

“This prospectus is made under the provisions of the Universities Act, the Postgraduate Institute of Medicine Ordinance, and the General By-Laws No. 1 of 2016 and By-Laws No. 2 of 2016 for Degree of Doctor of Medicine(MD) and Board Certification as a Specialist”



**POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO**

PROSPECTUS

Board Certification in Haemato-Oncology

(To be effective from the year 2016)

BOARD OF STUDY IN CLINICAL ONCOLOGY

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1. Background

The Board of Study in Clinical Oncology (BOCO), from its inception in late 1980s, has endeavoured meticulously to train and provide our country with well trained and Board Certified Specialists in General Clinical Oncology. The BOCO can now justifiably be proud of its achievement in establishing and of all of its efforts towards providing specialist Oncology services in all areas of Sri Lanka. Currently, Board Certified Specialist General Clinical Oncologists provide specialist Oncology services in all areas of the country.

Although General Clinical Oncologists are able to provide optimal cover for the majority of clinical problems that come up in Clinical Oncology, ultra-specialist care and high-powered services are required in certain well defined specialized areas. To cater to this need, over the last few years, the BOCO has commenced in stages, training programs for different sub-specialties in Clinical Oncology. Paediatric Oncology sub-specialty was incorporated into the current training programmes of the Board of Study in Clinical Oncology in 2010. As a further step in this direction the BOCO has now decided to request for the inclusion into its curriculum, Haemato-Oncology Training leading to Board Certification in this sub-specialty.

The mission of this endeavour is to ultimately produce appropriately selected, properly trained, exquisitely competent and holistically caring Haemato-Oncologists who would be able to satisfy the needs of the country in providing the best possible state-of-the-art care and follow up for those patients with Haematological Malignancies who need expert attention.

The workload of anyone involved in the care of Haematological Malignancies, in the medical and para-medical modalities, consists of a considerable proportion of Cancer Problem. It has been empirically estimated that around 30 per cent of the workload of a Cancer unit in Sri Lanka involves Haematological Malignancies. In addition, the picture reported globally, especially from the developing nations, is that many of the Haematological malignancies are getting cured, with very much less treatment related morbidity and mortality. Sri Lanka should endeavour to further improve the cure rate and towards that end, skilled specialist care of major Haematological Malignancies is of utmost importance.

While the major portion of these Haematological Malignancies could be handled adequately by Clinical Oncologists, there are those that require the expertise of highly trained Haemato-Oncologists. Such a person will be able to use his or her training, experience and the infrastructure facilities available in a highly specialised unit to cater to the needs of Haematological Malignancies. Haemato-Oncology is an established sub-specialty in the West for a long time and it is now a sub specialty in all countries in Asia. There are around 1000 patients annually who are diagnosed with Haematological Malignancies, admitted to National Cancer Institute, Maharagama. It is expected that there will be cadre provision for up to 8 Haemato-Oncologists in the Ministry of Health within the next 10 – 15 years, to man Haemato-Oncology Units and Bone Marrow Transplantation Units.

2. Entry criteria, selection process and intake of trainees

2.1 Entry criteria

- a. Trainees should have passed the MD (Clinical Oncology) Part II examination
- b. Trainees should not be Board Certified by the PGIM in any Speciality or Subspeciality

2.2 Selection Process

Trainees will be selected on the merit based ranking results of the Clinical Oncology Final MD (Part Two) Examination.

2.3 Intake

Trainees will be informed of the number of positions available for post-MD training in Haemato-Oncology at the post-MD allocation meeting or before. The selected trainees would be provided with full and comprehensive details of the training programme. This would be available at the PGIM for perusal by prospective candidates prior to the allocation meeting.

3. Training Outcomes and Learning Objectives

3.1 Proposed Outcome

The Haemato-Oncologists are expected to provide a specialty service to those Haematological Malignancies who need expert care in the management of their cancers. The range of the functions of the said specialist would also include cooperating with and assisting other sub-specialities as well as General Clinical Oncology.

3.2 Broad core objectives

The broad core objectives of the entire training programme are as follows:

3.2.1. Patient care.

The ultimate aim is to provide comprehensive care and specialised services to Haemato-Oncology. The trainees are expected to acquire the necessary knowledge and expertise in dealing with Haematological Cancers. The trainees would need to determine the infrastructure facilities required for optimal care to these patients and make personal and fervent efforts to acquire them into the specialised Haemato-Oncology units through the agencies that are responsible for the provision of these amenities.

3.2.2. Medical knowledge.

It is expected that the trainees should acquire extensive and up-to-date knowledge on Haemato-Oncology during the course of the training programme.

Wide reading and critical thinking together with reflective documentation would be essential attributes that should be developed during the programme.

3.2.3. **Interpersonal and communication skills**

It is essential that the trainees develop the indispensable skills in communication and liaison with other colleagues and the staff of the different units of a medical facility with whom they have to have a constant dialogue. It is most likely that the work of the Haemato-Oncologists would involve a multi-disciplinary approach in many instances and towards that end, proper communication with all those involved in the care of a patient with Haematological Malignancies would be crucial to the provision of optimal care.

