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Introduction

MISSION: The mission of the McMaster TM training program is to produce high calibre academic and clinical leaders in Transfusion Medicine in Canada.

OVERVIEW: Trainees in the TM program are senior learners who have completed one or more programs in any of Adult or Pediatric Hematology, Hematopathology, General Pathology or Anesthesiology. Clinical Fellows not pursing Royal College certification may also be trained in the program. The 1-2 year training program fulfills the requirements of the Royal College of Physicians and Surgeons of Canada for an area of Focused Competency (Diploma) in Transfusion Medicine. There are 4 core hospital rotations structured to provide exposure to both clinical and laboratory-based Transfusion Medicine focusing on the recipient; and one core rotation with Canadian Blood Services focusing on the donor. Participating sites include McMaster University Medical Centre, Juravinski Hospital, Hamilton General Hospital, St. Joseph’s Healthcare and the Canadian Blood Services – Hamilton centre, Toronto centre, and (Head Office -Ottawa).

During the Transfusion Medicine training program, trainees work closely with hematologists, pathologists and technologists whose interests span diverse areas of Transfusion Medicine including clinical and basic research. Biostatistics and critical appraisal are emphasized through exposure to the McMaster Transfusion Research Program, based at the MUMC site (Nancy Heddle, director). Academic Half-Day sessions are organized for all TM trainees in Canada by Canadian Blood Services and are presented by teleconference once per week. They include Journal Clubs (once per month), topic teaching and case based learning. Dedicated Multidisciplinary Academic Half-Days are organized for all Residents at McMaster University to address ethical and professional issues. Quality control and quality assurance are covered in both laboratory and clinical rotations.

THE PROGRAM: Transfusion Medicine is a recognized training program accredited by the Royal College of Physicians and Surgeons of Canada. As of July 2012, Transfusion Medicine has been designated as an Area of Focused Competency (or Diploma Program) with a Competency-based evaluation system. There is no final exam administered by the Royal College. Candidates are expected to complete their Portfolio by collecting completed markers of milestones (see Competency Portfolio for the Diploma in Transfusion Medicine).
Rotations

1. **Obstetrical, Pediatric and General Transfusion Rotation (MUMC) (2 months)** covers blood bank serology, clinical management of transfusion needs for patients with haematological malignancy including allogeneic bone marrow transplantation, pediatric and neonatal transfusion medicine, prenatal testing, hemophilia care, therapeutic apheresis, HLA typing and platelet immunology testing.

2. **Stem Cell Rotation (JCC) (2 months)** covers flow cytometry, stem cell processing and collection, and Transfusion Medicine needs for special patient population including haematological patients undergoing autologous bone marrow transplantation and orthopaedic surgery.

3. **Trauma and Surgery Transfusion Rotation (HGH) (2 months)** covers blood bank serology and special patient populations including trauma and cardiac surgery, prenatal testing;

4. **Special Populations in Transfusion Medicine Rotation (SJH) (2 months)** covers TM serology, general hematology patients, nephrology patients, ICU patients, surgical and obstetrical patients, tissue banking.

5. **Blood Centre Operations Rotation (CBS-H) (Stonechurch Rd. Ancaster site- 2 months)** covers donor issues including eligibility criteria, blood processing and delivery, lookback/traceback, TRALI investigations, autologous blood donations; donor apheresis.

6. **Blood Centre Operations (CBS-T) (Head Office Toronto– Donor Testing- 2 weeks)** covers donor testing (Toronto) and policies, procedures and planning; unrelated bone marrow registry, Public Health interactions including Transfusion Transmitted Injuries Surveillance System (TTISS) (Ottawa- Head Office)

7. **LONGITUDINAL ACTIVITIES (ongoing throughout training, see P.9)** These activities continue throughout the training period and including didactic teaching sessions, operational and administrative meetings. These activities include: TM Trainee Presentation Rounds, Multidisciplinary Academic (MAD) Day, Transfusion Medicine “Lunch and Learn” sessions, TM University of Toronto Intercity rounds, Hematology Grand Rounds, Transfusion Medicine Operations meetings, Transfusion Committee meetings, CBS centre directors meeting, Research in progress meeting of the McMaster Transfusion Research Program, Quality Management Program—Laboratory Services (QMPLS) meetings (http://www.qmpls.org/) and Ontario Blood Advisory Committee (OBAC) (http://www.transfusionontario.org/index.php/en/about-us/bpeco/obac) meetings.

