PARAMED VARTA

HALF-YEARLY NEWSLETTER OF

MATA GUJRI COLLEGE OF ALLIED HEALTH & PARAMEDICAL SCIENCES

A Constituent Unit of Mata Gujri University, Kishanganj, Bihar, India

ISSUE 1 – MAY 2025

MESSAGES

Dr. Dilip Kumar Jaiswal

Director, MGMMC & LSK Hospital Trust

Esteemed Faculty, Students and Readers, It is with great honor and satisfaction that I extend my best wishes on the occasion of the inaugural edition of the Paramedical Sciences Newsletter PARAMED VARTA . This publication marks a significant step in fostering academic dialogue, highlighting institutional achievements and strengthening our shared commitment to excellence in healthcare education. I commend the editorial team for their dedication and wish this initiative continued success in the times ahead.

Prof. (Dr.) Sudipta Bose, MD (OBS & G).

Vice Chancellor

Dear Students, Faculty, and Esteemed Members of the Paramedical Community, it gives me immense pleasure to extend my heartfelt greetings to all of you through the 1st edition of our college newsletter in 2025. As we continue to grow as a centre of excellence in paramedical education, we take pride in the significant strides we have made in both academics and healthcare service. I commend the entire college community for its collaborative spirit and commitment to excellence. Let us continue to inspire, support, and uplift one another as we shape the future of healthcare. Wishing you all a year filled with growth, success, and new achievements.

Dr. Ichchhit Bharat, MD (DVL).

Registrar

Greetings from Mata Gujri College of Allied Health and Paramedical Sciences, a Constituent Unit of Mata Gujri University. It gives me immense pleasure to connect with you through the First edition of our college newsletter. At MGCOAHPS, we believe that education is not merely a means to acquire knowledge, but a path to shape character, ignite curiosity, and instil a sense of responsibility towards society. This newsletter is not just a reflection of our milestones, but also a celebration of our collective spirit — the spirit that drives us to keep moving forward with integrity, compassion, and a vision for a healthier world. Let us continue to learn, grow, and contribute with sincerity and determination. I extend my best wishes to all our students, faculty, staff, and well-wishers.

Prof. (Dr.) Saumendu Deb Roy, M. Pharm, Ph.D.,

Dean-Academics

Dear Readers, It is marking a significant milestone as we unveil the first edition of "PARAMED VARTA" 2025, our newsletter which stands as a testament to our commitment to academic excellence, transparent communication and the celebration of our collective accomplishments in the Paramedical Sciences. It will be a new platform to share our achievements, updates, and inspire growth within our college community. Also, here's my message to you: Don't wait for the world to notice you. Make it impossible to ignore you. Be the heart beat of healthcare. Be the reason someone gets to go home. And above all stay kind, stay bold and never stop learning. In this college, we don't just teach paramedics, we create game- changers.

Prof. (Dr.) Dibyendu Shil, M.Pharm, Ph.D.,

Principal

Greetings from Mata Gujri College of Allied Health and Paramedical Sciences! It brings me great pleasure to declare the first edition of the MGCOAHPS newsletter "PARAMED VARTA". At MGCOAHPS, we think that education is a way to develop character, spark curiosity, and inculcate a sense of social duty in addition to being a way to gain knowledge. Driven by a deep-seated mission to serve humanity via healthcare services, our institution remains a paragon of academic achievement, discipline, and innovation. In addition to reflecting our accomplishments, this newsletter celebrates our shared spirit, which motivates us to continue acting honourably, compassionately, and with a vision for a better tomorrow with sincerity and resolve, let's keep learning, developing, and contributing. I hope the road ahead is full of significant achievements and mutual success.

Inside This Issue

About MGCOAHPS

Mata Gujri College of Allied Health & Paramedical Sciences had its inception in the year of 2021, A Constituent unit of Mata Gujri University, Kishanganj was sponsored & established by Mata Gujri Memorial Medical College & Lions Seva Kendra Hospital Trust, Kishanganj, Bihar under Bihar Private University act-20,2013, Dated 09/09/2013 vide notification No-463 Dated 20/02/2019, recognised under 2(f) of the UGC Act, 1956. Mata Gujri University is situated in the town of Kishanganj on the North-eastern part of Bihar. MGU offers world-class infrastructure, high qualified & dedicated faculties & excellent environment for academic & intellectual growth.

The university focuses on comprehensive growth of the student, working on their hearts & minds by addressing their academic, cultural, physical & social needs in an environment of continuous interaction & growth, conducive for the enrichment of mind & body. The Faculty is fully committed to impact quality education by investing all its skills and knowledge.






