention in community and health professionals
- To make Rawalpindi first hepatitis free city of Pakistan
- Moving from hepatitis C cure to elimination
- The first draft has been developed
- The second draft in light of suggestions of Dr. Shahzad Ali khan, HAS is under process
- Costing would be done once the draft is finalized

5.30 Project 22

Title: "Dengue Fever interpersonal Preventive awareness deliverance Impact" A qualitative study to evaluate interpersonal health awareness approach; effectiveness & feasibility.

Principal investigator: Prof. Dr. Arshad Sabir
Co-investigator:
Dr Sana Bilal, Department of Community Medicine RMU
Name of funding Agency: Nill
Total Funds: Nill

5.30.1 Summary

The current (Aug-Oct 2019) Dengue Fever Interpersonal Campaign was undertaken to avail the opportunity of availability of receptive & appropriate for IP contact population. DF Prevention Awareness Performa was designed to ensure delivery of the whole message, a ready resource for the client, and to bring objectivity in work at the

end of the sender. Performa was Health Education Activity-based not for research purposes.

Proposed Research is as follows

Phase-I

- IP Health awareness deliverance experience; (Senders, management & logistic aspects)
- Focus Group Discussion
- Guided and Supervised by Social Science Researcher. (Dr. Faiza)
- Learning opportunity for RMU faculty

Phase-II (next season)

- IP Health awareness deliverance experience (recipient retention of knowledge & practices change etc)
- New Research-based data tool will be designed
- Recipient participatory research (FGD)
-

5.31 Project 23

Title: "RMU Artificial Intelligence Project, to safe and improve lives.

Principal investigator: Prof. Dr Muhammad Umar
Co-investigator: Prof. Dr. Faud Ahmed Khan Niazi
Name of funding Agency: Nil
Total Funds: Nil

5.31.1 Summary

5.31.2

To use sophisticated artificial Intelligence-based algorithms to discern, identify, and distinguish specific patterns and features for learning from a large volume of health care data, and then apply the obtained information and capability to assist and enhance remedial interventions and clinical practice.

5.32 Project 24

Title: Genetic predisposition to dementia for early prognosis in Pakistani Population.

Principal investigator: Dr Uzma Shaukat
Approved by: ORIC, RMU and HEC
Name of funding Agency: HEC
Total Funds: 5.0 Million

5.32.1Summary

Dementia is a complex disease affecting memory and cognition of an individual thus affecting social functioning. It is highly prevailed and affected millions of people in their late onset all over the world. In Pakistan, dementia is alos increasing every year because of steadily growth in older population and stable increment in life expectancy. This project will provide a description of dementia, its demographic features and molecular genetics of dementia in Pakistan.

5.33 Project 25

Title: Genetic linkage Association studies for breast cancer susceptibility in Pakistani population for early detection and prognosis.

Principal investigator: Dr Uzma Shaukat
Co-Investigator: Dr Huma Shafique
Approved by: ORIC, RMU and HEC
Name of funding Agency: HEC
Total Funds: Rs. 2394500

5.33.1Summary

Breast cancer is the most common type of cancer, is regarded as the 5th most common cause of cancer death worldwide. Among Asian countries especially in Pakistani population there has been alarming increase in the incidence of breast cancer. Considering the current scenario immense efforts are required to identify the major risk factors for breast cancer. Etiology of breast cancer involves complex combination of genetic, environmental and lifestyle factors. Epidemiological evidence highlights genetic susceptibility to breast cancer. i.e, female relatives of breast cancer patients presents two fold risk of developing the disease as compared to general population. Breast cancer susceptibility is largely polygenic, i.e. it has found to be associated with inherited mutation of high penetrance genes (BRCA1, BRCA2 etc). genetic variants in susceptibility genes leading to a disease are highly polymorphic in populations of diverse races and ethnicities. However, most of the studies have been carried out in Europeans, some of their research encompasses few ethnic groups localized here. There is immense need to explore genetic factors/variants attributing to breast cancer in Pakistani population to elucidate the genetic causes leading to breast cancer development, the information gleamed from this study will help to prevent and ultimately cure and decrease breast cancer incidence, especially through prenatal diagnosis and genetic counseling.

5.34 Project 24

Title: Request for the establishment of breath testing facility by patients diagnostic lab, PINSTECH at Rawalpindi Medical University and Allied hospitals.

Principal investigator: Dr Faisal Rasheed
Approved by: ORIC, RMU and HEC
Name of funding Agency: HEC
Total Funds: Rs. 48,98,856

5.34.1 Summary

The Helicobacter pylori infection is considered the prime cause of genetic cancer and it has been designated as class I carcinogen by the international agency for research on cancer. H pylori plays a significant role in increasing bacterial endurance in host stomach. The spiral shape of H.pylori permit it in motility, while coccoid helps in colonization and invasiveness in mucus layer of the gastric epithelium. Moreover, this bacterium form biofilms as defensive strategy, which leads to antibiotic resistance along with problems in eradication. The frequency of Hpylori infection is more in developing as compared to developed republics.

The main objective of this project is the diagnosis of H.pylori infection using non invasive and highly reliable technique of the world, isotope ratio mass spectrometry on very economical test charges to the patients at RMU and Allied Hospitals.

5.35 Project 25

Title: Development of laser devices at 405 and 1064nm along with optical fiber based light delivery probes for the diagnosis and treatment of gastrointestinal, rectal and diabeteic disease dosorders.

Principal investigator: Dr Muhammad Saleem
Approved by: ORIC, RMU
Name of funding Agency: PSF
Total Funds: Rs. 5 Million

5.35.1 Summary

Endoscopy laser therapy is an important and widely used optical tool in gastroenterology and the development of optical fibers made it extremely flexible to deliver light of particular wavelength to specific site. Depending upon laser wavelength, energy and operational mode, it induces three type of therapeutic effects; photocoagulation, photodynamic therapy (PDT) and photobiomodulation therapy (PBMT). In this projects, effect of photobiomodulation therapy on tissue healing and photocoagulation of ulcer sores will be investigated. Interaction of light with cells

increases its adenosine triphosphate (ATP) that results in the restoration of its function and support in fast healing, reducing of inflammation and pain. In photocoagulation, infrared lasres are used to increase the temperature of cells and it resultrs in denaturation of proteins and collagen that leads to coagulation of tissue and it can necrotize cells. In the present research project, medical grade optical fibers will be used to produce guiding probes to assist red laser at 635nm and IR diode laser at 1064nm will be used to treat gastrointestinal disorders through photobiomodulation therapy and photocoagulation. The laser therapy system (Model: PDT635) already have been developed by National Institute of Laser and Optronics (NILOP) Pakistan, will be used in these proposed treatments/studies. Fiber optic probes of different core diameter and lasers at 405 and 1064nm will be developed at NILOP and later on provided to Dr. Tayyab Saeed Akhter at Gastroenterology Department, Holy Family Hospital Rawalpindi for clinical part of proposed study.

5.36 Project 26

Title: Local Hepatitus Elimination and Prevention (LHEAP)

Principal investigator: Dr Nida Ali
Approved by: ORIC, RMU
Name of funding Agency:
Total Funds: Rs.

