The Canadian Hemophilia Society is proud to announce that Mario Lemieux, hockey player and owner of the National Hockey League’s Pittsburgh Penguins, has agreed to become a spokesperson for the organization. “I’m lucky to be able to play a sport I love. But not everyone is so fortunate. Many young hemophiliacs would also like to play hockey or other sports, but their illness prevents them. I just hope I can be a source of inspiration or support for them.”

Needing no introduction, the celebrated number 66, alias Le Magnifique, has achieved many outstanding feats. A leader at every level he has played at, Mario Lemieux led his team to back-to-back Stanley Cup victories and saved the Penguins by buying the concession when it was on the brink of bankruptcy. Last February, he captained the Canadian team that won the gold medal at the Winter Olympics in Salt Lake City.

But above all, it is Mario Lemieux’s human qualities that make him so special. During the 1992-1993 season, the whole of North America shared his shock and anxiety when he announced that he had Hodgkin’s disease, followed his progress as he underwent treatment, and shared in the joy of his remission. His courage and determination to beat cancer were a source of inspiration for countless people. With his constant smile, warmth and unassuming air, Mario takes a particular interest in youngsters and has a particular affinity for them; he also has four children of his own.

Mario Lemieux is a member of the Hockey Hall of Fame and a celebrity whom the CHS is delighted to welcome on our team.
EDITOR’S KEYBOARD

François Laroche

Taking over from Barry Isaac, for so many years a key figure in the hemophilia community and a man whose knowledge was equaled only by his charm, the author of this column has big shoes to fill. You cannot hope to replace such an outstanding person, you can only succeed him. Such were my thoughts when I agreed to become the new Editor of Hemophilia Today.

As a person with hemophilia myself, I am deeply concerned about a number of issues. Major challenges are in store in the coming months. First we have to ensure that the factor products we infuse are safe, and will remain free of charge in the long term. This is a constant struggle, especially since the Canadian health system has launched major reforms. We have to make sure our voices are heard by the decision-makers. Another battle yet to be won is ensuring that people with bleeding disorders receive adequate care everywhere in Canada. In some provinces or territories, comprehensive care only exists in theory, and even where hemophilia centres are firmly established, we need to fight to preserve what we have. As a Canada-wide organization, we must make sure that all hemophiliacs enjoy access to the same standard of care coast to coast.

Treatments for hemophilia and other bleeding disorders are constantly being improved. With the advent of preventive treatment, the disease now has only minor impact on the daily lives of many young people with hemophilia. Maybe the day will soon dawn when gene therapy enables patients to undergo treatment less frequently, perhaps once a month or even just three times a year. And who knows, maybe we will soon see a complete cure. Is this just wishful thinking or is there real hope? The answer should become clearer in the next few months.

Meanwhile, I look forward to joining with the whole editorial team in ensuring that Hemophilia Today continues to be a high-quality publication and standard reference for health professionals worldwide, yet remains closely attuned to the needs of our readers, people with bleeding disorders, who are the reason we are here.

In this issue of Hemophilia Today, you can read the Blood Safety Committee’s report card on the main players in the blood system, five years after the Krever Report. Reassuringly, most of them scored high marks. We also feature information about the preparations for the 50th anniversary of the CHS. But the most exciting item in this issue is the announcement that Mario Lemieux is the new CHS spokesperson for the 50th anniversary of the CHS. But the most exciting item in this issue is the announcement that Mario Lemieux is the new CHS spokesperson for some of our special events. A hero in real life, as well as on the ice, Mario Lemieux is someone who is acclaimed wherever he goes. An excellent acquisition, and for a hockey fan like me, thrilling news indeed!

Please feel free to respond to this editorial or to any other article that has appeared in Hemophilia Today by writing to The Editor, Hemophilia Today, 119 Thomassin, Beauport, QC, G1B 2W6 or by E-mail at laroche@globetrotter.qc.ca.
Research means improvements

The mission of the CHS is to improve the quality of life for people with inherited bleeding disorders. We do this by offering services, providing information about bleeding disorders to those affected, to the public, and to the medical community, and by supporting research. Research provides the means by which we can improve treatments for bleeding disorders and offers the hope of eventually finding cures.

The Hemophilia Research Million Dollar Club is something of which people with bleeding disorders should be especially proud. Individual people with bleeding disorders, their families and friends, and CHS chapters across the country raised the initial capital fund of $1 million during the 1980s; and the investment income from that fund has been supporting research ever since. In 1999, because declining interest rates were reducing investment income available to support research, the trustees of the fund decided to raise an additional $500,000; and people with bleeding disorders and CHS chapters responded rapidly and generously. When pledges indicated that the initial goal would be reached faster than expected, the trustees raised the goal to $600,000, and they believe they have a good chance of reaching that larger goal in 2003. See Frank Bott’s article on page 9 in this issue for additional information.

In recent years, the Million Dollar Club has been providing the CHS with $100,000 per year to support researchers; and the CHS has been matching that with an additional $100,000 raised from the general public and from a grant provided by Bayer. These funds are awarded to Canadian researchers whose projects have finding cures for bleeding disorders as their ultimate aim. The decision about which projects to fund is made by a peer-review panel, a group of knowledgeable professionals who select projects on the basis of their scientific merit.

However, the CHS does not restrict itself to funding research projects whose goal is finding a cure. Through the generosity of Wyeth, we also spend $150,000 per year on projects funded through the Care Until Cure Research Program. Grants funded under this program, which are also selected on the basis of a peer-review process, seek ways to improve the quality of life for people with bleeding disorders by improving currently available treatments.

Finally, in conjunction with Aventis Behring and Novo Nordisk, the CHS funds two research fellowships. Recipients of these fellowships are young physicians interested in inherited bleeding disorders who work with a more experienced researcher on a project of particular interest to the younger physician. These fellowships build for the future by developing the research and clinical skills of young Canadians physicians in the field of inherited bleeding disorders. It is they who will become the clinic directors and cutting-edge researchers of the next several decades.

It is with great pleasure that I welcome two new recruits to the staff team of the Canadian Hemophilia Society.

Irving Rudy now occupies the position of Coordinator of Major Gifts and Planned Giving. Having extensive experience in marketing, volunteer recruitment and fundraising, Irving will lead the implementation of a new national program which will provide our generous donors with additional opportunities to support the activities of the CHS.

Jeff Rice is the Coordinator of Regional Resources and Hepatitis C Programs. Jeff will be called on to facilitate the work of our regional coordinators. He also has the responsibility to put in place the entire programming for Hepatitis C.

I am convinced that with the arrival of Jeff and Irving our team of employees is stronger and more competent than ever.

HEMOPHILIA TODAY WELCOMES NEW EDITOR

The Canadian Hemophilia Society would like to welcome François Laroche, as the new Editor of Hemophilia Today. François takes over from Barry Isaac who passed away suddenly in July.

François has been involved as a volunteer with the Quebec Chapter since 1993 when, as a young man of 27, he decided to share his skills and invade the Chapter newsletter, L’écho du facteur. He is still its editor and does the page layout himself. François has a degree in Communications, specializing in journalism as well as a diploma as a radio & TV announcer.

He has been on the Quebec Board of Directors since 1996, filling a number of positions, including President. He’s currently responsible for communications, and sits on other committees including programs, comprehensive care and the international twinning committee and is presently Interim Executive Director for the CHSQ. He served on the CHS Board as Vice-President in 1998. François and his wife, Marie-Claude, have a one-year-old son, Jacob, and are awaiting the birth of their second child in early 2003. A great sports enthusiast, François also volunteers as cameraman for a women’s college hockey team.

“1 got involved in the Society to keep informed about my hemophilia treatment and to offer my communication skills to help others.” François’ professionalism, dedication and talents are a welcome asset to Hemophilia Today.
My Trip to Pittsburgh to Meet Mario Lemieux

M.J. O’Grady

During the last week of summer break, Daniel Lapointe phoned us to ask if I would like to meet Mario Lemieux because Jane Bishop from TCOR had put my name in to meet him for a photo shoot. A day later, Daniel called to say that I had been chosen to meet Mario Lemieux. I was very happy because he is my favourite player on Team Canada!!!

On Thursday of Labour Day weekend, my family and I arrived in Pittsburgh. We stayed at the Marriott Hotel, which is across the street from the Mellon Arena, the home of the Pittsburgh Penguins. When I looked out my hotel room window, I saw the Mellon Arena and I was very excited!!! I was looking forward to meeting Mario on Saturday.

On Saturday morning, we had breakfast with Tom Alloway, the president of the CHS, Rochelle Winikoff, a doctor from Montreal, and Daniel Lapointe. It was nice to meet them and talk about the day ahead. I could hardly eat my breakfast I was so excited.