The trainees should also acquire the necessary skills and attitudes in maintaining a dialogue with the affected patients, their families and caregivers. Development of empathy and understanding of the problems faced by them would be an essential prerequisite to being a competent and successful Haemato-Oncologist.

3.2.4. **Professionalism**

It is envisaged that the trainees in Haemato-Oncology would act and behave in a most professional manner in all dealings with senior and junior colleagues and others involved in the management of patients with Haematological Malignancies. This is particularly relevant in Haematological Malignancies as one needs to secure the services of several other para-medical categories of staff in the provision of comprehensive care to those with Haematological Malignancies.

These attitudes and skills need to be carefully nurtured during the training programme.

3.2.5. **Practice-based and Evidence-based approach**

The trainees are expected to acquire these approaches to the ways in which the myriad of Haematological Malignancies could be handled. Although evidence-based medicine is the cornerstone on which optimal care is based, a practice-based approach may be appropriate in certain circumstances. The skills based on both approaches need to be developed during the training programme.

Board Certified Specialists in Haemato-Oncology are **not expected** to engage in laboratory-based diagnosis and issue of laboratory reports, but will engage in all aspects of treatment and Bone Marrow transplantation.

3.3 Content areas

Essential core areas of training are listed in Annex 1.

4. Structure of training programme, trainers and training units

The entire Haemato-Oncology Sub-Specialist Training Programme would consist of three and half years following selection. Of the entire training period, one and half years are to be spent locally and two years abroad in a centre of excellence. The foreign component of training should be with hands-on experience.

4.1 Training Settings, Units and Educational Resources

Teaching will be done by Trainers approved by the BOCO and resources such as wards, clinics, intensive care units, special care baby units, operating theatres, skills laboratories, information technology facilities and libraries will be used as learning methods and tools. Regular case discussions, Journal Clubs and audit meetings will be held.

4.2 Trainers

The current panel of Board Approved Trainers who are Board Certified Consultants with MD in Clinical Oncology or those with foreign qualifications that are eligible for Privileges of Board Certification with employment in the Ministry of Health or the Universities would carry out the training locally. Foreign training would be carried out by recognized Consultants in centers of excellence.

4.3 Local Training- One and half years

This will consist of 3 appointments; each appointment is of 6 months duration.

The selected trainee would be appointed to the Haemato-Oncology Unit/Clinical Oncology Unit, National Cancer Institute, Maharagama by the BOS in Clinical Oncology as a Senior Registrar for a **period of one year**, consisting of two 6-month appointments under 2 different haemato-oncology trainers. The choice of the order of training unit will be made by the trainee and offered by the Board of Study in Clinical Oncology in accordance with the availability of trainers at a given time.

During the training period Trainees should have hands on job experience in the management of **Haemato-Oncology** emergencies, relevant diagnostic and therapeutic procedures. Trainees are expected to have inpatient service responsibilities with patients admitted under the care of a clinical oncologist with special interest in **Haemato-Oncology** or a **Haemato-Oncologist**. The out-patient experience should include the special care of leukaemic patients. Ability to perform lumbar puncture and obtaining CSF samples for analysis and knowledge on detailed follow up procedures are essential. These should provide adequate experience in diagnosis, investigation, management and follow up.

If the trainee has successfully completed his/her assessments, at the end of 1st year of clinical training he/she could commence his foreign training component. OR the trainee could complete total period of 1½ year of local training before the foreign training

component. The 6 months training at the BMT unit at NCIM is compulsory and can be undertaken after or prior to the foreign training component.

The 3rd appointment (of 6 month duration) will be at the newly established Bone Marrow Transplant unit at National Cancer Institute, Maharagama. Trainees are expected to have service responsibilities with patients admitted under the care of a clinical oncologist with special interest in **BMT** or a **Haemato-Oncologist**. During this appointment the trainee should gain adequate experience in practical and clinical aspects of procedures involved with BMT including bone marrow harvesting / stem cell collections using Bone marrow aspiration/ cell separator, investigations and interpretation skills, decision making and follow up. The trainee will have to acquire and develop the knowledge on selection of patients and donors and ethical issues related to BMT.

During this period of one & a half years, the trainee is expected to visit and acquire knowledge in the human genetics laboratory, University of Colombo for a period of one month. BOCO shall arrange the appointment.

Trainees should also complete the following:

1. attend and preferably participate in at least one relevant national or international meeting over the two year training period.
2. be an active member of a journal club
3. be involved in preparation and presentation of teaching material for tutorials, seminars and grand rounds for undergraduates or postgraduates.
4. be encouraged to undertake one or more research projects during their training and to present their results at one of the annual scientific meetings of the special societies or published in peer reviewed journals.

4.4 Foreign Training- Two Years

The foreign training component should be in a centre of excellence abroad. Due to inherent logistical difficulties of securing a position continuously for two years, it may be necessary to arrange the training in more than one centre.

