Clinical Biochemistry
Post-Doctoral Training
Program Handbook
University of Manitoba
Max Rady College of Medicine
Rady Faculty of Health Sciences
Shared Health Manitoba
Diagnostic Services

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Introduction

This training handbook describes the post-doctoral training in Clinical Biochemistry at the University of Manitoba. The handbook is a supplement to the Handbook for Residents and Fellows (http://umanitoba.ca/faculties/health_sciences/medicine/education/pgme/media/New_Trainee_Handbook.pdf).

The program has operated as part of Post Graduate Medical Education in the Max Rady College of Medicine, Rady Faculty of Health Sciences at the University of Manitoba (http://umanitoba.ca/faculties/health_sciences/medicine/education/pgme/index.html) since the mid 1970’s and is based primarily in the Clinical Biochemistry Laboratories at Health Sciences Centre and St. Boniface General Hospital. Both institutions are tertiary care teaching hospitals affiliated with the University of Manitoba with a total combined bed number of approximately 1,500.

Shared Health (https://sharedhealthmb.ca/) leads the coordinated planning and integration of patient-centred clinical and preventive health services in Manitoba and delivers certain provincial health services and centralized business functions that support the delivery of care across Manitoba health organizations. Diagnostic Services is a service delivery division of Shared Health. It serves communities across the province, aiming to provide all Manitobans, no matter where they live, with high quality laboratory tests and diagnostic imaging procedures. There are 80 diagnostic facilities across the province of Manitoba managed by Shared Health Diagnostic Services (https://sharedhealthmb.ca/services/diagnostic/).
Section 1: Program Objectives

The objective of the Program is to train individuals at the post graduate level (PhD.) in the field of Clinical Biochemistry leading to the certification by the Canadian Academy of Clinical Biochemists (CACB). The program is intended to provide training equivalent to that required by the College of Physicians and Surgeons of Canada for the fellowship in Medical Biochemistry. This includes practical, professional and mentorship training in all aspects of laboratory medicine necessary to provide the resident with the skills necessary to independently direct a clinical biochemistry laboratory.

This manual is intended to provide practical information on the content of the program itself, and with resources that will assist with successful completion of the training.
Section 2: Program Organization

The training program consists of a residency program committee that assists the Program Director in the strategy direction of the program. The program director reports jointly to the associate Dean, University of Manitoba and the Chief Medical Officer-Lab Services, Shared Health. Day to day management of the training program is done by both the program director and program administrator, who are responsible for the wellbeing and education for the resident in the program. The figure below provides an overview of the organizational structure of the program.

Legend:
- Academic Reporting
- Admin Reporting
**Section 3: Trainee Selection**

The candidate must have a Ph.D. degree in Chemistry, Biochemistry, Pharmacology, Immunology, Physiology, or other medical science. Applications are reviewed by the program selection committee and candidates are short-listed for an interview and lecture presentation. Applications will be accepted from Canadian citizens or permanent residents.

The candidate should have taken courses or demonstrated experience in the following areas:

i) General and Organic Chemistry  
ii) Analytical Chemistry  
iii) Physics  
iv) Biology/Pathology  
v) Physiology/Pathophysiology  
vi) Biochemistry  
vii) Statistics
Section 4: Trainee Compensation and Benefits

Remuneration, Benefits, Entitlements

Salaries, benefits, and other entitlements are governed by a comprehensive collective agreement between PARIM and the Shared Health. See PARIM website (https://www.parim.org/) for further details.

Remuneration for residents in the Post Graduate Medical Education at the University of Manitoba is negotiated by the Professional Association of Residents and Interns of Manitoba (PARIM). Starting salaries for residents in Clinical biochemistry start at PGY2 level and end at PGY4.

Vacation

As per Collective Agreement one month (4 weeks) vacation time is allocated to be taken within each 12 month term.
Section 5: Program Outline

Curriculum

The training program follows the curriculum developed by the Canadian Academy of Clinical Biochemists (CACB),
https://cscc.ca/images/Academy/Certification/CACB_Syllabus_2013_ENG_FINAL_APROVED.pdf. As the accrediting body for the training program, the complete coverage is mandatory for completion of the training program.

The outline of rotations throughout the three years are provided below. They are basically of two types.

1. Home rotations (rotations within the laboratory)
2. Off-service rotations (clinical rotations)

Each of the rotations are supervised by a mentor (medical professional). For the off-service rotations, the primary mentor is the physician attending for the service with a secondary mentor in the clinical biochemistry lab acting as the anchor for the equivalent biomarkers in that service.

