

2020-21



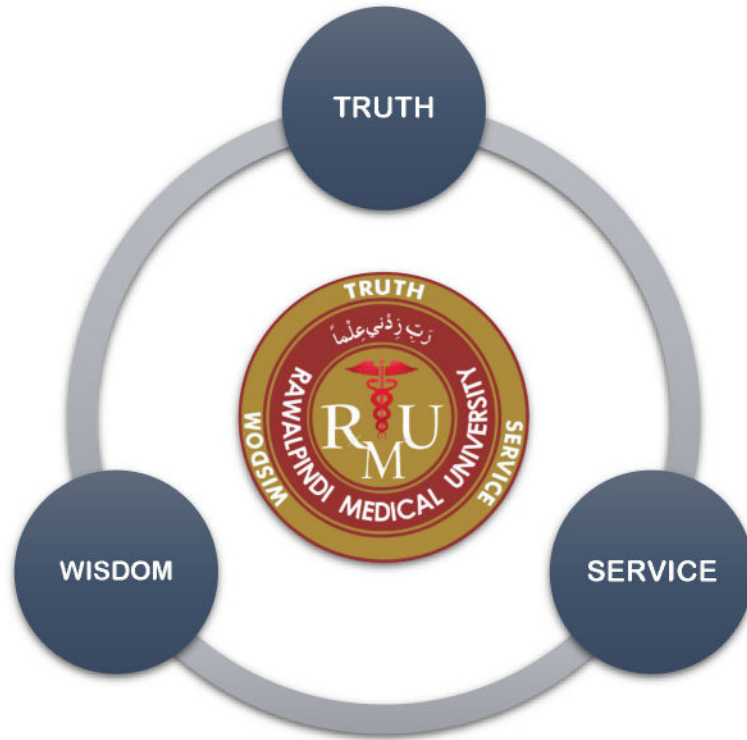
Annual Progress Report 2020-2021

Department of Pathology

RMU & Allied Hospitals Rawalpindi

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Motto



Vision

- ❖ To Impart Evidence Based Research Oriented Medical Education.
- ❖ To Provide Best Possible Patient Care.
- ❖ To Inculcate the Values of Mutual Respect & Ethical Practice of Medicine.

Message by The Vice Chancellor RMU



I congratulate the Pathology Department Rawalpindi Medical University and Allied Hospitals on bringing out their Annual Report for the year 2020-2021. The Pathology department of the Rawalpindi Medical University is no doubt the backbone of our health delivery infrastructure which has always provided state of the art facilities for the public at economical rates, continuing our vision to provide the best to our community in spite of the limited resources that any public sector institution may have as compared to the work load on it.

The pathology department stood by the efforts of the clinical teams of the Rawalpindi Medical University and Allied Hospitals in each and every time of need, working round the clock to ensure that the healthcare delivery doesn't suffer. May it be the Dengue epidemic or the COVID19 pandemic, the pathology department has never lagged behind to help the clinical teams fighting on the forefront, always being a key member in the fights against all health calamities.

It is not just the diagnostic role but their academic contributions have also never been something that can be ignored and the department has always played a vital role in the professional development of the future healthcare professionals.

I wish all the success to the Pathology Department of Rawalpindi Medical University & Allied Hospitals.

Professor Muhammad Umar

MBBS, MCPS, FCPS (PAK), FACG (USA), FRCP (L),
FRCP (G), ASGE-M(USA), AGAF (USA)
Vice Chancellor, Rawalpindi Medical University
Professor of Medicine Rawalpindi Medical University
Chief Gastroenterology & Hepatology Division
Clinical Coordinator of Hepatitis Prevention and Control Program,
Holy Family Hospital Rawalpindi Pakistan
Ex-Governor, American College of Gastroenterology (ACG)
Chairman Asia Hep Pakistan
Past President Pakistan Society of Gastroenterology
Past President Pakistan Society of Hepatology
President Rawalians' Research Forum

Message by The Chairperson, Pathology Department, RMU & Allied Hospitals

It gives me an immense pleasure to present the Annual report of the Pathology Department Rawalpindi Medical University and Allied Hospitals for the year 2020-2021. The pathology department of the Rawalpindi Medical University is one of the state-of-the-art departments who is always ready to contribute in fields of academia as well as provision of reliable and cost-effective diagnostic facilities to the public. The department through its faculty and hospital teams has always strived to uphold the best standards and feels proud of its legacy. As the Chairperson of the department, I wish to assure everyone that the Pathology department and its units in the Allied Hospitals will always be ready to contribute to all the efforts of the university in improving the field of medical education as well as healthcare delivery. I also wish to congratulate my team for always proving themselves, over and beyond the call of duty, whenever the need arises.