A SHINING LIGHT OF KNOWLEDGE-
MATA GUJRI UNIVERSITY

In Kishanganj a university so fine,
Mata Gujri University, knowledge divine.
Established by a Medical College's might,
A Trust that serves, with education in sight.
World-class infrastructure, faculty so grand,
A heaven for learning, in this academic land.
The town's pleasant climate, conducive to study and growth.
Kishanganj, a place, where knowledge takes its oath.
Mata Gujri University offers courses galore,
A pathway to success, that forever in store.
This university has many courses to choose,
A pathway to success, forever will produce.
A hospital too, for the needy it stands,
Providing free treatment, to thousands of hands.
Serving the poor, with care it might,
A hub of excellence, where dreams take flight,
And students soar, with knowledge as their might.

Shifa Taiyaba
B.SC. R&IT 2023 Batch

Event Updates

International Paramedics Day celebration

On July 8, 2024, Mata Gujri University proudly celebrated International Paramedics Day under the global theme "The Difference We Make". The event commenced with a dignified lamp lighting ceremony, symbolizing the dedication and compassion inherent in the paramedical profession. Honorable dignitaries graced the occasion, illuminating the path for aspiring healthcare professionals, students have shown their talents and paying tribute to the invaluable contributions of paramedics. These performances not only entertained but also highlighted the commitment and resilience of those in the paramedical field.

Teacher's day celebration

Mata Gujri College of Allied Health and Paramedical Sciences celebrated Teachers' Day on 5th of September with great enthusiasm. The whole program was organised by the students of the institute. The event started with lighting of the lamp and followed by garlanding on the photograph of Sarvepalli Radhakrishnan to pay him homage. Principal highlighted the importance of Teachers' Day. Some students also expressed their gratitude towards the teachers by giving short speeches. Students performed cultural activities like dance, songs, poems, dramas, etc. on this special occasion.

Parent teacher interaction cum orientation program

A Parent-Teacher Interaction and Orientation Program held on 18th November 2024 for the Paramedical students (2024 batch). Faculty members addressed the gathering which helps students acclimate to a new academic environment, learn about resources and policies, and connect with their peers and faculty. It provides a smooth transition into their program, fostering a sense of belonging and preparing them for success.

Event Updates

Republic Day Celebration

The college celebrated India's 76th Republic Day on 26th January 2025 with gaiety and patriotic fervour. Students of MGU hoisted the National Flag and all the members of the University saluted the National Flag and pledged to up hold the honour and integrity. The event was marked by patriotic speeches and the stage alived by the students through their patriotic songs and other cultural activities. The event was followed by the distribution of sweets to the staffs and students.

MGU annual sports event "AAKRID' was celebrated on University sport ground from 30th Jan to 1st Feb. 2025.

The event aimed to promote sportsmanship and physical fitness among students. The day started with a grand opening ceremony followed by various events such as Badminton, Volleyball, Long Jump, Shot-put, Tug of War, Carrom, Chess, and Musical Chair etc. One of the highlights of the event was the Tug of War in Girls Team where Paramedical fourth year students maintain their record for the third time in a row. The Shot put was another exciting event where Gaurav Kumar of Paramedical first year 2024 emerged victorious. The annual sports day was a great success.

Saraswati Puja celebration

On the Auspicious day of Saraswati Puja on 2nd Feb, the students and faculty of MGCOAHPS came together to seek the blessings of the goddess of knowledge, music, art and culture. The ritual Hawan was also joined by the Director sir Dr. Dilip Kumar Jaiswal with the Dean Sir and the Principal Sir of the college. Everyone joined their hands together with great zeal to make the event a memorable one.

Event Updates

International Women's day celebration

MGCOAHPS celebrated the International Women's Day on 8th March 2025. The event, themed Accelerate Action for Gender Equality, took place at the college premises. The day serves as a platform to raise awareness about gender-based discrimination, violence, and unequal access to opportunities, encouraging action toward a more equitable future for all.

ECLIPSE 2024: An Event for Freshers' Welcome

The university hosted ECLIPSE 2024, a vibrant fresher's welcome event, on 22nd March at the University Auditorium Hall. The celebration was marked by energetic performances, warm ramp walks and a cheerful atmosphere for the selection of Mr. and Miss Fresher. The event was graced by the presence of respected Dean Sir and Principal Sir who inspired the new batch with their motivating words. ECLIPSE 2024 was a perfect blend of fun, inspiration, and connection – a memorable start to an exciting journey ahead.