8. **RESEARCH (2 months)**

9. **ELECTIVE (4 months)**
## Typical Rotation Schedule

### Year 1

<table>
<thead>
<tr>
<th>BLOCK</th>
<th>1</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>Dates</td>
<td>July/Aug</td>
<td>Sept/Oct</td>
<td>Nov/Dec</td>
<td>Jan/Feb</td>
<td>Mar/Apr</td>
<td>May/Jun</td>
</tr>
<tr>
<td>MUMC</td>
<td>JH</td>
<td>HGH</td>
<td>CBS</td>
<td>SJH</td>
<td>Research</td>
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### Year 2

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<tr>
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<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates</td>
<td>July/Aug</td>
<td>Sept/Oct</td>
<td>Nov/Dec</td>
<td>Jan/Feb</td>
<td>Mar/Apr</td>
<td>May/Jun</td>
</tr>
<tr>
<td>CBS (HO/DT)</td>
<td>RESEARCH</td>
<td>ELECTIVE</td>
<td>CBS</td>
<td>ELECTIVE</td>
<td>RESEARCH</td>
<td></td>
</tr>
</tbody>
</table>

MUMC = McMaster site; SJH = St Joseph’s Hamilton; JH= Henderson Hospital; HGH = Hamilton General Hospital; R = Research; E = Elective; CBS = Canadian Blood Services; HO = Head Office (Ottawa); DT-Donor Testing- Canadian Blood Services, Toronto
The faculty involved in the Transfusion Medicine Program at McMaster University consists of Transfusion Medicine specialists from the Division of Hematology and Thromboembolism, Department of Medicine and from the Department of Pathology and Molecular Medicine. Highly skilled laboratory technicians and technical specialists make up an integral part of the teaching faculty.

