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Department of General Medicine
MANOHAR LOHIA INSTITUTE OF MEDICAL SCIENCES
HUTI KHAND, GOMTI NAGAR, LUCKNOW 226010

MBBS CURRICULUM

Program Outcomes (POs)

- PO 1: Physician of first contact for individuals, families, and communities.
- PO 2: Provide holistic health, promotive, curative, palliative, and rehabilitative.
- PO 3: Demonstrate clinical knowledge and skills to manage common health problems.
- PO 4: Communicate effectively with patients, families, and healthcare teams.
- PO 5: Practice with professionalism, ethics, empathy, and social accountability.
- PO 6: Understand and implement national health policies and programs.
- PO 7: Work effectively in varied healthcare settings and within interprofessional teams.
- PO 8: Apply principles of public health, epidemiology, and evidence-based medicine.
- PO 9: Demonstrate skills in basic healthcare management and leadership.
- PO 10: Engage in lifelong learning, self-improvement, and professional development.

Program Specific Objectives (PSOs)

- PSO 1: Diagnose and manage common clinical conditions using essential clinical skills.
- PSO 2: Deliver comprehensive healthcare at primary, secondary, and referral levels.
- PSO 3: Use rational therapeutics and be familiar with essential medicines.
- PSO 4: Consider psychosocial, cultural, economic, and environmental determinants of health.
- PSO 5: Participate in and implement National Health Programs.
- PSO 6: Demonstrate basic management, administrative, and leadership skills.
- PSO 7: Identify community health problems, plan interventions, and evaluate outcomes.
- PSO 8: Communicate clearly and work as an effective member/leader of healthcare teams.
- PSO 9: Apply ethical principles and maintain integrity, responsibility, and empathy.
- PSO 10: Pursue continuous learning, research aptitude, and professional advancement.

Medicine

Course Outcomes (COs)

- CO1: History-taking, physical examination and making clinical diagnosis
- CO2: Ordering and interpretation of diagnostic tests
- CO3: Management of common medical conditions
- CO4: Management of common medical emergencies
- CO5: Interpretation of ECG, ABG and X ray
- CO6: Ethics and communication/ patient counselling
- CO7: Skills- CPR, catheterization, venipuncture

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Program Outcomes (POs) of MD General Medicine, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow

The *Program Outcomes* define what a postgraduate student in Medicine should be able to achieve on completion of training.

A. Clinical Care & Knowledge

1. Deliver comprehensive patient care for a wide range of medical conditions with sound diagnostic reasoning.
2. Practice safe and effective clinical medicine based on up-to-date knowledge of disease pathogenesis, investigations, and therapeutics.
3. Perform relevant diagnostic procedures and interpret findings accurately.
4. Manage medical emergencies and critically ill patients efficiently.
5. Diagnose and manage essential adult illnesses including cardiovascular, respiratory, gastrointestinal, renal, endocrine, and infectious diseases.
6. Distinguish between common and uncommon presentations and make appropriate referral or consultation decisions.
7. Provide comprehensive management plans including preventive, therapeutic, rehabilitative and palliative approaches.

B. Skills and Professional Attributes

1. Demonstrate clinical competence including history taking, physical examination, differential diagnosis, and procedural skills.
2. Apply ethical principles, patient rights, confidentiality, and professional conduct in practice.
3. Communicate effectively with patients, families, and healthcare teams.
4. Show leadership in clinical settings and collaborate within multidisciplinary care.

C. Research, Teaching and Lifelong Learning

1. Understand and conduct scientific research, including designing, executing, analysing, and presenting a thesis/projects.
2. Incorporate evidence-based medicine into clinical practice.
3. Contribute to undergraduate medical teaching and training of healthcare workers.
4. Engage in continuing professional development and self-directed learning.



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D. Communication & Ethics

1. Effectively communicate with patients and families, respecting cultural, ethical and psychosocial aspects of care.
2. Demonstrate professional behaviour, empathy, patient autonomy, and informed consent practices.