5.36.1 Summary

Viral hepatitis B and C cause 1.1 million deaths and 3.0 million new infections across the globe per year, disproportionately impacting people around the globe and resulting in considerable morbidity and mortility. Underdiagnosis of viral hepatitis is a key bottle neck in elimination efforts. Only 10% of people who have chronic infection with hepatitis B virus (HBV) are diagnosed, of which receive treatment. For hepatitis C infection, 21% of people are diagnosed and 62% of those diagnosed receive treatment. Many of the populations who are most severely affected by viral hepatitis are also those that face the greatest challenges in accessing necessary services. Access to prevention, harm reduction and health-care services for these populations is largely insufficient, and persistent stigma, inequalities and other socio-structural barriers are preventing response efforts from reaching the people who need them most.There are major gaps in hepatitis B and C testing and treatment all across the world, specifically among economically disadvantaged regions, rural and displaced populations and at-risk key populations often marginalized by society. Added on, programs are being held back by a lack of funding and the high prices of diagnostics, treatments, and vaccines, especially in low- and middle-income countries with a high viral hepatitis burden.

5.37 Project 27

Title: Innovative imaging artificial intelligence (AI) based diagnostic tools for detection of stroke paradigm with clinical validation on local datasets.

Principal investigator: Dr Nasir Khan
Approved by: ORIC, RMU
Name of funding Agency:
Total Funds: Rs. 1.1 million

5.37.1 Summary

The main objective of radiology in disease management is to provide comprehensive information about structural and disease related changes with a various choice of tools imaging modalities and techniques available for the early detection, staging and treatment. Stroke or Major vascular occlusion leading to hemodynamic changes manifested as ischemic or hemorrhagic infarction is leading cause of morbidity and mortality after myocardial infraction in worldwide and acute stroke caused by LVO (Large vascular occlusion) detection requires emergent detection and treatment by endovascular thrombectomy, however radiological detection is subject to various delays, human expertise and puts a great burden on already strained system by limited resources, fewer radiologists and complex funding issue. The project aims to build an artificial intelligence (AI) based assistive technology for analyzing radiology images by methods of random forest learning (RFL) and convolutional neural networks (CNN). Keeping in view the importance of Radiology and shortage of radiologist, AI can play vital role by provoding the medical community with much needed addiotional support that can potentially reduce the healthcare burden.
This Liasion and research collaboration is between with institute of health innovation and education, Neurocare Al Academy providing deep care algorithm consisting of CNN-LSTM architecture and Rawalpindi Medical University (CT non enhanced scans data will be collected from Holy Family Hospital, Rawalpindi. The proposed project aims to develop a PACS (picture archiving and communication system) integrated DICOM with medical imaging and diagnostics lab system will be able to archieve different spectral images of stroke) and will be able to diagnose, classify and segment the disease in less time than human. AI will be used as the main tool behind the specialized system which will enable the system to learn features that are unrealizable and unidentified by human eye. The system will be a breakthrough and will help in upgrading the local healthcare handle.

5.38 Project 28

Title: Pancreatic Cancer Detection using deep learning for ROSE during EUS guided FNAC
Principal investigator: Dr Yasir Ayaz
Approved by: ORIC, RMU and HEC
Name of funding Agency: HEC
Total Funds: Rs. 13,549,804

5.38.1 Summary

This project aims to develop a decision support tool for Endoscopic Ultrasound – Fine Needle Aspiration (EUS-FNA) operators in order to aid them in performing Rapid On Site Evaluation (ROSE) of patients for pancreatic cancer screening. Deep Learning framework will be used to process and analyse the data stream from EUS in real time and perform object detection of adequacy of sample and diagnosing of cancerous or pre-cancerous tissue development. It is proposed that EUS-FNA biopsy slides be scanned and the resulting images be labeled adequate sample for diagnosis and malignant. Subsequently, the data set be divided into training and testing parts having equal percentage of PC positive cases in both divisions. The training data may then be used to train a deep learning image detection algorithm based model and the model be subsequently tested on the test dataset. As performance evaluation metrics classification accuracy and FI score may be evaluated.
Existing object detection alogrithms may be employed to train deep learning models. This would require training and testing of defferent models and their performance evaluation. In case existing alogrithms do not meet the performance criteria, feature engineering, model turning and other machine learning techniques may be used.

5.39 Project 29

Title: Decentralized AI Video Surveillance System

Principal investigator: Dr Yasir Ayaz
Approved by: ORIC, RMU and HEC
Name of funding Agency: HEC
Total Funds: Rs. 14,97,1756

5.39.1 Summary

Security is the paramount to ensure the safety of the public and protection of the business interests of the people. It ha sbecome one of the key areas which are gaining the attention of potential investors. With the latest developments in the field of science

and technology, new ways are being introduced to cater the need of increasing demand for the artificial intelligence based security mechanisms that can efficiently identify, analyze and report the potential threat with an increased accuracy as compared to the traditional methods.

Pakistan needs to enhance the traditional security system to attract investments and improved the overall safety of its citizens. The objective to develop this system is to make Pakistan delf sufficient by introducing a trand of technology based security system in the market. Once implemented, it will be open for furher modifications and improvements to academia and researchers.

Our industry partners have shown a full confidence in the taem of experts from our institution and the plan is to develop a cheap but powerful srveillenec system which will reduce the risk of potential threats. It is pertinent to note that the entire system can be imported from some international companies which are already working in AI domain. But the goal of this project is to design it locally using the labs and the talent of our researchers and students. Students seeking entrepreneurship opportunities can get inspiration from this project and introduce a variety of solutions to similar problems locally without relying on the international companies.

5.40 Project 30

Title: Estimation of Economic Burden of antimicrobial resistance on patients (NIH, Islamabad).

Principal investigator: Dr Muhammad Salman
Approved by: WHO
Name of funding Agency: WHO and Federal Government through PSDP
Total Funds:

5.40.1 Summary

Antimicrobial resistance is defined as a failure of antimicrobials to fight against bacteria, viruses, fungi and parasites. This brings difficulty to treat even simple or life threatening infections, therefore increasing the risk of disease spread, prolonged illness, extended hospital stays, and death. This shortage is affecting countries all over the globe. The majority of published studies reflected direct association between antibiotic resistance and adverse outcomes, that has almost doubled mortality, morbidity, and cost for patients with resistant infections in comparison to those with susceptible infections. However original scope of the AMR in the Region, and its impact on health, costs for healthcare sector, and its social impact is still unclear. If this issue is left untouched, the world will enter once again in a post antibiotic era where common infections could once again kill (WHO, Global report on surveillance).

To address the above concern, a pilot survey is planned in Islamabad to understand the economic burden of antimicrobial resistance due to extended stay of patients in health

facilities. The study complies withassigned activities under 5th objective of National Action Plan on AMR & IPC.

5.41 Project 31

Title: Behavioral cost effective interventions to improve outpatient antibiotic prescribing for acute respiratory infections in Pakistan

Principal investigator: Dr Muhammad Salman
Approved by: WHO
Name of funding Agency: WHO and Federal Government through PSDP
Total Funds:

5.41.1Summary

Inappropriate prescribing is a global issue. In USA, it is estimated that more than 50% of out-patient prescribed antibiotics are inappropriate, predominantly among patients seeking treatment for acute respiratory infections (ARI) caused by viruses. According to the estimation made by WHO, ARTI account for 20% of all the childhood deaths. Globally, 40% of the mortalities due to ARTIs have been reported in developing countries like Nepal, Bangladesh, Indonesia and India. The introduction of educational and behavioural interventions based on digital support of prescription habits is a novel approach and expected to substantially reduce the ratio of inappropriate antibiotic prescription in major public sector hospitals of Pakistan. The objective is to provide educational support to the healthcare providers on software for rational prescription of antibiotics in acute respiratory infections.

