

TEACHING DOSSIER

of

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1. CURRICULUM AND COURSE DEVELOPMENT

1. **Remodelling of Internal Medicine Training Program:** After its negative review in October 1995, it was necessary to remodel the core internal medicine training program. As the new program director, I coordinated the development of a new structure, centred on four internal medicine units. The following changes were the result of my work:
 - General Medicine CTU's increased to 4 teams from 2
 - New CTU leadership with an educational mandate
 - Wider spectrum of clinical cases cared for on the general medicine CTU's
 - Subspecialty experience focused on ambulatory patients and consults
 - Added new rotations in Palliative Care and Medical Oncology
 - Organized the curriculum content to better reflect the needs of Queen's residents
 - A longitudinal resident-run ambulatory clinic
 - A new rotation in ambulatory and consult General Internal Medicine
 - Evaluation of residents includes a monthly mini-clinical examination
 - An annual Royal College-style oral for all residents
 - New rotation-specific objectives and evaluation for each rotation
2. **Development of Hematology Training Program:** I took over as director of the Queen's University training program in adult hematology in 1997, when the program did poorly and received only provisional approval by the Royal College of Physicians and Surgeons. I rewrote the Goals and Objectives, restructured the timetable, introduced a basic science course, developed rotations in stem cell transplant and pediatric hematology, introduced rotation-specific evaluation based on the goals and objectives, and initiated an annual Royal College style examination (see 7.1.6 and appendix 6).
3. **Undergraduate Hematology lecture course:** I revised this course in 1997. I initiated a format in which a topic-based lecture is followed by a clinical exercise, which often involves bringing patients to the lecture theatre. I involve both basic scientists and clinicians in the course, to fulfil a mandate for teaching both the scientific and clinical aspects of the topics. I introduced a formative multichoice examination, and a system of feedback which ensures complete evaluation of the course content and the teachers by the whole class (see 7.1.3 and appendix 3).
4. **Internal Medicine (IMU) development:** I was a member of the IMU development task force in 1995. This was charged with improving the education of residents in the Internal Medicine training program, by creating clinical units on which they could experience undifferentiated general internal medicine. Two new units were created, IMU-C and IMU-D. I served as the first service chief of IMU-D, and I was responsible for setting up the initial policies and procedures on this unit. The scheme of Internal Medicine Units which arose from the task force received favourable comment in the 1999 Royal College review.
5. **Undergraduate Bioethics Queen's University:** I collaborated with a group of 5 clinicians and bioethicists in 1992 to develop the Queen's University introductory bioethics course. We decided upon half-day sessions, using analysis of moral dilemmas based on *prima facie* moral principles. Each session was started with a film, or a clinical scenario depicting the dilemma, and then the group broke into seminar groups, each led by one of the faculty. At the end of the session, the whole group reconvened to report and discuss their small group findings.

6. **St Mary=s Hospital Medical School.** In 1983, there was no formal instruction in bioethics at St Mary=s Hospital Medical School. I collaborated with Dr Raanan Gillon to introduce a philosophical medical ethics course for both undergraduates and postgraduates. We started with undergraduate lectures on the principles of moral analysis, and from there we developed discussions with the residents, using a system in which a moral philosopher and a clinician were present to analyse actual clinical cases. We also presented bioethics for the first time at grand medical rounds.
7. **Clerkship Review** I was a member of the 1995 clerkship review task force, which examined the content and timing of the Clinical Clerkship at Queen=s University. The review panel met over several days, and recommended lengthening the period of clerkship. The recommendations will be implemented in January 2000.
8. **Internal Medicine Training Program Website** I authored the internal medicine training program website in 1995.

2. INSTRUCTIONAL INNOVATION

Anemias teaching interactive quiz I developed an interactive anemia teaching quiz, for which I received an Aesculapian Society teaching award in 1992. The students are asked to make the diagnosis on 12 clinical cases, from the presenting complaint and the blood count, and a series of questions which they can ask about the history and physical examination, and the laboratory results. The data are contained in a numbered list. The students are expected to use clinical reasoning, and achieve a diagnosis using the minimum number of queries to the data (see 7.1.4 and appendix 4).