Program specific outcomes of MD General Medicine NMC and CBME guidelines

At Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow

1. Practice efficiently internal medicine specialty, backed by scientific knowledge including basic sciences and skills
2. Diagnose and manage majority of conditions in his specialty (clinically and with the help of relevant investigations
3. Exercise empathy and a caring attitude and maintain professional integrity, honesty and high ethical standards
4. Plan and deliver comprehensive treatment using the principles of rational drug therapy
5. Plan and advise measures for the prevention and rehabilitation of patients belonging to his specialty;
6. Manage emergencies efficiently by providing Basic Life Support (BLS) and Advanced Life Support (ALS) in emergency situations
7. Recognize conditions that may be outside the area of the specialty/ competence and refer them to an appropriate specialist.
8. Demonstrate skills in documentation of case details including epidemiological data
9. Play the assigned role in the implementation of National Health Programs
10. Demonstrate competence in basic concepts of research methodology and clinical epidemiology; and preventive aspects of various disease states
11. Be a motivated 'teacher' - defined as one keen to share knowledge and skills with a colleague or a junior or any learner



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12. Continue to evince keen interest in continuing education irrespective of whether he/she is in a teaching institution or is practicing and use appropriate learning resources
13. Be well versed with his medico-legal responsibilities
14. Undertake audit, use information technology tools and carry out research - both basic and clinical, with the aim of publishing the work and presenting the work at scientific forums.
15. The student should be able to recognize the mental condition characterized by self absorption and reduced ability to respond to the outside world (e.g. Autism), abnormal functioning in social interaction with or without repetitive behaviour and/or poor communications, etc.


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Course Outcomes (COs) MD General Medicine

Paper I: Basic Medical Sciences

1. Integrate basic sciences with clinical medicine, applying advanced concepts of anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, and immunology to patient care.
2. Explain pathophysiological mechanisms underlying common and complex internal medicine disorders.
3. Interpret laboratory investigations including hematology, biochemistry, ABG, immunological tests, and molecular diagnostics.
4. Apply principles of clinical pharmacology — rational drug therapy, adverse drug reactions, drug interactions, antimicrobial stewardship.
5. Demonstrate understanding of genetics, molecular medicine, and immunopathogenesis of diseases.
6. Critically appraise scientific literature and apply biostatistics and research methodology in clinical research.
7. Incorporate principles of evidence-based medicine (EBM) into decision-making.

Paper II: Medicine and Allied Specialties

Course Outcomes (COs)

At the end of Paper II, the postgraduate student should be able to:

1. Diagnose and manage disorders related to:
 - Cardiology
 - Neurology
 - Gastroenterology
 - Nephrology
 - Endocrinology
 - Pulmonology
 - Rheumatology
 - Hematology
2. Recognize and manage medical emergencies and common systemic illnesses relevant to internal medicine interface.
3. Diagnose and manage common dermatological manifestations of systemic diseases.
4. Identify and initiate management of common psychiatric disorders encountered in medical practice (e.g., depression, delirium, anxiety disorders).
5. Manage chronic diseases with a multidisciplinary approach.



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Paper III: Tropical Medicine and Infectious Diseases

Course Outcomes (COs)

1. Diagnose and manage **tropical and endemic diseases** prevalent in India.
2. Recognize and treat:
 - Vector-borne diseases
 - Parasitic infections
 - Bacterial, viral, fungal infections
 - Emerging and re-emerging infections
3. Apply principles of **antimicrobial therapy and stewardship**.
4. Manage **sepsis, septic shock, and infectious emergencies**.
5. Interpret microbiological and serological investigations.
6. Understand national public health programs related to communicable diseases.
7. Apply infection control practices and hospital epidemiology principles.
8. Participate in outbreak investigation and surveillance activities.