Publications (International)

1. Mental health Protocol: Cognitive–behavioral therapy-based intervention to treat symptoms of anxiety in pregnancy in a prenatal clinic using non-specialist providers in Pakistan: design of a randomized trial: Pamela J Surkan, Syed Usman Hamdani, Zill-e Huma, Huma Nazir, Najia Atif, Armaan A Rowther, Rizwana Chaudhri S, Hamsa Zafar, Luke C Mullany, Abid Malik, Atif Rahman: Epub Volume 10, Issue 4, 2020, http://orcid.org/0000-0002-0334-5931

2. A Woman Is a Puppet." Women's Disempowerment and Prenatal Anxiety in Pakistan: AQualitative Study of Sources, Mitigators, and Coping Strategies for Anxiety in Pregnancy Armaan A Rowther , Asiya K Kazi , Huma Nazir, Maria Atiq , Najia Atif , Nida Rauf 2 , Abid Malik 2 and Pamela J Surkan : Int. J. Environ. Res. Public Health (Open Access Journal): 2020, 17, 4926; doi: 10.3390/ijerph1714492.

3.Development of a Psychological Intervention to Address Anxiety During Pregnancy in a Low-Income Country: Najia Atif, Huma Nazir, Shamsa Zafar, Rizwana Chaudhri, Maria Atiq, Luke C. Mullany, Armaan A. Rowther, Abid Malik, Pamela J. Surkan, and Atif Rahman , Front Psychiatry. 2019; 10: 927.
Published online 2020 Jan 10. doi: 10.3389/fpsyt.2019.00927, PMCID: PMC6967413, PMID: 31998151

4. Effects of tranexamic acid on death, disability, vascular occlusive events and other morbidities in patients with acute traumatic brain injury (CRASH-3): a randomised, placebo-controlled trial The CRASH-3 trial collaborators* Lancet 2019; 394: 1713–23 Published Online October 14, 2019 https://doi.org/10.1016/ S0140-6736(19)32233-0

5.Title: Effects of a high-dose 24-h infusion of tranexamic acid on death and thromboembolic events in patients with acute gastrointestinal bleeding (HALT-IT): an international randomized, double-blind, placebo-controlled trial: Lancet 2020; 395: 1927–36

6. Development of a patient reported outcome questionnaire to measure the impact of postpartum blood loss in women with moderate and severe anaemia: A study using a multi-faceted approach [version 1; peer review: approved with reservations] Lori Miller, Shahana Chaudhri, Danielle Beaumont, Aasia Kayani, Kiran Javid, Rizwana Chaudhri, Phil Edward, Amy Brenne, Ian Roberts, Haleema Shakur-Still: Wellcome Open Research 2019, 4:85 Last updated: 17 MAR 2020

7.Frequency and management of maternal infection in health facilities in 52 countries (GLOSS): a 1-week inception cohort study. The WHO Global Maternal Sepsis Study (GLOSS) Research Group. Lancet Glob Health. 2020 May; 8(5): e661–e671. Published online 2020 Apr 27. doi: 10.1016/S2214-109X(20)30109-1PMCID: PMC7196885. PMID: 32353314

8. Dengue Epidemic 2019-An Experience in Tertiary care Hospitals of Rawalpindi Medical University Pakistan: Shazia Zeb, Rizwana Shahid, Muhammad Umar, Sumaira Yasmeen: March, 2020 DOI: 10.32474/LOJNHC.2020.02.000148

Section VIII:

Office of Research Innovation and Commercialization (ORIC) Health Certification Courses

6.1 CERTIFICATE HEALTH RESEARCH COURSE

Certificate course in Health Research is a new certification offered by Rawalpindi Medical University, Rawalpindi. This name is well recognized and established for the last many decades worldwide**.** The learning objectives of this certificate course were designed following a need assessment and a valid syllabus is chosen. It is mandatory to complete all modules of the course to receive the qualification of Certificate in Health Research.

This is structured to include interactive sessions and relevant workshops for the development of a sound basis for Health Research through feasible contact sessions. Rawalpindi Medical University is committed to providing full support for the implementation of this certificate course by allocating necessary resources, providing faculty development, and establishing a monitoring system to take it to next level to meet with the international standards.

Course Director

Prof. Syed Arshad Sabir
Dean of Community Medicine & Public Health

Course Conveners

Dr. Khaula Noreen
Assistant Professor, Community Medicine

Dr. Sidra Hamid
Assistant Professor, Physiology

6.1.1 Rationale & Needs Assessment

The increasing importance of research in healthcare practices and competency in research methods for a medical-professionals is highly debated, deliberated, and demanded but it has not given due space in the framework of the medical career. Much attention has been focused in recent past on scarcity of numbers of physician-scientist in our part of t h e world

Unfortunately, this problem is aggravated by a lack of effective training in health research and it is not possible to resolve this issue without tacking this gap. Research-oriented healthcare providers can practice evidence-based medicine with more promising treatment outcomes and a positive impact on the overall wellbeing of the people. Research is the only portal to provide “evidence” to human health development efforts. The medical profession is by default obligatory to health research. Since

research plays a key role in the practice of medicine as a profession; a multi-pronged approach needs to be exercised, to best address the health needs of a community Discovery-care continuum introduced in academic health institutions played a significant contribution in the integration of research inpatient care and led to an improvement in the health care system. The „Think much; publish little" dictum was then replaced by a „Publish or perish" culture. There is a need to produce research-oriented professionals who can generate evidence in improving health systems, act as advocates and champions for addressing the 21st-century challenges confronting Pakistan.

6.1.2 The vision of the Course

The Rawalpindi Medical University (RMU)"s Certificate in Health Research (CHR) program is aimed at the development of health research capacity among health care professionals with the purpose to promote research in health academic institutions and the health care system. The development of research capacity is expected to equip the health professionals with knowledge and skills to practice evidence-based practice and evidence-based decision- making in health care, policy-making and management, and public health intervention implementation. The program stresses hands-on training to develop knowledge and skills for research problem identification and prioritization, preparation of research project proposals and protocols, searching for literature, preparation of research plans and budgets, research reports and publications writing and reviewing of research proposals and publications.

6.1.3 The mission of the Course

To produce competent research-oriented Professionals in the community, adequately equipped with the knowledge, skills, and attitude deemed necessary to meet the healthcare needs of the community and play a fundamental leadership role in the provision of comprehensive healthcare services through evidence-based medicine.

6.1.4 Aims & Objectives

- Promote innovation and research to improve the overall health status of the community
- Develop institutional culture & infrastructure for long term sustainability and acceptability for research
- Enhance the capability in performing quality research
- Setting the standard of excellence in research among medical professionals.

6.1.5 Learning Outcomes

On completion of certification in Health Research, the participants should be able to:

1. Develop fundamental concepts of research and philosophy of research
2. Design different types of research studies including descriptive, analytical and experimental studies
3. Apply of evidence in clinical practice, health management and implementation of public health interventions
4. Select appropriate statistical techniques for different types of research studies and hypothesis testing
5. Select and use appropriate computer software for data processing and analysis and communication of research results
6. Have advanced knowledge and critical understanding of types and uses of evidence in health care.
7. Apply evidence-based medicine in clinical practice.
8. Understand the principles of systematic reviews and meta-analysis
9. Understand and apply principles of Good clinical practice
10. Understand plagiarism.
11. Construct a proper research proposal.