Prof. Dr. Mobina Ahsan Dodhy

Chairperson,
Department of Pathology
RMU & Allied Hospitals,
Rawalpindi.

ANNUAL REPORT 2020-21

LIST OF CONTRIBUTORS

- Prof. Dr. Mobina Ahsan Dodhy
- Dr. Mudassira Zahid (BBH)
- Dr. Huma Amin (DHQH)
- Dr. Tayyaba Ali (HFH)
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The Department of Pathology, RMU & Allied Hospitals

The Department of Pathology, Rawalpindi Medical University & Allied Hospitals, is one of the largest basic sciences department & an important component of the infrastructure of the Rawalpindi Medical University, providing not only the academic services to the budding physicians but also serving as the diagnostic backbone for the clinical sciences by means of its well-equipped and state of the art laboratories present in the Allied Hospitals of Rawalpindi Medical University.

The core of the Department of Pathology is present in the New Teaching Block of the Rawalpindi Medical University & is primarily involved in the teaching of the undergraduate as well as post-graduate students and also in working as the focal point for the coordination between its diagnostic setups in the Allied Hospitals for their efficient & smooth functioning. The department boasts a strong, qualified and competent teaching faculty



comprising of 2 Professors, 1 Associate Professor, 3 Assistant Professors, 8 Senior Lecturers & 6 lecturers, each experienced in the art of Medical Teaching, with various levels of qualifications including Ph.D., MPhil, FCPS, MCPS, MHPE, CMT etc.

The dynamic structure of the Pathology Department of Rawalpindi Medical University enables it to offer not only academic services but also provide diagnostic backbone to the healthcare delivery facilities of the RMU by virtue of its branches in the Allied Hospitals of the Rawalpindi Medical University.

The department consists of following faculty members deputed at Rawalpindi Medical University and the Allied Hospitals

| Name | Designation |
|------------------------------|---------------------------|
| Prof. Dr. Mobina Ahsan Dodhy | Professor of Pathology |
| Prof. Dr. Naeem Akhtar | Professor of Pathology |
| Dr. Mudassira Zahid | Associate Professor (BBH) |
| Dr. Huma Amin | Assistant Professor (HFH) |
| Dr. Tayyaba Ali | Assistant Professor (HFH) |
| Dr. Aasiya Niazi | Assistant Professor (HFH) |
| Dr. Imran Habib | APMO |
| Dr. Khalid Javed | APMO |
| Dr. Saeed Lehrasab | Sr. Demonstrator |
| Dr. Abid Hassan | Sr. Demonstrator |
| Dr. Syed Muhammad Ali | Sr. Demonstrator |
| Dr. Fariha Sardar | Sr. Demonstrator |

| Name | Designation |
|-------------------------------|------------------|
| Dr. Syed Iqbal Haider | Sr. Demonstrator |
| Dr. Syeda Fatima Sughra Rizvi | Sr. Demonstrator |
| Dr. Syeda Aisha | Demonstrator |
| Dr. Nida Fatima | Demonstrator |
| Dr. Rabbia Khalid | Demonstrator |
| Dr. Unaiza Aslam | Demonstrator |
| Dr. Mehreen Fatima (HFH) | Demonstrator |
| Dr. Sarah Rafi | Demonstrator |

Pathology Departments in Allied Hospitals

The Pathology department Rawalpindi Medical University and Allied Hospitals is actively contributing to the welfare of the ailing public through provision of round the clock diagnostic facilities through its state-of-the-art laboratories present in the Pathology Departments of the Allied Hospitals. These include

I - Pathology Department, Holy Family Hospital

Pathology Department of Holy Family Hospital is important diagnostic centre of prestigious institute of RMU and Allied Hospitals. It is also affiliated to UHS, CPSP and HEC for provision of academic services to its students. It is a well-equipped centre with facilities of training and research for higher studies like FCPS and M.Phil. It is also conducting undergraduate program B.Sc. (Hons.) in Medical Laboratory Technology (MLT).



It is a specialized lab equipped with automated analyzers. Team comprising of dedicated Professor, Assistant Professors, Consultants, Medical Officers, Resident doctors, Technical Staff and Assistants are working very hard day and night for the provision of in time quality services. To ensure the delivery of reliable results and for quality assurance, in addition to the internal quality control it is also linked to external quality control programs like NEQAPP and NEQAS.

II - Pathology Department, Benazir Bhutto Hospital

The Pathology Department of Benazir Bhutto Hospital is dynamic department endeavoring for the best patient care, faculty development and research along with educational activities at various levels. It provides a broad-spectrum laboratory services required by

the hospital at competitive rates with a strict quality control. Free diagnostic facilities are also provided to the needy patients.