Around 1:00 p.m. we went over to the arena and waited for the photo shoot to begin. While we were waiting, we took pictures of each other in the back entrance of the arena. We also had a chance to meet the security guard on duty. He was very nice and told us lots of interesting things about the arena and gave us a Penguins schedule. My Dad, my sister and I went and saw where the ice is supposed to be and I could almost imagine playing on it in the NHL. WOW!!

At 1:30, Mario arrived. He looks just like he does in pictures and is very tall—6 foot 4. I had to really look up because I am only 4 foot 9. He was very nice and it made me feel very welcome.

The photo shoot was held in the Penguins’ dressing room—I actually touched his jersey! It was a lot of fun to see the dressing room and Mario even took me to see the locker room where he and the other players keep their equipment. My family and I sat on their leather couches in the lounge which was very fun (and comfy).

The CHS presented me with a Mario Lemieux jersey, which he signed for me with a personal message. I want to get it framed and keep it forever.

It was great to have the opportunity to meet Mario and have my picture taken with him. I think that it is very nice that Mario is helping out the hemophilia society and giving up some of his time to help find a cure for hemophilia. Maybe one day I can play hockey like Mario.
Bayer Facility Licensed

RETURN TO NORMAL FACTOR VIII SUPPLY SITUATION

James Kreppner, Chair, CHS Blood Safety Committee

As you may recall, while previous articles in Hemophilia Today reported that the Factor VIII shortage had ended, there was still an on-going problem with respect to product only being available through Health Canada’s Special Access Programme (SAP). This required physicians to seek Health Canada approval for every vial of product they ordered from the Canadian Blood Services (CBS) or Héma-Québec. This was still in effect until recently due to the fact that the new Bayer Kogenate® FS production facilities in the U.S. had yet to receive Canadian regulatory approval. While these facilities were licensed by the U.S. Food and Drug Administration in August, 2002, we are now pleased to report that they have also been granted Canadian licensure as of October 25.

Products that share the same serial number are all part of the same lot or production run, and this presented an additional potential problem. The Canadian regulator requires that FVIII products such as Kogenate FS also be approved on a lot-by-lot basis, and there was a concern that while the fermenter (production facility) would be licenced, there could still be a further delay in the approval of the individual lots. Foreseeing this potential problem, Bayer submitted samples of the lots known to be in the country in advance of receiving regulatory approval of the fermenter. This has allowed Health Canada to approve these lots at the same time as the licensure of the production facility. While there has been a report of at least one lot in the country that was not submitted by Bayer for lot release, there is very little of this product left and it does not present a real problem in terms of access to Kogenate FS. The bottom line is that Kogenate FS is now available through the regular channels in the same fashion as in the pre-shortage past.

One problems remains. Kogenate FS is only available in the 1000-IU format. According to Bayer, it will still be several months before the 500-IU and 250-IU vial sizes are supplied in Canada.

Since the end of the shortage in the spring of 2002, we have seen an increase in Kogenate FS usage and overall Factor VIII usage, and some concern had been expressed in this regard by the CBS. However, according to CBS statistics, distribution of FVIII from July to October, 2002 (17 weeks), was, on average, 2.14 million units per week. This constitutes only 96 per cent of historical demand, as prior to the shortage Canadian hemophiliacs were using on average 2.23 million units per week. More recent figures were even lower; from September to October (8 weeks) the average distribution was 2.02 million units per week, or 91 per cent of the historical average. There was a prediction that we would see demand levels in excess of historical averages as surgeries and immune tolerance therapies delayed by the shortage were carried out. As can be seen, this has not been borne out by reality.

As has been noted in a previous article, the CHS is grateful for the responsible manner in which this shortage was handled by all parties. CBS sponsored weekly and later bi-weekly teleconferences of all the interested parties (including the CHS, Héma-Québec, Bayer, Health Canada, and representatives of the hemophilia treaters and nurses), and this became an important forum for obtaining information as to expected deliveries, and managing the shortage with the least negative impact. These meetings are now at an end, but they helped plant the idea that ongoing consultation would be helpful. With this in mind, CBS has led efforts to create a new committee with a broader mandate that will meet on a regular basis (every 6 to 8 weeks) so that ongoing issues affecting people with bleeding disorders can be discussed and hopefully addressed.

This shortage has had its silver lining (although we certainly would not wish for a repeat). While we should be careful to use product in a responsible fashion, it is reassuring to know that adequate supplies are now available, and that processes are in place to monitor the situation into the future.

ACCESS TO REFACTO UNCERTAIN

Access to ReFacto® for the treatment of factor VIII deficiency remains uncertain, at least for the coming months.

In the summer 2002 issue of Hemophilia Today (Vol 37, No 2), it was reported that Wyeth had obtained its Notice of Compliance for ReFacto from Health Canada. The company predicted that the product would be commercially available in September.

As of early November, approval for the release of individual lots had not yet been granted by the regulatory authorities. In addition, the Canadian Blood Services’ (CBS) Medical Director, Dr. Heather Hume, would not confirm that all requests for the product from physicians would be funded. “We will deal with each request on a case-by-case basis. If the number of requests is small, it is unlikely that we would refuse. However, until a contract is in place with the company, we cannot say all requests will be granted.”

Contracts with the manufacturers of two other products to treat hemophilia A, Bayer and Baxter Biosciences, run until the end of the 2002-2003 fiscal year, and already provide for the total quantity of recombinant factor VIII concentrates forecasted to be used. As a result, the CBS is hesitant to purchase additional products and risk not being able to use up the contracted supply. New contracts are currently being negotiated for the next three years.

In September meetings with the operators of the blood system, representatives of the Canadian Hemophilia Society promoted the following principles: the decision as to choice of product should be made jointly by the physician and the patient, and access to a range of products to meet individual patient needs must be provided.

BAXTER INTRODUCES NEEDLELESS TRANSFER DEVICE

Users of Baxter’s factor concentrates—Recombinate®, Hemofil M® and Feiba VH®—will soon encounter a new needleless transfer device designed to make reconstitution of therapeutic products safer, faster and easier.

In its promotional material, Baxter Biosciences claims that the new Baxject device…
- eliminates the risk of sharp, metal needle sticks associated with reconstitution;
- reduces the chance of touch contamination;
- supports occupational health and safety recommendations for the selection of safer needle devices as they become available;
- eliminates many steps in the reconstitution process;
- increases confidence and convenience for hemophilia patients at school, at work or on a trip.

Of course, the re-designed reconstitution device does not take the place of the needle required to infuse the clotting factor into the vein.

Nurses in hemophilia treatment centres across Canada have already received training with the new device. They, in turn, will train those patients in their clinics who will need to use the Baxject. This is expected to occur early in 2003.
In 1953, a group of Montreal hemophiliacs, parents and doctors held kitchen-table meetings to discuss how to improve care and treatment for people with hemophilia in Canada. Fifty years later, preparations are underway to celebrate this courageous initiative, begun in a time when the only treatments were transfusions of whole blood and plasma, communication tools were limited and those with hemophilia suffered intense pain and crippling. We’ve come a long way since then, through good and bad times, and have reason to celebrate our accomplishments – accomplishments that have been made possible by dedicated teamwork.

Many events are being planned throughout the year to highlight this important milestone. A 50th Anniversary Committee, chaired by Patricia Stewart, has been established to plan the activities. And, Mario Lemieux, NHL hockey superstar, has agreed to be the CHS spokesperson during our 50th Anniversary year.

On May 8th and 9th, the CHS will be hosting the 1st Canadian State of the Art Conference on von Willebrand Disease. The goal of the VWD conference will be to bring together researchers, clinicians, relevant health care providers, persons living with VWD and other key stakeholders to develop recommendations on the diagnosis and treatment of VWD. A Steering Committee, chaired by Dr. David Lillicrap, has planned the program which will include presentations by international experts on von Willebrand Disease.

A Medical Scientific Symposium on the afternoon of May 9th will address scientific topics relating to hemophilia of interest to clinic directors and health care providers as well as people with hemophilia.

The CHS will be presenting a Public Exhibition featuring 50 years of hemophilia research, care and treatment to be held at Complexe Desjardins, May 8-11, 2003. Héma-Québec has agreed to collaborate with us on this event by hosting a blood donor clinic. The Planning Committee is seeking historical memorabilia, newspaper articles or other material relating to the history of the Society which could be used in the display. A commemorative book will be published to document the accomplishments and faces of the CHS over the past fifty years. We are offering space for individuals, chapters or corporations to purchase an ad or include a personal message in the book. To contribute to either of these projects, please contact Patricia Stewart at stewart.page@globetrotter.ca or Clare Cecchini at the CHS at 1-800-668-2686 or by E-mail at ccecchini@hemophilia.ca.

The CHS 50th Annual General Meeting will take place on May 10th followed by the Board of Directors Meeting and annual meetings of the Association of Hemophilia Clinic Directors of Canada, the Canadian Association of Nurses in Hemophilia Care, hemophilia physiotherapists and social workers. Consumer educational workshops on a variety of topics will be offered during the day. Chapters are encouraged to sponsor delegates to attend the Anniversary Weekend.