6.1.6 Program Specifications

Certificate Awarding Institute	**Rawalpindi Medical University in collaboration with University of Wales**
Duration	**6 months, having contact session every 6-weeks, each of two days a weekend (total 8 days)** **8:00 Am to 2:00 PM**
Course structure	**4 contact sessions each comprising of 02 days**
Courses in Contact session-I	**Basics of Epidemiology, Biostatistics & Ethics** **Biostatistics; Basic concepts (Basic data types, distributions, and analyses, estimation of confidence intervals)** **Sampling and hypothesis testing** **Statistical tests** **Epidemiological study designs with merits & demerits** **Basics of Medical Research Ethics**
Courses in Contact session-II	**Research proposal writing** **Evidence-Based Medicine** **Publication of research paper**

Courses in Contact session-III	**Hand on Training**
Courses in Contact session-IV	**Grant proposal writing** **Application-based project for grant writing**
Credit hours	**10 credit hours**
Total contact days	**08**
Number of students per Batch	**20**
Fees	**PKR 30,000**
Admission Criteria	**MBBS/MD/BSc Nursing /Allied Health Sciences**
Training sites	**Rawalpindi Medical University, New Teaching Block**
Teaching strategies	**Workshops, interactive sessions, Virtual learning,** **Assignments**
Assessment	**Candidates will be assessed through assignments and Exit assessment.**

6.1.7 Teaching Faculty

Rawalpindi Medical University Faculty	
Community Medicine Department	Prof. Dr. Syed Arshad Sabir Dr. Sana Bilal Dr.Khola Noreen Dr. Rizwana Shahid Dr. Afifa Kulsoom Dr. Shaikh Abdul Rehman Dr.Abdul Qudus Dr. Farhan Hasan
Ph.D. Faculty	Prof Naeem Akhtar Prof Akram Randhawa Prof Wafa Umer Prof Shireen Rafiq Dr M. Abdul Rab Dr Uzma Shaukat Dr Huma Shafique Dr. Amna Noor Dr Asma Nafeesa Dr Faisal Sultan Dr Rashid Iqbal

	Dr Muhammad Umar Dr Huma Amin
National Faculty	Prof. Dr. Umar Ali Khan; Pro-Vice-Chancellor Health Sciences Isra University Prof. Dr. Shahzad Ali Khan; MBBS, MBA-Finance, MPH, Ph.D., FRSPH; Head of Department of Health Management; Health Services Academy, Islamabad Mr. Shahzad Inayat Nursing Instructor Nursing College, Isra University Mrs.Jacoline Albert Senior Nursing Instructor Nursing College, RMU Mrs.Raisa Senior Nursing Instructor, STMU, Islamabad
International Faculty	Professor Tayyeb Tahir Consultant Liaison Psychiatrist Dept. of Liaison Psychiatry University Hospital of Wales, Cardiff Professor Stephen Davies Steve Davies <daviesjs@diploma-msc.com

6.1.8 Eligibility Criteria

MBBS/BDS, MD, or equivalent qualification recognized by PMDC; BSC/M. Sc Nursing (Recognized by PNC); B. Sc /M. Sc/ DPT Physiotherapy; B. Sc / M. Sc Paramedics; Pharm-B/Pharm-D; MSc Psychology. Computer literacy is a MUST.

6.1.9 Application Procedure

The available Admission form on the university website www.rmu.edu.pkshould be filled online and submitted. The course organizer will finally select the candidates after reviewing the application forms.

The candidates selected by the RMU management for the applied certificates will submit the required copies of their academic qualifications along with the admission fee.

6.1.10 Program Evaluation

The program will not be static, it will respond to 360-degree feedback to help design for the future. The evaluation will be of two types:

At the end of each course: Feedback on the various parts of the course and is by questionnaires completed for each course and final evaluation will be done after course. The feedback will be coordinated by the Course Organizer and coordinators for improvement. The final evaluation will be done at the time of completion of the certificate course.

Prof. Dr. Muhammad Umar
Vice Chancellor
RMU & Allied Hospitals
Rawalpindi

It is indeed a matter of great pleasure that the Office of Research Innovation & Commercialization (ORIC), Rawalpindi Medical University is going to commence the certificate program for health research. This is one of the initiatives that Rawalpindi Medical University has taken so far to promote the medical education and Continuous Professional Development (CPD) of our professionals, both working in public and private healthcare sectors.

Prof. Dr. Naeem Akhtar
Director ORIC
Dean Basic Sciences & Diagnostics
RMU & Allied Hospitals
Rawalpindi

Research is fundamental to the progress of all fields of life. Capacity building of health professionals is among fundamental functions of ORIC. Certificate course in Health Research is venture by ORIC to promote and enable scientific inquisitiveness in health care professionals at all levels to meet challenging needs of ailing humanity.

Prof. Dr. Syed Arshad Sabir
Course Director
Dean Community Medicine & Healthcare Education
RMU & Allied Hospitals
Rawalpindi

The Rawalpindi Medical University (RMU)'s certificate in Health Research program is aimed at the development of health research capacity among health care professionals. The course will provide opportunity for problems identification, prioritization, preparation of research project proposals including protocols preparation, literature search, planning research and budgets, reports and manuscripts writing and reviewing of proposals and articles.

INTERNATIONAL FACULTY

Prof. Tayyeb Tahir
Consultant Liaison Psychiatrist
Dept. of Liaison Psychiatry
University Hospital of Wales, Cardiff

Prof. Stephen Davies
Steve Davies
daviesjs@diploma-msc.com

NATIONAL FACULTY

Prof. Dr. Umar Ali Khan
Pro Vice Chancellor Health Sciences
Isra University

Prof. Dr. Shahzad Ali Khan
Head Department of Health Management
Health Services Academy, Islamabad

Dr. Mobine Iqbal
Dr. Zia-ur-Rehman
Mrs. Jacoline Albert
Dr. Sadaf Mumtaz
Mr. Shahzad Inayat
Mrs.Raisa

RMU FACULTY

Prof. Dr. Syed Arshad Sabir
Dr. Amna Noor
Dr. Rizwana Shahid
Dr. Abdul Qudus
Dr. Arsalan Manzoor (Medical Educationist)

Prof. Dr. Naeem Akhtar
Dr. Khola Noreen
Dr. Shaikh Abdul Rehman
Dr. Farhan Hasan

Dr. Shireen Rafiq
Dr. Sidra Hamid
Dr. Afifa Kulsoom
Dr. Sana Bilal

AIMS & OBJECTIVES

Aim of certified health research course is to create center of excellence for our faculty members by establishing intellectual foundation to promote critical thinking and practiceevidence based medicine with the aspiration to improve clinical outcomes, population health and health care services delivery across the world beyond traditional medical care.

DURATION & FORMAT

The duration of the course will be six months with a total of ten (08) contact days, comprising of 2 days session after every 6 weeks interval . Attendance at these contact sessions will be mandatory.

COURSE MODULES

Mainly consist of three modules
The modules listed below must be completed by all potential participants
Basic Epidemiology , Biostatics & Medical Ethics :CHR 1
Research Proposal Development & Principles of Medical Writing: CHR 2
Hand on session :CHR 3
Grant proposal writing : CHR 4

CONTACT SESSIONS

1st Session: 6th & 7th December 2019
2nd Session: 17th & 18th January 2020
3rd Session: 13th & 14th March 2020
4th Session: 08th & 09th May 2020
5th Session: 05th & 06th June 2020

CREDIT HOURS

The course will be of 10 credit hours which have been divided into contact sessions and assignments.

ELIGIBILITY CRITERIA

MBBS/BDS, MD or equivalent qualification recognized by PMDC; BSC/M. Sc Nursing (Recognized by PNC); B. Sc /M. Sc/ DPT Physiotherapy; B. Sc / M. Sc Paramedics; Pharm-B/Pharm-D; MSc Psychology. Computer literacy is MUST.