Hematology teaching website In 1996-7, I adapted the teaching quiz for interactive use on the internet. I have added a morphology atlas, the objectives of the undergraduate curriculum, most of the lecture notes and slides, the hematology ethics pages, and Dr Galbraith=s interactive teaching program >HemeTeam= (see 7.1.8 and appendix 8).

Bioethics in hematology In 1998, I developed a series of 10 hematology cases as a self-instructional tool in bioethics. I posted these on the teaching website, along with a simple primer for moral analysis using the well-known *prima facie* principles, and an analysis of each case. After self-study, the residents are expected to spend a half-day discussing the cases with a bioethicist.

Outpatient clinical skills Since 1994, I and Dr Galbraith have developed a system of ambulatory clinical skills teaching. The students see new cases in the hematology clinic, and are taught history-taking, examination, and presentation skills in this setting, with emphasis on clinical reasoning. The model has caused interest, because of its consistent popularity with the students, and because it helps to move clinical teaching away from the in-patient setting (see 7.1.2 and appendix 2).

Resident Research in the Internal Medicine Training Program (1992-1998) In 1992 I initiated a process whereby each new resident in the Internal Medicine Training Program was expected to conduct a research project during their three years of core internal medicine. I devised goals and objectives, instructed the residents, and ensured that they

found suitable supervisors and topics. I made certain that the projects were carried out. I put on four annual Department of Medicine Resident Research Days, and obtained external support for them. The program is viewed positively by both the residents and faculty (appendix 9).

3. EDUCATIONAL LEADERSHIP

3.1 NATIONAL

1. **Chair, Examination Board in Hematology, Royal College of Physicians and Surgeons of Canada, 2001-3.** The chair is responsible for the content, organization and marking of the examination leading to certification in Adult Hematology. The examination is held over a 2 day period for approximately 20 candidates. It consists of a short answer paper, a glass slide examination, and an oral.
2. **Canadian Society of Clinical Investigation Programs (1996-2000):** I was a member of the CSCI program committee. Each year, we put on a program at the Annual Meeting, designed to assist in developing the presentation skills of young clinician-scientists in training. We selected abstracts from approximately 40 submissions, some for oral presentation, and some for posters. The posters were reviewed by members of the CSCI council at the meeting, and the presentations were heard by members of CSCI, and the presenters= peers. I took part in selecting the abstracts, reviewing the posters, and chairing the presentation sessions.

3.2 PROVINCIAL

Cancer Care Ontario Provincial Guidelines Group (1997-present): this body is constituted by Cancer Care Ontario from hematologists in the Province of Ontario, and it develops guidelines for practitioners in the specialty of hematology. The group selects topics for guideline development, reviews the manuscript as it is being prepared by one or two of the members, and approves the final document, which is then circulated to the practitioners for feedback. The overall purpose is to educate physicians in the rational use of hematological therapies. I have been a member of the group since 1997, and I have participated in the development of three completed and several ongoing guidelines. I have taken the lead role in preparing a guideline on malignant thrombocytosis, the final version of which has just been completed

3.3 QUEEN=S UNIVERSITY

1. **Director, Queen=s University Training Program in Core Internal Medicine (September 2005-)** I took over this large training program, initially on an interim basis, shortly before a Royal College Review, the result of which was 'Notice of Intent to Withdraw Accreditation'.
2. **Director, Queen=s University Training Program in Adult Hematology (Feb 1997-Sep 2003)** I chaired the residency program committee which is responsible for all aspects of the program, including the selection of residents, the program content, creating the goals and objectives, and the evaluations. I organised the timetable, and the basic science course, and I ensured the smooth running of the program. I took the program through one mandatory internal review, and in 1999 successfully prepared the program for external review by the Royal College of Physicians and Surgeons.
3. **Chair, Task Force on the ethical conduct of clinical teaching, Queen's University Faculty of Health Sciences, 2001.** I undertook a survey of ethical transgressions which

were then suspected of occurring during clinical teaching encounters. I reported to the faculty on this issue, and developed a code of conduct. Since then I have conducted an annual survey