The 50th Anniversary Banquet on the evening of May 10th will be a special opportunity for people with hemophilia or other inherited bleeding disorders, their treaters and industry partners to celebrate the CHS accomplishments of the past 50 years and look towards the future. Everyone is invited to attend!
Among 5 New Appointments

MINISTERS OF HEALTH APPOINT JAMES KREPPNER TO CBS BOARD

On September 20, 2002, the Provincial and Territorial Ministers of Health appointed five new members to the Board of Directors of the Canadian Blood Services (CBS). Of special interest to those close to the Canadian Hemophilia Society was the appointment of James Kreppner as a Consumer Interest representative. Prior to his nomination, James was already a member of the CBS National Liaison Committee.

James has long been known to the hemophilia community as an extremely active and effective volunteer and advocate for the interests of people living with a bleeding disorder and the complications of its treatment. He is currently a Director and Vice-President, and is a member of the Society’s Blood Safety Committee. James represents the CHS on numerous advisory committees.

He has not limited his volunteer work to the CHS. He is a member of the Canadian HIV Trials Network Community Advisory Committee and a Council Member of the Canadian Treatment Action Council. James helped found the HIV/AIDS Legal Clinic in 1996 and was a Director, Co-Chair and Corporate Secretary of the Toronto People with AIDS Foundation from 1993 to 1997.

Other nominations made by the Ministers of Health were W. John Dawson, Dr. M. Bernadette Garvey and Frank D. Jones, who join the Board as representatives of the Medical, Scientific, Technical, Business and Public Health sectors; and Kenneth Wayne Ezeard who becomes the new regional representative from the Atlantic Region.

Hemophilia Today congratulates the Ministers of Health for their wise choice of James Kreppner as Consumer Interest representative. We are convinced he will make a valuable contribution to the work of the CBS and be a worthy advocate for recipients of blood and blood products.

NEW CHS WEB SITE FORUM

The forum on the new CHS web site (www.hemophilia.ca) has undergone a change. It’s a return to the old formula where access is much simpler and messages are easily read. There’s no need for a password to access this site any more. This forum is bilingual, including both English and French queries and comments so that everyone can take advantage of the information. It’s a great way to get in touch with others in the hemophilia community or to find answers to that question you have. When we can, we get medical experts to answer any question touching on bleeding disorders; however, it’s impossible to offer diagnostic services and we often refer people to the hemophilia treatment centre nearest to them. Don’t forget to change your bookmark for the new site: www.hemophilia.ca/phorum/list.php?f=1

Note that the old forums on the defunct CHS web site will be inactivated in the very near future. So, please change your bookmarks as advised above.

NAME THE CHS NEWSMAGAZINE CONTEST

WIN AN ALL-EXPENSES-PAID TRIP TO THE CHS 50TH ANNIVERSARY CELEBRATIONS AND STATE-OF-THE-ART CONFERENCE ON VON WILLEBRAND DISEASE

The CHS Board of Directors is considering a new name for its newsmagazine, Hemophilia Today. The new name is intended to reflect our philosophy of inclusiveness of all people with bleeding disorders—not only hemophilia A and B, but also the rarer factor I, II, V, VII, X, XI and XIII deficiencies, von Willebrand Disease and platelet function disorders.

The winner will receive an all-expenses-paid trip for the person of his/her choice to the CHS 50th Anniversary Celebrations and State-of-the-Art Conference on von Willebrand Disease, to be held in Montreal, May 8-11, 2003. The prize includes economy airfare, ground transportation, hotel accommodations, registration, meals and free entrance to all events.

Please send your suggestions before February 28, 2003 to:

NAME THE CHS NEWSMAGAZINE CONTEST
Canadian Hemophilia Society
625 President Kennedy Avenue, Suite 1210
Montreal, Quebec
H3A 1K2

The winner will be announced March 15, 2003.
The new name will be unveiled at the CHS 50th Anniversary Celebrations.

WEB SITE QUERIES

There are often interesting questions on the website forum. However, not everyone has access to a computer, so here is a sample (more at a later date).

Q: I’m a hemophilia patient, I was just wondering whether I can put on braces?
A: (from a hematologist): I had to consult one of my oral surgery colleagues about this question. It should not be a problem. For the placement of braces themselves, there shouldn’t be any bleeding. However they have to put rubber bands around the molars and these generally go below the level of the gums, so there could be some minor bleeding with this. The dentist would have to consult with the hematologist about the need for prophylaxis for the initial placement. After that there shouldn’t be any bleeding. It would be important to maintain good oral hygiene or the gums could get inflamed and bleed.
**BAYER LAUNCHES INTERNATIONAL HEMOPHILIA AWARDS PROGRAM**

Bayer Biological Products announced in October the launch of the Bayer Hemophilia Awards Program, a $2.75 million USD annual grant initiative to fund hemophilia research and education programs around the world. The program, to which any professional in the worldwide hemophilia community may apply, will provide grants supporting basic and clinical research and education in hemophilia to early career investigators, fellows in training, and other hemophilia care professionals.

The Bayer Hemophilia Awards Program will focus on projects involving inherited bleeding disorders and hemostasis. There will be four award categories.

- **Bayer Hemophilia Special Projects Award**, supporting a wide range of research projects in the field of hemophilia in all regions of the world. Ten to fifteen Special Project Awards will be granted each year.

- **Early Career Investigator Award**, to fund basic and/or clinical research in the field of hemophilia for five junior faculty members each year.

- **Clinical Scholarship Award**, designed to attract physicians who are interested in a possible career in hemostasis and thrombosis and which supports a two-year mentored experience for up to five clinicians.

- **Bayer Hemophilia Caregivers Education Award**, to recognize and support programs that seek to enhance the skills and/or knowledge base of allied health professionals working in hemophilia. Ten to fifteen Hemophilia Caregivers Awards will be granted each year.

“This international program builds on Bayer’s long-standing commitment to funding important Canadian research and education initiatives that will benefit the hemophilia community here and around the world,” said Jean-Paul Bédard, Vice President, Biological Products, Bayer Inc. “One example of this is Bayer’s investment in the Bayer - Canadian Blood Services - Héma-Québec - Canadian Institutes of Health Research Partnership Fund devoted to research in blood products and affiliated fields. Since 1990, it has awarded $10 million CDN for hemophilia-related research in Canada.”

The Partnership Fund has known some great successes. Dr. Mark Pickett, Director, Research and Scientific Affairs for Bayer in Canada, has run the Partnership Fund since arriving at Bayer from the biotech industry in 1993, said, “Research is risky. Most projects fail. But some have succeeded beyond our wildest expectations. Examples are the escalating dose prophylaxis study in young children with hemophilia, led by Dr. Brian Feldman and Dr. Victor Blanchette, and the TRICC (Transfusion Requirements in Critical Care) study led by Dr. Paul Hébert at the Ottawa Hospital which demonstrated that giving higher quantities of blood to critically ill patients was a disadvantage for them. This study, published in the New England Journal of Medicine, has led to many follow-up studies attempting to explain why.”

Dr. Pickett has also played a critical role in developing the new Bayer Hemophilia Awards Program and will serve as one of the Bayer members on the Committee. “Our international colleagues knew about the Canadian Partnership Fund, and it was well regarded. It is unique in that it is extra-mural, peer-reviewed, advertised widely and open to anyone. As far as I know, Bayer had not operated anything like this elsewhere. When the Hemophilia Group decided to develop an international research fund, they looked to the Canadian model.”

The Grant Review and Award Committee will review all submitted research proposals. This 12-member body was developed in partnership between Bayer and the World Federation of Hemophilia. Dr. Pickett explained how its members are chosen. “Bayer has chosen a highly-respected senior clinician-scientist who in turn appoints seven others from around the world. Bayer also names four people.”

To ensure that awards are granted to respond to differing priorities, the world is divided into three geographical regions: Europe, United States and Canada, and Japan and all other countries. A certain number of grants are reserved for each region.

The Bayer Hemophilia Awards Program is open to Canadian health care professionals in the hemophilia community. Applications must be submitted through the program’s web site at www.bayer-hemophilia-awards.com. All information about the program, including requirements and timelines, is also available at this web site address. The first awards will be announced in mid-2003.