The pathology team follows the global guidelines and international standards for accurate and timely diagnosis and management of the patients. The pathology team including the well qualified faculty and well-trained technicians and working staff, believes in quality work with efficiency and timeliness. The department is dynamic, ever improving and stresses upon acquiring firsthand updated



diagnostic facilities for achieving best practices in laboratory medicine. It is also the privilege of the Pathology Department, BBH to host the special well-equipped BSL-3 Laboratory, specially created by the Government of the Punjab for COVID19 pandemic, to facilitate the public in Rawalpindi and its catchment areas.

III - Pathology Department, DHQ Hospital

The Department of Pathology at DHQ hospital is a multidisciplinary department consisting of Hematology, Microbiology and Chemical Pathology sections. The department is providing diagnostic services round the clock to indoor and emergency patients of the hospital as well as to outdoor patients of DHQ Hospital, Rawalpindi. All the services to OPD are provided at nominal rates, while the emergency and indoor services are totally free.



The department is equipped with modern analyzers and computerized network system for OPD and Emergency reports, leading to quick turnaround time. The staff is committed to provide high quality, efficient, reliable services. The Pathology lab at DHQ is offering more than 60 laboratory parameters to facilitate the patient diagnosis. The laboratory performs around 500,000 tests annually.

Academic Activities

The academic activities of the department span round the year with teaching of 1st to 4th year MBBS classes under the integrated modular curriculum with special attention to the 3rd Year & 4th Year MBBS Classes. The department has been contributing to the needs of

the nation by producing Allied Health professionals in the field of Medical Laboratory Technology (MLT) as well as helping in the professional development of other Allied Health students of RMU in the Doctor of Physical Therapy & B.Sc. (Hons.) programs of Orthotics & Prosthetics, Optometry and Medical Imaging Technology. The department also hosts facilities for Postgraduate programs. The postgraduate teaching for M.Phil. Microbiology program is offered at the Pathology Department RMU and teaching of FCPS Hematology and Histopathology are carried out at the Pathology departments of the hospitals. The Pathology department RMU also has the honor of being the first department of the Rawalpindi Medical University to start PhD program in the subject of Microbiology & Molecular Biology.

To facilitate in the process of teaching & learning by virtue of hands-on experience, the department has two spacious on-campus laboratories which are sufficiently equipped with modern equipment, coupled with museum having quality histopathology specimens, to meet the requirements of the students. The department also has furnished & air-conditioned lecture halls available providing comfortable learning atmosphere for the students. Each of the laboratories and the lecture halls are also equipped with modern teaching aids of the time like Multimedia projection systems etc. so that the learning can take place with limitations.

Development of Modular Curriculum for 3rd & 4th Year MBBS Programs

The Pathology department Rawalpindi Medical University has played instrumental role in the development and implementation of the Integrated Modular Curriculum for the 3rd & 4th Year MBBS classes, which was developed and implemented under the chairmanship of the Dean of Basic Sciences and Diagnostics RMU & Allied Hospitals Prof. Dr. Naeem Akhtar, who was then also the Chairman of the Pathology Department RMU & Allied Hospitals. The pathology department was the first one among the clinical year departments to step forward in development of the initial modules as well as to develop mechanisms for successful implementation and assessment thereof. Each of the modules were meticulously developed keeping the fine details in view with the help of qualified faculty members in the field of Health Professions Education to cater to the future needs of the students, in lines with the international standards.

Not only did the department through its faculty members contributed in development of a number of modules itself, but also contributed a lot in the modules prepared by other departments by providing quality content for the curriculum.

Online Teaching Sessions

The last year was overshadowed by the COVID19 pandemic which resulted in disturbance of teaching activities in educational institutions across the globe. The department of Pathology realizing its responsibility towards the future of the medical students of RMU stood firm against all odds and conducted online teaching and assessment sessions for the students of RMU to play its part in professional development of the healthcare

professionals of the future. Even with lack of resources and training for the new mode of the imparting medical education, the determination of the department never shattered and the challenges of the new-normal were met with increased resolve with each passing day.

On-campus Teaching Sessions

With the things coming back to the normal, the normal activities of on-campus teaching have returned to the university and the Pathology department actively conducts the following sessions for the MBBS students in the university campus and the hospital settings as well

- Large Group Interactive Sessions (LGIS)
- Case Based Learning Sessions (CBL)
- Small Group Discussions (SGD)
- Practical Sessions
- Bench teaching sessions in Pathology Laboratories at Allied Hospitals.

Apart from the MBBS Students, teaching & learning sessions are also conducted on campus and in laboratories for the students of Allied Health Sciences.

The Pathology Department RMU acts as the hub of all academic activities under the department itself and its units to facilitate and regulate the teaching and learning experience for the students by coordinating the activities and continuously developing and upgrading the teaching material.