4. **Department of Medicine Resident Research Co-ordinator (1992-98)** I was responsible for introducing new residents to the process of conducting a research project, ensuring that they obtained a suitable supervisor, and ascertaining that their project was pursued successfully. I was also responsible for organising and conducting the annual resident research presentation day.
5. **Associate Director Internal Medicine Training Program (1994-97)** I acted as a back-up for the program director. I was responsible for evaluating the resident grand rounds, and obtaining and equipping a resident resource room.
6. **Internal Medicine Training Program Committee (1992-7)** Member. Bi-monthly meetings to conduct all aspects of the internal medicine residency training program.
7. **Chair of the Hematology/Oncology Block of the undergraduate curriculum (Feb 1997-2003)** I was responsible for organising this teaching block. I coordinated the annual 3-4 weeks of teaching, with ten teachers and approximately 75 hours of lectures and other educational events.
8. **Kingston General Hospital Bioethics Committee Member (1994-2003):** This committee is responsible for promoting bioethics education, providing ethics input into hospital policies, and is the >parent= group for bioethics consultations. I have participated in setting the ethical framework for the hospital policies on >Futility= as it relates to resuscitation, and >Withholding or Withdrawing Nutrition and Hydration=. I also have substituted for Dr Sandra Taylor in performing ethics consultations as a member of a small team set up to cover her absences. I have coordinated one session in the >Ethics for Lunch= series, which is given to interested hospital staff as an educational session.

3.4 ST MARY=S HOSPITAL MEDICAL SCHOOL

1. **Student Research Projects Co-ordinator (1983-9)** It was my responsibility to conduct this program of mandatory student research (see below).

4. TEACHING RESPONSIBILITIES

4.1 UNDERGRADUATE TEACHING DUTIES

Undergraduate Hematology Teaching

Queen=s University: I currently contribute the following in the undergraduate curriculum -

- Stem cells and hemopoiesis lecture
- Approach to Anemia: 1 hr lecture on anemia
- The Anemias: 3 hrs interactive session using a quiz I developed
- Macrocytic Anemia: 1 hr lecture
- Macrocytic Anemia: 1 hr case discussion
- Medical Science Round - Clonality: 2 hr combined clinical and basic science case-based discussion on how to diagnose clonality in hematological neoplasia
- Medical Science Round - Paraproteinemia: 2 hr combined clinical and basic science discussion on paraproteinemia. Includes case discussion multiple choice self test and quiz
- Chronic Leukemia: 1 hr lecture
- Chronic Leukemia: 1 hr patient presentation and discussion
- Myeloproliferative Disorders: 1 hr lecture

- Myeloproliferative Disorders: 1 hr patient presentation and discussion
- Hemoglobinopathy: 1 hr lecture
- Hemoglobinopathy: 1 hr combined clinical and basic science case analysis
- Medical Science Rounds - Thalassemia: 1 hr combined clinical and basic science discussion of a case of thalassemia
- Medical Science Rounds - Acute Leukemia: 1 hr combined clinical basic science discussion of a patient with acute leukemia

The above has been my contribution since 1997. Prior to this the hematology block was structured differently, but my overall part in it was similar.

St Mary=s Hospital Medical School: from 1983-89 I contributed annually

- X Acute Leukemia: 1 hr lecture
- X Megaloblastic Anemia: 1 hr lecture
- X Blood Cell Morphology: 1 hr demonstration of red cell abnormalities
- X Multiple Myeloma: 1 hr lecture
- X Hematology Seminars: six 1 hr discussions on hematological topics in a small group setting

University of Leicester: from 1978-83 I gave annually

- X Acute Leukemia: 1 hr lecture
- X Multiple Myeloma: 1 hr lecture

Hematology Teaching Website I authored a teaching website in 1996, and it now contains most of our lectures, and the anemias quiz (see below).

Undergraduate Clinical Skills

Queen=s University: I gave a clinical skills course on one half-day per week 18 weeks per year (1991-2005). The students were each given a new case in my clinic, and I observed them perform the history and physical, and listened to them present the case. Clinical reasoning was the main focus.

St Mary=s Hospital Medical School: I gave clinical skills instruction for 4 sessions annually (1983-9)

Undergraduate Bioethics

Queen=s University: I taught as a seminar group leader for six half-day sessions per year (1992-1996). The sessions began with a case presentation, or a film, and then the class broke up for discussions with their seminar group. Finally, the large group reconvened, and the groups reported on their discussion. The focus was on the principle of moral philosophy as applied to medicine.