Paper IV: Recent Advances in Medicine

Course Outcomes (COs)

1. Critically evaluate **recent advances in diagnostics and therapeutics** across medical specialties.
2. Interpret and apply findings from landmark clinical trials and updated guidelines.
3. Integrate advancements in:
 - Molecular medicine
 - Precision medicine
 - Biologic therapies
 - Immunotherapy
 - Advanced imaging
4. Apply innovations in critical care and emergency medicine.
5. Utilize digital health technologies and artificial intelligence in medicine.


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PDCC Diabetes care, Department of General Medicine, Dr. RMLIMS, Lucknow

Program Outcomes

At the end of PDCC Diabetes care student should be have:

- PO1 – Advanced Medical Knowledge: Apply in-depth knowledge of basic and clinical sciences in diabetes care.
- PO2 – Clinical Competence: Deliver evidence-based, patient-centered diabetes management.
- PO3 – Rational Pharmacotherapy: Prescribe individualized and safe antidiabetic therapy.
- PO4 – Diagnostic & Procedural Skills: Perform and interpret investigations including CGM and insulin therapy adjustments.
- PO5 – Research & Innovation: Critically appraise literature and incorporate recent advances.
- PO6 – Communication & Counseling: Educate patients and families effectively.
- PO7 – Professionalism & Ethics: Practice ethical, cost-effective, and equitable diabetes care.
- PO8 – Leadership & Teamwork: Function effectively in multidisciplinary diabetes care teams.

Program Specific Outcomes (PSOs)

PSO1 – Advanced Diabetes Pathophysiology & Pharmacotherapy

Apply in-depth knowledge of diabetes pathogenesis and rational pharmacotherapy to deliver individualized, safe, and evidence-based treatment.

PSO2 – Comprehensive Clinical Diabetes Management

Diagnose, manage, and prevent acute and chronic complications of diabetes using multidisciplinary and technology-enabled approaches.

PSO3 – Diabetes Technology, Research & Innovation

Utilize modern diabetes technologies (CGM, insulin pumps), interpret emerging evidence, and contribute to quality improvement and research in diabetes care.

PDCC in Diabetes Care-Program Outcomes (POs)

- PO1 – Advanced Medical Knowledge: Apply in-depth knowledge of basic and clinical sciences in diabetes care.
- PO2 – Clinical Competence: Deliver evidence-based, patient-centered diabetes management.
- PO3 – Rational Pharmacotherapy: Prescribe individualized and safe antidiabetic therapy.
- PO4 – Diagnostic & Procedural Skills: Perform and interpret investigations including CGM and insulin therapy adjustments.
- PO5 – Research & Innovation: Critically appraise literature and incorporate recent advances.
- PO6 – Communication & Counseling: Educate patients and families effectively.



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PO7 – Professionalism & Ethics: Practice ethical, cost-effective, and equitable diabetes care.

PO8 – Leadership & Teamwork: Function effectively in multidisciplinary diabetes care teams.

Course Outcomes (COs)

CO1: Apply basic sciences including pathophysiology and pharmacology in diabetes care.

CO2: Deliver comprehensive clinical management incorporating recent advances.

PO–CO Mapping Matrix

COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1 Basic Sciences & Pharmacology	3	2	3	2	2	1	2	1
CO2 Clinical & Recent Advances	3	3	3	3	3	3	2	2

Correlation Levels

- 3 – Strong Correlation
- 2 – Moderate Correlation
- 1 – Low Correlation

Justification of Mapping

- CO1 strongly maps to PO1 and PO3 as it focuses on advanced knowledge and pharmacological application.
- CO2 strongly maps to PO2, PO4, and PO6 due to its emphasis on clinical skills, diagnostics, and patient counseling.
- Research and innovation (PO5) are primarily addressed through incorporation of recent advances.
- Leadership and professionalism are moderately addressed through multidisciplinary diabetes care practice.