APPLICATION DEADLINE

20th November 2019

HOW TO APPLY

Download application form from the website www.rmur.edu.pk and follow the instructions given in the application form

ANNOUNCEMENT OF SELECTED CANDIDATES

28th November 2019

REGISTRATION FEE

RMU Participants: Rs. 10,000/-
Non-RMU Participants: Rs. 30,000/-

LADY SANGEETA FELLLOWSHIP (LSF)

IN

GENETICS

Plan

- Fellowship scheme aimed at ECRs, defined as those that are either pre-doctoral or within 5 years of completing their doctorate and do not yet have permanent academic posts
- Will be based at RMU
- Fellowship scheme will provide RMU-based supervision and mentoring from international thought-leaders
- Open to those who have graduated from medicine or any health-related discipline
- Start date for first intake is beginning of academic year October 2023
- Duration of Fellowship: 12 months
    - First six months: laboratory work (Full time)
    - Second six months**:** Project implementation for commercialisation /publication /report writing
- Interim reviews at 3 and 6 months and final review at 12 months.
- Project owned by RMU.

Award and support

- Degree eligibility: One year experience certificate of trainee shall be awarded.
- Fellows will receive a research stipend of: Rs 25,000/month
- Funds for consumables: Rs 75,000

Section IX:
Conferences (National and International)

7.1 1st Annual Faculty Research Conference

The 1st Annual Conference of Faculty of RMU and Allied hospitals was held on 23.12.2019 at Latif Auditorium, OTB, RMU. It was organized by ORIC & Faculty Research Forum, RMU. It was a prestigious event organized with a motivation to provide an excellent platform for the academicians, researchers, clinicians to share their reseach findings with each other.

December 2019


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7.2 2nd Annual Resident Research Conference

Rawalpindi Medical University Resident Research Forum was established with an aim to cultivate and nurture the research culture among post-graduate trainees of RMU allied hospitals. 2nd Annual Resident Research Conference was held in Latif Auditorium, OTB, RMU on 24.12.2019. it was organized by: ORIC & Resident Research Forum, RMU.

9.3 Conference on Family Medicine

The Higher Education Commission (HEC) in collaboration with the Association of Physicians of Pakistani Descent of North America (APPNA) and Rawalpindi Medical University (RMU) hold a conference on family medicine entitled ‘Building Primary Care Capacity: Pakistan's Critical Need’ from March 4- 5, 2020 on the RMU's main campus

The event was meant to identify actionable items needed to enhance life expectancy and health outcomes in the country. These included the fostering of training programmes and policies for comprehensive development of Family Medicine, investing in public health and health systems, and initiating a crash programme for training nurses.

According to organisers, the conference was also consistent with the steps taken recently by the HEC to enhance the quality and relevance of the system of education in the country.

The APPNA experts were included Family Medicine faculty from US/Canada training programmes, including Residency programme directors. presented the curriculum and structure of Family Medicine training in US/Canada and participated in design workshops to help Pakistan's participating teaching institutions develop primary care training.

Participants from Pakistan included Vice Chancellors and faculty members of medical universities and colleges, leaders from Federal and provincial health ministries, representatives of regulatory bodies, and other stakeholders.


Conference for Medical Professionals,
Providers, Educators, Administrators & Policy Makers
Building Primary Care Capacity
Pakistan's Critical Need
March 4-5, 2020


Conference for Medical Professionals,
Providers, Educators, Administrators & Policy Makers
Building Primary Care Capacity
Pakistan's Critical Need
March 4-5, 2020


Conference for Medical Professionals,
Providers, Educators, Administrators & Policy Makers

7.3 ISO 9001:2015 Quality Management System (QMS) Training Course, 18th Jan, 2023

7.4 Resident Research Forum Conference, 2021

Section X:
Official Collaborative ORIC Visits to Different Institutions

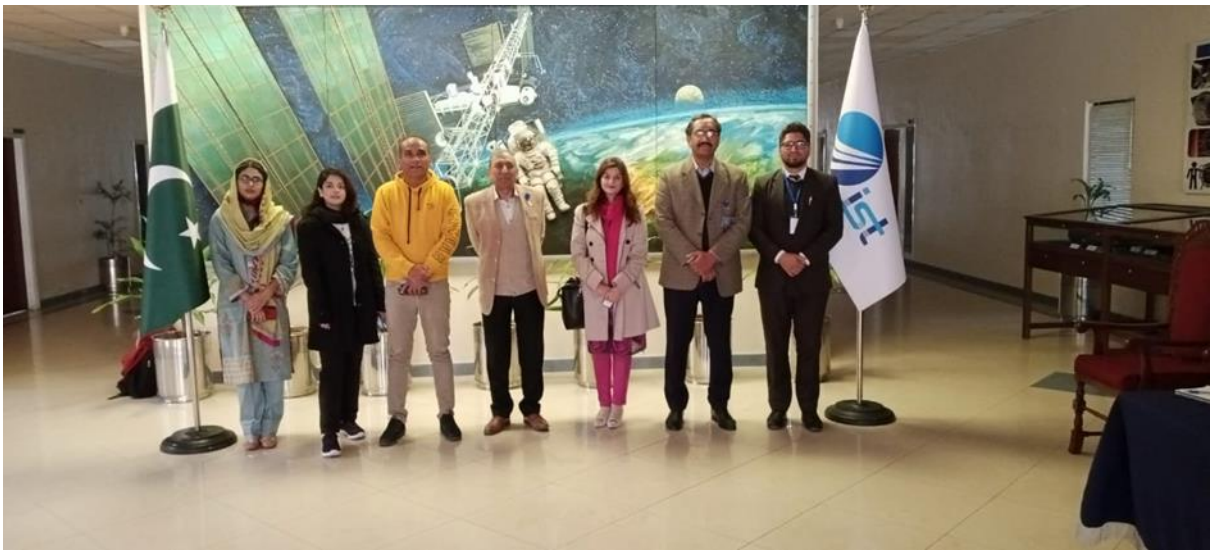
Team of Office of Research, Innovation & Commercialization (ORIC) at the Rawalpindi Medical University of Pakistan visited ORICs of other Universities who are successfully running their ORICs to explore their functions and working. Further, some other ORIC was also visited for collaborations and linkages development. A brief of all visits is given below.

7.5 Orientation Visits to HEC with VC-RMU

7.6 N-ovative Health Tech (NUST), Islamabad

7.7 Official Visit at National Science and Technology Park (NSTP-NUST)

7.8 ORIC-RMU Official Visit to Institute of Space Technology (IST)



7.9 ORIC-RMU Official Visits to the Departments of RMU for Research activities and upgadation of Laboratories

Departmen of Paediattric Surgery

f

Department of Pathology

Department of Basic Sciences

7.10 Industrial Linkage with Health Professionals

7.11 Visit of Young Pre-Medical Students (Beacon House School System, Islamabad Campus) to Health Professionals at Rawalpindi Medical University

7.12 RMU-ORIC Capacity Building Academic Calender, 2023

Sr #	Title of Events	March	April	May	June	July	August	September	October
1.	• Lady Sangeeta Fellowship • Meeting with all faculty members, PhD holders in RMU for research • Departmental Meetings in RMU and Allied Hospitals	8th /03 16th /03 16th /03							
2.	• Orientation sessions of research and Innovation in RMU • Certificate of Innovation & Entrepreneurship		2nd week 3rd week						
3.	• Patents Orientation sessions by IPO • Products and Prototype development by NUST, Brig Tariq, CUST			1st week 2nd week					
4.	Advanced innovation hands on workshops				1st week				
5.	Development of Business Incubation Center					1st week			
6.	Advance analytical skills for health professionals						2nd week		
7.	RENOVACON, 2023							2nd week	
8.	Marketing of patent projects								1st week