St Mary=s Hospital Medical School: In 1984 I introduced an annual course in philosophical medical ethics. I participated in the sessions with a moral philosopher.

Undergraduate Research

Queen=s University: I have supervised the following

Brian Nishimura	Critical enquiry elective > Splenectomy in Immune Thrombocytopenia=
George Rodriguez	Summer student project looking at survival of patients with AML in Kingston 1993
Richard Perrin	Summer Student Project assembling database in multiple myeloma 1994
Patrick Davidson:	Summer student project Inferior vena cava filters@ 1995
Joye St Onge	Summer student project Warm Autoimmune Hemolytic Anemia in CLL@ 1996
Joye St Onge	Critical enquiry elective. Thrombopoietin assays and colony growth in a patient with cyclic thrombocytosis 1996
Helen Richmond	Elective overseas student - > Prognostic Factors in Gastrointestinal Lymphoma= (1997)
Sarah Noble	Summer Student Project - Information Instruments for AML@ (1998)
Natalie Julien	Summer Student Project - Prognosis and neutropenia in Diffuse Large Cell Lymphoma
Paul Cleve	Summer Student Project - > Cytogenetics in Multiple Myeloma= 1999

St Mary=s Hospital Medical School: I was the co-ordinator of the program of mandatory medical student research. I organised an annual session to present the prize-winning projects, and instruct the new students in the process. I then ensured that they found supervisors and conducted their projects. Finally, I collected and evaluated the manuscripts.

Clinical Clerks

Queen=s University: In my six months per year of in-patient service, I was responsible for the education of the clinical clerks rotating through the service from 1990-1994. This reduced to 4 months per year (1995-6) and is now approximately 3 months per year (1997-2006). I acted as an hematological mentor for the clinical clerk on the hematology service for 1 month per year (1990-97): the duties were to provide a weekly tutorial.

Mentorship

Queen=s University: From 1994, I have been a mentor for a group of 5-8 undergraduate students.

4.2 POSTGRADUATE TEACHING DUTIES

Subspecialty Teaching in the Clinical Hematology Training Program

Queen=s University: I conduct 4 postgraduate teaching clinics weekly, which are attended the hematology fellows. I perform hematology consults on the in-patient service for 4 months of the year: the patients are seen first by the training fellow, followed by a joint visit and a discussion of the case. From 1997-2003 I organised their teaching timetable, including the weekly 1 hr basic science lecture and journal club. I organised the weekly hematology conference (1990-5). I contribute approximately 2 sessions annually to both these events.

St Mary=s Hospital Medical School and University of Leicester: I carried out bedside and seminar teaching of registrars and senior registrars for 9 months per year in preparation for their final examinations (1978-89).

Hematology/Oncology In-Patient Unit Teaching

Queen=s University: from 1990-2006 I attended on the hematology service for an average of about 4 months per year. The in-patient team typically included a first year resident, and a second year resident. I conducted teaching ward rounds twice weekly, and informal rounds daily. Currently the service has been reorganised to emphasize the ambulatory and consult aspects of the discipline. I conducted an hematology seminar for the rotating house staff every two weeks for the whole year (1997-2000). I also supervise the hematology training fellows when they undertake duties as Junior Attending for 1 month per year.

St Mary=s Hospital Medical School and University of Leicester: I taught house officers on rotation to the hematology service.

Subspecialty Teaching in Laboratory Hematology

St Mary=s Hospital Medical School and University of Leicester: I was responsible for supervising hematology trainees in laboratory hematology, to the level of Royal College certification (MRCPPath). This involved teaching them hematological morphology, coagulation, and blood banking.

General Medicine Teaching

Queen=s University: I was the first service chief of Internal Medicine Unit-D (IMU-D; 1995-97). I supervised the house staff and taught general internal medicine for 2 months per year. I inaugurated a weekly general medicine conference, and I attended sign-in rounds 2 months per year. I have contributed two sessions annually to the internal medicine core program lecture series. I have conducted approximately twelve Mock Royal College oral examinations for Internal Medicine residents since 1993-1999.