The faculty at Pathology RMU ensures that the assessments are carried out under the best practice guidelines for medical education to not only assess the students but also provide formative feedback wherever applicable to help in improving the performance of the students.

Teaching Activities at Pathology Department Holy Family Hospital

The department is fully recognized by CPSP Pakistan for FCPS training 4years in Histopathology & Hematology. At present 6 FCPS residents are being trained at the department with a Professor as their supervisor & 3 FCPS residents are being trained at the department with an Assistant Professor as a supervisor in Histopathology. Regular academic activities such as slide sessions, presentations and journal clubs are carried out for a continuous advance post graduate training. All the residents are performing research for their dissertation.

Apart from post graduate teaching activities, all teaching faculty and the postgraduate residents are actively involved in the teaching of MBBS students of RMU including lectures, clinical rotation and case presentation.

The department is also involved in the teaching of B.Sc. MLT program students as UHS's recognized training setup for the program. The department not only caters for the

theoretical needs of the students but also provides hands-on practical training done in the lab under the supervision of senior trained technologists and technicians.

Teaching Activities at Pathology Department Benazir Bhutto Hospital

The department gleams with well qualified faculty having expertise in their field. The Pathology faculty is actively involved in teaching various disciplines including FCPS, MBBS, FSc MLT and Nursing and internship programs. The F.Sc. MLT diploma program is a 2-year program. Weekly classes of these students are taught by the Pathology faculty. The department also caters for their practical training. The training is done in batches in different sections of the lab so as individual coaching is possible for every student and they can perform the laboratory tests under supervision. The faculty also contributes an important share in conducting MBBS Program. They are actively involved in the teaching of Pathology subject to the emergent doctors along with the clinical rotation in the Pathology laboratory for practical training of basic laboratory tests. Special emphasis is made on relating the diagnostic methodologies of laboratory practice with the clinical background for an integrated approach to learning. The laboratory also provides Pathology internship facilities for students enrolled in different courses like BSc, MSc.

The department is also recognized for FCPS in Hematology. Two postgraduate trainees are currently enrolled in the program. The training matches the standards set by CPSP. The PG training encompasses the routine hematology tests along with specialized modalities including bone marrow biopsy, coagulation studies and blood banking. They are also trained for quality assurance methodology and subjugate various laboratory errors and problems. Along with this the trainees undergo and extensive educational exercises which train them for the highly specialized modalities like flowcytometry, FISH and cytogenetic studies in collaboration with AFIP Rawalpindi.

The department along with the routine teaching activities also encourages the faculty development. The faculty actively participates in various CME activities at the university level as well as national level.

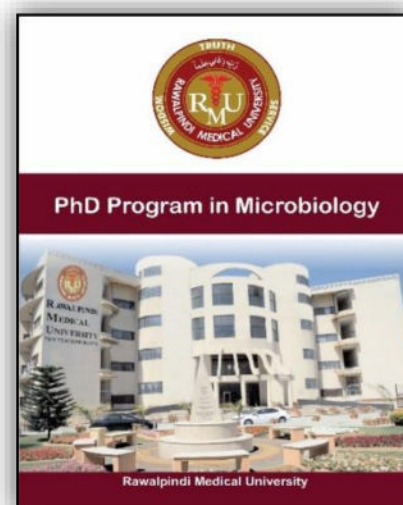
Teaching Activities at Pathology Department District Headquarters Hospital

Undergraduate teaching of 3rd year M.B.,B.S. students in Pathology subspecialty (Microbiology and Hematology) is in the form of small group wards rotation in DHQ hosp. Regular demonstration and classes at continuous pace are carried out for these students throughout the year.

Department also participate in conducting regular seminars/ training sessions as part of continued medical education in collaboration with other departments of Hospital.

Ph.D Program in Microbiology Molecular Biology

The two year structured Ph.D program has commenced by mid of year 2021 at the Department of Pathology, RMU, under the supervision of Prof. Dr. Naeem Akhtar, a Ph.D himself from the University of Sheffield, UK, with experience of supervision of a large number of M.Phils and Ph.Ds to his credit. All the necessary technical & infrastructural requirements have been met and the program has received approval from the Pakistan Medical Commission & the Higher Education Commission of Pakistan. The department has a faculty of 02 regular and 01 visiting Ph.Ds. The program will induct 2 fellows each year.



Research & Publications

Cultivating the culture of Research has always been envisioned as one of the main pillars of Rawalpindi Medical University, as a means to develop healthcare professionals capable of contributing to the development of their country and the world. The department of Pathology also shares the same vision. For the purpose thereof, right from the inception of Rawalpindi Medical University, efforts were concentrated to establish a comprehensive framework for research in Rawalpindi Medical University, as a matter of prime importance.