It is necessary to have the training abroad for two years as Haemato-Oncology is not well developed in Sri Lanka at present, and some of the desired training facilities are available only in those centers of excellence abroad.

The selected training centre/s have to be approved by the BOCO. It must be a centre of excellence. The trainee is expected to apply and secure suitable positions for training.

It is expected that the trainee would be able to gain valuable experience in all aspects of Haematological Malignancies in such a centre. The trainee has gone through the general oncology curriculum successfully, he /she does not need any general training in chemotherapy drugs or radiotherapy in the foreign center.

This training would include

- i. The use of sophisticated facilities for diagnosis, assessment and follow-up of patients with Haematological Malignancies.

- ii. Treatment of all types of adult haematological malignancies & management of all types of complications
- iii. Exposure to all diagnostic techniques used in Haemato-Oncology and be able to interpret results of these laboratory tests, and correlate the results with the clinical condition of the patient under treatment.
- iv. Laboratory work in detail for diagnosis of Haematological Malignancies.
- v. All aspects in Transfusion Medicine that are needed to support a patient with haematological malignancy
- vi. A thorough knowledge in Bone Marrow Transplantation including practical aspects of harvesting marrow, storage etc for adult as well as paediatric patients.
- vii. Investigations and interpretations of results associated with the clinical genetics

Such exposure and training would enable the trained Haemato Oncologist to deal adequately with the many types of Haematological Malignancies that he/ she is likely to encounter in Sri Lanka.

5. Research Project

Successfully carrying out a research project, directly relevant to Haemato-Oncology in Sri Lanka, is a **mandatory requirement** that needs to be fulfilled to be eligible to appear for the Pre-Board Certification Assessment (PBCA).

The Research Project could be undertaken at any time in Sri Lanka. It should be a prospective study which is either hospital based or community based and could include clinical, epidemiological, genetic components. It may be observational or interventional in type.

All aspects of the study have to be assessed and deemed to be satisfactory by the BOCO **before embarking on the proposed study**. Towards that end, a comprehensive project proposal has to be submitted to the Board of Study in Clinical Oncology and approval obtained, prior to commencing the study including recruitment of patients and data collection (see Annex 2 for format of proposal)

The draft proposal should be all-inclusive and detailed with all relevant particulars being included. The supervisor would be the trainer in whose unit the work is to be carried out. Once approved, it should be commenced without any delay and within a period of two months after approval.

All projects should also have Ethical Clearance, and would need informed written consent. Interventional studies have to be registered with the Sri Lanka Clinical Trials Registry.

Acceptance of the research project by the BOS may be based on fulfillment of either of the following:

1. Publication of the research findings as an **original full paper** (not case reports) in a **peer-reviewed journal** (preferably indexed) with the trainee as first author. No further evaluation is required on the premise that a paper which is already peer-reviewed.
2. Submission of a detailed project report to the BOS. **A generic format for such project reports is shown in Annex 2.** This should be evaluated by 2 assessors nominated by the BOS, and marked as either satisfactory, or unsatisfactory.
 - a. If the project is considered unsatisfactory by both assessors, the trainee will be requested to revise and resubmit, with written feedback on the required revisions. If the project report is still unsatisfactory, the trainee may, at the discretion of the BOS, be asked to extend the same research project or undertake a new research project which will have to go through the same procedure of approval as the initial project.
 - b. If there is disagreement between the two assessors, with only one assessor's decision being 'unsatisfactory', the project report should be sent to a third assessor for a final decision.
 - c. Presentation of the research findings at a recognized scientific congress, either local or international, as oral or poster presentation, with a published abstract, with the trainee as first author, should be given credit during the assessment process.

The paper/dissertation should be submitted three months before the date of the PBCA to the Board of Study in Clinical Oncology for acceptance. (See Annex 2 for guidelines). Once accepted and other requirements are fulfilled the complete research article with a certificate of presentation/publication or dissertation should be submitted to the PGIM three months prior to the date of the Pre Board Certification Assessment.

A project report will be assessed based on the following marking scheme:-

▪ Title, Introduction and Literature Survey	10 marks
▪ Objectives	10 marks
▪ Method	20 marks
▪ Results	20 marks
▪ Discussion	20 marks
▪ Conclusions	05 marks
▪ References	05 marks
▪ Overall presentation of the project.	10 marks
TOTAL	100 marks

A minimum mark of 50 per cent is necessary for the project to be accepted by the BOCO.

6. Clinical Audit

As a part of foreign training, **it is a mandatory requirement** for the trainee to do a comprehensive Clinical Audit and formally present it at the hospital where he or she is

working. This is in addition to the prescribed Research Project. Documentary evidence of such an audit presentation must be provided to the BOCO. This venture is a form of training that would be most useful when such audits have to be carried out or supervised in the Sri Lankan setting when the trainee returns to Sri Lanka.

7. Monitoring of progress

7.1 Progress reports

Once selected, a trainee would come under the general purview of the Special Committee of the BOCO that deals with Haemato-Oncology. Each candidate would be allocated to a “Professional Mentor” from the BOCO and would be guided by that personality right throughout the training programme.