<table>
<thead>
<tr>
<th>Name</th>
<th>University Rank or Position</th>
<th>Subspecialty</th>
<th>Position in the TM program (e.g. rotation supervisor, teaching faculty)</th>
<th>Contact Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Donald M. Arnold</td>
<td>Associate Professor</td>
<td>Hematology, Transfusion Medicine</td>
<td>Program Director</td>
<td><a href="mailto:arnold@mcmaster.ca">arnold@mcmaster.ca</a> MUMC, Room 3V50 X76305</td>
</tr>
<tr>
<td>Genie LeBlanc</td>
<td>Administrative Assistant</td>
<td>Hematology, Transfusion Medicine</td>
<td>Program Assistant</td>
<td><a href="mailto:leblanc@mcmaster.ca">leblanc@mcmaster.ca</a> MUMC Room 3V-50 X76305</td>
</tr>
<tr>
<td>Nancy Heddle</td>
<td>Associate Professor</td>
<td>Hematology</td>
<td>Rotation supervisor (MUMC rotation)</td>
<td><a href="mailto:heddlen@mcmaster.ca">heddlen@mcmaster.ca</a> MUMC Room 3H50 X26800</td>
</tr>
<tr>
<td>Dr. John Kelton</td>
<td>Professor</td>
<td>Hematology, Pathology</td>
<td>Clinical teaching</td>
<td><a href="mailto:keltonj@mcmaster.ca">keltonj@mcmaster.ca</a> MUMC Room 2E1 X22100</td>
</tr>
<tr>
<td>Dr. Kathryn Webert</td>
<td>Medical Director</td>
<td>Utilization Management</td>
<td>Canadian Blood Services</td>
<td><a href="mailto:kathryn.webert@blood.ca">kathryn.webert@blood.ca</a> Ancaster, Ontario 905.304.7282</td>
</tr>
<tr>
<td>James Smith</td>
<td>Laboratory Manager</td>
<td>Pathology (Platelet Immunology)</td>
<td>Teaching faculty</td>
<td><a href="mailto:smithjw@mcmaster.ca">smithjw@mcmaster.ca</a> MUMC Room 3H42 X22414</td>
</tr>
<tr>
<td>Dr. Ronan Foley</td>
<td>Associate Professor</td>
<td>Hematology, Pathology</td>
<td>Rotation supervisor (Juravinski Hospital rotation)</td>
<td><a href="mailto:foleyr@hhsc.ca">foleyr@hhsc.ca</a> Henderson Site, 2nd floor X42074</td>
</tr>
<tr>
<td>Dr. Theodore Warkentin</td>
<td>Professor</td>
<td>Hematology, Pathology</td>
<td>Rotation supervisor (Hamilton General Hospital rotation)</td>
<td><a href="mailto:twarken@mcmaster.ca">twarken@mcmaster.ca</a> HGH Site, Room 1-180D X46139</td>
</tr>
<tr>
<td>Madelaine Verhovsek</td>
<td>Assistant Professor</td>
<td>Hematology</td>
<td>Rotation Supervisor (St. Joseph’s Hospital rotation)</td>
<td><a href="mailto:verhovm@mcmaster.ca">verhovm@mcmaster.ca</a> SJH Site, Room L-208 905.521.6024</td>
</tr>
<tr>
<td>Menaka Pai</td>
<td>Assistant Professor</td>
<td>Hematology, Pathology</td>
<td>Teaching faculty</td>
<td><a href="mailto:mpai@mcmaster.ca">mpai@mcmaster.ca</a> HGH Site, Room 1-270A X46139</td>
</tr>
<tr>
<td>Dr. Robert Skeate</td>
<td>Medical Director of Ontario</td>
<td></td>
<td>Canadian Blood Services</td>
<td><a href="mailto:robert.skeate@blood.ca">robert.skeate@blood.ca</a> Toronto, Ontario 416.313.4581</td>
</tr>
<tr>
<td>Dr. Kylie Lepic</td>
<td>Assistant Professor</td>
<td>Hematology</td>
<td>Teaching faculty</td>
<td><a href="mailto:lepic@hhsc.ca">lepic@hhsc.ca</a> JHCC, Room A3-75 X73390</td>
</tr>
<tr>
<td>Azim Gangji</td>
<td>Associate Professor</td>
<td>Medicine, Nephrology</td>
<td>Teaching faculty</td>
<td><a href="mailto:gangijas@mcmaster.ca">gangijas@mcmaster.ca</a> SJH, 3rd Floor, M314 X33261</td>
</tr>
<tr>
<td>Allahna Elahie</td>
<td>Technical Specialist</td>
<td></td>
<td>Teaching faculty</td>
<td><a href="mailto:elahie@hhsc.ca">elahie@hhsc.ca</a> SJH X33023</td>
</tr>
<tr>
<td>Anna MacDonald</td>
<td>Technical Specialist</td>
<td>Transfusion Medicine</td>
<td>Teaching faculty</td>
<td><a href="mailto:amacdon@hhsc.ca">amacdon@hhsc.ca</a> JHCC, Section A, Level 0 Room 107 X42098</td>
</tr>
<tr>
<td>Name</td>
<td>University Rank or Position</td>
<td>Subspecialty</td>
<td>Position in the TM program (e.g. rotation supervisor, teaching faculty)</td>
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<tr>
<td>Sophie Stouth</td>
<td>ONCtraC Blood Conservation Coordinator</td>
<td>Teaching faculty</td>
<td><a href="mailto:stouth@hhsc.ca">stouth@hhsc.ca</a> MUMC, Room 2P4 X75836</td>
<td></td>
</tr>
<tr>
<td>Sandra Fazari</td>
<td>Technical Specialist Transfusion Safety Officer</td>
<td>Transfusion Medicine</td>
<td><a href="mailto:fazari@hhsc.ca">fazari@hhsc.ca</a> HGH X46465</td>
<td></td>
</tr>
<tr>
<td>Terry Owenson</td>
<td>Medical Laboratory Technologist</td>
<td>Transfusion Medicine</td>
<td><a href="mailto:towenson@stjosham.on.ca">towenson@stjosham.on.ca</a> SJH, Luke Wing L404 X33020</td>
<td></td>
</tr>
</tbody>
</table>
Academic Half Days