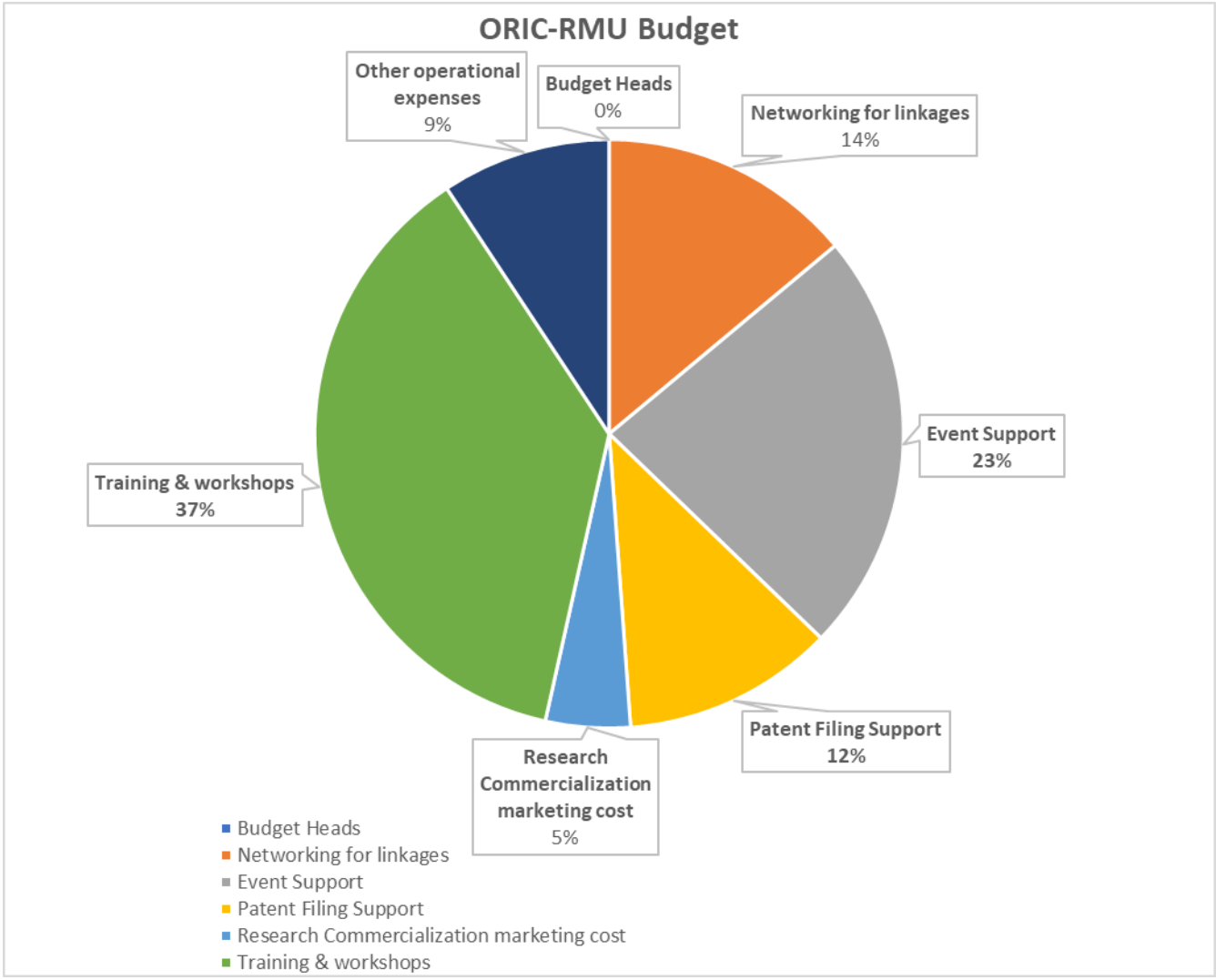
Section XI:
Workshops/Seminars/Programs

7.13 Workshop on "Research Article Writing and getting it published"

Office of Research, Innovation & Commercialization (ORIC) organized a one day workshop on "Research Articlel Writing" at Syndicate Hall, Old Campus, RMU Jan, 2022. The Facilitator was Dr Huma Shafique, Manager Research Management, RMU-ORIC and Dr Lubna Meraj, Associate Professor Medicine, BBH. Faculty members from RMU, PGTs from Allied hospitals, attended the workshop.

Section XII:

Rawalpindi Medical University- Office of Research Innovation and Commercialization Budget


ORIC-RMU Budget
Other operational expenses 9%
Budget Heads 0%
Networking for linkages 14%
Event Support 23%
Patent Filing Support 12%
Research Commercialization marketing cost 5%
Training & workshops 37%
Budget Heads
Networking for linkages
Event Support
Patent Filing Support
Research Commercialization marketing cost
Training & workshops

Section XIII:

Publications (Journal of Rawalpindi Medical University & Students Journal of Rawalpindi Medical University)

9.1 Journal of Rawalpindi Medical University

The Journal of Rawalpindi Medical College is a double-blind peer-reviewed open-access journal that is recognized by both HEC and PM&DC. It follows the Committee on Publication Ethics (COPE), and the International Committee of Medical Journal Editors (ICMJE) guidelines. It was started in the year 1997 by the founding editors' Prof Khalid Randhawa, Prof Mussadiq Khan, Prof Khalid Hassan, and Prof Masood Qureshi. From the year 2000 to 2008 it was regularly published biannually under the editorship of Prof Khalid Hassan, Prof Imtiaz Ali, and Prof Arif Malik and was recognized by PM&DC in 2002. By the efforts of Prof Irfan and Dr. Nadeem Ikram, quarterly publications were started in 2014 and eventually recognized by HEC. According to the vision of the vice-chancellor Prof M Umar, under the editorship of Dr. M Khurram and Dr. Arsalan Manzoor Mughal, we constantly strive to ensure quality and highest ethical standards of medical publication.

9.2 Scope of JRMC

JRMC is meant to;

1) Facilitate the creation of medical professionals in basic and clinical medical sciences per its utility for medical practice

2) To employ medical research as a potent and effective tool in combating disease and alleviating the suffering of mankind.

Editorial Advisory Board is comprised of both national and international research experts.

JRMC publishes important and leading topics focusing on basic and clinical medical research.


JRMC

Journal of Rawalpindi Medical University

ISSN: 1683-3562

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April-June 2019
Pages: 59-119

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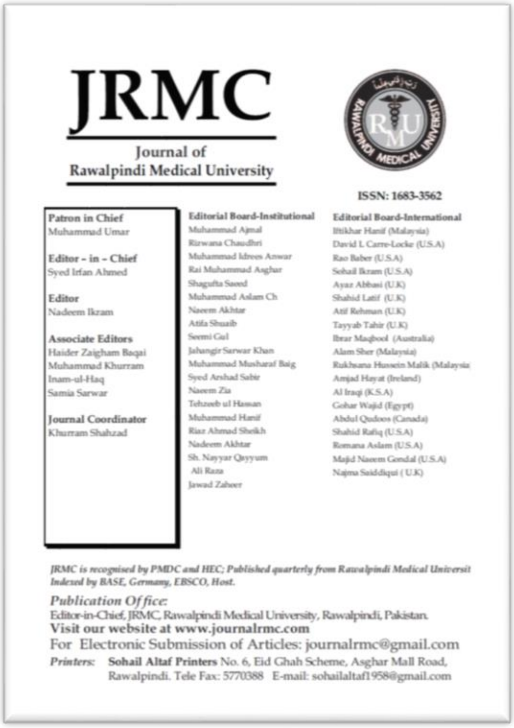
Continued overleaf.........