Each completed section of the training programme should be followed by the submission of a Progress Report by the Supervisor / Trainer. The templates for non-clinical and clinical training assessments are provided as **Annexures A and B** respectively at the end of this document. These reports should be received by the PGIM within one month of completing the relevant section of training.

During the first year of local training, trainees will be required to undergo three-monthly appraisals by the trainer/s (see Annex 4 for format of appraisal). This will be carried out by the appropriate trainer/s and be based on a log book.

- The Log Book to determine the work experience of the trainee in consultative activities on the ward services and out-patient experience devoted to Haemato-Oncology at approved training unit/s.
- The Log Book to include the number of clinical meetings attended and addressed by the trainee for a larger audience of trainers and peers, journal clubs participated in and made presentations at, clinical meetings and case discussions with multi disciplinary inputs; certified by the trainer.

The onus of ensuring that these reports are sent in time to the PGIM is entirely on the trainee. He or she should liaise with the trainers and make sure that the reports are received by the PGIM in time. This includes local as well as foreign training.

Any grade of “average”, “good” or “excellent” would be a satisfactory evaluation result. The grading of “poor” would be considered to constitute an adverse report.

Suitable and appropriate action will be taken by the BOCO according to the General Regulations and Disciplinary Code of the PGIM in the event of the receipt of an unsatisfactory or adverse progress report at any stage of training.

Satisfactory Progress Reports are a mandatory requirement to qualify for the Pre – Board Certification Assessment (PBCA)

7.2 In-service assessments

The main components of the assessments of the training programme are given below:

Main components	Pass mark (%)
a) Assessment I at end of first year (when both clinical oncology	50%

appointments are over) in Year 1	
b) Assessment II at end of BMTransplantation Appointment in Year 2	50%
c) PBCA at end of post-MD training of 3 ½ years	50%

7.2.1. **Assessment 1**

This will consist of discussion of management of 2 cases of common haematological malignancies, which will include interpretation of blood picture, bone marrow biopsies, flow cytometry and cytogenetics reports; by 3 consultants appointed by the Board of study in Clinical Oncology. 50% must be obtained in order to pass the assessment.

Trainees will not be allowed to proceed to overseas training unless they have passed this assessment.

7.2.2. **Assessment II**

This will take place at the end of local training. The objective of this assessment is to ensure the trainee receives a comprehensive clinical training in bone marrow transplantation. At the end of this training the candidate is expected to have acquired the fundamental knowledge and skills to become a capable, caring, and committed Haemato-Oncologist with good communication skills to practice in Sri Lanka and in accordance with PGIM training requirements and in keeping with patient / societal expectations.

An oral examination in the form of a case-based discussion of 30 minutes duration, will be conducted by two examiners. At least one of these will be an Oncologist with special interest in Haemato-Oncology or a Haemato-Oncologist.

The objective of the viva is to assess the trainee's capabilities in rational clinical decision making, investigatory and analytical thinking, and ethical issues involving the practice and evidence based approach to clinical care of a patient diagnosed with Haematological malignancies.

The trainee will be required to obtain a minimum mark of 50% in order to pass this assessment.

Unsuccessful performance

In the event of unsuccessful performance at any of the above assessments the trainee will be required to undergo one more month of training in the relevant unit(s), at the end of which the assessment will be repeated.

For the trainees who are unsuccessful, a total of three attempts at each assessment will be allowed. If yet unsuccessful, the trainee will be reverted

back to the Board of Study in Clinical Oncology, for Clinical Oncology training as a Senior Registrar. The trainee will then be required to complete the training as described in the prospectus and become a Clinical Oncologist.

7.2.3. Portfolio

The portfolio is an important tool for assessment of trainee performance and learning processes. The portfolio will be used as an assessment criterion for the training programme in Haemato-Oncology. It is a key document in the formative assessment of the trainee during the training programme and at PBCA.

The fundamental basis of portfolio maintenance is Reflective Practice, which is an important tool in postgraduate training. Reflective practice consists of -

- a) focused self-assessment
- b) reflecting on experience
- c) reflecting on strengths, weaknesses and areas for development
- d) design of own strategies that leads to improvement in practice

Using such a process, there is improved training by self-identification of strengths and weaknesses, which is expected to promote deep learning, document what the trainee already knows, identify areas for improvement and helps in planning further learning. This approach promotes self-directed learning and critical thinking skills

The objective of maintaining a Portfolio is

- to help the trainee to record his or her training in brief so that the experience acquired can be assessed and deficiencies identified and remedied.
and
- to help supervisors and assessors to evaluate the overall training and provide guidance in areas where it is needed.

The portfolio should display evidence of following broad outcomes at the end of specialist training; when he/she is board certified.

1. Subject expertise
2. Teaching
3. Research and audit
4. Ethics and medico-legal issues
5. Information technology
6. Life-long learning

Examples of evidence that may be included in each of these sections are as follows

1. Subject expertise:
 - Documentation of all aspects of training and learning

experienced by the trainee. This should include a minimum of ten case records and a minimum of ten procedures and practical skills.