Academic half days are organized jointly by the Chief Resident and the CBS Trainee Coordinator, Dr. Robert Skeate, for all Transfusion Medicine Trainees in Canada. Half-days occur on a weekly schedule consist of a rotating schedule of Journal Club sessions (co-ordinated by Dr. Donald M. Arnold), Topic Teaching sessions, Case-Based Learning & Textbook Review sessions, and Scientific Sessions. All sessions are conducted via teleconference with the slide set distributed in advance and available on the TM Website. Trainees take turns moderating the session and one or more faculty members including a content expert are invited to attend. All of these learning activities are self-approved group learning activities (Section 1) as defined by the Maintenance of Certification program of The Royal College of Physicians and Surgeons of Canada. The current schedule for academic half-day as well as archived presentations from past academic half-days are kept on the CBS TM Website. For a complete list of CBS trainee education activities, visit CBS Education Website.

**Journal Club sessions** involve the discussion and critical appraisal of a recent journal article relevant to Transfusion Medicine. The topics for journal club presentations must be approved by the journal club coordinator in advance.

**Topic Teaching sessions** are a series of tutorials that provides guidance from experts on key topics in transfusion medicine - what is important? What is relevant? CBS Medical and Scientific staff will take a lead role in providing this guidance. These sessions are designed to cover specific RCPSC Subspecialty Committee Topics which are identified in the distributed pre-reading material.

**Case Based Learning & Textbook Review sessions** follow a 2-year rotating curriculum that covers most chapters of 3 key Transfusion Medicine textbooks- Mollison’s *Blood Transfusion in Clinical Medicine*; Hillyer’s *Blood Banking and Transfusion Medicine*; and the *AABB technical manual* (reference copies of these textbooks are available through the Program Director’s office). cutting edge science.