While these rotations are being covered, the trainee is expected to also expected to (longitudinal learning):

i. Attend clinical/medical rounds appropriate to the area of rotation
ii. Present a seminar on a topic related to the current rotation (monthly)
iii. Participate in medical school and technologist teaching
iv. Participate in on-call rotation for Clinical biochemistry
v. Present at clinical biochemistry scientific rounds
vi. Present seminars on selected topics or R & D data
vii. Attend when possible Clinical biochemistry departmental meetings, Journal Club, R&D presentations, audiovisual conferences etc
viii. Provide interpretive reports (under the supervision of a clinical biochemist)
ix. Be involved in research projects that develop an understanding for method development, method evaluations, and clinical evaluation of methods

Year 1

The first year of the program is intended to provide the resident with an overview of the clinical biochemistry laboratory operations and a general understanding of human disease. Rotations include:

Lab Orientation & Introduction to Lab Medicine (4 weeks)

This rotation is designed to introduce the trainee to the concepts of central laboratory processes - comparison of processes across laboratories of differing size and function and hands-on experience. This will include sample labelling and receipt, patient registration, test accessioning, requisitions, referred-in, referred-out, laboratory information systems, test information manuals, lab reports, pre-analytical and post analytical errors, laboratory safety, phlebotomy
Automated Testing (8 weeks)
This rotation is focused on automated clinical biochemistry instrumentation and methods. The trainee will be immersed in the automated biochemistry lab for hands on learning on how an automated analyzer runs, the maintenance of the analyzer (QC, Calibration, etc) and troubleshooting. During the rotation, the trainee will learn the theory of automated methods as dictated by the CACB Syllabus.

Lab Accreditation (4 weeks)
The rotation is aimed at providing the essential skills in accreditation. This included the principles of laboratory licensing, lab accreditation.

QC & EPT 1 (4 weeks)
This rotation is designed to impact the theory and practice of quality monitoring in the clinical laboratory, specifically external proficiency testing, and peer comparison, as well as accuracy-based proficiency programs.

Method Evaluations & Lab Statistics (4 weeks)
This rotation is designed to provide the trainee the skills required to do clinical laboratory evaluations (new methods, instrument-to-instrument comparison, new reagent lot/shipment validations). Fundamentals of lab stats are covered during this rotation (sensitivity, specificity, predictive value, receiver operator curves, total allowable error).

Cancer Biomarkers (4 weeks)
This rotation covers the laboratory performance of cancer biomarkers and the clinical utility of these tests. The trainee gains the foundation of cancer testing which is utilized in subsequent clinical rotation.

Hematology (4 weeks)
This rotation covers the laboratory performance of hematologic disorders and the clinical utility of these tests. The trainee gains the foundation of these tests which is utilized in subsequent clinical rotation.

Immunology (4 weeks)
This rotation covers the laboratory performance of immunologic disorders and the clinical utility of these tests. The trainee gains the foundation of these tests (autoimmune and immune cancers) which is utilized in subsequent clinical rotation.

Ambulatory Care (Hematology/Oncology) (4 weeks)
This is a clinical rotation in the adult hematology/oncology clinic. The knowledge gained in the laboratory rotations (all rotations prior to this rotation) is used to integrate to clinical scenarios. The rotation, under supervision of a clinical hematologist, exposes the trainee to various clinical scenarios of cancer diagnosis,
treatment, and management and the role the clinical laboratory plays in patient care.

*Pathology (4 weeks)*

This rotation is designed to expose the trainee to the principles and practice of anatomic pathology lab (Histology, cytology, autopsy). The trainee gains an insight into the intersect of the pathology lab and other core labs (Biochemistry, immunology and hematology) in diseases (colon cancer, lymphoma, bladder cancer, neurometabolic diseases, etc).

*Research (4 weeks)*

This is a research block where the trainee is encouraged to work with the mentor on an area of research. This work may not have to be finished now, should the research be longer (there is another block of research in the second year). All efforts are to be made to have a publication/abstract/conference presentation out of this effort.

*Vacation (4 weeks)*

The trainee is entitled to 4 weeks of vacation per academic year that can be taken in a 1 block of 4 weeks or 2 blocks of 2 weeks each.