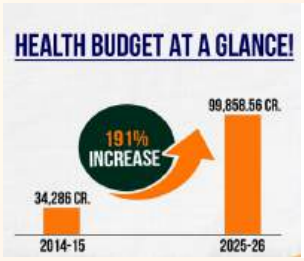
Annual Cultural Fest SPANDAN 2025

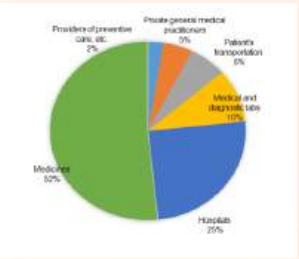
The spirit of celebration came alive as SPANDAN 2025, the annual cultural fest of Mata Gujri College of Allied Health and Paramedical Sciences, unfolded on 24th March 2025 at the University Auditorium. The event was a colourful blend of culture, creativity and achievement. The fest was honoured by the esteemed presence of Respected Registrar, MGU as the chief guest. His inspiring words set the tone for an evening filled with joy and recognition. He also distributed awards to students for academic excellence, sports achievements. A series of energetic dance performances, soulful music, and engaging acts lit up the stage, keeping the audience thoroughly entertained and inspired. SPANDAN 2025 was more than an event - it was a proud showcase of unity, passion, and the vibrant spirit of the institution.

News & Updates

Launching of National Commission for Allied and Healthcare Professionals (NCAHP) official website: The NCAHP website (https://ncahp.abdm.gov.in/) was launched virtually by Honorable Prime Minister of India Shri. Narendra Modi ji on 29th Oct 2024. The website and portal will regulate and maintain standards of education and services for allied and healthcare professionals.

Growth of India's Health – Tech Industry :
India's health – tech market is projected to double from $10.6 billion in 2022 to approx. $21.3 billion by 2025. This growth reflects a significant shift towards innovation in healthcare technologies, positioning India as a global leader in health-tech solutions.





Increased Healthcare Budget Allocation:
The Union Budget 2025 has allocated to Rs. 95,957.87 crore the healthcare sector, marking a significant rise in funding. This budget emphasizes investments in medical education, cancer care, digital health and nutrition support programs, aiming to strengthen India's healthcare infrastructure and services.

Smart Contact lenses:
Collaborative efforts between Indian and UK scientists have led to the development of Smart contact lenses capable of detect in geye infections, Glaucoma etc. representing a significant leap in ocular diagnostics.

Advancement in MRI technology:
AI-Driven Imaging AI algorithms are being used to accelerate scan times, improve image quality, and enable real-time analysis for more accurate diagnoses, especially for conditions like neurological disorders and cancers.

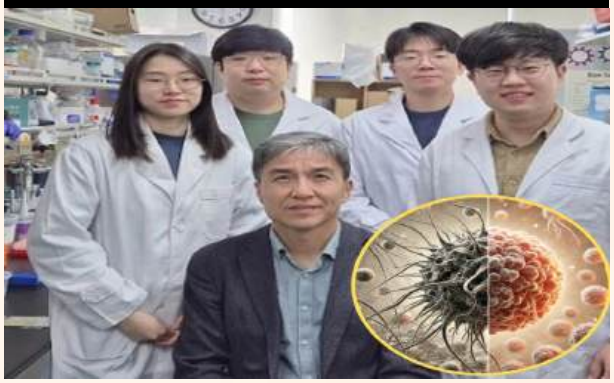
Operational Technology (OT) Advancements: Digitalization and Connectedness-
OT is becoming more digitalized, with increased connectivity of machines and digital workplaces, boosting productivity and quality. This trend is evident in sectors like manufacturing, energy, logistics, and transportation.

Expansion of Tele radiology Services:
The Indian Tele radiology market is projected to reach USD0.38 billion in 2025 grow in gata CAGR of 27.3% to USD 1.26 billion by 2030. This growth facilitates remote consultations and timely diagnoses bridging the healthcare gap in areas lacking specialised radiology services.

Collected By:
Ms. Anamika Anand
Asst. Prof.

Faculty Speaks

KAIST (KOREA ADVANCED INSTITUTE OF SCIENCE & TECH.) TEAM DISCOVERS MOLECULAR SWITCH TO REVERSE CANCER CELLS

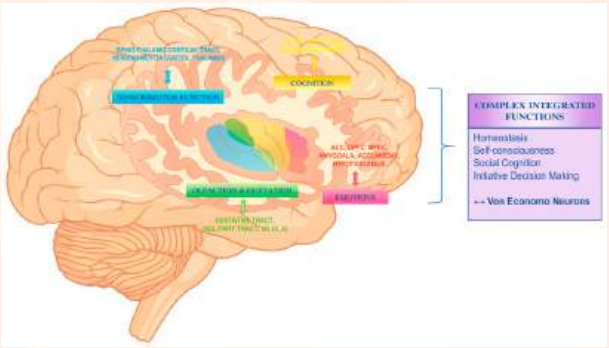


Development on original technology for cancer reversal treatment that does not kill cancer cells but only changes their characteristics to reverse them to a state similar to normal cells. On 5th of feb-2025, they announced of developing a fundamental technology to capture the critical transition phenomenon at the moment when normal cells change into cancer cells and analyze it to discover a molecular switch that can revert cancer cells back into normal cell.