**HISTORY TELEVISION REQUESTS PHOTOS OF LOST LOVED ONES**

History Television’s series called “Turning Points of History” is doing a documentary on the history of blood to air next year. It looks at the history of blood collection in Canada and then what went wrong during the mid-80’s during the AIDS crisis. The director of the documentary, Mary Anne Alton, would like to pay tribute to all the people who lost their lives because they were infected with HIV or hepatitis C during this period. She is asking for photos or video of loved ones that she could use as a memorial during and at the end of the documentary. It’s a way for the general public to put a face to the tragedy. She has promised to return all the photos and video tape. Please send her material by December 31. Her address is 71 Brooklyn Ave., Toronto, Ont. M4M 2X4. Her phone number is 416-469-5877. Call collect if you have questions for her. Thanks in advance.
Frank Bott, Chair, Hemophilia Research Million Dollar Club

Just over two years ago we launched a drive to increase the endowment of the Million Dollar Club by issuing new Voting Memberships. Since that time, we have increased from 100 to 160 such memberships, which means that our current objective is to increase the total endowment from $1,000,000 to $1,600,000 (because each Voting Membership must be backed by $10,000 in endowment). The response of the national CHS, chapters, regions, and individuals has been most generous in membership subscriptions and donations. At the same time our other objective has been to maintain our present level of funding ($100,000 per year) to the Canadian Hemophilia Society for research, challenged by declining returns in the bond market due to interest rate reductions. Our members and donors have contributed or committed over $530,000 in these two years, $60,000 of which has gone to current research, the balance to endowment growth.

When we developed strategies for endowment growth last year, we plotted two scenarios. One we called Hope & Prayer, in which we would increase total endowment from $1,000,000 to our target of $1,600,000 by the end of 2006. The other was named Impossible Dream, which we thought was pretty optimistic and would get us to our present level by year-end 2002, and would reach our ultimate goal by the end of 2004. At this point, we see that our other objective has been to maintain our present level of funding ($100,000 per year) to the Canadian Hemophilia Society for research, challenged by declining returns in the bond market due to interest rate reductions. Our members and donors have contributed or committed over $530,000 in these two years, $60,000 of which has gone to current research, the balance to endowment growth.

We express our thanks to those who supported the Million Dollar Club from its earliest beginnings and have made it possible to contribute in excess of $1,500,000 in research funds to the Canadian Hemophilia Society over these past twelve years. We acknowledge these organizations and individuals who have been instrumental in raising the first million dollars of endowment and have recognized their great contribution in our booklet In Gratitude and Commemoration, which was mailed to all members and donors.

We thank those who are making it happen now, you who have contributed or committed a total of $155,000 this year to-date, $115,000 of which has gone to endowment growth, and all who have helped us pass the half-million dollar mark in the last two years:

**VOTING MEMBERSHIPS**
- Canadian Hemophilia Society
- Northern Alberta Region
- Hemophilia Manitoba
- Hemophilia Ontario
- Central Western Ontario Region
- Ottawa & Eastern Ontario Region
- South Western Ontario Region
- Toronto & Central Ontario Region
- Nova Scotia Chapter
- Quebec Chapter

**NON-VOTING MEMBERSHIPS**
- Susan E. Anderson
- Dr. David Lillicrap
- Gay Godin
- Dr. and Mrs. Ron George (In Memory of Dr. Barry Isaac)
- Jamie Hill
- David Holmes
- Francois Laroche
- Friends and Family of Mary MacLeod
- Nova Scotia Chapter (In Memory of Martin Bott)
- Elaine Reid (In Memory of Marvin Louis Olson)

**DONORS**
- Valerie Alexander and Greg Rumpel
- James Joseph Barrette
- Frank Bott
- Hélène Bourgazi and Norman Latulippe
- Margaret Cracknell
- Northern Alberta Region
- CV Labs - FMC University of Calgary
- Joan Fulton
- Jacqueline and Peter Gilbert
- Joyce Gouin
- Hemophilia Manitoba
- Hemophilia Ontario
- Mike and Joanne Hayden
- Dr. A. James and Helen Black

**SCENARIOS AND FUTURE PROJECTIONS TO 2003 AND BEYOND**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope &amp; Prayer</td>
<td>$1,280,000</td>
<td>$1,300,000</td>
<td>$1,350,000</td>
<td>$1,400,000</td>
<td>$1,500,000</td>
<td>$1,600,000</td>
</tr>
<tr>
<td>Impossible Dream</td>
<td>1,300,000</td>
<td>1,400,000</td>
<td>1,500,000</td>
<td>1,600,000</td>
<td>1,650,000</td>
<td>1,700,000</td>
</tr>
</tbody>
</table>

**ACtIVE Donors**

- Dr. A. James and Helen Black
- Mike and Joanne Hayden
- Dr. A. James and Helen Black

**ACKNOWLEDGEMENTS**

We express our thanks to those who supported the Million Dollar Club from its earliest beginnings and have made it possible to contribute in excess of $1,500,000 in research funds to the Canadian Hemophilia Society over these past twelve years. We acknowledge these organizations and individuals who have been instrumental in raising the first million dollars of endowment and have recognized their great contribution in our booklet In Gratitude and Commemoration, which was mailed to all members and donors.

We thank those who are making it happen now, you who have contributed or committed a total of $155,000 this year to-date, $115,000 of which has gone to endowment growth, and all who have helped us pass the half-million dollar mark in the last two years:
Grace Jasper  
Dr. David Lillicrap  
Erma Chapman and James Love  
Lorne Macdonald  
Shirley and John MacKillop  
Friends and Family of Mary MacLeod  
Lorraine J. Markotic  
Eldene Miller  
William Mindell  
Newfoundland and Labrador Chapter  
Ottawa & Eastern Ontario Region  
Douglas Page  
Faith and Kip Panesar  
Lolita Pelletier  
Marlene Permanand  
Mary-Lou and Garnet Plante  
Prince Edward Island Chapter  
Joan Roberts  
Toronto & Central Ontario Region  
Janice Young  

Our thanks, as well, to special persons who have helped us in other ways, and who made an important contribution to whatever success we enjoyed in the past two-plus years. 

We acknowledge gratefully the CHS Past President, Erma Chapman, who was our chief “booster” and used every opportunity to speak and write in support of the Million Dollar Club; thanks to our President, Tom Alloway, who has recognized the value of and supported acceleration of endowment growth; to Ken Poyer, the founder of the Million Dollar Club, who has been a valuable resource to us as we’ve proceeded up the “learning curve” of the fund in all its historical, legal, and financial dimensions; to Jane Bishop, Executive Director of TCOR, who is always a willing “sounding board” on fundraising matters; to the CHS National Executive Director, Daniel Lapointe, and our indispensable staff team member, Joyce Gouin, and other national office staff who have provided administrative and other support (at no cost to the Million Dollar Club); as well as to staff in the Chapters and Regions who have been very supportive; on a personal note to my fellow trustee-administrators, with whom it has been a pleasure and satisfaction working these past two years - Daniel Baribeau, who was “our man” in Quebec and the trustee in contact with the investment firm of BMO Nesbitt Burns in Montreal, and Lawry MacLeod, our Atlantic presence and representative on the CHS Resource Development Committee. We bid fond farewell to Daniel and welcome Jamie Hill! This has been truly a trans-Canada effort with support from all across the country!

Those who organized the Hemophilia Research Million Dollar Club some twenty years ago, early established the concept of linking support for research to annual recognition of persons who have made a significant contribution to the mission of the Canadian Hemophilia Society. Also it would serve as an ongoing memorial to those who had died. While the Honorary Memberships were specifically designed this way, any membership can fulfill this purpose. The national organization and all the chapters and regions and a number of individuals have, over the years, used the memberships for recognition and commemorative purposes. The commitment of the Million Dollar Club is that those so honoured will be remembered on an annual basis for as long as the Club exists. Beyond the annual recognition of all members and those recognized, there is a special commitment to Honorary Members and to Honorees to publish their names annually in Hemophilia Today.

**Honorary Memberships**

- Frank Bott and Family  
- Jeff Brownning and Poyer Family  
- Canadian Hemophilia Society  
- British Columbia Chapter  
- Southern Alberta Region  
- Northern Alberta Region  
- Hemophilia Manitoba  
- New Brunswick Chapter  
- Newfoundland and Labrador Chapter  
- Nova Scotia Chapter  
- Prince Edward Island Chapter  
- Quebec Chapter  
- Hemophilia Saskatchewan  
- Hemophilia Ontario  
- Hemophilia Ontario (On Behalf of the Maynard Family)  
- Central Western Ontario Region  
- North Western Ontario Region  
- Ottawa & Eastern Ontario Region  
- Toronto & Central Ontario Region  
- Toronto & Central Ontario Region (On Behalf of the Estate of Ann Lois Brown)  
- Tom and Marvin Olson  
- Francine O’Meara  
- Bert and Joan Reibo  
- Candace Terpstra