**Year 2**

The second year of the program is intended to provide the resident with a comprehensive understanding of integration of clinical biochemistry with clinical medicine. For most part of the year, the resident is embedded within several clinical programs acting as the resource for laboratory testing (indications, interpretation, and review of discordant results). Rotations include:

*Infectious Diseases/Clinical Microbiology (4 weeks)*

This rotation is based in the clinical microbiology lab and is designed to expose the trainee to the principles and practice of clinical microbiology and how therapeutic drug monitoring and culture and sensitivity among others. The trainee gains an insight into the intersect of the microbiology lab and biochemistry lab as well as infection prevention and control.

*Urinalysis and Stool Analysis (4 weeks)*

This rotation is based in the clinical biochemistry lab and is designed to exposure on the principles and practice of urine and stool analysis. The trainee is exposed to the clinical aspects of these tests (guidelines, best practices, clinical utility). Opportunity is provided to the trainee to liaise with clinical programs on utilization/resource stewardship.

*Ambulatory Care (Gastroenterology) (4 weeks)*

This rotation is based in the adult gastroenterology clinical service at HSC. It is designed to expose the trainee to the principles and practice of markers of GI
disease. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending gastroenterologist, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Ambulatory Care (Peds Gastroenterology) (4 weeks)**

This rotation is based in the pediatric gastroenterology clinical service at HSC. It is designed to expose the trainee to the principles and practice of markers of GI disease in children. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending pediatric gastroenterologist, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Genomics (4 weeks)**

This rotation is based in the genomics specialty area of the laboratory (molecular diagnostics, cytogenetics, and molecular hematology). The trainee is expected to gain knowledge on molecular techniques in the clinical laboratory and their use in genetic diseases.

**Ambulatory Care (Medical Genetics) (4 weeks)**

This rotation is based in the medical genetics clinical service at HSC. It is designed to expose the trainee to the principles and practice of genetic markers in medical genetics. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending medical geneticist, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a laboratory geneticist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Biochemical Genetics (4 weeks)**

This rotation is based in the metabolic laboratory (biochemical genetics lab). The trainee is expected to gain knowledge/competency on analytical techniques and tests in the metabolic laboratory and their use in inborn errors of metabolism.

**Ambulatory Care (Endocrinology – Adults & Peds) (4 weeks)**

This rotation is based in the endocrinology clinical service (adult and pediatric) at HSC and St. Boniface hospital. It is designed to expose the trainee to the principles and practice of biochemical markers of endocrine disease. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending endocrinologist, the trainee is expected to integrate the clinical case with
laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Nephrology (4 weeks)**

This rotation is based in the adult nephrology clinical service at HSC. The trainee may end up spending time at Grace hospital which is the site of the largest hemodialysis service in North America. It is designed to expose the trainee to the principles and practice of biochemical markers of renal disease. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending nephrologist, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Critical Care/ICU (4 weeks)**

This rotation is based in the adult critical care clinical service at St. Boniface hospital. It is designed to expose the trainee to the principles and practice of biochemical markers of critically ill patients. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending critical care physician, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist and a clinical pharmacist as co-supervisors who acts as an anchor to the laboratory portion of the curriculum.

**Research (4 weeks)**

This is a research block where the trainee is encouraged to work with the mentor on an area of research. This work may not have to be finished now, should the research be longer (there is another block of research in the second year). All efforts are to be made to have a publication/abstract/conference presentation out of this effort.

**Vacation (4 weeks)**

The trainees is entitled to 4 week of vacation per academic year that can be taken in a 1 block of 4 weeks or 2 blocks of 2 weeks each.

**Year 3**

**Laboratory Consultancy & Clinical Supervision (Westman Lab) (4 weeks)**

This rotation is based at the Westman Laboratory in Brandon Regional Health Centre in Brandon, Manitoba. This is the third largest laboratory at Shared health and acts as a referral lab for most of the province. The rotation is designed to
provide the trainee with skills/competency required to practice clinical biochemistry independently in a tertiary care clinical environment. The trainee acts a clinical biochemist resource for the referring labs, the Westman Lab, and a greater number of rural and Brandon physicians. This rotation requires the trainee to integrate all of the skills/competency of the training gained.

**POCT/Respiratory Medicine (4 weeks)**

This rotation is based in the respiratory laboratory of the adult critical care clinical service at St. Boniface hospital. These labs are embedded within the ICUs (medical and surgical). It is designed to expose the trainee to the principles and practice of blood gases (analysis and clinical use). The trainee is expected to integrate relevant clinical case in the ICU with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the CACB curriculum.