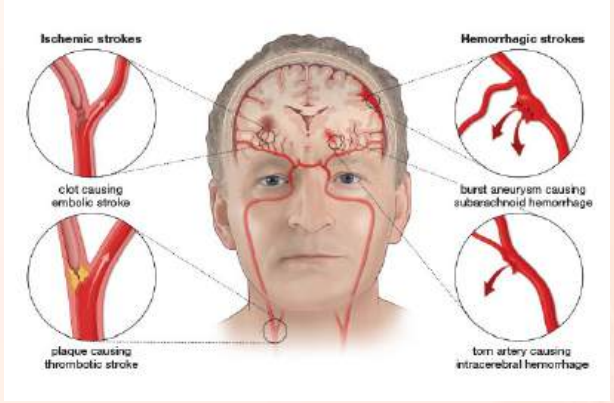
Collected By:
Mr. Saradindu Bhattacharyya
Lecturer

CEREBRAL CORTEX PLAYS KEY ROLE IN MEMORY & NOVELTY DETECTION-

One current hypothesis suggests that the cortex's primary role is to predict what's going to happen in the future by identifying & encoding new information it receives from the outside world & comparing it with what was expected to occur.



Collected By:
Mr. Atindra Paul
Lecturer



RAPID BLOOD TEST COULD IDENTIFY BRAIN BLEEDS FROM CLOT-CAUSED STROKES

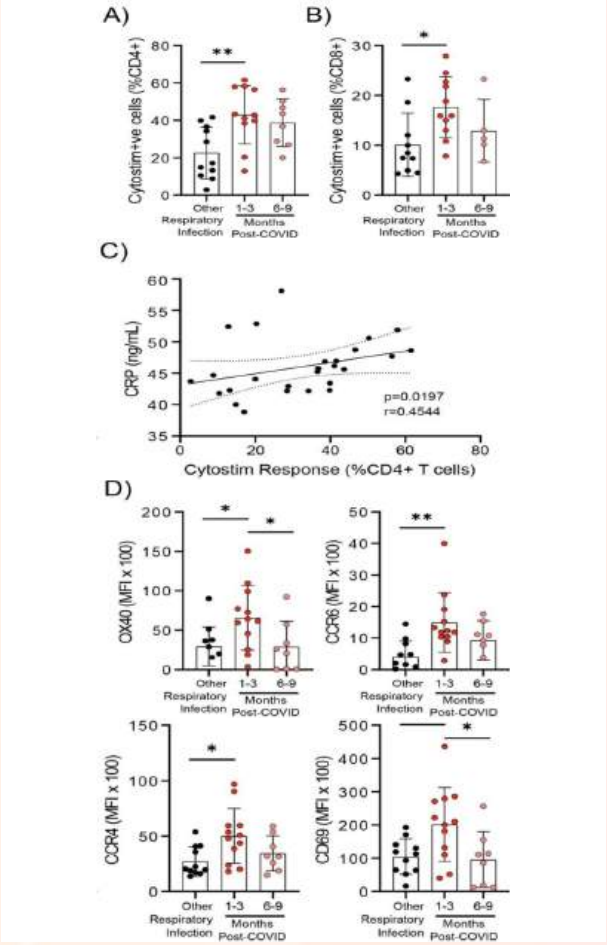
At International Stroke Conference, American Stroke Association demonstrates that the level of glial fibrillary acidic protein (GFAP) in a blood test report can effectively differentiate between hemorrhagic (bleeding) and ischemic (clot-caused) strokes, potentially even before patients make it to the hospital. Timely treatment is critical for stroke patients, and traditional imaging methods can take hours. Brain cells released GFAP protein into the blood when they are damaged, and it is used in evaluating traumatic brain injuries. The study measured GFAP levels in blood samples taken by ambulance teams and found significantly higher levels in patients with bleeding strokes. The test could accurately predict hemorrhagic strokes 90% to 95% of the time using age-based cutoffs. GFAP levels also helped rule out bleeding strokes when below 30 pg/ml in those with severe neurological deficits. These findings suggest that GFAP testing could guide stroke treatment before reaching the hospital, although the method requires centrifugation and may not be reliable for older patients with small strokes. The study had a small sample size, so further research is needed for validation. If confirmed in larger studies, GFAP testing could significantly improve stroke care in emergency medical settings.

Collected By:
Mr. Arijit Naskar
Asst. Prof.