**Honorees**

- Dr. Agathe Barry  
- Gisele Belanger and her Team  
- Helen and Hunter Bishop  
- In Memory of Martin Bott  
- In Memory of Ann Lois Brown  
- Dr. Robert Card, Caryl Bell and Elena Kanigan  
- Comprehensive Care Team of Southern Alberta  
- Kathy Conliffe  
- Ray and Pat Daniel  
- Dr. Barry L. deVeber  
- Bill Featherstone  
- In Memory of Raymond Joseph Fontaine  
- For Persons with Hemophilia who have Died from AIDS “So We Never Forget”  
- Pierre Fournier  
- In Memory of Robert Gibson  
- Muriel Girard and her Team  
- Dr. Gerry Grove  
- In Memory of Frank Haslam  
- Ann Harrington  
- Dr. Martin Inwood  
- Dr. Francois Jobin  
- In Memory of Stuart Johnson  

**Family of David Joy**  
- Marie Jutras  
- Dr. Garner King and Dr. John Akubutu  
- Dr. Nathan Krobinsky  
- In Memory of Barry Waines Kubin  
- In Memory of Edward Kubin  
- Niomand Landry Family  
- In Memory of Pierre Latreille  
- In Memory of Bill Laxdal  
- Dr. Mariette Lepine and her Team  
- In Memory of Garry MacLean  
- In Memory of Dr. Douglas, Mark, Paul and Norine Maynard  
- In Memory of Ray O’Meara  
- Bob O’Neill  
- Ottawa & Eastern Ontario Region  
- Dr. Mohan Pai  
- John Peach  
- Persons with Hemophilia from South Western Ontario Region  
- Pauline Peters and Duncan Conrad  
- Gary N. Petrick  
- Ken Poyer  
- In Memory of Allan E. Quartermain  
- In Memory of Brian Reibo  
- In Memory of Darryl Reibo  
- Dr. Georges-Etienne Rivard  
- Joyce Rosenthal and Lois Bedard  
- In Memory of Howard Sayant  
- Dr. Brent Schacter  
- In Memory of Kenneth Shewchuk  
- In Memory of Frank Schnabel  
- In Memory of John Strawa  
- Dr. Hanna Strawczynski  
- Frank and Candy Terpstra  
- In Memory of Frank Terpstra  
- In Memory of Troy Christian Trepanier  
- Dr. Chris Tsoukas  
- Dr. Irvin Walker  
- Barbara Webster  
- Glen Webster

We invite you all to become a part of the Impossible Dream! Contributions to the Hemophilia Research Million Dollar Club offer a number of features:

- All contributions (whether in the form of memberships or donations) are tax-deductible.
- 100% of a contribution goes to research - we have no administrative overhead (thanks to the CHS). The only cost we incur are fees paid to our investment manager and these come out of investment income.
- Many supporters prefer to give to something specific, such as research, particularly to an endowment which will “continue giving” for years to come.
- Our recognition of members and honorees, for as long as the Million Dollar Club exists, is a very attractive feature.

If you want to support and/or find out more about the Hemophilia Research Million Dollar Club, contact Joyce Gouin at the CHS national office 1-800-668-2686 or at jgouin@hemophilia.ca and ask for our brochure An Invitation To Invest in Hemophilia and Other Inherited Bleeding Disorders Research.
<table>
<thead>
<tr>
<th>TOPIC</th>
<th>ORGANIZATION</th>
<th>MARK</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| SAFETY MEASURES, SURVEILLANCE OF ADVERSE REACTIONS | CBS | A | • The CBS is to be commended for its precautionary approach in the introduction of donor screening measures to limit the risk from variant Creutzfeldt-Jakob Disease (vCJD). The 1999 decision has proven to be justified. What's more, it has continued to strengthen the measures as events unfold in Europe.  
• It moved quickly to introduce nucleic amplification testing for hepatitis C and HIV, thereby significantly reducing the already small risk from these pathogens.  
• It resisted pressure to relax donor eligibility requirements which have served Canadians well. |
|  | HÉMA-QUÉBEC | A | • Héma-Québec played a leadership role world-wide in the introduction of precautionary donor screening measures to limit the risk from vCJD, which have since proven justified. Furthermore, Héma-Québec has moved to strengthen these donor deferral criteria.  
• It moved quickly to introduce nucleic amplification testing for hepatitis C and HIV, thereby significantly reducing the already small risk from these pathogens.  
• It resisted to pressure to relax donor eligibility requirements which have served Canadians well. |
|  | HEALTH CANADA | B | • Health Canada has mandated the world’s strictest donor screening measures to reduce the risk from vCJD.  
• Health Canada created the Bloodborne Pathogens Division in the Centre for Infectious Disease Prevention & Control.  
• It is moving ahead with National Standards for the Safety of Blood and Blood Components.  
• It has funded pilot projects for the development of better systems of reporting adverse reactions to the transfusion of blood and blood products. However, it has failed to consistently provide feedback to provinces, hospitals and physicians on the reports it has received.  
• Health Canada has been slow in approving new biological therapeutics and manufacturing facilities. |
|  | QUEBEC | B | • Quebec has made major progress in the development of an integrated surveillance system for reporting accidents/incidents, involving hospitals, public health and a hemovigilance committee. However, the integrated information system (SIIATH) remains to be deployed in all hospitals.  
• There has been progress with regard to informed consent for treatment with blood and blood products. |
|  | BC | C | • BC has made progress in the establishment of reporting mechanisms for adverse reactions.  
• It has also made worthwhile efforts to promote informed consent for treatment with blood and blood products. |
|  | OTHER PROVINCES | F | Much remains to be done with regards to provincial approaches to surveillance, error reporting and informed consent. |
| SUPPLY OF FACTOR CONCENTRATES | CBS | A | • CBS did an excellent job in managing the recent world shortage of factor concentrates to ensure provision of high-quality factor concentrates for Canadians.  
• It has adopted a policy of making available a variety of high-quality factor concentrates, thus providing patient choice.  
• It is moving to relationships with several suppliers to better ensure supply in case of manufacturing breakdowns. |
|  | HÉMA-QUÉBEC | A | • While Héma-Québec has been less involved in the past than the CBS in contracting for factor concentrates, nevertheless, Quebecers with bleeding disorders enjoyed constant supply throughout the shortage.  
• Héma-Québec has recently given itself the capacity to negotiate and enter into contractual arrangements with suppliers of factor concentrates. |
|  | HEALTH CANADA | D | • During the shortage, Health Canada facilitated access to factor concentrates through the Special Access Program.  
• It stills lags behind other regulators in its ability to quickly evaluate new products and new manufacturing facilities. |
|  | PROVINCES | A | • Canadians in all provinces continue to enjoy access to the safest factor concentrates, in sufficient quantity, and at no direct cost to the patient.  
• The provinces have provided adequate funding to allow CBS and Héma-Québec to manufacture and purchase high-quality blood components, blood products and their alternatives. |
### Self-Sufficiency in Blood Components and Blood Products

<table>
<thead>
<tr>
<th>Organization</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
</table>
| CBS          | C    | • CBS has made major progress in its ability to ensure an adequate supply of fresh components to hospitals. It has been successful in attracting lapsed donors to return to give blood.  
• Canada has continued to lose ground in its ability to collect enough plasma to manufacture blood products (e.g. IVIG) for its citizens. Plans to develop plasmapheresis centres across the country are progressing extremely slowly. |
| Héma-Québec  | C    | • Héma-Québec has continued to be a reliable supplier of fresh components to hospitals.  
• Quebec, too, has continued to lose ground in its ability to collect enough plasma to manufacture IVIG for its citizens. Plans to develop plasmapheresis centres are progressing extremely slowly. |
| PROVINCES    | D    | • The provincial Ministers of Health have failed to provide CBS and Héma-Québec with the necessary financial resources to promote greater self-sufficiency. |
| THE CANADIAN PUBLIC | C | • Canadians have responded well to appeals to give blood. As a result, severe shortages have become much less frequent than in the past.  
• However, in a country where close to half the population is eligible to give blood, only 3% of Canadians actually do. |

### Accountability, Decision-Making, Transparency

<table>
<thead>
<tr>
<th>Organization</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
</table>
| CBS          | B    | • CBS’ handling of the severe shortage of factor concentrates through dialogue and open communication was exemplary.  
• The creation of the National Liaison Committee which includes representatives from recipients of blood products is a major step forward.  
• CBS has begun to understand that the public representative on its Board of Directors is a person who should be connected to blood recipient groups.  
• The process to select the public representatives on the Board of Directors was conducted hastily and without proper public notice. |
| Quebec      | A    | • Héma-Québec continues to have a policy of openness and dialogue in its treatment of policy issues. |
| HEALTH CANADA | C | • The current development of the Standards for Blood and Blood Components is a model of open stakeholder participation. However, other advisory groups are secretive. Health Canada should model itself after the U.S. FDA’s Blood Products Advisory Committee which holds public meetings. |