**Ambulatory Care (Lipid Clinic) (4 weeks)**

This rotation is based in the adult lipid clinic at St. Boniface hospital. It is designed to expose the trainee to the principles and practice of biochemical markers of dyslipidemia. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending physician, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Cardiology (4 weeks)**

This rotation is based in the cardiology clinical service at St. Boniface hospital. It is designed to expose the trainee to the principles and practice of biochemical markers in cardiac disease. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending cardiologist, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Toxicology (4 weeks)**

This rotation is based in the toxicology laboratory at St. Boniface hospital. During the rotation, the trainee is exposed to instrumentation and analytical aspects of clinical, medical, and forensic toxicology and application of the toxicology tests in poisons, poisoned patients, treatment. The role of this service (toxicology service) poison-control, forensic investigations, and post-mortem autopsy is integral to the rotation. The trainee also gains competency in the role of the specialized analytical
techniques (mass spectrometry, liquid chromatography) in the therapeutic drug monitoring.

**Emergency Medicine (Adult & Peds) (4 weeks)**

This rotation is based in the emergency medicine clinical service (adult and pediatrics) at HSC. It is designed to expose the trainee to the principles and practice of biochemical markers in emergency medicine. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending emergency medicine physician, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as a co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Pharmacy (Family Medicine Wards) (4 weeks)**

This rotation is based in the family medicine clinical service (family medicine inpatient ward) at Grace hospital. It is designed to expose the trainee to the principles and practice of biochemical markers in stable inpatient medicine. The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending hospitalist, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as a co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Obstetrics/Gynecology (4 weeks)**

This rotation is based in the Obstetrical/gynecologic clinical service at HSC. It is designed to expose the trainee to the principles and practice of biochemical markers in OB/GYN practice (fetal assessment and health, pregnancy related disorders, labor and delivery including pre-term labor, gynecologic disease including cancer, etc). The trainee acts a clinical biochemistry resource in this service. Under the supervision of the attending OB/GYN, the trainee is expected to integrate the clinical case with laboratory testing and provide insight into the laboratory aspects of the case (preanalytical, analytical, post analytical, and choosing wisely where applicable). This rotation also has a clinical biochemist as a co-supervisor who acts as an anchor to the laboratory portion of the curriculum.

**Laboratory Management (4 weeks)**

This rotation is based as a virtual rotation (HSC and St. Boniface Hospital). The trainee is expected during the rotation to do site visits (lab sites across the province) and understand the different landscape of delivery of clinical biochemistry lab services across the province. The rotation is designed to provide the trainee with skills in laboratory management. The trainee acts both consultant and resource for the labs in the province. This rotation requires the trainee to integrate all of the skills/competency gained so far in the training, including the
rotation at Westman Laboratory. This rotation also provides the opportunity of applying the principles of resource stewardship gained from the resource stewardship course in core curriculum.

**Dynamic & Algorithmic Testing (4 weeks)**

This rotation is based in the clinical biochemistry lab. It is designed to provide exposure to clinical biochemistry algorithmic testing and specialized challenge/dynamic tests. The trainee gets an opportunity to review the current testing algorithms that are both laboratory based and also clinico-lab (transcend both lab and clinic/ward). It is expected that areas for improvement is identified and embarked on by the trainee.

**Review and Study (4 weeks)**

This rotation is designed to reassessment the curriculum the trainee has been exposed to so far and identify any gaps that need to be addressed. It also provides an opportunity to identify any further interest the trainee may have that are above and beyond the curriculum.

**Vacation (4 weeks)**

The trainee is entitled to 4 week of vacation per academic year that can be taken in a 1 block of 4 weeks or 2 blocks of 2 weeks each.
Section 6: Trainee Evaluation

Training evaluations occur throughout the training and are based on the postgraduate medical education (PGME) policy on resident passements (http://umanitoba.ca/faculties/health_sciences/medicine/education/pgme/media/CPG_ME_Resident_Assessment_RCPSC_Time_Based.pdf). This means that the each rotation has an approved objectives which the resident is made aware of on which the resident is evaluated during the rotation and at the end using the evaluation tools approved by the resident committee. The PGME assessment map (page 2) is strictly followed for each rotation (http://umanitoba.ca/faculties/health_sciences/medicine/education/pgme/media/Assessment_and_Promotion-Time_Based.pdf).

The resident/trainee will meet with the program director on a monthly basis to assess his/her progress. At the completion of various rotations, the faculty/mentor responsible for the resident during that rotation will be asked to submit an evaluation form. Mentors/evaluators are encouraged to have continuous a face to face evaluation with the trainee throughout the rotation. The resident will be made aware of his/her evaluations as they are submitted during the regular scheduled meetings with the mentors (in-rotation) and Program Director (end of rotation evaluation).