Pathology department acts as a fore front of research that encompasses many of the major advances in medicine. Currently the department is conducting research with collaboration with WHO. The Pathology faculty is actively contributing to the field of medical research. During the year 20-21 a number of research articles have been published in the medical journals. The following is the list of original research articles by the departmental faculty:

| S. No. | Topics | Principal Investigator / Contributors | Status |
|--------|---|--|---|
| 1 | Antibiotic treatment guidelines for Intensive care units of RMU & Allied Hospitals | Dr. Fareeha Sardar Dr. Shireen Rafiq | Printed as booklet |
| 2 | Pattern of Antibiotic resistance in ICU's of RMU and allied hospitals. | Dr. Kiran Ahmed Dr. Shireen Rafiq | Paper was sent to NUML journal – Reply is awaited |
| 3 | Salmonella Infection Treatment guidelines | Dr. Kiran Ahmed Dr. Shireen Rafiq | Printed |
| 4 | Extensively Drug-Resistant Salmonella typhi XDR Infection at Rawalpindi Medical University and Allied Hospitals | Dr. Kausar Izhar Dr. Kiran Ahmed Prof. M. Umar Dr. Nadeem Ikram Prof. Naeem Akhtar | Published in JRMJ, Dec. 2020 |

| S. No. | Topics | Principal Investigator / Contributors | Status |
|--------|---|--|---|
| 5 | Histopathological and clinical correlation of vesiculobullous lesions in tertiary care hospital | Dr. Sophia Khurshed | Published in Journal of Ayub Medical College |
| 6. | Correlation of Arterial blood gases and hypertension with clinical outcomes in COVID 19 patients | Dr. Sophia Khurshed Dr. Asma Nafisa | Under review - JRMC |
| 7. | Risk assessment for Healthcare Workers exposed to persons with COVID-19 | Dr. Amber Habib | In Progress |
| 8. | Contaminated Equipment A Source of hospital acquired infection among patients at critical areas of Holy Family Hospital | Irum Munawar Dr. Kiran Ahmed Dr. Shireen Rafiq | Under review by Life and Science Journal (NUML) |
| 9. | Epidemiologic profile of Thyroid Disorders in a Tertiary care Hospital, a five year Analysis. | Dr. Asma Nafisa Dr. Nadeem Ikram | Under review JRMC, Submitted May 2021 |
| 10. | Predictive efficacy of Hematological Biomarkers in Covid-19 | Dr. Nadeem Ikram Dr. Asma Nafisa Dr. Rabia Anjum | Published in JRMC, December 2020 |
| 11. | Hyperferritinemia an Independent Predictor of COVID Severity | Dr. Asma Nafisa Dr. Nadeem Ikram | in progress |
| 12. | Assessment of Hepatic Enzyme Derangements in Covid -19 | Dr. Asma Nafisa | Under review in BIOMARKERS |
| 13. | Risks Factors and Outcomes of Neonatal Thrombocytopenia | Dr. Hira Arif Dr. Nadeem Ikram Dr. Asma Nafisa | Published in JRMC, September 2020 |
| 14. | Epidemiological Analysis of COVID-19 Patients detected by Real-Time Reverse Transcription - Polymerase Chain reaction in a Tertiary Care Biosafety Level III Laboratory, Rawalpindi | Dr. Rabia Anjum Dr. Nadeem Ikram Dr. Asma Nafisa Prof. Naeem Akhtar | Published in JRMC, March 2021 |

Recently Completed and In Progress Research Work at Pathology Department RMU & Allied Hospitals 2020-21

Other published work by faculty members includes

- Niaz M, Hameed F, Zahid M. Laparoscopic Cholecystectomy: A Study Of Demographic, Morphological Factors and Iatrogenic Occurrences. PAFMJ. 20Aug.2020; 70(4):1039-4.
- Usman A, Lakhnana NK, Sarwar A, Zahid M. Correlation of Serum IgA anti Tissue Transglutaminase Antibody levels with Histopathological grades of Celiac disease using Corazza Grading system. Isra Med J. 2021; 13(1): 39-42.

- Zahid M, Usman A, Tauseef K, Zaffar H, Niaz A, Khan N. Frequency of Incidental Carcinoma in Thyroids Operated for Multinodular Goiter. Journal of Islamabad Medical & Dental College. 2021 Jun 29;10(2):110-5.
- Zafar T, Siddique H, Zeeshan R, Zafar L. Effect of Implementation of COVID-19 Guidelines on the Lives of Haemophilia Patients Registered with the Haemophilia Treatment Centre, Rawalpindi. Journal of Rawalpindi Medical College. 2021 Aug 31;25(1).

Apart from the published research articles there are multiple research projects ongoing in the department. These include typhoid surveillance study aimed to diagnose Salmonella especially XDR and determine the sensitivity pattern of this organism. The department is facilitating a project of WHO about Congenital rubella syndrome CRS in collaboration with Peads Department and NIH. Another study for diagnosis of Rota Virus in vaccinated and non-vaccinated children is being done in collaboration with WHO.