Resident Research

Queen=s University: I have supervised the following resident research projects:

Catherine Link and Satish Raj	Resident research project co-supervisor >Thromboembolic Therapy in Kingston= 1994-1996
Mitchell Sabloff	Resident research project supervisor. >Serine Metabolism in vitamin B ₁₂ deficiency 1996-1998

Intramural Rounds and Conferences

Queen=s University Since 1990 , I have presented the following Grand Rounds

- Hodgkin=s Disease (Dept Medicine 1991)
- Inferior Vena Cava Filters (Dept Medicine 1995)
- Low Molecular Weight Heparin (Dept Medicine 1996)
- OP therapy of Deep Vein Thrombosis (Dept Medicine 1997)
- Jean Denys and the History of Blood Transfusion (Dept Medicine 1998)
- Annual Summer Grand Rounds on Hematological Emergencies (Dept Medicine)

- Thrombosis in Cancer Patients (Dept Oncology 1999)
- Advances in Hematology (2000)
- Chronic Myeloid Leukemia (2004)

I have also presented 18 times at Medical Mortality conference, and numerous ad hoc seminars in the department of Oncology.

CME and other contributions

1. **Queen=s University:** I have given approximately 10 CME sessions since 1990. I have also given a number of other seminars and lectures, including an invited talk at the John Austen Society for the History of Medicine.
2. **Mini-Medical School:** invited to give a public lecture in the Queen's 'Mini-Medical School' series. Topic: hematological stem cells

5. EVALUATION OF STUDENTS

5.1 NATIONAL

Royal College Examiner (1997-2000), and Chief Examiner (2001-2003) The examination comprises a microscopic morphology section, and both written and oral components. It takes place annually over 2 days. I was responsible for setting the general hematology section of the short answer written paper, and contributing Kodachrome slides for the morphology component of the written paper from 1997-2000, and I also provided oral questions in general hematology, and in medical ethics. From 1998-2000 I had special responsibility for setting the morphology component. I collected microscope slides during the year, and then chose 26 of them suitable for the microscopic morphology part of the examination. I also maintained the national collection of hematology examination slides. I extensively revised the collection, and catalogued it. took part in the oral sessions, and marked sections of the written and oral components of the examination. From 2001 I was Chief Examiner (see above)

5.2 UNIVERSITY

1. Undergraduate Examinations

Queen=s University: I have set and marked parts of the hematology examinations annually, and I was responsible for setting the whole hematology/oncology section of the examination from 1997-2003. I have examined in clinical skills, both in oral format, and as an Objective Structured Clinical Examination (OSCE, 1993-99). I set and marked a bioethics essay in phase I of the curriculum from 1992-6.

Imperial College and St Mary's Hospital School of Medicine, University of London I set and marked the annual hematology component of the final MB examination (essay, short answers, and morphology). I conducted *viva voce* examinations of approximately 12 students in conjunction with an external examiner, also in the final MB examinations.

2. Postgraduate Examinations

Queen=s University

Internal external MSc examiner
Examiner for PhD thesis defence

Ben Matthews, (1999)
Cynthia Tape(1991)

5.3 DEPARTMENTAL

I am responsible for conducting the evaluation of rotating residents and clinical clerks when they are on the hematology service, or in the ambulatory clinics. I also conducted approximately two Mock Royal College oral examinations in internal medicine annually (1990-2005).

Currently, I am responsible for setting the annual mock Royal College examination in core internal medicine.

5.4 DIVISIONAL

I evaluated the training residents in hematology after each of their rotations, using a rotation specific instrument which I devised. I also organise an annual Mock examination, based on the Royal College examination.

6. TEACHING PHILOSOPHY

In large group teaching I value a simple conceptual approach, intended to help the students organise a framework for their knowledge, to which further detail can be added in private study. Adequate preparation and structure is essential for success, and the visual material must also be simple, to enhance the spoken message and not to detract from it. The lecturing style is very important. I try to be interested and enthusiastic about the teaching process, and the lecture content, and if I can achieve this, I feel that the students will also be interested and enthusiastic. I try not to deliver knowledge from >on high=, but rather to challenge the students to learn it as equals, in a non-threatening manner. When dealing with clinical topics, I try to anchor conceptual knowledge to reality, by using case examples from my own clinical practice.