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Upon successful completion of the **PDCC in Infectious Diseases**, the learner will be expected to:

1. **Clinical Competence**
 - Diagnose and manage a wide spectrum of infectious diseases seen in clinical practice.
 - Integrate clinical findings, laboratory data, and imaging to make evidence-based decisions.
 - Apply principles of antimicrobial therapy, including rational antibiotic selection, dosing, and stewardship.
2. **Epidemiology & Public Health**
 - Understand epidemiology, transmission, and prevention strategies for communicable diseases.
 - Participate in surveillance, outbreak investigations, and reporting of public health-important infections.
3. **Laboratory Skills & Interpretation**
 - Develop skills to interpret and correlate microbiological and serological data with clinical presentations.
 - Understand common and advanced diagnostic tools for infectious agents.
4. **Infection Control & Prevention**
 - Apply infection control practices in hospital and community settings.
 - Understand policies and procedures for preventing nosocomial (hospital-acquired) infections.
5. **Research & Evidence-Based Practice**
 - Engage with current research literature and translate findings into practice.
 - Foster skills in planning, performing, and evaluating clinical research in infectious diseases.
6. **Professionalism & Communication**
 - Communicate effectively with patients, families, and healthcare teams regarding infection diagnosis, treatment, and prevention measures.
 - Demonstrate professionalism and ethical practice in clinical decision-making.

Program Specific Outcomes

- Comprehensive understanding of **pathogenesis, clinical features, diagnostic criteria, and management** of major infectious diseases (bacterial, viral, fungal, parasitic).
- In-depth knowledge of **antimicrobial agents, resistance mechanisms, and chemoprophylaxis**.
- Familiarity with **immunization principles**, including active and passive immunization strategies and national immunization programmes.
- Knowledge of **reportable diseases**, surveillance systems, and public health mandates.
- Ability to assess and manage **complex infectious disease syndromes** (e.g., sepsis, fever of unknown origin, pneumonia, intra-abdominal infections, skin/soft tissue infections, etc.).



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- Competent use of laboratory diagnostics, interpretation of microbiology results, and integration into patient care planning.
- Skills in **infection control practices**, antimicrobial stewardship, and implementation of hospital policies to reduce infection transmission.
- Develop patient-centered communication skills, counselling regarding infection risks, therapy adherence, and preventive care.
- Cultivate professional responsibility, ethical decision-making, and lifelong self-directed learning.

CO1: Basic Sciences Pertaining to Infectious Disease Medicine (Including Pharmacology)

At the end of the course, the trainee should be able to:

1. Microbiology & Pathogenesis

- Explain the **structure, classification, and virulence mechanisms** of bacteria, viruses, fungi, and parasites.
- Describe host–pathogen interactions and immunopathogenesis of infectious diseases.
- Correlate laboratory microbiological findings with clinical syndromes.

2. Immunology

- Discuss innate and adaptive immune responses to infections.
- Explain mechanisms of immune evasion and immune-mediated tissue injury.
- Interpret immunological diagnostic tests (serology, antigen detection, molecular assays).

3. Pharmacology & Antimicrobial Therapy

- Describe **pharmacokinetics and pharmacodynamics (PK/PD)** principles of antimicrobial agents.
- Explain mechanisms of action, spectrum, resistance mechanisms, adverse effects, and drug interactions of:
 - Antibacterial agents
 - Antiviral agents
 - Antifungal agents
 - Antiparasitic drugs
- Apply principles of **antimicrobial stewardship**, rational prescribing, de-escalation, and combination therapy.
- Formulate individualized treatment plans considering renal/hepatic function, pregnancy, immunocompromised states, and drug–drug interactions.



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□ 4. Diagnostic Sciences

- Interpret microbiological cultures, antimicrobial susceptibility reports, molecular diagnostics (PCR-based tests), and serological assays.
- Understand biosafety principles and laboratory infection control practices.

CO2: Clinical Infectious Diseases & Recent Advances

At the end of the course, the trainee should be able to:

1. Clinical Competence

- Diagnose and manage common and complex infectious disease syndromes:
 - Sepsis and septic shock
 - Fever of unknown origin (FUO)
 - Respiratory, gastrointestinal, urinary, CNS, skin & soft tissue infections
 - Tropical infections
 - Opportunistic infections in immunocompromised hosts
- Identify complications and prognostic indicators in severe infections.
- Manage infections in special populations (ICU patients, transplant recipients, HIV, elderly, pediatric transition cases).