- Documentation regarding in-service assessment I and II
- A record of individual activity-based entries on the trainee's own experience
- Exposure to new technologies.
- Mini-Clinical Examination (Mini-CEX). A minimum of five.
- Direct Observation of Practical Skill (DOPS). A minimum of ten.
- Case Based Discussions (CBD). A minimum of five.

2. Teaching

- Evidence of teaching undergraduate medical students or postgraduate trainees
- Evidence of teaching any other category of health personnel

3. Research and audit

- Outcome of research project: article accepted for publication in scientific journal or report written as per guidelines in Annex 2
- Records of oral or poster presentations made at scientific conferences.
- Clinical audit as described in Section 6 above

4. Ethics and medico-legal issues

- Completed Professionalism Observation Forms (from integrated learning component of Professionalism Strand)
- Completed PTR forms during post-MD training

5. Information technology

- Evidence of information gathering using internet-based literature search strategies
- ????

6. Life-long learning

- Details of Continuing Professional Development activities. Minimum of twenty.

7. Reflective practice

- narration of at least one learning event experienced by the trainee, in relation to each of the above outcomes, with reflection on what and how the trainee learned from this experience

The portfolio should be maintained in separate sections to conform to the above format. Entries in the Portfolio should be made by the trainee at the time of acquiring the skill and authorized by the trainer or supervisor. The trainee is expected to keep it updated regularly. The trainers and supervisors will use the portfolio to assess the progress of the trainee and to provide a

feedback at regular intervals during the training period. The portfolio should be reviewed at least every 6 months by the local supervisor(s), with regular feedback to the trainee on how the portfolio may be improved. The trainers and supervisors are expected to assess the level of competencies in different areas of training and provide advice and assistance to the trainees to achieve the expected levels of skills empowerment.

It is the responsibility of the trainees, the trainers and the supervisors to ensure that the entries in the Portfolio are authentic and made regularly. It is essential to provide the trainee with accurate feedback on his or her views about his or her performance during the training period.

The Board of Study expects the Trainee and the Trainers to make the best use of the Portfolio in order to achieve the objectives of the training programme. The portfolio should be kept as a ring binder document which will allow easy insertions by the Trainee.

8. Pre-Board Certification Assessment (PBCA)

8.1 Eligibility to sit for the PBCA

A trainee must fulfil all the following criteria in order to be eligible to appear for the PBCA.

1. Provision of satisfactory Progress Reports for **ALL** stages of training.
2. Submission of the completed portfolio including evidence of
 - Successful completion of the Research Project.
 - Successful conduct and presentation of a Clinical Audit.

8.2 Format of PBCA

The PBCA will be based on assessment of a portfolio maintained by the trainee during the period of post-MD training.

The portfolio should be reviewed at least every 6 months by the local supervisor(s), with regular feedback to the trainee on how the portfolio may be improved.

When the trainee is eligible for PBCA, 4 copies of the completed portfolio should be submitted to the PGIM Examinations Branch.

The PBCA should take the form of a final, summative assessment of the trainee's portfolio, carried out by 3 examiners; 2 independent examiners out of clinical oncologists / Haemato-oncologists & the 3rd examiner should be a nominee from the Board of study in Medicine to improve objectivity. All examiners are to be appointed by the Board Of study of Clinical Oncology and these nominations would be approved by the Senate of the University of Colombo.

The trainee should be called for an oral examination of minimum of 45 minutes duration, during which he/she will be questioned on the portfolio. The trainee may be required to start with a presentation of 10 – 15 minutes, on the post-MD training.

The overall assessment should be based on each of the main sections, which should be assessed as satisfactory or not on an overall basis. (ref to Annex 3)

If the examiners are of the view that the trainee's performance is unsatisfactory, and the trainee should not be given immediate Board Certification, the examiners must provide the trainee with written feedback on how the portfolio should be improved in order to reach the required standard. The trainee should then re-submit the portfolio within a specified period of time (up to 3 months), and face another oral examination based on the re-submitted portfolio. If the trainee is successful at this 2nd oral examination, the date of Board Certification should be backdated as done routinely. If unsuccessful again, the date of Board Certification will be the date of passing the subsequent PBCA following further training for a minimum period of six months in a unit selected by the Board of Study.

8.3 Criteria to pass PBCA

The overall assessment should be based on each of the main sections in portfolio; which should be assessed as **satisfactory or not** on an overall basis.

9. Requirements to be eligible for Board Certification

The candidate is recommended for Board Certification if he / she has:

Passed the PBCA

AND

fulfilled all other stipulated requirements of the PGIM.

The panel of examiners will recommend to the Board of Study of Clinical Oncology that the trainee has successfully completed PBCA, when a trainee would be eligible for Board Certification as a Specialist in **Haemato-Oncology**.

ANNEX 1. CONTENT AREAS

A. Core knowledge

This is a general overview of the central nuclear areas that need to be covered in the training programme. All aspects of these connotations have to be addressed during the training programme. Some of these could be done in Sri Lanka while some others may need the facilities of a centre of excellence abroad.