Following research work was conducted by the students of B.Sc. (Hons.) Medical Laboratory Technology under the Pathology Department

| Author | Topic | Year |
|-----------------|---|------|
| Khansa Khusheed | Auditing of Hand Sanitizer in various areas of HFH, Rwp | 2020 |
| Javeria Farooq | Use of Gene Xpert for the detection of TB cases among contacts of the patient with PTB | 2020 |
| Tasbiha Gul | Use of Gene Xpert for Rifampicin resistance profiling in previously diagnosed patients with PTB | 2020 |
| Madiha Gul | Role of biofilm forming bacteria(Klebsiella and Acinetobacter) causing persistent infections in critical areas of HFH | 2020 |
| Anita Bibi | Air sampling of critical areas of HFH | 2020 |
| Aleena Syed | Disinfectant , life savior or killer | 2020 |
| M. Asif | Comparison of common infections in children of Day care and feeding rooms | 2020 |
| Naima Naseer | Presence of microbial contamination on different surfaces(floors, Tap surface, Cleaning buckets, Mops) in HFH, Rwp | 2020 |
| Javeria Mazhar | Utilization of blood and its components in critically ill patients of HFH | 2020 |
| Tehreem Gul | ABO blood group association with DM type II | 2020 |
| Arman Zahid | ABO blood group association with Myocardial infarction | 2020 |
| Shabana Majeed | Frequency of Rh-Ab titer in pregnant females of HFH | 2020 |
| Aqsa Zulfiqar | Current status of Antimicrobial Susceptibility Pattern of Colectin on ESBL and Carbapenemase Producing clinical isolates of Gram Negative Rods at Tertiary care Hospital | 2021 |
| Shumaila Qurban | Bacterial Contaminants of the white coats of Drs and medical students in a tertiary care hospital of Rawalpindi | 2021 |
| Humaira Bibi | Current status of Tigecycline Susceptibility of Carbapenem Resistant Enterobacteriaceae and Acinetobacter species isolated from blood culture specimens of tertiary care hospital | 2021 |
| Nida Tariq | Pattern of Bacterial Contamination in Critical Care Areas of a Tertiary Care Hospital | 2021 |

| Author | Topic | Year |
|------------------------|--|------|
| Ayesha Mustafa | Isolation of Pathogenic Bacteria From Currency Notes Taken from Health Care and Non-health care workers | 2021 |
| Aiman Mushtaq | Prevalence of Bacterial and Fungal Infections in COVID-19 Hospitalized Patients | 2021 |
| Ramiza Irum | Determination of in Vitro Interactions of Minocycline based Combinations against MDR and XDR Acinetobacter species using disc approximation assay | 2021 |
| Rida Zainab | Isolation of Bacteria from the Mobile Phone Surfaces of Health Care Professional Working in Tertiary Care Hospital | 2021 |
| Aqsa Laraib | Frequency of Candida albicans and other candida species in urine of Pregnant and non-pregnant females presenting to tertiary care hospital Rawalpindi. | 2021 |
| Sabahat Fatima | Frequency of Bombay blood group in patient, presenting to tertiary care hospital | 2021 |
| Dua Saeed | Association of ABO blood group with patients of Breast Carcinoma | 2021 |
| Aleena Irfan | Frequency of transfusion transmitted infections in blood donors | 2021 |
| Isra Qudrat | Frequency of Hepatitis B & C in Thalassemia patients | 2021 |
| Um-e-farva | Pattern of Haemoglobinopathies in a tertiary care hospital | 2021 |
| Urooj Nasrullah | Association of ABO blood group in Covid 19 positive patient | 2021 |
| Ateeq ur Rehman | Clinico-Hematological spectrum of hematological malignancies | 2021 |
| M. Ahtesham | Clinico-Hematological spectrum of non-Leukemic myeloproliferative disorders | 2021 |
| Muhammad Kashif | Derangement of platelets in COVID-19 patients | 2021 |
| Muhammad Ali | Utilization of fresh frozen plasma in BBH | 2021 |

Telemedicine Services

A hallmark of Pathology Department RMU in patient care contributions was witnessed during the COVID19 pandemic. In response to the Telemedicine initiative of the Government of the Punjab under the patronage of the Governor of the province of Punjab, his excellency, Mr. Chaudhary Muhammad Sarwar, the Governor of Punjab and Sardar Usman Buzdar, the Chief Minister of the Punjab; Prof. Dr. Muhammad Umar, the Vice Chancellor of the Rawalpindi Medical University launched the telemedicine service at the Pathology Department Rawalpindi Medical University on 27th March 2020.