2. Infection Control & Public Health

- Implement hospital infection prevention strategies.
- Participate in outbreak investigation and surveillance.
- Apply national and international guidelines in communicable disease management.

3. Emerging & Re-emerging Infections

- Discuss epidemiology and management of emerging infections.
- Understand antimicrobial resistance trends and global health implications.
- Apply updated vaccination strategies and preventive protocols.

4. Recent Advances & Research

- Interpret advances in:
 - Molecular diagnostics
 - Rapid pathogen identification technologies
 - Novel antimicrobials and biologics
 - Immunomodulatory therapies
- Critically appraise current literature and clinical trials.
- Integrate evidence-based medicine into clinical practice.



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Program Outcomes (POs)

At the end of the PDCC Infectious Diseases program, the scholar will be able to:

PO1 – Advanced Clinical Expertise

Demonstrate super-specialty level competence in diagnosing and managing infectious diseases across diverse clinical settings.

PO2 – Basic and Applied Scientific Knowledge

Integrate principles of microbiology, immunology, pathology, and pharmacology in clinical infectious disease practice.

PO3 – Rational Therapeutics & Antimicrobial Stewardship

Apply pharmacokinetic–pharmacodynamic principles and stewardship strategies for safe and effective antimicrobial use.

PO4 – Diagnostic & Laboratory Competence

Interpret conventional and advanced diagnostic investigations, including molecular and microbiological techniques.

PO5 – Infection Prevention & Public Health Leadership

Implement infection control policies, outbreak management, and surveillance strategies aligned with national health priorities.

PO6 – Research & Evidence-Based Practice

Critically appraise scientific literature and incorporate recent advances into clinical decision-making.

PO7 – Professionalism, Ethics & Communication

Demonstrate ethical practice, interprofessional collaboration, and effective communication with patients and healthcare teams.



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2 Course Outcomes (COs)

CO1: Basic Sciences Pertaining to Infectious Diseases (Including Pharmacology)

On completion, the learner will be able to:

- CO1.1 Explain microbial structure, virulence, and host–pathogen interactions.
- CO1.2 Integrate immunological mechanisms in disease pathogenesis and diagnostics.
- CO1.3 Apply PK/PD principles for rational antimicrobial prescribing.
- CO1.4 Analyze mechanisms of antimicrobial resistance and stewardship strategies.
- CO1.5 Interpret microbiological, serological, and molecular diagnostic reports.

CO2: Clinical Infectious Diseases & Recent Advances

On completion, the learner will be able to:

- CO2.1 Diagnose and manage common and complex infectious disease syndromes.
- CO2.2 Manage infections in special populations (ICU, immunocompromised, transplant).
- CO2.3 Implement infection prevention, surveillance, and outbreak control measures.
- CO2.4 Integrate emerging diagnostic technologies and novel therapeutics into practice.
- CO2.5 Critically appraise current literature and apply evidence-based medicine.

3 PO–CO Mapping Matrix

COs ↓ / POs → PO1 PO2 PO3 PO4 PO5 PO6 PO7

CO1.1	2	3	1	2	1	1	1
CO1.2	2	3	1	2	1	1	1
CO1.3	3	2	3	2	1	2	1
CO1.4	2	2	3	2	2	2	1
CO1.5	2	2	2	3	1	2	1
CO2.1	3	2	3	2	2	2	2
CO2.2	3	2	3	2	2	2	2



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COs ↓ / POs → PO1 PO2 PO3 PO4 PO5 PO6 PO7

CO2.3 2 1 2 2 3 2 2

CO2.4 2 2 2 3 2 3 1

CO2.5 2 2 2 2 1 3 2

Mapping Key:

- 3 – Strong correlation
- 2 – Moderate correlation
- 1 – Low correlation


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