1. Biological Basis of Cancer and Basics of Haematology- Epidemiology, Cancer and Heredity, Molecular and Genetic Basis, Biology of Cancer, Tumor Immunology and Haematological Cancer, Normal Haematopoiesis, Non neoplastic and neoplastic white cell disorders, Morphology and functions of Lympho-Reticular system, Normal Lymphocyte and Non-neoplastic Lymphoid Cell Disorders, Phagocyte and Phagocytic Disorders Haematological Malignancies, Leukaemia, Lymphoma, Myelomatosis, Myeloproliferative disorders and myelodysplastic Syndromes, Bone Marrow Transplantation, Transfusion Medicine, Immune-Haematology, Antigens in Human Blood, Clinical Blood Transfusion.
2. Clinical Assessment and Differential Diagnosis of a patient with Suspected Haematological Cancer
3. Pathology and Molecular Diagnosis of Leukaemias and Lymphomas.
4. Diagnostic Pathology of Haematological Malignancies.
5. Imaging Studies in the Diagnosis and Management of Haematologic Malignancies.
6. Principles of Multimodal Therapy & clinical applications.
7. Elderly patients with Haematologic Malignancies & Cancer: Special Considerations.
8. Cancer Clinical Trials: Design, Conduct, Analysis, and Reporting.
9. Regulating Patient Safety in Cancer Treatment.
10. Management of Common Cancers of Haematological Malignancies
 - Acute Lymphoblastic Leukaemia
 - Acute Myeloblastic Leukaemia
 - Chronic Leukemias
 - Myeloproliferative and Myelodysplastic Disorders
 - Hodgkin Lymphoma
 - Non-Hodgkin Lymphomas
 - Lymphoproliferative Disorders and Malignancies Related to Immunodeficiencies
 - The Histiocytoses
 - Multiple Myeloma and other Plasma cell disorders
11. Management of Infrequent Cancers of Haemato-Oncology
12. Ethical, emotional, psycho-social, economic and legal aspects of Haemato-Oncology.
13. All facets of the ancillary connotations of Haemato-Oncology, ethics of management modalities, off-label prescribing, use of potentially toxic drugs, cost-effectiveness of treatment modalities, ethical and moral issues in Haematological Malignancies research, statutory and legal implications in Haematological Malignancies / diseases etc.,.

B. BMT Training objectives:

1. Understand the use and toxicity of commonly used chemotherapeutic, immunosuppressive and anti-infective agents used in HSCT.
2. Understand the quality use of blood products in HSCT via on the job training and e-learning websites such as www.blood.gov.au/pbm-guidelines, www.bloodsafelearning.org.au, www.transfusion.com.au
3. Understand the principles and management of stem cell mobilization in both the autologous and allogeneic setting with a particular emphasis on CD34 stem cell enumeration via flow cytometry and the potential complication of apheresis.
4. Understand the logistics, work up and management of bone marrow and peripheral blood stem cell donors including the timing of HSCT in the overall disease management of patient.
5. Understand the HLA system and the choice of donors for allogeneic HSCT using matching at HLA along with blood group and CMV status.
6. Understand the principles of management of neutropenic sepsis and the diagnosis and management of fungal and viral infection in an immunosuppressed patient.
7. Have a thorough knowledge of commonly used conditioning regimens used in both autologous and allogeneic HSCT and any possible modification that are required.
8. Demonstrate knowledge of the indications and choice of conditioning regimens for various conditions.
9. Understand management guidelines of patients post HSCT as per commonly used protocols such as EVIQ (www.eviq.org.au).
10. Have a thorough understanding of the management of patients post HSCT with a particular emphasis on infection and graft versus host disease.
11. Demonstrate knowledge of vaccination post HSCT along with long term follow up issues such as osteoporosis and secondary malignancy.
12. Acquire skills in information technology in order to establish a HSCT recipients registry.

C. Skills development

There are some essential skills that need to be acquired during the training programme.

These are as follows :-

1. Routine and special Haematological procedures, laboratory tests and Interpretation of results :
 - Bone marrow aspiration and trephine biopsies.
 - Special stains
 - Immune marker studies
 - Coagulation tests
 - Serological tests – related to Blood Bank serology
 - Other special Haematological tests.
 - Cytology esp in CSF
2. Laboratory instrumentation in Haematology
 - Automated analyzers and their working principles.