Faculty Speaks

WBC COUNT COULD PREDICT SEVERITY OF COVID-19 SYMPTOMS

The COVID-19 pandemic has affected many people worldwide, causing long-term symptoms like cognitive impairment and fatigue. Older adults, especially women, are more likely to experience these symptoms. Researchers are still learning about COVID-19, but they've found that it affects multiple organs, not just the lungs. A new study discovered that a person's white blood cell count might predict how severe their COVID-19 symptoms will be. The study used data from a large research project and focused on older women. It found that WBC count is a reliable predictor of COVID-19 symptom severity in postmenopausal women. This research suggests that inflammation might contribute to severe COVID-19 symptoms. White blood cell count is a simple and inexpensive test that could help identify people at risk. A doctor commented on the study, emphasizing the significant impact of long-term COVID-19 symptoms on quality of life, especially for women.



Collected By:
Mr. Subhajit Karmakar
Lecturer

HOW PORTABLE X-RAY MACHINES ARE HELPING REMOTE PATIENTS

Portable X-ray machines can literally be the difference between life and death, If we need to be X-rayed, in most of the cases, the procedure is done in a hospital. On other hand, for acutely unwell patients, or for controlling infection, the portable X-ray machines are very helpful. The obvious advantages for remote locations, including battlefields, roadsides and disaster zones. There are two types of portable X-ray machines - those on wheels, which are generally described as "mobile", and the lightest devices that can be carried by a single person. These are generally described as "ultraportable". This device made by Japanese firm Fujifilm was taken to local clinics. Called the Fujifilm Xair, it weighs just 3.5kg, and is only 301mm (12 inches) wide and 144mm tall. German company OR Technology is another manufacturer of portable X-ray machines.

Collected By:
Mr. Navneet Kumar
Lecturer

Students Column

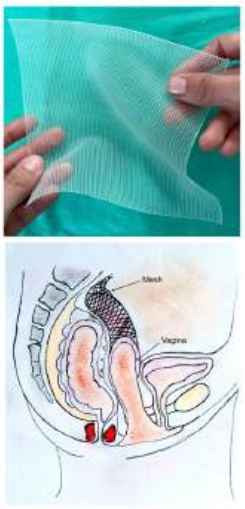
RECENT DEVELOPMENTS IN PARAMEDICAL EQUIPMENTS

Recent advancements in paramedical technology highlight significant innovations in medical devices designed to enhance patient care & emergency response. Innovative developments include the deployment of automatic CPR machines in ambulances, which improve emergency medical services, and the introduction AI-Powered diagnostic tools that facilitate efficient patient monitoring and treatment. Furthermore, new devices such as the UroDapter for urological care and the Brain Anaesthesia Response Monitor (BARMtm) are revolutionizing surgical procedures and patient management. These innovations underscore a strong commitment to advancing healthcare delivery through cutting-edge technology.

Suhana Jahan
B.Sc. MLT 2021 Batch

HERNIOPLASTY AND MESH INNOVATION

Surgical procedure in which hernia cases are repaired using a synthetic mesh to prevent further bulging, hernioplasty aims to achieve a durable and less likely to recite repair of hernia. Mesh is constructed of knitted filament of extended polypropylene substance. Polypropylene mesh are commonly used in hernia repair, this mesh are non-absorbable, which are not dissolved in the body within a certain time period. Polypropylene mesh have higher infection rate, it can cause pain, infection, mesh erosion. Absorbable mesh for hernia repair can be prepared by using biodegradable polymers or derived from animal tissue, where as synthetic polymers include poly-4-hydroxybutyrate (P4HB), polylactide, polyglycolide and trimethylene carbonate. Animal derived meshes utilize processed and disinfected tissue like intestine or skin from source like pigs' Porcine cells or cows' Bovine cells. Fabrication technique for preparing the mesh includes electrospinning, a method to create nanoscale fibres using electric field, melt electro writing and 4-D-printing, producing innovative meshes with controlled properties.

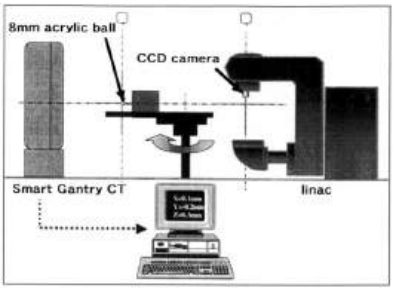


Anup Raj
B.Sc. OT&A 2021 Batch

A NEW IRRADIATION UNIT CONSTRUCTED OF SELF-MOVING GANTRY-CT AND LINAC

The study was discussed on improvement of the reproducibility in stereotactic irradiation (STI) without using non-invasive immobilization devices or body frames, an integrated computed tomography (CT)-linac irradiation system connecting CT scanner and linac via a common treatment couch.