### Compensation

<table>
<thead>
<tr>
<th>Organization</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
</table>
| FEDERAL GOVERNMENT | F | • The federal government has failed to respond to Justice Krever’s recommendation to compensate all Canadians injured through the administration of blood and blood products.  
• The Minister of Health, Anne McLellan, refuses to even meet individual health charities to discuss their concerns. |
| Ontario      | A    | • Among the provinces, Ontario has responded best to this issue, with better pre-86, post-90 compensation for hepatitis C and indexation of the 1994 F/P/T settlement for HIV to the cost of living.  
• Ontario has also set up an Advisory Committee to oversee spending of the federal “Care not Cash” monies for those infected with Hepatitis C through blood and blood products. |
| Manitoba     | B    | • Manitoba has provided minimal help for people infected with hepatitis C pre-86, post-90, but has so far failed to index the 1994 F/P/T settlement for HIV to the cost of living. |
| Quebec       | C    | • Quebec has provided minimal help for people infected with hepatitis C pre-86, post-90, but has so far failed to index the 1994 F/P/T settlement for HIV to the cost of living.  
• In addition, it has refused to accept the federal “Care not Cash” monies for political reasons, while people with Hepatitis C are refused treatment because of a shortage of nursing care. |
| BC           | C    | • While BC has provided some help for people infected with hepatitis C pre-86, post-90, it is at a lower level than Ontario, Manitoba or Quebec.  
• It has also failed to index the 1994 F/P/T settlement for HIV to the cost of living. |
| ALBERTA, SASKATCHEWAN, NEW BRUNSWICK, PEI, NOVA SCOTIA, NEWFOUNDLAND | F | These provinces have yet to provide any help to the people infected with hepatitis C pre-86, post-90, nor have they provided indexation for the 1994 F/P/T settlement for HIV. |
Focus on Research

Dr. Gershon Growe, Chair, CHS Research Grants Review Committee

Over the past three years I have had the pleasure of chairing the Grants Review Committee for the CHS. This is the group which evaluates research proposals and submits recommendations to the Board of Directors. There is a spectrum of expertise on the panel ranging from basic lab scientists to clinical practitioners, and we call upon others for consultation if appropriate. The panel has expanded as the number of granting opportunities has increased.

Over the past thirteen years the CHS has supported research in this country, and has filled a particularly important role by funding young investigators, and supporting fellowships to attract these scientists and clinicians into the field of hemophilia care in this country.

The development of a Quality of Life instrument to help identify current needs of persons with hemophilia and their families is an example of a very practical application. Measurement of sweat production with exercise and the production of von Willebrand Factor also may shed some specific and helpful information on the management of bleeding patterns in women with von Willebrand Disease.

At a more basic research level, support has gone to labs refining carrier identification, refining coagulation proteins in the hope of producing better recombinant products, and to tissue expression of factors VIII and IX in the hope of developing an implantable delivery system.

The applications continue to be diverse, and we look forward to the next round.

This issue of Hemophilia Today describes all the projects funded in the last year and takes a closer, more personal look at two of them: Dr. Manuel Carcao's study, A prospective, randomized trial to compare two regimens of prophylaxis in older boys with severe hemophilia A, and Jenny Aikenhead and Jane Hagel's study, Impact of proprioceptive and balance training on ankle joint bleeds in severe hemophilia.

CHS Research Program

Supporting research towards improving the quality of life for persons with hemophilia and finding a cure have been goals of the Canadian Hemophilia Society (CHS) since it was founded in 1953. Since 1989, through funds provided by the Hemophilia Research Million Dollar Club and the CHS, the Society provides basic scientific research grants and studentships aimed at developing treatments for hemophilia and finding a cure. The following reports describe the projects funded in 2002.

CHS RESEARCH PROGRAM

Gene Therapy for Hemophilia A

Paul X.-Q. Liu, Ph.D., Dalhousie University, Halifax, Nova Scotia

This project is to develop a novel method for gene therapy of hemophilia A. The novelies are to deliver the large human factor VIII (FVIII) gene in small pieces using the safe and efficient rAAV (recombinant adeno-associated virus) vector, and to enable these small pieces to come together and function properly.

Hemophilia A is caused by a deficiency or abnormality in blood coagulation factor VIII. Gene therapy is a promising future treatment, in which a functional FVIII gene is delivered to the patient to produce the coagulation factor. Among available molecular vehicles for gene delivery, the rAAV vector has several advantages (safe, efficient, long-lasting) over other vectors, but rAAV’s small packaging size prevents its use with the large FVIII gene. A miniature FVIII gene may be as small as 4.5 kb, but the final size will increase to well over 5 kb after the addition of accessory parts (promoter, regulator, etc.) that are required for efficient and regulated FVIII production. This final size is too large to be packaged into the rAAV vector for gene delivery. We will try to solve this problem by using a gene-splitting and splicing technique that we have developed recently.

A functional FVIII gene will be split into two small pieces and modified by adding accessory parts including promoter, regulator, and splicing sequences. Each modified piece will be approximately 4 kb and within the size limit of the rAAV vector. These modified FVIII gene pieces will be delivered simultaneously into target cells using rAAV vectors, and the corresponding gene products are expected to come together and splice into a functional form of FVIII. Over the next two years, we will test this novel method initially in E. coli cells, then in cultured human cells, and finally in FVIII-deficient mice (an animal model of hemophilia). The production of FVIII and its therapeutic effect will be monitored.
A Soluble Tissue Factor which Binds Inhibitors and Increases Efficacy of rFVIIa

Herbert Lau, Ph.D., University of Toronto

Hemophilic A patients have a deficiency of a clotting factor VIII, and hemophilic B patients have a deficiency of a clotting factor IX. These factor deficiencies make blood clotting very difficult, and the hemophilic patients are usually treated by artificially replacing the missing clotting factors. However, some of these patients develop antibodies in their blood stream which oppose the clotting activity of the replaced factors, and have to be treated with a genetically engineered recombinant factor VIIa (FVIIa). This factor clots blood without using either FVIII or FIX. Unfortunately, it has to be given to patients in large amounts and therefore the therapy is very expensive. The aim of this project is to find a way of enhancing the activity of recombinant factor VIIa, so as to reduce the amount that is needed to initiate blood clotting, which might provide an efficient and cost-effective solution to treating these patients.

FVII is an inactive protein and its enzymatic activity is realized only when it combines with a clotting co-factor called tissue factor (TF). TF converts the inactive FVII into an active FVIIa. The TF:FVIIa combination then directly clots blood, bypassing the use of the hemophilic factors. However, this combination is also susceptible to inhibition by many blood-borne inhibitors and destruction by cells. One way of overcoming these shortfalls will be to administer the recombinant FVIIa in conjunction with a very active TF molecule. In this way, the TF molecule will convert the patients’ own FVII into active FVIIa, and relieve the inhibition and destruction imposed on the therapeutic TF. This will then reduce the amount of recombinant FVIIa that is necessary for initiating blood clotting. By searching for TF molecules from different sources, it is hoped that the active TF molecule will be found at the end of this project.

A Study of Gene Analysis in an Isolated Population of Mild Hemophiliacs in Forteau, Labrador

Yagang Xie, MD, Memorial University of Newfoundland, St. John’s

Hemophilia A, an X-linked recessive blood coagulation disorder, is caused by deficiency or dysfunction of the coagulation co-factor VIII (FVIII). Early diagnosis and treatment is the key to minimizing the long-term complications of hemorrhages. We have identified two isolated populations with extremely high prevalence of hemophilia A from rural areas of Newfoundland (approximate 44 in 3,300 males) and Labrador (approximate 14 in 260 males), respectively. The high prevalence of hemophilia A in these two small isolated populations raises the potential of founder effect(s) from one, or at the very most, a small number of factor VIII mutations. The clinical presentation and plasma FVIII:C levels in affected individuals from both populations were all compatible with mild hemophilia A. We recently successfully identified a founder mutation of the FVIII gene, Val2016Ala, from the isolated Newfoundland population. The mutant allele has been identified from all of the tested affected subjects and obligate carriers in this population, but none of the patients from the Labrador population. Therefore, another possible founder effect may account for the mild hemophilia A in Labrador patients.

We have collected clinical information and family history on quite a large number of Labrador patients. All presently identified affected patients have been linked to one big kindred with approximately 567 individuals in six generations. DNA mutation screening of FVIII gene has been performed in a group of DNA samples from selected patients with known clinical status. The possible founder effect of the mutation will be determined by using haplotyping analysis of FVIII intrinsic polymorphisms in affected patients. A direct mutation testing will be immediately established based on the nature of the identified mutation, and a permanent DNA diagnostic service for the identified mutation will be offered to the local community. There will be a long-term benefit in: a) precise and pre-symptomatic diagnosis of mild hemophilia, especially for those with atypical results in coagulation tests; b) definitive hemophilia genetic counseling to the community by determining the carrier status for all individuals who are at risk.