The Pathology Department of RMU was honored to be selected as the managing department for the project and the department embraced the responsibility with sheer dedication. The Pathology department has been providing the administrative and logistical support for the project non-stop since the day it was initiated. The setup was managed

round the clock by qualified doctors providing round the clock online consultation facility to the public free of cost in these trying times being faced by the nation.



Telemedicine is a unique concept of providing medical care to the patients over digital platforms used for communication like voice calls, video consultations etc., in situations where the patient may be present at a distant location, avoiding the need of patient presenting himself to the doctor. The first practical use of the concept of was seen in 1940s in Pennsylvania where radiology images were transmitted over a distance of 24 miles for consultation.

The telemedicine center at the Pathology Department Rawalpindi Medical University offered round the clock teleconsultation through the connectivity provided via the mobile phone and live video consultation to the patients. The center was a part of the chain of telemedicine centers being established by the Government and the Chief Minister of the Punjab consisting of around 150



mobile phone lines and web based video consultation solution that the Government is offering in conjunction with the UK based telemedicine solution provider "MedicalCity.Online", forming the largest of its kind 24/7 online health consultation provision network in the country. The telemedicine center can be accessed through the free UAN Calling Number 0304-1112101 while the video consultation can be arranged through visiting the web portal "doctors247.online". It is worthwhile to mention that both the mobile based and video consultation services are free for the public.

During that time, special capacity building sessions for doctors were conducted by Dr. Syed Muhammad Ali of Pathology Department Rawalpindi Medical University, who was designated by the master trainer for the region by the management of the solution provider MedicalCity.Online and more than 30 senior faculty members were trained in



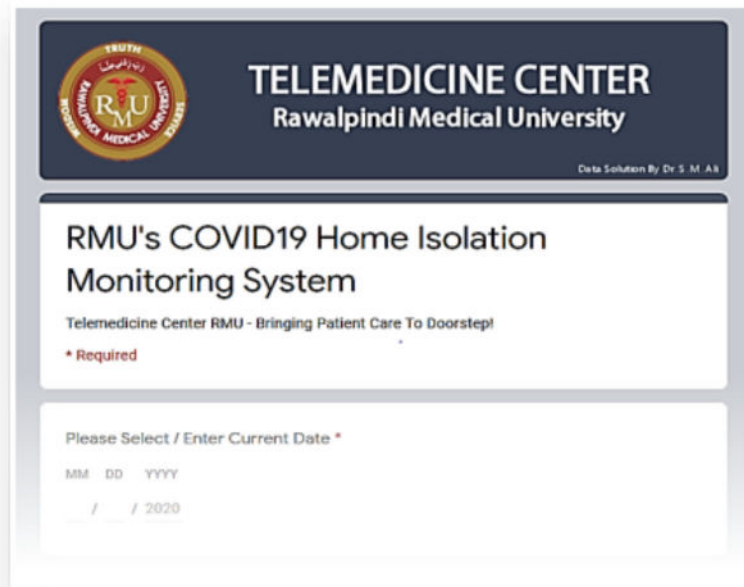
Telemedicine as shift in charges, apart from other faculty members for providing efficient services to the patients during the lockdown. All the services were also monitored and recorded through an indigenous online portal developed by him, not only for patients seeking medical consultation but also those who were under home-isolation. Close liaison was maintained with the district health authorities to intimate for necessary actions whenever a flag was generated on the

monitoring portal for a patient requiring assistance or immediate medical attention.

The Telemedicine Center established at Pathology Department RMU also hosted dedicated video conferencing portals in arrangements with the district government that were connected to the Basic Health Units of four of the most densely populated union councils of Rawalpindi including Rehmat Abad, Kotha Kalan, Dhok Mustaqeem and Dhok Mungtal. The Rawalpindi Medical University along with its team of dedicated doctors played its role in community welfare by joining hands with the Government of the Punjab to facilitate the public in all ways possible.

Although established in wake of the COVID-19 pandemic and to provide the consultation for Corona infection related concerns of the public, in just under a week of its establishment, the center catered to the needs of over 500 patients, not only in their COVID-19 related concerns, including its identification, prevention and care of suspected patients; but also for management of other health related problems as well as in facilitating in matters where the public is facing difficulties due to the current lock down. The indigenous COVID19 Home Isolation Monitoring System portal developed by Dr. Ali of Pathology Department RMU served as an identification system for patients in distress and numerous patients were provided prompt medical attention by raising alerts with the concerned authorities, contributing in saving precious lives.





The RMU's Data Management Portal for Telemedicine Services

Diagnostic Facilities Provided by Pathology Department

The Pathology department Rawalpindi Medical University has a long spanning legacy of providing state of the art diagnostic facilities for the patients of the twin cities and the catchment areas at extremely economical rates. Some of the important facilities offered by the Pathology units in the Allied Hospitals include

Hematology

Hematology lab provides wide range of tests for both indoor and outdoor patients as well as essential emergency tests.