This system consists of a linac, a CT scanner, and a common treatment couch. The linac and the CT gantry are positioned on opposite ends of the couch so that, by rotating the treatment couch, linac radiotherapy or CT scanning can be performed. The rotational axis of the linac gantry is coaxial with that of the CT gantry, and the position of the linac iso-center on the couch matches the origin of the coordinate system for CT scanning when the couch is rotated 180° towards the CT side. Instead of the couch moving into the gantry, as in conventional CT, in this case the table is fixed and scanning is accomplished by moving the gantry. The rotational accuracy of the common couch and the scan-position accuracy of the self-moving gantry CT has been evaluated.



The positional accuracy of the common couch was 0.20, 0.18, and 0.39 mm in the lateral, longitudinal, and vertical directions, respectively. The scan-position accuracy of the CT gantry was less than 0.4 mm in the lateral, longitudinal, and vertical directions.

The conclusion obtained was that this irradiation system has a high accuracy and is useful for non-invasive STI and for verification of the position of a target in three-dimensional conformal radiotherapy.

Zohaibuddin
B.Sc. R&IT 2021 Batch

Students Column

AI IN RADIOLOGY: THE FUTURE IS NOW

AI is making a big impact in radiology, helping radiologist become faster, more accurate, and efficient. It reduces workload by doing tedious task like segmenting structures, that enables more quantitative imaging, which improves the product of radiology. It helps in detecting lesion, which is useful when the radiologist is tired or distracted. It finds information in images that is not perceived by human – things like molecular markers in tumors. It helps with efficiency by automatically delineating the cardiac chambers on cardiac CT, making measurement of heart function more efficient and more reproducible. It helps by computer- aided detection for cancer, auto segregation of organ in 3D, natural language processing to facilitate critical results reporting, consulting of best guidelines for recommendation, and qualification and kinetics in post processing. It also helps in coordinate and integrate patient information, identify patients for screening examinations, prioritize patients for immediate interpretation, standardize reporting, and characterize disease.

Prerna Shah
B.Sc. R&IT 2021 Batch

TOMOSYNTHESIS: BRIDGING THE GAP BETWEEN 2D RADIOGRAPHY AND CT IMAGING

Radiographic imaging has long been central to diagnostic medicine, but traditional 2D radiographs are limited by the superimposition of anatomical structures, often obscuring pathology. Tomosynthesis, or digital tomosynthesis (DTS), offers a compelling alternative. By acquiring multiple low-dose X-ray projections at different angles and reconstructing them into sectional images, tomosynthesis provides quasi-3D visualization with enhanced diagnostic clarity. Technically, tomosynthesis involves an X-ray tube moving in an arc over the patient while capturing a series of projections. These are reconstructed using algorithms such as filtered back projection or iterative reconstruction. Unlike CT, which requires a full 360-degree rotation and multiple detectors, tomosynthesis employs a limited angle and a stationary detector—making it more cost-effective and significantly reducing radiation exposure. Clinically, tomosynthesis has had its greatest impact in breast imaging. Digital Breast Tomosynthesis (DBT) enhances lesion detection and lowers recall rates, particularly beneficial for women with dense breast tissue. In chest imaging, tomosynthesis improves detection of lung nodules and tuberculosis over traditional radiography, while maintaining a lower radiation dose than CT. In conclusion, tomosynthesis is a transformative imaging modality that effectively addresses the shortcomings of 2D radiography while avoiding the higher dose and cost of CT. With ongoing advances in artificial intelligence and image reconstruction, tomosynthesis is poised to become a standard tool in modern diagnostic radiology

Deboshree Bhattacharya
B.Sc. R&IT 2021 Batch

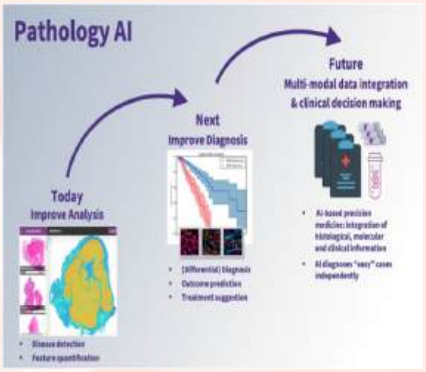
"MEDICON 2025" THE 1st NATIONAL CONFERENCE OF ALLIED HEALTHCARE PROFESSIONALS: A NOTEWORTHY EXPERIENCE