- Understand Principles and application of Instruments including Quality Control, Calibration and Operation
3. Quality assurance
 - Internal quality control
 - External quality assessment
 - Laboratory accreditation
 4. Supportive Care of Haemato-Oncology patient with Cancer
 - Oncologic Emergencies-esp. tumour lysis
 - Hematologic Supportive Care for Haemato-Oncology patients with Cancer
 - Infectious Complications in Haemato-Oncology Patients
 - Nutritional Supportive Care
 - Symptom Management in Supportive Care
 - Nursing Support of the Haemato-Oncology patient with Cancer
 - Rehabilitation of the Haemato-Oncology patient with Cancer
 - Psychiatric and Psychosocial Support for the Haemato-Oncology patient and Family
 - Ethical Considerations in Haemato-Oncology.
 5. Other Issues Arising at Diagnosis, During Treatment, and after Cessation of Therapy
 - Late Effects of Haemato-Oncology and Its Treatment
 - Palliative Care for the Haemato-Oncology patient with Advanced Cancer
 - Financial Issues in Haemato-Oncology patient
 - Preventing Secondary Cancer
 - Resources for Haemato-Oncology patient with Cancer, Their Families, and Physicians
 6. Academic dexterity in communication

All relevant competencies in communicating with parents, relatives and colleagues in the different areas of diagnosis and management of Haemato-Oncological Malignancies.
 7. Teaching capabilities

All aspects of teaching with regard to Haemato-Oncology with the ability to tone up or down the level at which teaching is conducted with reference to the level of knowledge of the audience.
 8. Proficiency in Research

Proven capabilities in research and the ability to lead research teams and guide future research by junior colleagues.
 9. Competence in Platform Oral Presentations

Training for Platform Oral Presentations with the use of computer based text, images, real-life photography and real-time videos etc.
 10. Posters and Publications

Ability to design and present posters. Scientific writing for Journal Publications.

ANNEX 2. RESEARCH PROJECT LEADING TO A DISSERTATION

Successful completion of a research project is a mandatory requirement to be eligible to appear for the Pre-Board Certification Assessment (PBCA).

The purpose of this module is to enable the trainee to obtain a practical knowledge of conducting a research project.

This includes the ability to:

1. Develop an area of interest, to search and analyze the background on the subject and to undertake a literature search.
2. Define the aims and objectives of the study, to decide on a study design.
3. Identify the study sample, sampling methods, sample size and to decide on methods of data collection and analysis.
4. Learn the principles involved in ethical issues.
5. Utilize this information to prepare a research protocol.
6. Construct a timetable for the research, its conduction and completion.
7. Write and present the research paper.

It should be a study which is either hospital-based or community-based and could include clinical, epidemiological, genetic or immunological components. It may be observational or interventional in type.

All aspects of the study have to be assessed and deemed to be satisfactory by the Board of Study in clinical oncology ***before embarking on the proposed study.***

The draft proposal (format given below) should include all relevant details. The submitted proposal will be evaluated by a member appointed by the Board and comments submitted to the Board according to the format given below.

Once approved, it should be commenced without any delay and within a period of three months after approval. List of instructions to the supervisor is indicated below. The supervisor should submit a progress report to the Board every six months using the form given below. All projects would need ethical approval.

The trainee may submit the study for publication in a peer-reviewed journal or present in a recognized scientific session. A comprehensive report on the completed study should be produced to the Board according to the format given below. Examiner(s) appointed by the Board will assess the completed project report based on the marking scheme indicated below.

FORMAT OF DETAILED PROJECT PROPOSAL

Section 1

1. Name of trainee
2. Name(s) of supervisor(s)
3. Training centre

Section 2

1. Project title
2. Background and justification
3. Objectives of study
4. Research plan
 - a. Design
 - b. Setting
 - c. Method
 - d. Sample size and sampling techniques
 - e. Outcome measures
 - f. Statistical analyses and plan of presentation of results
 - g. Ethical considerations
 - h. Work plan and time lines
5. References
6. Funding for study
7. Signature of trainee

Section 3

Recommendation of supervisor(s)

Signature of Supervisor 1

Signature of Supervisor 2

Date

Date

Section 4

Date of submission to PGIM

Date of approval by BOS

Signature of Secretary BOS

REPORT OF THE BOS MEMBER (REVIEWER) EVALUATING THE PROPOSAL/ FINAL REPORT OF THE RESEARCH

1. Name of Trainee:

2. Training Centre:

3. Supervisor:

4. Reviewer:

Name:

Designation:

Address Official:

Tel//Fax:

Email:

5. Title of Project:

6. Please comment on each of the following headings.

1. Introduction: Rationale (Justification) – problem identified and quantified. Hypothesis and expected outcome, impact and relevance of the study.

Comment:

2. Literature Review: Adequacy (evidence of a systematic search for related. similar, relevant studies)

Comment:

3. Objectives: Clearly defined, relevant and stated in measurable terms.

Comment:

4. Method: Appropriate study design to address the objectives with clear detailed description of subjects, sampling technique and sample size, interventions, data collection and management. The study should be, internally valid and reproducible. Where specific details are available in the literature, reference should be made to the original papers, and comments kept to a minimum. If modifications have been made to the published techniques, these should be described in full. Appropriate statistical tests planned should be mentioned and ethical issues addressed

Comment:

5. Results: Order of presentation and appropriate presentation of tables, figures, graphs. Appropriate statistical analyses and interpretations

Comment:

6. Discussion: The findings of the study should be discussed taking into consideration findings of relevant studies, within and outside the country. The discussion should not be a repetition of the results only. Limitations should be included.

