PDCC in Transfusion Transmitted Disease Testing

Course Curriculum:

Course: Post-doctoral certificate course (PDCC) - Transfusion Transmitted Disease Testing

Duration of the course – 1 year

Learning: Independent self-directed + Work-based experiential learning

Assessment: Continuous cumulative assessment (Formative + Summative)

COURSE LEARNING MODULES:

I. HISTORY OF TTDS AND HISTORIC BENCHMARKS IN BLOOD SAFETY
II. GOOD LABORATORY PRACTICE
III. BASICS OF TRANSFUSION TRANSMITTED INFECTIONS
IV. BASICS OF TESTING PLATFORMS AVAILABLE FOR TTI SCREENING
V. EMERGING AND RE-EMERGING TTIs
VI. PATHOGEN REDUCTION TECHNOLOGIES
VII. ADMINISTRATIVE ASPECTS – HOSPITAL TRANSFUSION COMMITTEE
VIII. POLICIES AND REGULATORY ASPECTS
IX. QUALITY CONTROL AND QUALITY ASSURANCE
X. BIO-SAFETY AND WASTE MANAGEMENT

Each of these learning modules are addressed below using the principles of Bloom's taxonomy to assess the areas of

A. Knowledge (Cognitive domain)
B. Skills (Psychomotor domain) and
C. Attitude/Behaviour (Affective domain)

SUBJECT	COURSE CONTENT
1. HISTORY OF TTDS AND HISTORICAL BENCHMARKS IN BLOOD SAFETY	1.1. Identify and relate the important features in the history of safe blood transfusion 1.2. Outline the scientific benchmarks in the evolution of Blood safety 1.3. Impact of historic events in the development and evolution of Safe Blood 1.4. Effect of specific historical innovations on blood safety
2. GOOD LABORATORY PRACTICE (GLP)	2.1. Pre-analytical phase 2.2. SOPs for appropriate sample collection, storage, transport, and processing of samples 2.3. Analytical phase 2.4. Pipetting techniques 2.5. Understand the flow in TTD lab with different screening platforms 2.6. Troubleshooting 2.7. Post-analytical phase 2.8. Timely uploading of test results 2.9. Comparison of test results with different available testing platforms
3. BASICS OF TRANSFUSION TRANSMITTED INFECTIONS	3.1. Fundamentals of immunology & immunological techniques. 3.2. Immunology, immune response, immunoglobuins. 3.3. Antigens, Antibodies 3.4. Characteristics of TTI 3.5. Epidemiological concepts in TTI 3.6. Current mandatory TTIs screened 3.7. Emerging new infections
4. BASICS OF TESTING PLATFORMS AVAILABLE FOR TTI SCREENING	4.1. Principles of available TTI testing kits and platforms – 4.2. Immunoassays 4.3. ELISA 4.4. Chemiluminescence 4.5. Nucleic Acid Amplification testing 4.6. Evaluation of testing kits for transfusion transmitted infections (TTI) 4.7. Automated assays 4.8. LJ chart and Westgard rules
5. EMERGING AND RE-EMERGING TTIs	5.1. AABB committee on emerging TTIs 5.2. TTI risk assessment tools for emerging infections 5.3. Surveillance strategy for emerging infections 5.4. Preventive strategies 5.5. CDC categories and Bioterrorism
6. PATHOGEN REDUCTION TECHNOLOGIES	6.1. Viral inactivation techniques 6.2. Viral Reduction techniques 6.3. PRT for cellular and plasma products 6.4. Newer advances 6.5. Clinical trials

7. ADMINISTRATIVE ASPECTS	7.1. Quality indicators of TTI screening 7.2. Hospital policy formulation on emergency blood issue 7.3. Donor recall and patient trace back policy 7.4. Hospital Transfusion Committee
8. POLICIES AND REGULATORY ASPECTS	8.1. National Blood Policy 8.2. National Plasma Policy 8.3. National AIDS Control Program 8.4. National Viral Hepatitis Control Program 8.5. Evaluation of effectiveness of pre-transfusion hepatitis, syphilis, and HIV testing.
9. QUALITY CONTROL AND QUALITY ASSURANCE	9.1. Quality management practices in blood transfusion services. 9.2. Electronics, software and Plastics in transfusion medicine. 9.3. Development of Standard Operating Procedures (SOP) manual 9.4. Quality control of Reagents, Instruments, Disposables and Testing procedures 9.5. Quality assurance in TTI testing 9.6. Internal quality assurance (IQA) 9.7. External quality assurance (EQA) 9.8. Servicing and calibration of equipment – log book for equipment 9.9. Medical audit 9.10. Hospital transfusion committee 9.11. Good manufacturing practice (GMP) 9.12. Turnaround time 9.13. ISO certification 9.14. Accreditation
10. BIO-SAFETY AND WASTE MANAGEMENT	10.1 Bio-safety levels in health care set up and blood banks 10.2 Bio-safety measures in blood centre, blood donation camps 10.1. Waste generation and segregation 10.2. Waste disposal 10.3. Sterilization procedures in transfusion technology 10.4. Post exposure prophylaxis 10.5. Vaccination

Research Project/Clinical audit
The candidate will be required to execute a short research project during the 1-year course.

Publication:
The candidate will be required to have 1 accepted manuscript based on the work during the 1-year course period (Any category: Case report/Letter to Editor/Short research note/Review article/Original article)

PERIPHERAL POSTING

Memoranda of Understanding (MOU) will be executed with other Institutes to implement an observership programme during the course period

Department of Microbiology (Infection control section) – RGCB, Thiruvananthapuram -1 week