As B.sc OT&A student, Sweta Raj and B.sc R&IT student Muskan Kumari of Mata Gujri College of Allied Health and Paramedical Sciences, we had the chance to attend the1st National conference of Allied and Healthcare Professionals "MEDICON" held on 30th March 2025 in Patna, Bihar by A.K Soni (organizing chairman of Medicon 2025) and J.P.S Badal (organizing secretary of Medicon 2025) & inaugurated by Dr. Ranvir Nandan, Ex- MLC of Bihar. The theme for this conference was "Healthcare updates". It provided each student with a MEDICON 2025 file containing a certificate and a booklet containing an overview of lectures from the healthcare professionals who joined us. We were overwhelmed with the amount of knowledge that was shared by the professors and doctors via their own experiences. Several topics were discussed as such on Autism by Dr. Sanchi Gunjan, Physiotherapy approach in I.C.U. by Dr. William, Gullian-Barre Syndrome by Mrs. Anubha Martin, Common Eye Diseases and General Eye Care by Dr. Abhishek Golwara, Management of Tendinopathy by Dr. Umesh Kumar, Interaction between physical therapy and Critical care patients by Dr. Ravi Kr. Singh etc. All the lectures were discussed via ppt which was highly knowledgeable for us. It gave us the opportunity to get involved in recent advancements and those who attended the conference were provided a certificate and a booklet of the overview of the given lectures. We are looking forward to attend such conferences in future because experience speaks louder than books.

Sweta Raj
B.Sc. OT&A 2022 Batch
Muskan Kumari
B.Sc. R&IT 2022 Batch

Students Column

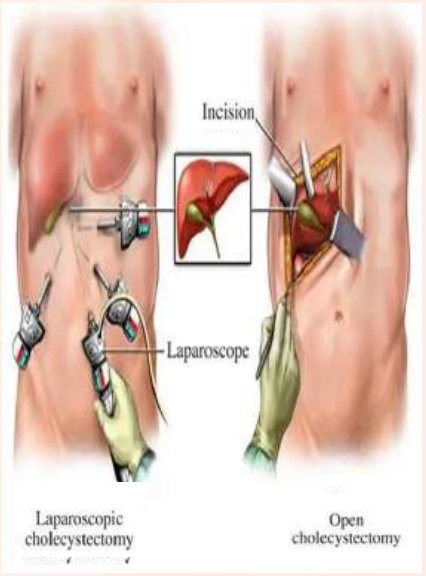
HOW AI (ARTIFICIAL INTELIGENCE) IMPROVES THE DIAGNOSIS IN PATHOLOGY?



AI tools are being developed to assist with various aspects of pathology, including diagnosis, image analysis, and reporting. Due to an acute shortage of pathologist in many countries, increasing cancer screening program resulting in increased workloads, along with increasing complexity of pathology tests driving up the time taken per case. This makes AI very important in diagnostic tests. There are various examples of AI based diagnosis in pathology like screening of lung cancer, breast cancer prostate cancer, brain cancer, ovarian cancer etc and also used for diagnosis of sickle cell anaemia, genetic mutation prediction, tumour detection for molecular analysis. AI is expected to become increasingly integrated into pathology, workflows, potentially leading to faster and more accurate diagnose.

Vishal Kumar
B.Sc. MLT 2021 Batch

ROLE OF LAPAROSCOPY IN THE SURGICAL MANAGEMENT OF GALL BLADDER CANCER.



Gall Bladder Cancer (GBC) is a relatively rare tumour in Western Population with an Annual incidence of 1.13 per 1,00,000 in the United States, where as it is more common in South America. However, it accounts for 80-95% of biliary track malignant tumours. GBC has a low sensitivity to current chemo & radiation treatments and a poor prognosis. As often happen in surgical issues, specially about the rare tumours such as GBC, there are several papers in literature but high-quality evidence obtainable with randomized controls trails lacking. Since most patients are asymptomatic, a Pre-operative diagnosis of early GBC is difficult but with the advent of laparoscopic cholecystectomy, the frequency of early GBC diagnosed intra or post operatively has increased. Never the less, laparoscopic confirms with known advantages like less bleeding, shorter length of hospital stays, and less post operative morbidity. The results of the articles considered in the present review seen to suggest that laparoscopy is feasible and safe in surgical management of GBC which may play an increasingly important role in the future.

Kaneez Fatima Khan
B.Sc. OT&A 2021 Batch

MEDICAL MYSTERY: THE SILENT PREDATOR IN HER BRAIN

Geeta Krishnamoorthi, a 65-year-old retired teacher, was brought to the hospital after experiencing forgetfulness and a fall due to loss of coordination. Her family sought medical help following these motor issues and unexplained confusion. With no prior history of drug use, psychiatric illness, hereditary symptoms, or metabolic conditions, initial suspicions of neurodegenerative disorders like Alzheimer's were ruled out by normal CBC, thyroid panel, and B12 level tests. Further Central Nervous System examinations revealed cognitive and memory impairment, along with a positive Romberg test, suggesting a rare condition.