**Scientific Sessions** are presentations by CBS faculty.
<table>
<thead>
<tr>
<th><strong>Longitudinal Activity</strong></th>
<th><strong>Time</strong></th>
<th><strong>Location</strong></th>
<th><strong>Contact</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CBS academic half days</td>
<td>Tuesdays 12:00 – 13:00 From September to June</td>
<td>Teleconference</td>
<td>Robert Skeate (<a href="mailto:robert.skeate@blood.ca">robert.skeate@blood.ca</a>) Julia Gilmore (<a href="mailto:julia.gilmore@blood.ca">julia.gilmore@blood.ca</a>)</td>
</tr>
<tr>
<td>Transfusion Resident Sessions</td>
<td>Tuesdays 8:30 – 10:00</td>
<td>McMaster Site</td>
<td>Heather Patterson (<a href="mailto:pattersh@mcmaster.ca">pattersh@mcmaster.ca</a>)</td>
</tr>
<tr>
<td>Transfusion Medicine Operations meetings</td>
<td>Monthly</td>
<td>McMaster Site</td>
<td>Loretta Rossaert (<a href="mailto:rossaert@hhsc.ca">rossaert@hhsc.ca</a>)</td>
</tr>
<tr>
<td>Transfusion Committee meetings</td>
<td>Monthly Wednesdays 5:00-6:00pm</td>
<td>Hamilton General Site</td>
<td>Catherine Griffin (<a href="mailto:griffinca@hhsc.ca">griffinca@hhsc.ca</a>)</td>
</tr>
<tr>
<td>CBS centre directors meeting (teleconferences)</td>
<td>Yearly</td>
<td>Teleconference</td>
<td>Julia Gilmour (<a href="mailto:julia.gilmour@blood.ca">julia.gilmour@blood.ca</a>)</td>
</tr>
<tr>
<td>TM University of Toronto Intercity rounds</td>
<td>third Thursday of every month from September to June 12:00 to 1:00</td>
<td>Videoconference at MUMC, SJH and Juravinski sites</td>
<td>Laurie Young (<a href="mailto:layment@mcmaster.ca">layment@mcmaster.ca</a>)</td>
</tr>
<tr>
<td>Quality Management Program—Laboratory Services (QMPLS) meetings (<a href="http://www.qmpls.org/">www.qmpls.org/</a>)</td>
<td>Quarterly</td>
<td>QMPLS offices in Toronto</td>
<td>Astrid Petersens (<a href="mailto:petersons@qmpls.org">petersons@qmpls.org</a>)</td>
</tr>
<tr>
<td>Ontario Blood Advisory Committee (<a href="http://www.transfusionontario.org/index.php/en/about-us/bpc/obac">www.transfusionontario.org/index.php/en/about-us/bpc/obac</a>)</td>
<td>Quarterly</td>
<td>OBAC offices in Toronto</td>
<td>Denise Evanovitch (<a href="mailto:evanovd@mcmaster.ca">evanovd@mcmaster.ca</a>)</td>
</tr>
<tr>
<td>Hematology Grand Rounds</td>
<td>Every second Friday 12:00 – 13:00</td>
<td>JCC Lecture Theatre (videoconference at all sites)</td>
<td>Menaka Pai (<a href="mailto:mpai@mcmaster.ca">mpai@mcmaster.ca</a>)</td>
</tr>
<tr>
<td>Research in progress meetings (McMaster Transfusion Research Program)</td>
<td>Every second Tuesday 3:30pm-5:30pm</td>
<td>McMaster Site</td>
<td>Heather Patterson (<a href="mailto:pattersh@mcmaster.ca">pattersh@mcmaster.ca</a>)</td>
</tr>
<tr>
<td>Multidisciplinary Academic (MAD) Day</td>
<td>Twice per year (?) for all McMaster residents</td>
<td>MDCL Bldg – McMaster Site</td>
<td>Sharon Cameron (<a href="mailto:camerons@mcmaster.ca">camerons@mcmaster.ca</a>)</td>
</tr>
<tr>
<td>NAC meetings</td>
<td>Twice per year- April and Oct/Nov</td>
<td>Various</td>
<td>Gabriella O’Reilly Gabriella.O’<a href="mailto:Reilly@gnb.ca">Reilly@gnb.ca</a></td>
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<td>AABB International Conference</td>
<td>Annually</td>
<td>Various</td>
<td><a href="http://www.aabb.org">www.aabb.org</a></td>
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<tr>
<td>CSTM International Conference</td>
<td>Annually</td>
<td>Various</td>
<td><a href="http://www.transfusion.ca">www.transfusion.ca</a></td>
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On-Call Duties and Leave

On-Call

Transfusion Medicine trainees are expected to attain proficiency in the recognition and management of emergent, urgent and elective problems in Transfusion Medicine. Trainees will review on-call logs with the technical specialist who were on-call at night and on weekends and in a graduated fashion will be responsible for some out-of-hospital on-call duties. Trainees will be on-call with a faculty member, who provides support, advice and education. The frequency of call is designed to provide optimal and adequate exposure to routine and urgent problems.

Leave

Vacation

Paid vacation entitlement is four weeks per year. Vacation entitlements do not carry over from one year to the next. Requests for vacation must be communicated in writing using the Postgraduate Medical Education Office’s Vacation Form at least 8 weeks before the proposed start of vacation. Vacation requests should first be submitted to the Rotation Supervisor for approval.

Trainees are entitled to recognized statutory holidays, including at least five consecutive days off during the twelve day period that encompasses Christmas, New Year’s Day, and two full weekends. These five days off are to account for the three statutory holidays (Christmas, Boxing Day, New Year’s Day) and two weekend days. If a trainee is scheduled to work on a recognized holiday, he/she is entitled to a paid day off in lieu to be taken at a time mutually convenient within ninety (90) days of the holiday weekend.