The resident also gets an opportunity to evaluate the rotation, faculty, and program (at the end of the training). This is done confidentially and submitted directly to the PGME.
Section 7: MENTORSHIP MODEL

Description of the Model

The core rotation schedule is divided into blocks. Blocks are classified as either Clinical or laboratory, depending on where they are based. Both types of blocks (clinical and laboratory) are linked to each other through cases of interest identified by the resident/trainee during the rotation. The program schedule is customized on an ongoing basis to incorporate opportunities that arise, timetables of individuals involved and specific resident needs and interests.

Resident time, for most part, is divided between HSC and St Boniface Hospital, in approximately equal amounts. Laboratory rotations are intended to have bench-related activities for about 50% of the time, as appropriate.

External rotations provide opportunities to understand the larger medical picture and how laboratory practices relate to effective patient care.

Resident is required to provide monthly presentations on an area of current rotation, via the resident academic half-day, which coincides with the faculty scientific sessions. These presentations provide an important learning tool.

The presentations are given at regularly scheduled staff scientific meetings where all scientific staff are present and presentation time is about one hour. While there is more opportunity to expand on a topic in the presentations, the resident is still expected to cover basic knowledge of the topic presented.

Resident presentations are not intended to be educational to the clinical biochemist group, but rather to give the resident feedback on their comprehension of the topic and through discussion identify deficiencies. It is also an opportunity for staff to evaluate the resident, which is a vital part of helping the resident improve.

Case studies are another important learning tool and are incorporated into each rotation. It is the goal, at the end of the training program, that the resident must feel comfortable at interpreting a set of laboratory results with some kind of differential. For this reason, the resident needs to review charts on a fairly frequent basis to get to this end point. Some case reviews can serve as mini or maxi presentation topics. These are evaluated by the audience (Seminar evaluations, Section 9D).

Related minor mock exam questions are incorporated into each rotation with a major mock exam at the end of each academic year. The resident discusses answers to these questions with the mentor or any staff member either individually or at presentations.

The resident maintains a CACB syllabus check-off list of topics studied during each rotation. Resident also keeps an activity log and a record of presentations and projects.
Assigned projects are part of the training program, both clinical service (method development, reference interval determinations, etc) and academic research (clinical application of a research-based test, investigation of novel biomarkers, etc). Each rotation involves a service project as appropriate that is completed within the rotation period. The purpose of a service project is to directly experience dealing with real work issues. It is up to the mentor and resident to define the boundaries, goals and expectations of the service project so that it can be completed within the rotation period. The resident is expected to present on the outcomes of the service project. Research projects extend over longer periods and are aimed at scientific publication.

The scientific staff of Shared health Diagnostic Services give annual presentations on scientific topics related to their areas of responsibility. As there is no didactic teaching in this training program, staff members use these presentations to inform resident of specific scientific issues in their areas of expertise. The resident is required to attend and present on a topic of choice (related to the training) at these meetings. Attendance of various medical rounds are mandated for the resident as well.

Mentor Responsibilities:

i. Coordinate with director to schedule rotation involving your areas of expertise and responsibility

ii. Work with resident to create rotation specific objectives.

iii. Interact with laboratory personnel to facilitate logistics of laboratory rotation.

iv. Liaise with external partners to facilitate clinical or external aspects of rotation, as required.

v. Meet with resident on a regular basis (at least weekly) to review progress, needs and opportunities of rotation.

vi. Be available to resident for inquiries and provide guidance to as to where and how the resident can find answers to these inquires.

vii. Ensure adequate exposure of resident to required syllabus topics related to rotation.

viii. Provide relevant mock exam question(s) and discuss answer(s) with resident. These can be incorporated into resident presentations.

ix. Challenge resident with new insight, ideas and questions.

x. Provide constructive feedback to resident for improving performance and knowledge base.
xi. Evaluate the resident at end of rotation and throughout the program on a regular basis (such as after completing projects, presentations or some specific interaction). (See Appendix C)

xii. Assign and discuss relevant service projects that should be executable during current rotation.

xiii. Submit research project titles to director for approval and prioritization.

xiv. Attend resident presentations (monthly).

xv. Give an annual scientific presentation that involves information about what is happening in your areas of responsibility.