Targeted Gene Therapy for Hemophilia

André C. Schuh, MD, University of Toronto

This project is proposing to assess a novel gene therapy strategy for the treatment of hemophilia A. Specifically, to use bone marrow-mediated, targeted gene therapy to direct the expression of FVIII to platelet α-granules, such that coagulation is specifically initiated by regulated FVIII release following platelet activation at sites of vascular injury. Since the targeted protein would be sequestered in α-granules and would not be released until platelet activation occurs, even low levels of constitutive transgenic protein production would result in high local factor levels at the sites of bleeding. In addition, this approach has a number of potential immunological advantages as well, as bone marrow-mediated antigen exposure is known to be less immunogenic than is parenteral exposure to the same antigen, and may potentially induce antigen-specific tolerance.

Our approach is to use transgenic mice, retrovirus-mediated gene transfer, and bone marrow transplantation, to deliver engineered hematopoietic precursors to hemophilic mice. Transduced and transgenic stem cells will give rise to megakaryocytic precursors expressing human BDD-FVIII in a tissue-specific manner, under the control of PF4 regulatory sequences. The intracellular trafficking of FVIII will be directed to α-granules, either by virtue of vWF acting as an intracellular “chaperone”, or by incorporating regulated secretory granule sorting domains into BDD-FVIII as in-frame fusions.
Care Until Cure

The Care until Cure Research Program was established in the year 2000 in collaboration with WYETH/Genetics Institute. WYETH is engaged in the discovery, development, and commercialization of human pharmaceuticals through recombinant DNA and other technologies.

This program allows Canadian investigators to conduct research on various medical and psychosocial aspects of bleeding disorders. Grants are given for clinical research, including outcome evaluation, in fields relevant to improving the quality of life of persons with hemophilia, persons with von Willebrand Disease or other inherited bleeding disorders, persons with related conditions such as HIV or hepatitis C as well as carriers of an inherited bleeding disorder. The following reports describe the projects funded in 2002.

CARE UNTIL CURE

The Impact of Proprioception and Balance Training in Severe Hemophiliacs

J. Aikenhead, PT, J. Hagel, BSc, PT, Southern Alberta Hemophilia Clinic, Calgary

One-year funding
The physiotherapists from the Southern Alberta Hemophilia Clinic at the Alberta Children’s Hospital are grateful to have been awarded a grant from the Care until Cure Research Program. The funding was provided for a pilot study to look at the impact of proprioceptive training on the ankle bleeds in severe hemophilia.

The subjects for the study will be selected on the basis that they have had ankle bleeds in the past six months and that their range of motion has not significantly decreased. The subjects will undergo two tests in a gait laboratory. The first will record balance on a computerized footplate and the second will measure angle matching on a still camera. Following the initial testing, the subjects will then be asked to carry on with their normal routine and then re-tested six weeks later. This allows for maturation and learned response to the test to be measured. The subjects will then be taught a home exercise program that will be practiced five times a week for six weeks. A daily log recording the exercises will be kept and a telephone contact once a week will be made by a physiotherapist to ensure compliance with the home program. After the ten-week exercise program, the subjects will be re-tested in the gait laboratory. The results will then be correlated to the subjects’ balance and joint awareness.

Also the subjects’ bleeding logs will be reviewed six months prior to and post study to see if the exercise program had any effects on the subjects’ balance and joint awareness. If the home exercise program does provide positive results, a multi-centre study could be considered looking not only at the ankle joint but also including the knee, elbow and shoulder joints.

Editor’s note: For an in-depth profile of these researchers and their research, see Page 18.

CARE UNTIL CURE

A Prospective, Randomized Trial to Compare Two Regimens of Prophylaxis in Older Boys with Severe Hemophilia A

Dr. Manuel Carcao, Hospital for Sick Children, Toronto, Ontario

For an in-depth profile of Dr. Carcao and his research, see page 19.

CARE UNTIL CURE

Aminoglycoside Treatment of Severe Hemophilia

Dr. David Lillicrap, Queen’s University, Kingston, Ontario

The aim of this research project is to perform a pilot clinical trial of a novel form of hemophilia therapy. This trial represents the first form of “targeted gene therapy” in which a particular type of hemophilia mutation is being treated with a drug not previously used in the management of hemophilia.

The six patients who will be studied in this project have all previously been identified with mutations in their clotting factor genes that prematurely stop the synthesis of the newly produced clotting protein. This type of “premature stop” mutation accounts for approximately 20% of the mutations resulting in severe factor VIII deficiency and about 10% of severe hemophilia B. In recent studies carried out in both cultured cells and animals with certain forms of genetic disease, there has been a suggestion that these “premature stop” mutations can be “overwritten”, in some instances, with the use of a group of antibiotics called the aminoglycosides. These observations have now been extended to several small clinical studies in human patients where, to date, the results have been inconclusive.

In this project, we have identified six hemophilia patients with “premature stop” mutations who will receive three daily treatments of the aminoglycoside antibiotic, gentamicin. During the course of the treatment, the patients’ clotting factor levels will be examined on several occasions to assess a potential therapeutic response. In addition, tests will also be performed to measure the blood levels of the antibiotic and to assess any potential drug-related toxicities.

This class of antibiotics has been used extensively to treat infections for many years, and although their use can be associated with kidney and hearing problems, these adverse effects usually occur at doses far higher and after a much longer duration of treatment than will be used in this pilot study.

The attainment of clotting factor levels of even 2-3% following this treatment would be an important and clinically useful result. This type of result would suggest that the development of drugs such as these could then be used to provide an alternate form of prophylactic therapy in hemophilia.
CARE UNTIL CURE
A Cohort Study on the Risk of Cancer Associated with Radioactive Synovectomy

Dr. Georges-Étienne Rivard, Hôpital Ste-Justine, Montreal

1st year funding

Chronic inflammation of the synovium, which results in recurrent articular bleeding, is a major source of disability among hemophilic patients worldwide. The procedure known as radioactive synovectomy is an efficacious and widely used technique to treat this condition. Among its major advantages, compared to other available treatment options, is the fact that it is simple, has a low complication rate, does not require patient hospitalisation or rehabilitation and is cost effective. In fact, for all these reasons, radioactive synovectomy is ideal to treat this condition, especially in countries where cost and medical resources are limiting factors. Despite the fact that there exists no convincing evidence to suggest that radioactive synovectomy causes cancer, this fear has lead to considerable reluctance on the part of treating physicians to consider it as a treatment option for their patients.

In order to address whether radioactive synovectomy causes cancer, we have designed a retrospective cohort study whose aim is to assess the cancer rate and cancer related mortality rate of patients treated with radioactive synovectomy compared to the general population. The effect of increasing radioactive dose and/or number of treatments on these cancer outcomes will also be studied. The current study will be carried out on a large group (~4 000) patients who have undergone this procedure at least once at one of two University of Montreal affiliated teaching hospitals since 1978. The average time of follow-up for the entire group is 14 years (range 3-25 years). We feel that this is a badly needed study to answer a longstanding and important but unresolved question.

AVENTIS BEHRING FELLOWSHIP
The Molecular Genetic Basis of Type 1 von Willebrand Disease

Dr. Paula James, Queen’s University, Kingston, Ontario

Type 1 von Willebrand disease is a common inherited bleeding disorder which can be difficult to diagnose. Patients are often required to undergo repeated labour intensive hemostatic testing, and a clear cut diagnosis is not always arrived at. The overall aim of this project is to characterize the underlying genetic basis for type 1 von Willebrand disease. The entire project, which is comprised of a number of parts, is being conducted by Dr. David Lillicrap at Queen’s University and has been funded by the Canadian Institutes of Health Research.

This fellowship will allow me to be involved in two main parts of the study. The first is to coordinate the collection and interpretation of phenotypic data on a well characterized population of nuclear families with unequivocal type 1 von Willebrand disease and the second is to perform genetic polymorphic testing using PCR amplification techniques on this population. Our ultimate goal is to incorporate this form of genetic testing into the current, temporally variable forms of phenotypic analysis to aid in the precise diagnosis of type 1 von Willebrand disease.

At present, very little is known about the genetic basis of type 1 von Willebrand disease and the reduced penetrance and variable expressivity of the phenotype is reminiscent of other autosomal dominant disorders and currently remains unexplained. An understanding of the genetic basis of type 1 von Willebrand disease may well apply to other complex traits within the human genome.
Regulation of the Protein C (PC) Anticoagulant System

Dr. Luigina Mollica, *Imperial College of Science, Technology and Medicine, London, England*

A better understanding of the mechanisms that regulate hemostasis is crucial for the development of new diagnostic and therapeutic strategies for patients presenting with coagulation disorders. Many groups around the world are focusing on the role of the endothelium (cells lining the blood vessels) in the regulation of hemostasis.

The fellowship grant offered by the Novo Nordisk – Canadian Hemophilia Society – Association of Hemophilia Clinic Directors of Canada is a very important contribution to the advancement of our knowledge on the mechanisms that regulate hemostasis. The fellowship will take place at the Imperial College of Science, Technology and Medicine (ICSM) in the United Kingdom, one of the world’s most renowned institutions in the field of molecular haemostasis and thrombosis.

