



الجامعة الوطنية - السودان
National University - Sudan

Postgraduate Diploma

Infection Prevention and Control





Introduction

Many challenges at health care settings and community levels have recently been acknowledged as due to spreading of diseases. For this, prevention and control of infections is becoming vital. It is therefore, imperative to back the medical, health and safety professionals with the apt knowledge and skills to deal with the existing and projecting viruses, bacteria and other pathogens.

General objective

Qualify medical, health and safety professionals to develop and implement comprehensive infection prevention and control programmes that secure patient safety in healthcare settings and the community.

Specific objectives

The program qualifies the candidates to:

- Identify outcomes of exposure to pathogenic organisms in health-care settings.

- Develop and implement comprehensive infection prevention programmes referencing research outcomes and evidence-based practices to secure patient safety.
- Review infection control policies related to construction of hospitals.
- Prevent transmission of blood borne pathogens from patient to patient, healthcare workers to patients, and patients to healthcare workers via contaminated injection equipment.
- Define specific high-risk practices and procedures exposing healthcare workers and patients to the potential infectious materials.
- Critically discuss the principles preventing the spread of infection within the hospital and community.
- Discuss investigating and controlling outbreak of infection.
- Critically discuss the use of surveillance methods in infection prevention and control.

Learning outcomes

Upon successful completion of the program, the graduate shall be able to:

- Establish infection control policy and procedures in medical institutions.
- Shoulder professional's responsibility to monitor infection prevention and apply control practices.
- Intervene when necessary to assure compliance with the set safety measures.
- Conduct clinical researches: design clinical studies, collect, analyze, present data and write documents.
- Deal with health emergencies.

Admission requirements

- Applicants must satisfy the general regulations set by the faculty of graduate studies of the National University- Sudan for registration for postgraduate diploma degree.
- Eligible candidates are B.Sc. (Honors) in Medical Laboratory Sciences from the National University or from an equivalent University or a college. With either of the following grades :
 - Bachelor (General or Honors) with grade Good at least
 - Bachelor (General or Honors) with grade Pass plus qualifying courses during one semester, equivalent to 12 credit hours.

Study program

Semester One

Code	Course	Credit hours	Contact hours/Week	
			Theory	Practical
IPC-611	Medical Microbiology and Immunology	3 (2+1)	2	2
IPC-612	Bioethics and Biosafety	2 (2+0)	2	0
IPC-613	Epidemiology and Control of Infectious Diseases	2 (2+0)	2	0
IPC-614	Infection Prevention and Control in Health-care	6 (4+2)	4	4
IPC-615	Antimicrobial Stewardship	3 (3+0)	3	0
Total		16 (13+3)	13	6

Semester Two

Code	Course	Credit hours	Contact hours/Week	
			Theory	Practical
IPC-621	Occupational Safety and Health	3 (3+0)	3	0
IPC-622	Infection Control in Built Environment	2 (2+0)	2	0
IPC-623	Infection Outbreak: Investigation and Control	2 (2+0)	2	0
IPC-624	Research Methodology and Biostatistics	3 (2+1)	2	2
IPC-625	Healthcare Quality and Patient Safety	2 (2+0)	2	0
Total		12 (11+1)	11	2

Courses contents

IPC-611 Medical Microbiology and Immunology

Bacterial Cell Structure and Function; Environmental Influences on Microbial Growth; Anaerobic Bacterial Diseases; Skin and Soft Tissue Infections; Medical Mycology; Virus Infections; Immune Evasion of Viral Infections; Medical Importance of Protozoan Parasites.

IPC-612 Bioethics and Biosafety

Bioethics and Morality; Environmental Ethics; Genetically Modified Micro-organisms and Synthetic Organisms; Epidemiology and Spreading of Pathogens; Levels of Biosafety; Biohazards; Disposal of Medical Wastes.

IPC-613 Epidemiology and Control of Infectious Diseases

Infectious Disease Epidemiology; Molecular Epidemiology of Infectious Disease; Vaccines - Impact and Challenges; Epidemiology of Infectious Diseases; Disease Surveillance and Screening; Assessment of Infectious Diseases Outbreaks; Computer Surveillance and Decision Support.

IPC-614 Infection Prevention and Control in Healthcare

Standard Precautions; Hand Hygiene; Personal Protective Equipment; Clean-

ing and Environment Disinfection; Reuse of Medical Devices and Equipment; Sterilization; Waste Management; Prevention of Accidental Exposure to Body Fluids; Handling of Patient Linen; Efficiency of Sterilization.