Resident Responsibilities:

i. Work with program director to coordinate rotation schedule.

ii. Work with mentor to create rotation specific objectives. These objectives must relate to CACB syllabus A and B topics.

iii. Perform or observe assigned benchwork in collaboration with technologists (problem solving at the technologist level/operate like a technologist in the lab). All lab rotations involve getting involved with benchwork. This is a great opportunity to interact with and get to know technical staff. Effort should be made to associate with them during their work routine.

iv. Challenge status quo practices and procedures with scientific and technical staff.

v. Study rotation topics at textbook level and pursue further knowledge when textbook basics are covered.

vi. Answer and discuss with mentor relevant mock exam questions during each rotation. Include exam questions in presentations for discussion.

vii. Perform relevant service and research projects. Service projects are assigned by mentor and research projects are approved by program director.

viii. Give a presentation about every two weeks. Presentations provide an excellent way to learn about specific study topics. Most presentations can be mini presentations going over recently learned material and do not need to be as comprehensive as maxi presentations.

ix. Review patient charts as need and opportunities arise and incorporate case reports into presentations as appropriate. Find out about and
attend relevant medical rounds on a regular basis (at least twice monthly).

x. Maintain activity log and record of presentations, rounds and projects.

xi. Maintain syllabus check off record.

xii. Follow through with assignments and report back promptly on status.

xiii. Perform on-call duty with staff scientist backup as assigned.

xiv. Provide constructive feedback and expectations to program director about training program as appropriate

xv. Schedule resident-mentor meetings during rotations.

xvi. Meet with program director biweekly.

xvii. Notify director and rotation mentor of prolonged absences/vacations.

xviii. Provide names of staff who participated in resident training during rotation to program director.

xix. Participate in appropriate PGME training modules.

xx. Give status report to advisory committee on request.

xxi. Attend general medical and rotation specific grand rounds.

Director Responsibilities:

i. Work with advisory committee to design rotation blocks.

ii. Coordinate rotation schedule with all participants (internal and external).

iii. Respond to inquiries about training program.

iv. Meet with resident biweekly to discuss

   a. exchange of expectations of program and resident,

   b. evaluation feedback,

   c. rotation schedule, objectives and issues,

   d. activity log,

   e. syllabus check-off,

   f. mock exam questions,
g. presentations,

h. research and service projects and any non-standing item as they arise.

v. Review and compile resident evaluations and give timely feedback to resident at director-resident meeting.

vi. Arrange and coordinate CACB program accreditation process.

vii. Keep advisory committee informed of resident and program status.

viii. Liaise with PGME office as required.

ix. Provide general guidance, encouragement and support to resident where required.
Section 8: Clinical Chemistry Resident Start-up

Postgraduate Medical Education (PGME) registration

A welcome package should be sent by e-mail from PGME in the between May and June. This should include registration forms that need to be submitted to the PGME office (260 Brodie Centre) by the date indicated. In addition the welcome package should give the date of the mandatory PGME resident orientation and other essential registration requirements.

All of the necessary resources and information for new residents, administered through the PGME, are found in the PGEM website (http://umanitoba.ca/faculties/health_sciences/medicine/education/pgme/11392.html). These resources include the registration manual, registration checklists, and trainee handbook. New resident is strongly urged to review this webpage by April of the year the training starts.
Section 9: EVALUATIONS

Evaluations are divided into the categories below. Each rotation has defined objectives that allow for acquisition of certain skills by the resident. Evaluations of the resident are done using these rotation objectives as the anchor. Therefore, while the evaluations are global in nature, the basis for grading the resident is based on the milestones achieved with respect to the rotation objectives.

1. Resident in-training evaluation (ITER): filled out by mentor/preceptor/faculty for evaluation of the resident at end of rotation.
2. Mid-rotation assessment (MRA): filled out by mentor/preceptor/faculty for evaluation of resident mid-way through a rotation.
3. Faculty evaluation: filled out by resident, in confidence, for evaluation of teaching faculty.
4. Rotation evaluation: filled out by resident, in confidence, for evaluation of completed rotation.
5. Preceptor feedback: filled out by resident, in confidence, for evaluation of rotation preceptor/mentor.
6. Educational event assessment:
   a. filled out by resident, in confidence, for evaluation of faculty delivered presentation.
   b. Filled out by faculty/preceptor/mentor for evaluation of resident presentation.

All of the evaluation templates are done and documented using the PGME curriculum software Entrada. Reports are generated using the system though the respective administrators. The confidential resident filled forms are anonymized and provided to the training program by the PGME.