In addition to vacation entitlement, trainees are entitled to additional paid leave (up to a maximum of seven days per year) to attend educational events, such as medical conferences approved by the Program Director, provided that professional and patient responsibilities are met.
Contacts

Training Program Director
Dr. Donald M. Arnold (arnold@mcmaster.ca)
Program Assistant: Genie LeBlanc 905-521-2100, ext. 76305 (leblancg@mcmaster.ca)

Discipline Director, Hematology and Thromboembolism
Dr. Shannon Bates (batesm@mcmaster.ca)
Administrative Assistant: Ann-Marie Turner; (aturner@mcmaster.ca)

Chair, Pathology and Molecular Medicine
Dr. Mark Crowther (crowthrm@mcmaster.ca)
Administrative Assistant: Norma Stewart; stewarn@mcmaster.ca

Canadian Blood Services Education Coordinator
Dr. Bob Skeate (robert.skeate@blood.ca)
Administrative Assistant: Julia Gilmore (julia.gilmore@blood.ca)

Rotation Supervisors
Nancy Heddle (heddlen@mcmaster.ca)- McMaster Rotation
Administrative Assistant: Heather Patterson 905 525-9140, ext. 26800 (pattersh@mcmaster.ca)

Dr. Ronan Foley (foleyr@hhsc.ca) – Juravinski Hospital Rotation
Administrative Assistant: Laura Elson (905-389-4411, ext. 42074; elsonlau@hhsc.ca)

Dr. Ted Warkentin (twarken@mcmaster.ca) - Hamilton General Hospital Rotation
Administrative Assistant: Maria Adamek (905 527-0271, ext. 46139; adamek@hhsc.ca)

Dr. Madelaine Verhovsek (verhovm@mcmaster.ca) – St. Joseph’s Healthcare Rotation

Dr. Kathryn Webert (kathryn.webert@blood.ca) Canadian Blood Services Rotation

Dr. Donald M. Arnold (arnold@mcmaster.ca) – Research Rotations

Additional contacts:
Program Assistant: Genie LeBlanc 905-521-2100, ext. 76305 (leblancg@mcmaster.ca)

Contact for Toronto rotation in donor testing: Julia Gilmore (416-313-4560; julia.gilmore@blood.ca)
Resident Rooms available at each site

JHCC
F2 - room 215 - 2nd floor lab
Enter front doors of hospital 711 concession. Turn left and go around corner to elevator. Take elevator to 2nd floor turn right out of elevator, through double doors marked F2-Lab. Third door on right side.

HGH
Room 1-271, located inside the Hematology office, Room 1-270
When you arrive at the hospital through the main entrance (Level 2), take the elevator to level 1. On level 1, turn left toward the cafeteria, and take the first hallway on the right. You will see the sign above the door "Hematology and LIS" on the left. When you come through that door, come straight to Hematology office area 1-270, and the resident room is located inside, Room 1-271 (first door on your left).

MUMC
HSC-2N35A
2nd floor, blue area

SJH
L-208
Luke wing; 2nd floor
Website/Internet Resources for Transfusion Medicine

2. Canadian Blood Services  [www.bloodservices.ca](http://www.bloodservices.ca)
3. Canadian Society for Transfusion Medicine  [www.transfusion.ca](http://www.transfusion.ca)
5. TraqProgram  [www.traqprogram.ca/](http://www.traqprogram.ca/)
6. Canadian Hemophilia Society  [www.hemophilia.ca](http://www.hemophilia.ca)
8. Advancing Transfusion and Cellular Therapies Worldwide (AABB)  [www.aabb.org/content](http://www.aabb.org/content)
10. The Institute for Transfusion Medicine  [www.itxm.org](http://www.itxm.org)
11. Food and Drug Administration  [www.fda.gov/cber](http://www.fda.gov/cber)
15. McMaster Transfusion Research Program  [www.fhs.mcmaster.ca/mtrp](http://www.fhs.mcmaster.ca/mtrp)
16. American Association of Tissue Banks  [www.aatb.org](http://www.aatb.org)
17. Hamilton Regional Laboratory Medicine Program  [www.fhs.mcmaster.ca/hrlmp](http://www.fhs.mcmaster.ca/hrlmp)
19. Serious Hazards of Transfusion (SHOT)  [www.shotuk.org](http://www.shotuk.org)
21. Capital Health Regional Tissue Bank  [www.cdha.nshealth.ca/transplantservices](http://www.cdha.nshealth.ca/transplantservices)
23. Bloodlink BC  [www.bloodlink.bc.ca](http://www.bloodlink.bc.ca)