Following is the list of Sections available for different tests.

Routine Hematology Section

- Blood Complete Picture with Differential Counts
- Peripheral Smear
- Reticulocyte Count
- Malarial parasite Smear
- ESR

Serology Section:

- Blood Grouping
- Coomb's Test
- Rh Antibody Titre

Bone Marrow Examination

- Bone Marrow Aspirate
- Bone Marrow Trephine Biopsy

Coagulation Studies

- Prothrombin Time
- Activated partial thromboplastin time
- Fibrinogen
- D- Dimers
- Mixing Studies

Hb Studies

- Hb Electrophoresis

Microbiology

Aerobic Culture and sensitivity of various pathological specimens are performed along with automated blood culture. Examination of various biological fluids is also performed in this section. Routine Serology, MTB detection by ZN staining, Fluorescent Microscopy and by gene expert methods, Fungal scraping examination and ELISA for Hep B & C detection is also performed.

The serology examinations like TYPHIDOT, HIV, H. pylori blood, CRP, ASO titer, RA factor, ANA/ANF, Widal etc. are performed in serology section.



Dengue serology like IgM, IgG, NS1 and other viral serology HBsAg, Anti HCV are performed BY ELISA method.

GENEXPERT

A hallmark of the department is a state-of-the-art TB laboratory equipped with GeneXpert placed as a part of National TB Control Program (NTP), revived under Ministry of Health

- The Xpert MTB/RIF is a cartridge-based nucleic acid amplification test (NAAT) for simultaneous rapid tuberculosis diagnosis and rapid antibiotic sensitivity test.
- It is an automated diagnostic test that can identify Mycobacterium tuberculosis (MTB) DNA and resistance to rifampicin (RIF).
- It is highly sensitive and specific: 40 times more sensitive than smear microscopy.
- Results are available within 2 hours.
- Xpert MTB/RIF is now recommended as the first line diagnostic test in all adults and children with signs and symptoms of TB where testing is available.



The Pathology lab at DHQ is offering sputum AFB microscopic examination and GENEXPERT PCR to facilitate the patient diagnosis. The laboratory performs around 130 PCR TEST annually free of cost.

Histopathology

Following facilities are provided to both indoor and outdoor patients:

- Surgical pathology (Biopsy, resection specimens) reporting
- Frozen section facility
- Fine needle aspiration cytology (FNAC)
- Immunohistochemistry for tumour identification and tumour diagnosis
- Cytopathology of gynae samples (PAP smears)
- Cytopathology of non-gynae samples (Body Fluids, such as pleural, ascetic, cardiac, synovial, CSF fluids etc.)
- ROSE (rapid routine onsite evaluation) of EUS Guided FNAC.



Molecular Biology & Role During COVID19

In the wake of the recent COVID-19 Pandemic the pathology department has played a leading role in combating its effects with timely screening and diagnosing the diseases. It takes pride in establishing state of the art BSL III lab for the diagnostic PCR facilities for COVID19 in collaboration with Primary and Secondary health care department. The testing for COVID19 is done by realtime quantitative PCR. The reports are available to the patients online.

The lab provides this facility free of cost not only to the inhouse hospital patients but also to the general public with catchment area of Rawalpindi District and its surroundings.

The BSL-III Laboratory at BBH has emerged as a leading center for COVID19 testing in the public sector in this region. In the current year the lab has performed 170214 COVID19 PCR tests out of which 164762 came positive.

Quality Assurance

At pathology department Rawalpindi Medical University & Allied Hospitals, quality is a matter of pride for us. All our tests are supported daily by internal Quality Assurance (Controls), thus ensuring reliability and confidence of results

The Laboratory is also registered with National External Quality Assurance Program Pakistan (NEQAPP) for last four years. It actively participates in every round of twelve-month cycle to objectively assess the quality results in all three discipline (Hematology, Microbiology and Chemical Pathology) which plays a pivotal role in improving the quality of laboratory services.

Punjab Healthcare Commission (PHC) indicators are being displayed in every section and they are being strictly implemented.



Statistics of Tests Performed at Pathology Department During 2020-2021

| SECTIONS | HFH | BBH | DHQ |
|---------------------------|---------|--------|--------|
| Hematology | 488910 | 183897 | 147984 |
| Chemical Pathology | 1438600 | 501532 | 252190 |
| Microbiology | 177146 | 75775 | 77710 |
| Molecular Biology | 36992 | 170214 | --- |
| Histopathology | 6602 | 4432 | --- |
| TOTAL | 2148250 | 935850 | 477884 |