JRMC

Journal of Rawalpindi Medical University

ISSN: 1683-3562

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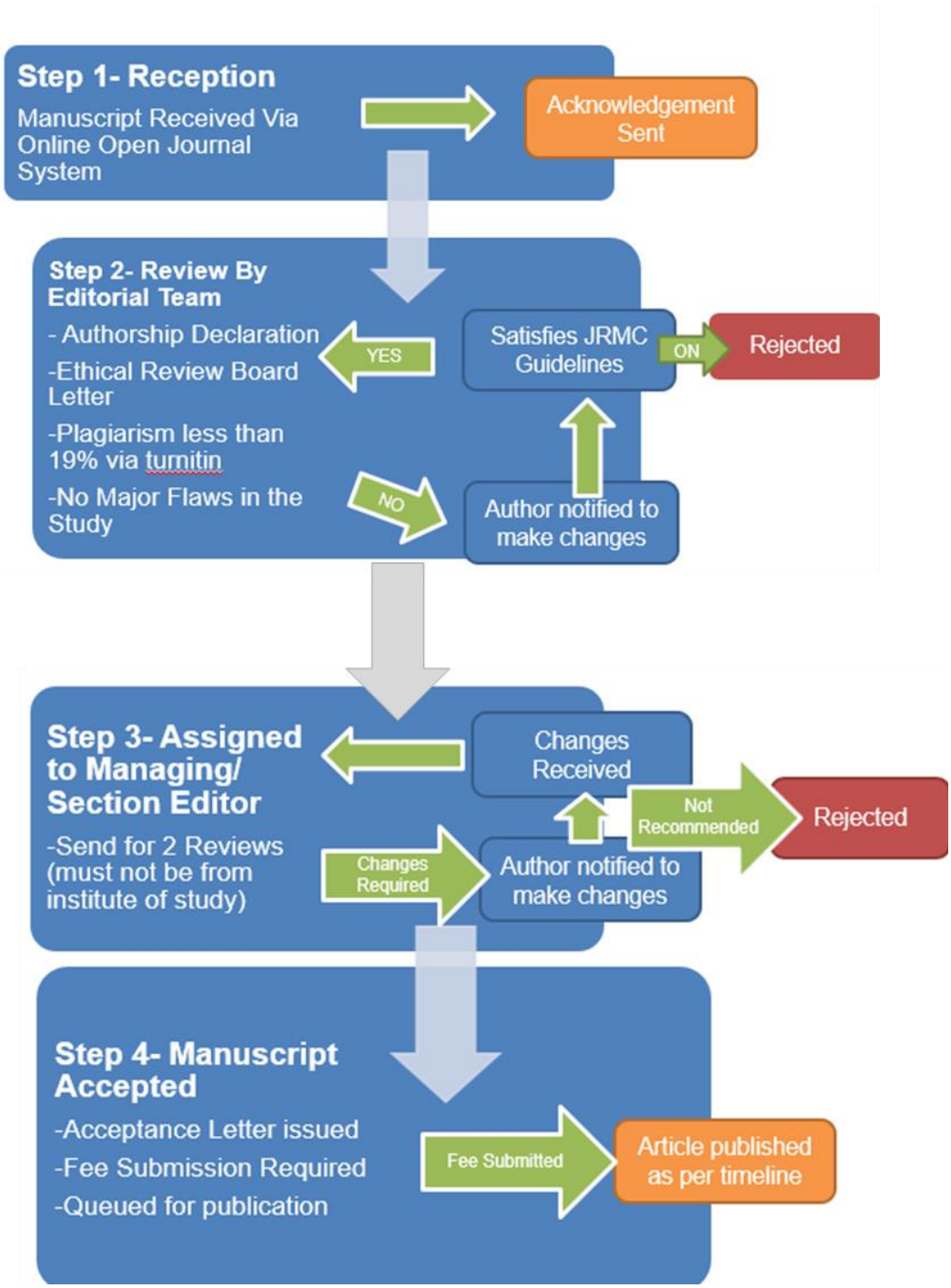
9.3 JRMC Workflow Process



9.4 Student Journal of Rawalpindi Medical College

With the advent of Evidence-Based Practice over the last three decades in medical sciences, integration of best research evidence with clinical expertise and ethical values is of paramount significance to improve the healthcare of the community. Therefore it is inevitable for our healthcare workers to be well versed in research. Untiring and persistent efforts of Prof. Muhammad Umar, Vice-Chancellor RMU are worth mentioning in this regard. He not only organized many International Scientific Conferences, Seminars and workshops at RMU but also took initiative for the Student Journal titled ***"SJRMC"*** in 2014 to promote a culture of research among undergraduate students. This Journal is published biannually under the editorship of Prof Shagufta and Dr. Omaima Asif. There is a research society of students in the university which is responsible for monitoring the research activities of students and this society works under the senior faculty members who are actively involved in research activities. Efforts of Dr. Faiza Aslam, Research Coordinator RMU are commendable for conduction basic and advanced research methodology workshops, correction of research proposals, and facilitating the students as well as residents in the compilation of research data and narrations of articles.

9.5 RMU Newsletter

Volume 1: Issue 1, 2020

RMU Headlines

Vice Chancellors Note

Professor Dr.Muhammad Umar (SI)

I feel honoured to present the first "Rawalpindi Medical University Newsletter" which contains updates of the year 2019-2020. Last year was quite busy and productive. The university had embarked upon its journey towards excellence in the fields of medical education, research, and healthcare delivery. Shifting to the integrated modular curriculum by the Medical Education department, extensive monitoring of University Residency Program, training by the Quality assurance department, end of year conference by Faculty and Resident research forum and multidisciplinary collaborative research by the Office of Research Innovation & Commercialization were some of the major achievements made by the respective teams by their extreme effort and dedication.

This year we faced a new challenge, the COVID-19 pandemic, for which the university established flu and filter clinics, increased testing capacity, and established a new quarantine and treatment facility at Rawalpindi Institute of Urology. Benazir Bhutto Hospital was declared as the COVID hospital & the Institute of Psychiatry Building was declared as the COVID screening area. Online Teaching was established for the continuation of undergraduate and postgraduate studies during these special circumstances. We combatted the Dengue challenge last year by providing a a special Dengue response team in the Allied Hospitals of RMU.The Dangerous Infectious Diseases (DID) department was exclusively designated for Dengue, so as to provide the best care to the patients.

I believe that our greatest strength at Rawalpindi Medical University is the effective teamwork and leadership qualities of each individual due to which we can strive towards our goals and meet any challenge that comes along the way. I would like to appreciate & congratulate Dr.Arsalan Manzoor Mughal & his team of JRMC for putting their efforts to bring this newsletter to you.

OFFICE OF RESEARCH INNOVATION COMMERCIALIZATION

Prof Dr.Naeem Akhtar, Dr. Amna Noor

The Office of Research Innovation and Commercialization (ORIC) RMU was established in 2017 with a strategic aim of linking academia and health with industry. The year 2019 marked the first year of ORIC's performance as ORIC RMU started its activities/functioning under the visionary leadership of our worthy Vice-Chancellor Professor Dr. Muhammad Umar.

On the research forefront, ORIC is committed to foster research culture among students and Faculty members of RMU. ORIC RMU has a strong research centered philosophy and has seen persistent growth since its inception. The excellency & diversity of our research across the disciplines of medical research is making a significant contribution to the Higher Education Commission's national agenda of promoting collaborative multidisciplinary research. The initiatives and the enthusiasm of the ORIC team members contribute largely towards the pursuit of these objectives. ORIC RMU will continue to foster research culture among researchers & faculty members of RMU and Allied hospitals.

The recently published annual report showcases our greatest achievements in the reported period from July 2019 – March 2020. This was a year of significant accomplishment for ORIC RMU and one that sets the stage for our valuable and persistent contributions to RMU. In the year 2019 through increased industrial collaboration, breakthrough innovation, outreach, and integration, ORIC RMU has delivered has set the groundwork for a research-based culture at the university. The trainings, workshops, seminars, and MOUs remained at the core of our activities. Along with the in house training/meetings, commercial training had been successfully organized to further strengthen our connection with industry experts.