Confirmation came with a positive 14-3-3 protein test in her cerebrospinal fluid and characteristic high signals in the basal ganglia and cortex on an MRI scan. The diagnosis was Creutzfeldt-Jakob Disease (CJD), a prion disease caused by misfolded proteins leading to rapid brain damage. Often called the "human form of mad cow disease" (though that term specifically refers to variant CJD), it can manifest sporadically (85%), hereditarily (10%), acquired (<1%), or as a variant.

Unfortunately, by the time symptoms appear, significant brain damage has already occurred, leaving doctors with no cure but supportive care for muscle stiffness, seizures, and pain. CJD remains a baffling and tragic neurodegenerative disorder. Its rapid progression, diagnostic challenges, and lack of cure underscore the importance of early recognition. Understanding rare conditions like CJD enhances clinical acumen and highlights the profound complexity of the human brain, reminding healthcare professionals of the significant lessons even obscure diseases can impart.

Fatima Zohra
B.Sc. R&IT 2023 Batch
Shekh Mishba Ramzanali
B.Sc. R&IT 2023 Batch
Damini Kumari
B.Sc. OT&A 2023 Batch

Students Column

GREENING THE LABORATORIES

Today's laboratories are embracing sustainability through smart innovations and eco-friendly alternatives. Reusable lab ware prevents plastic from being thrown away, refurbished equipment contributes to the circular economy while minimizing waste and landfill use, and artificial intelligence-based maintenance increases efficiency and reduces resource consumption. Modular and sustainable lab furniture can also allow for flexibility that leads to a low carbon footprint. Micro devices that reduce energy consumption, and green nanotechnology are also remaking diagnostics, lab certifications such as My Green Lab can validate sustainability accomplishments. Collectively, these processes are changing the way lab's function and are allowing scientific research to be cleaner, smarter, and more sustainable.

Amit
B.Sc. MLT 2021 Batch

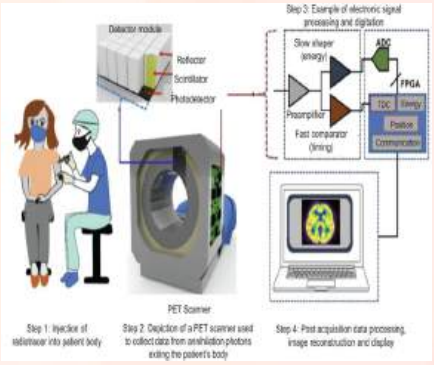
ROBOTIC-ASSISTED SURGERY

Robotic-assisted surgery is a minimally invasive surgical technique where surgeons use robotic arms and advanced technology to perform procedure with greater precision and control. The surgery utilizes robotic arms that hold and manipulate surgical Instruments. A high-definition camera provides the surgeon with a clear view of the surgical site on a monitor. The surgeon sits at a console and uses hand and foot controls to guide the robotic arms and instruments. AI is being integrated into health care to aid in diagnosis, treatment planning and even surgical procedures. The robotic system can provide enhance dexterity and precision allowing surgeon to perform complex procedure with greater accuracy.

Ghazala Naaz
B.Sc. OT&A 2021 Batch

RECENT ADVANCEMENTS IN POSITRON EMISSION TOMOGRAPHY (PET) SCANNING

Recent advancement in PET scanning including improved sensitivity, spatial resolution, and the development of total body pet system, leading to earlier and more precise disease detection. these advancements allow for clearer visualization of metabolic and anatomical information, enhancing diagnostic accuracy and broadening the scope of PET application. Advance PET/CT scanners utilized algorithms and more sensitive detectors allowing for clearer images particularly in areas, like brain and liver with reduced radiation exposure. It offers a larger axial field of view, enabling the scanning of the entire body in a single or two positions, leading to faster and more efficient scans. Revolutionized diagnostic capabilities by providing enhanced imaging quality and more comprehensive understanding of the patient condition.



Fiza Naaz
B.Sc. R&IT 2021 Batch

CANCER- A HIDDEN PANDEMIC

Recent cancer research has seen significant advancements in Treatment. These advancements are leading to more effective treatments and personalized approaches for various Cancer. Immunotherapy advances is a new tool called PRR Detect, developed by researchers at the University of Cambridge, identifies cancer that may respond well to immunotherapy by detecting specific mutation patterns. This could help personalize treatment for patients with cancers like colorectal or pancreatic cancer. CAR-T Cell therapy is a small clinical trial showed that an experimental CAR-T Cell therapy targeting the GD2 protein shrank tumors in children and young adults with diffuse midline glioma, a deadly brain cancer. Some patients show benefits lasting over two years. Recent cancer research has focused on personalized Therapies and leveraging the immune system showing promising results in various cancer types.

Mahenoor
B.Sc. MLT 2021 Batch

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