In the clinical setting, on rounds and in the outpatient clinics, I try to stand back and allow the residents to make their own decisions on diagnosis and management, and to supervise mainly by questioning and challenging them to prove that their clinical reasoning is valid, and rigorously based on current standards of evidence. I feel though, that it is important to maintain a strong interest in what they do, to support them in difficult cases, and to be readily available for help and consultation. I also think it extremely important to be a role model in all clinical teaching: one must behave with respect and empathy towards patients, and one should respect the opinions of residents and students as valid, to be challenged and questioned, but not belittled.

7. EVIDENCE OF TEACHING EFFECTIVENESS

7.1 Data from students

- 1. Evaluation of overall performance as undergraduate lecturer (Appendix 1):** I have been consistently the highest rated lecturer in the hematology block for the last 10 years. Feedback from 2004-6 is given in Appendix 1. I have won the award as best lecturer in Phase IIA 9 times, and consecutively over the last 8 years
- 2. Ambulatory Clinical Skills (Appendix 2):** I have given a consistent and reasonably strong performance in this area. I received awards for excellence in 2004 and 2005
- 3. Evaluation of Phase Ila course (Appendix 3):** this is the course I designed, and ran until 2003. It is consistently rated as one of the best in Phase 2A.
Sample comments: X ABest so far of phase Ila@

XAVery well taught and organized with lots of chances to try cases@
 XAOverall-EXCELLENT! You have succeeded in interesting me in
 hematology@

4. Feedback on Anemias Quiz 1998-9 – Appendix 4

This 12-case interactive problem-solving quiz functions both on paper and in a web-based version. It has been consistently well-received. See appendix for comments

5. Feedback from rotating residents on in-patient service 1997-8 – appendix 5

On a scale of 1-5	Score
Organization and clarity	5.0
Enthusiasm and stimulation of teaching	5.0
Directs ongoing and independent learning	4.9
Knowledge	5.0
Supervision	4.5
Professional characteristics	5.0

Comments X AFantastic Teacher. Thoroughly enjoyed being on service with Dr
 Matthews@
 XADr Matthews did teaching on rounds going over topics which related to our
 patients and was helpful@
 XADr Matthews - very knowledgeable. Good teacher. Humorous, very easy to
 get along with. Always clinical supervision, readily available, would come and
 speak to patients at any time. Professional characteristics = wonderful! Very
 knowledgeable yet humble@
 XADr Matthews - Enjoyable Teacher@

6. Royal College review of Hematology Training Program 1999 (appendix 6)

The report, which is strongly positive, highlights the changes I made to the program between 1997 and the date of the review, and indicates my role in the program.

7. Feedback from CME sessions (appendix 7)

Three recent CME feedback sheets are included

7.2 Teaching Awards

- **Queen=s University Aesculapian Society Phase IIA Lectureship Award** (*The Lectureship awards are made annually to a maximum of one faculty member from each of Phase I, Phase IIA, Phase IIB, Phase IIC, and Phase IIE who is deemed to have made the most outstanding contribution to the education of students*). Awards received in:
 - 1992
 - 1998
 - 1999
 - 2000
 - 2001
 - 2002
 - 2003
 - 2004
 - 2005
- **Clinical Skills Teaching Awards** (*given annually for excellence in the phase 2E clinical skills course*). Received in
 - 2004
 - 2005
- **W.F.Connell Award 2002** (*A professor or instructor in the Faculty of Medicine who, in the opinion of the final year medical students, has made the most outstanding contribution to their undergraduate medical education*)
- **Queen=s University Department of Medicine Teaching Award 1999** (*given by the Internal Medicine residents each year to a faculty member who has made the most significant contribution to their education*)
- **Nominated for PAIRO teaching award 1994** (*nominated by the residents in the internal medicine program for this provincial award, but did not win*)
- **>Lady Byng= award for exemplary patient interactions and outstanding teaching**, Queen=s University Internal Medicine Residency Training Program, 1993 (*an ad hoc award given by the residents in the internal medicine training program*)

8. PROFESSIONAL DEVELOPMENT IN TEACHING

Philosophical Medical Ethics

Intensive course taken at the University of London 1984

TIPS

TIPS training course for improvement of teaching skills taken 1991