ORIC RMU continuously strives to achieve its vision i.e. "to enable and lead RMU to be the best medical university by promoting world-class biomedical research and creative research activities that develop knowledge-based economy depending upon innovation and entrepreneurship which contributes to improve the health care system and social advancement for the people of Pakistan and benefit humanity as a whole with a standard of excellence".

9.6 Editorial policies

It is the policy of the Journal of Rawalpindi Medical University (JRMC), to publish articles of different fields of medical sciences which provide sufficient contribution to medical knowledge. Incomplete studies are discouraged.

9.6.1 Objectives

1. To publish original, well documented, peerreviewed manuscripts related to the field of medicine (both basic as well as clinical sciences)
2. To develop the habit of medical writing
3. To achieve a high level of ethical medical journalism.
4. To produce a publication that is credible & authentic.

13.6.2Editorial freedom & independence

The Editor has full authority over the editorial content of the journal & timing of publication of its content. The editorial team makes decisions on the authenticity & validity of the submitted manuscripts in light of the journals' aims & scopes. We are of the vision that the editorial decision-making process should be independent of all commercial concerns.

13.6.3 Manuscript withdrawal by the author

Once the article is submitted, the author grants the editorial board full publishing rights & it is the absolute right of the editorial board to decide on article withdrawals.

13.6.4 Peer review process: Peer review is the unbiased critical assessment of manuscripts by experts who are not part of the editorial team. Each article submitted to JRMC for publication is reviewed by at least two specialists of the concerned specialty as a double-blinded process.

13.6.4 Ehical committee: The journal requires a certificate from the respective Institutional review board/ Ethical committee for the research encompassed in the submitted manuscript. All clinical investigations must be conducted according to the declaration of Helsinki principles.

13.6.5 Plagiarism prevention: Manuscripts are screened for plagiarism using Turnitin software. After checking the plagiarism in the content submitted and the journal has the right to inform the author and reject the manuscript based on set limits.

13.6.6 Citations: Research articles and non-research articles must cite appropriate and relevant literature in support of the claims made.

13.6.7Confidentiality: Editors will treat all manuscripts submitted to the Journal of Rawalpindi Medical University in confidentiality. Our journal adheres to ICMJE Ethical Guidelines for peer reviewers.

13.6.8 Journal Ownership: The Journal of Rawalpindi Medical University, referred to as 'JRMC', is the property of Rawalpindi Medical University a not-for-profit, provincially chartered, public sector University. It is governed and maintained by the editorial board of the Journal under the supervision of the statutory bodies of the University. OPEN ACCESS POLICY: JRMC provides open access to its content with the vision that making research freely available to the public supports the global exchange of knowledge.

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13.6.10 Disclaimer: The content published represent(s) the opinion of the author(s). The editorial board makes every effort to ensure the accuracy and authenticity of material(s) printed in the journal. However, conclusion(s) and statement(s) expressed

are view(s) of the author(s) and do not necessarily reflect the opinion(s) of the editorial board of JRMC.

Section XIV:
Guidelines Development

ANTIBIOTIC USAGE
IN
INTENSIVE CARE UNITS

EVIDENCE BASED
RECOMMENDATIONS

RAWALPINDI MEDICAL UNIVERSITY
RAWALPINDI

10.1 Guideline for Antibiotic Resistance

These are Evidence based recommendations for empirical antimicrobial usage in intensive care units of Rawalpindi Medical University and Allied Hospitals. Evidence is based on the available data of 2019 of antimicrobial resistance patterns seen in intensive care units.

This document outlines the antimicrobial recommendations for Intensive Care Units of Rawalpindi Medical University and Allied Hospitals. The recommendations are designed with the specific objective of reducing or minimizing the use of antibiotics. Improper use of antibiotics is major risk factors for the acquisition and infection with multidrug resistant bacteria such as MRSA and ESBL producing E.coli and Klebsiella species etc.

The recommendations are based on National antimicrobial policies of Pakistan from the data collected from Rawalpindi Medical University and Allied Hospitals. The recommendations have been developed by Antibiotic Usage Committee of RMU. The recommendations should not be used alone but be cross-referenced with relevant specialty protocols.

Hospital study was conducted to ascertain the current scenario of bacterial susceptibility to optimize empiric therapy among patients admitted in ICU's. The present study concluded that tigecycline was active against gram negative bacteria. Other drugs Imipenim, Meropenem, aminoglycosides and flouroquinolones shows less than thirty percent activity so cannot be recommended as empirical therapy.

These recommendations are intended to provide insight for healthcare professionals who prescribe and oversee the provision of antimicrobial therapy in Intensive Care Units. It does not offer recommendations on the treatment of specific infections. The reader is referred to disease-specific guidelines for such support.

10.2 Guideline for Dengue

Rawalpindi has been facing Dengue epidemics since long. It was 2015 when last biggest epidemic of dengue was noted here. 3917 dengue patients were diagnosed to be suffering from dengue in 2015. The Dengue hit Rawalpindi, Islamabad in 2019 again. This year 11941 patients were diagnosed to be suffering from Dengue at Rawalpindi medical University (RMU) Allied Hospitals. All efforts were employed for efficient clinical management of Dengue patients at RMU Allied Hospitals. Indoor and outdoor patient load was overwhelming that choked our Department of Infectious Diseases and Medicine resource. The issue was managed on war footing. All the RMU Departments were involved along with Health and Administrative authorities. Vice Chancellor, RMU headed all this. RMU has successful in order to make guidelines (clinical management of Dengue patients) and to provide framework so that such epidemic can be managed in future. It is to be emphasized that epidemics have to be prevented rather than managed, so all efforts should be done for prevention so that resources can be used appropriately.

Dengue Clinical Management Clinical management of Dengue patients entails; Identifying patients with dengue infection who require hospital management • Managing Dengue patient in hospital set up while prioritizing problematic patients i.e., Dengue Hemorrhagic fever (DSS) and Dengue shock syndrome (DSS) patients. • Standardized dengue patient management • Educating patients and attendants about the disease and its prevention • Capacity building by training of health care workers • Liaison with departments concerned with prevention so that epidemic situations/spread of disease can be prevented

Managing Patient load First and most crucial step in clinical management of an epidemic is to handle patient load in such a way that morbidity and mortality remain controlled. As generally hospital staff, and allocated beds at hospitals become insufficient in epidemic settings, so these need to be arranged. Provision of investigations and supply of medications required are also very important in this regard. Maintaining cleanliness and solving patient/attendant issues is also important. This require combined effort of Health Care Workers, Ancillary Staff, and Administration. Based on patient load Dengue patient management at RMU Allied Hospitals was done employing following phases • In Phase I-III, patient management was confined to RMU attached hospitals and other Government, Semi Government Hospitals • In Phase IV hospitals other than RMU Allied Hospitals were involved • In Phase V, involvement of other hospitals if admission capacity saturates further.

Future Perspective

- To establish Innovation Centre in the Research Unit, RMU
- To build innovative cohort community program, 2023.
- To improve the human resource development plan.
- To initiate Patent Orientation sessions by IPO Pakistan for patent filing.
- To build products/prototype development by NUST, Comsats, OU, CUST.
- Explore funding for establishing research at RMU in its various departments.
- To strengthen international linkages with international universities on joint research proposals for international funding.
- To hold regular seminars, symposiums, workshops to promote the culture of interaction and sharing scientific knowledge with researchers around the world.
- To prepare research plans for university
- To explore possibilities of projects based on public-private partnership

Section XVI:
References and Links

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10.3 Electronic sources

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