IPC-615 Antimicrobial Stewardship

Scope of Antimicrobial Resistance Problems; ASP Elements, Members, and Administrative Support; Comprehensive Multidisciplinary Antimicrobial and Antiretroviral Management Programmes; ASP Education; Combination Therapy; Prevention of Resistance vs. Redundant Antimicrobial Coverage and Dose Optimization; Role of Laboratory Rapid Diagnostics and Bio-markers Test in Stewardship; Surgical Prophylaxis; Antifungal Stewardship.

IPC-621 Occupational Safety and Health

History of Occupational Health; Occupational and Environmental Medicine; Field of Occupational and Environmental Medicine; Financial and Business Aspects of Occupational Health; Workers' Compensations; Non-Occupational Disability Management; Chemical Hazards: Vapours, Mists, Solids, Fumes, Aerosols; Biological Hazards: Fungi, Molds, Virus, Bacteria, Animals; Control of Substances Hazardous to Health Regulations (COSHH); Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR); Safety / Risk Management, Performance Metrics, Fire Prevention.

IPC-622 Infection Control in Built Environment

Critical Care, High Dependency Units; Theatres Design and Ventilation; Endoscopy Specialist Isolation Facilities; Hospital Design and Maintenance; Risk Assessments; Ventilation, Water Systems and Water Related Outbreaks; Nightingale Hospitals for COVID.

IPC-623 Infection Outbreaks: Investigation and Control

Concepts of infectious Diseases: Outbreak Agents; Surveillance, Identification, Confirmation and Assessment of Outbreak; Outbreak Preparedness, Management and Response; Outbreak Investigation, Preparations and Practicalities; Epidemic Curves and Incubation Periods of infections; Analytical Epidemiology: Study Design and Data Collection; Environmental Investigations of infectious diseases; Analytical Epidemiology: Analysis and Interpretation of Data; Outbreak Reporting.

IPC-624 Research Methodology and Biostatistics

Introduction: Definition; Uses of Biostatistics and Data Collection; Observational vs. Experimental Research; Qualitative and Quantitative Study Designs;

Concepts of Epidemiology; Clinical Research Study Protocol; Scientific Writing.

IPC-625 Healthcare Quality and Patient Safety

Policy of Patient Safety; Critical Incident Analysis; Error Investigating; Error Reporting System; Human Factors Engineering; Patient Satisfaction; Quality Measure Presentations; Innovation and Adoption.

Human resource and facilities

Teaching Staff:

- One Associate Professor
- Three Assistant Professors
- One Specialist in Infection Prevention and Control
- Two Lecturers

Facilities:

- Two Lecture Rooms 100 Seats each
- Two Clinical Chemistry Laboratories 100 Seats each
- Two Computer Laboratories 100 Seats each
- One E-Library 50 Seats

Duration of the program: Two semesters (32 Weeks). 28 Credit Hours = 470 Contact Hours (Theory= 350 + Practical= 120).

Teaching Modules

Lectures, practical sessions, tutorials, group discussions, assignments, case study and problem-based practices.

Teaching Language: English.

Examinations regulations

- Students must abide by the Examinations Rules set by the Faculty of Graduate Studies of the National University-Sudan.
- A student who completed a course but was unable to sit for its examination for an acceptable reason shall be allowed a substitute examination.
- Medical reports are not accepted unless approved by the Medical and

Health Services of El-Ragi Teaching Hospital.

- The medical report should be submitted to the Programme Coordinator, within the seven days following the date of the examination.
- Medical reports are not accepted if a student sat for the examination.
- A student who submitted a medical report is not allowed to sit for the examinations during the period covered by the medical report, and if sat the results will be canceled.
- The pass mark for any course is 60% and the student must succeed in both the theoretical and the practical components of each course separately.
- A student missing an examination without acceptable reasons will be assigned failure in the concerned course(s).
- A student has the right to sit for supplementary examinations in no more than 1/3 of the number of courses, and to re-sit the examination in all courses if failed in more than 1/3 to 1/2 of the number of courses.
- A student failing in more than 1/2 of the courses will be discontinued.
- A student failing a supplementary examination of a course shall be discontinued.
- Supplementary examinations convene after the final examinations of each semester.

Assessment:	Continuous assessment	30%
	Final examination	70%

(For courses including practical sessions: continuous assessment (theory + practical) = 20%, Final Exam (Theory) = 60%, Final Practical Exam = 20%).

Grading system: A+ (90-100) A (80-89) B+ (75-79) B (70-74) C+ (65-69) C (60-64) F (<60)

Award of the degree

The Scientific Council of the National University-Sudan, based on the recommendation of the Board of the Faculty of Graduate Studies , shall award the successful candidate a:

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Better **World**