Comment:

- 7. Conclusion and recommendation:** Based of the results of the study and to address the objectives
Comment:
- 8. Limitations:** Any inherent and / or inadvertent biases and how they were dealt with.
Comment:
- 9. References:** According to the Vancouver system and relevant to the study. Properly documented in the Bibliography and appropriately cited in the text
Comment:
- 10. Institution(s) where work would be carried out:**
- 11. Ethical considerations/institution from where ethical approval will be /has been obtained:**
Comment:
- 12. Overall presentation:** Overall presentation of the proposal (grammar, spelling, typographical mistakes etc).
Comment:
- 13. Recommendation of reviewer:**
Comment:

Is the project report acceptable? Yes / No

If No, What corrections are required? (Attach a separate sheet of paper if necessary)

Signature:

Date:

14. Recommendation of the Board of Study in Clinical Oncology:

Signature of Chairperson/Secretary:

Date:

INSTRUCTIONS TO SUPERVISORS

1. The objective of the research project is to prove the trainee's capability to plan, carry out and present his / her own research. The purpose of this training is to ensure maturity, discipline and scholarship in research.
2. The supervisor should guide the student in planning and designing, carrying out the research and in presentation of the work.
3. The research project must be original and must comprise the trainee's own work.
4. It must contribute to existing knowledge relevant to Sri Lanka and afford evidence of originality as shown by independent, critical assessment and / or discovery of new facts in the area under study.
5. It should be satisfactory with regard to literary presentation.
6. The research project should be certified by the supervisor as suitable for submission.
7. General Comments on the contents: The objectives should be clearly stated and should be feasible to achieve within the time frame. Other published work relevant to the problem (both international and local) should be comprehensively and critically evaluated. An appropriate study design and method should be used to achieve the objectives stated. The results should be appropriately analyzed, interpreted and presented effectively. The discussion should include comments on the significance of results, how they agree or differ from published work. If they differ, the probable reasons for these differences need to be discussed. Theoretical / practical applications of the results, if any should be given. The conclusions should be valid and be based on the results obtained on the study.
8. Ethics: Approval should be obtained by a recognized Ethics Review Committee prior to commencement of the research project.
9. If at any time the supervisor is not satisfied with the work progress of the trainee, the trainee should be made aware of the deficiencies and corrective measures suggested. This should be conveyed in writing to the trainee with a copy to the Board in **Clinical Oncology**. In such instances, a follow-up report should be forwarded within three months or earlier.

RESEARCH PROGRESS REPORT

To be forwarded by the supervisor to the Board at least once in SIX months

- 1. Name of trainee:**
- 2. Training Centre:**
- 3. Supervisor:**
- 4. Title of project:**
- 5. Description of work carried out to date:**

To be filled in by trainee: briefly describe progress in lab / field work and report writing

Supervisor's comments

- 6. Is the work on schedule?** Yes / No
- 7. Progress in writing:** satisfactory / unsatisfactory
- 8. Constraints (if any)**
- 9. Recommendation of supervisor:**

Signature:

Date:

10. Recommendation of the Board of study in Clinical Oncology:

Signature of Secretary:

Date:

DISSERTATION FORMAT

General instructions

The past tense should be used. The metric system and the International System (SI) of units should be used whenever possible.

Length

The text should *not* exceed 4000 words, which equals to approximately 10 pages. With figures, references, etc., the total length is likely to be in the region of 15 - 20 pages.

ORGANIZATION

1. Title
2. Author's name and address
3. Abstract
4. Table of contents
5. List of tables
6. List of figures
7. Introduction
8. Objectives
9. Review of literature
10. Materials and methods
11. Results
12. Discussion (including limitations)
13. Conclusion and recommendations
14. Acknowledgements
15. References
16. The overall presentation

ANNEX 3. SCHEME FOR ASSESSMENT OF PORTFOLIO

Component of Portfolio	Satisfactory or Not
✓ Subject expertise	
✓ Teaching	
✓ Research and audit	
✓ Ethics and medico-legal issues	
✓ Information technology	
✓ Life-long learning	
Overall performance	

ANNEXURE 4. ASSESSMENT FORM

POSTGRADUATE INSTITUTE OF MEDICINE ASSESSMENT FORM Haemato-Oncology

Name of the trainee:

Name of the trainer:

Institution:

Period covered:

(Please tick [v] in appropriate cages)

Training modality Comments	<i>Excellent</i>	<i>Good</i>	<i>Average</i>	<i>Poor</i>
Regular attendance				
Punctuality				
Ability to follow instructions				
Attitude				
Commitment				
Motivation				
Self learning capabilities				
Understanding of content				
Performance in discussions				
Presentations				
Striving for improvement				
Doctors-patient relationship				
Communication skills				
Staff relationships				
Professional responsibility				
Clinical skills :- History taking				
Clinical skills :- Examination				
Clinical decision making				
Use of diagnostic tests				
Procedural / Technical skills				
Participation in research activities				
Participation in Seminars, Case presentations/audits etc				
Overall assessment at the end				

General / Specific comments:

Signature of Trainer: -

Date :-

Designation:-