The research project I will be working on concerns the newly described endothelial protein C receptor (EPCR). This receptor is being increasingly recognised as an important regulator of the protein C anticoagulant pathway. This pathway represents the major anticoagulant system of the human body. I will be working in the laboratory of Professor David Lane, a world-renowned expert in the field of molecular coagulation. The major focus of my fellowship will be the characterisation of the EPCR gene expression through a transgenic approach (with laboratory mice). During my fellowship, I will also be exposed to the activities of the local haemophilia and thrombosis clinics. At the ICSM, there is a well-established collaboration between clinicians, clinical-scientists and fundamental researchers. Thus, the ICSM exposes me to a scientific process adapted to my training as a clinically oriented fundamental researcher.

By financially supporting my fellowship, the Novo-Nordisk – Canadian Hemophilia Society – Association of Hemophilia Clinic Directors of Canada gives me the opportunity to offer our scientific community state-of-the-art expertise on the biology of the endothelium. After my fellowship, I will return to Montreal to join the team of academic hematologists at Maisonneuve-Rosemont Hospital. My main mandate upon return will be to develop a research program oriented toward the resolution of clinically pertinent coagulation issues.
JENNY AIKENHEAD AND JANE HAGEL, PHYSIOTHERAPISTS AND RESEARCHERS

Pam Hilliard, Physiotherapist, The Hospital for Sick Children, Toronto; Co-chair, CHS Physiotherapy Committee

Jenny Aikenhead graduated from the School of Physiotherapy in Wolverhampton, England (a few years back!), choosing a career in physiotherapy to combine her interests in nursing and physical education. She has worked at the Alberta Children’s Hospital for seventeen years, gaining a variety of experience in the fields of orthopedics, rheumatology and neurology. When the Southern Alberta Hemophilia Clinic was searching for a new physiotherapist six years ago, Jenny felt that her experience working with rheumatology and orthopedics would be a “natural fit” for this position and applied for it. Although her primary area of work at the Alberta Children’s Hospital is treating children with spina bifida, Jenny covers the hemophilia clinic held once a month and follows both adults and children requiring physiotherapy for acute or chronic bleeding episodes. She has been actively involved in the Canadian Hemophilia Society Physiotherapy Committee since its revival in 1997.

Jane Hagel was drawn to a career in physiotherapy by her interest in sports and the influence of her grandmother who as a physiotherapist treated post polio patients. She graduated from McGill University in Montreal in 1992. For the past ten years, Jane has also been part of the physiotherapy staff at the Alberta Children’s Hospital. As part of her primarily orthopaedic caseload, she has been a backup resource to Jenny and the hemophilia program for the past five years.

Jenny and Jane have both been involved with social activities sponsored by the Canadian Hemophilia Society. Jenny also attended a seminar organized by the local chapter that focused on von Willebrand Disease.

Amongst the challenges which Jenny and Jane have faced in treating patients with hemophilia, managing those with inhibitors to factor VIII has probably presented the greatest difficulties. Maximizing functional activities while protecting the more vulnerable joints from injury often requires that the physiotherapist “walk a very fine line”. As well, they have been concerned to see arthritic joint changes in young adults, particularly in the ankle joint. Jenny and Jane recognized that there was a lack of clinical research in physiotherapy related to hemophilia care. From their experience treating patients with sports injuries, they knew that athletes who suffered from repeated ankle sprains demonstrated decreased proprioception or sense of balance in the ankle joint. This was a significant factor in whether the athlete re-injured that ankle. They did a search of the literature, but couldn’t find good measurable data to prove that specific exercises could improve this “joint sense”. They decided to look into using simple equipment in a gait lab, where the components of walking are analyzed, to try to get information that could be measured and not just observed.

After drawing up a research proposal for a pilot study looking at the effect of specific exercises in improving the balance or “joint sense” of ankle joints which had suffered from repeated bleeds, Jenny and Jane applied for and received a “Care until Cure” grant from the Canadian Hemophilia Society. The medical and nursing staff in their hemophilia program were very supportive. They took a longer time to recover than the time which had been allotted. Of note, none of them had a bleed into his ankle joints. The very small cohort size—three patients—meant that any variation from the protocol could affect the outcome of the study.

On the positive side, the three patients were very compliant and their parents were interested and supportive.

Jenny noted that she was very surprised to find that none of the three boys at study entry was able to rotate his affected ankle, unlike the unaffected one, in a circle with his eyes closed. That was definitely an unexpected finding and it will be interesting to see whether this skill improved during the course of the study.

The testing phase of the study has recently been completed. Jenny and Jane are hoping to correlate improved joint sense or proprioception with a decrease in the number of ankle bleeds. If the results of this pilot study are positive, a multi-centred study may be recommended to provide more data.

Jenny offered a few parting opinions. She would like to look more at the challenges of managing the pain and morning joint stiffness experienced by many patients with hemophilia. She would also like to further explore the role of joint injections—chemical and radioactive synovectomies. She also said that it would be helpful to have a Canada-wide committee with expertise in hemophilia and research to help new investigators, especially in the areas of physiotherapy, nursing and social work, get started in designing research projects.

As co-chair of the Canadian Hemophilia Society Physiotherapy Committee, I applaud Jenny and Jane’s efforts in furthering clinical research in physiotherapy related to hemophilia care and look forward to hearing their results.
**PROFILE**

**DR. MANUEL CARCAO**  
**HEMATOLOGIST AND RESEARCHER, HOSPITAL FOR SICK CHILDREN, TORONTO**

Dr. Manuel Carcao graduated from the Medical School at the University of Toronto in 1990. After a one-year internship at St. Michael’s Hospital, he completed four years of residency and a three-year fellowship in hematology-oncology at Toronto’s Hospital for Sick Children. Before joining the staff at Toronto’s world-renowned hospital in April 1999, Dr. Carcao completed electives at the Boston Children’s Hospital, Baystate Medical Center in Springfield, St. Jude’s Hospital in Memphis Tennessee, and B.C. Children’s Hospital in Vancouver.

Dr. Carcao is currently the Associate Director of Sick Kids’ Bleeding Disorders/Comprehensive Hemophilia Care Centre and co-runs the Centre with Dr. Victor Blanchette. In addition to his work in hemophilia and related bleeding disorders, Dr. Carcao cares for patients with other hematologic disorders including leukemia, anemia and ITP (idiopathic thrombocytopenic purpura). He was recently appointed as Secretary of the Association of Hemophilia Clinic Directors of Canada and chairs its Inhibitor Sub-Committee.

Hemophilia Today interviewed Dr. Carcao about his current research project, A Prospective Randomized Trial to Compare Two Regimens of Prophylaxis in Older Boys with Severe Hemophilia A.

The research project is funded through the CHS Care until Cure Research Program established in collaboration with Wyeth, and is now in its second year. It is a single-institution pilot study to study two different approaches to prophylaxis in boys with severe hemophilia A between the ages of 2.5 and 15 years.

In the standard arm of the study, boys receive 30 IU of factor VIII per kilogram of body weight three times a week. The infusions are done on days determined by the family and the physician as most advantageous in terms of the boy’s physical activities. Such a dose would be expected to raise a boy’s factor VIII level to 50 to 60 per cent of normal immediately after infusion, and then it would fall to close to one per cent within 48 to 72 hours.

In the "tailored" arm of the study, boys receive 25 IU per kilo of factor VIII twice a week. However, if bleeding is judged as too frequent, the dose is escalated in steps to the standard dose of three times weekly. Conversely, if there is no bleeding, the dose can be lowered to once weekly.

“Our goal,” says Dr. Carcao, “is to collect information on product usage, frequency of bleeding, musculo-skeletal changes as measured by physical therapy examinations, X-Rays and MRIs, patient satisfaction and compliance, and the total cost of treatment, including factor concentrates, but not forgetting other costs such as ER visits, hospital resources and the cost of transportation.”

Monitoring Committee, comprised of international experts, to review the progress of the trial and ensure patient safety.

Dr. Carcao had hoped to enroll 25 of the 30 eligible patients at Sick Kids. As of September 2002, 21 boys had enrolled, ten of whom were under 11 years of age and eleven of whom were older. One boy in the standard arm of the trial has withdrawn, saying he was not willing to continue prophylaxis at the rate of three times a week. The trial is now closed to new enrollments.

While the study will continue at least until all boys have been followed for two years, Dr. Carcao was willing to share some preliminary findings. “We have learned that there is a wide spectrum of disease severity that has nothing to do factor level. As a result, it is clear that patients need variable prophylactic regimens, ranging from minimal to frequent infusions. In the tailored arm of the trial, several boys needed to escalate to three times weekly; several switched to only once a week and several stayed where they were at twice a week.”

Another preliminary finding concerned the time of the day infusions are given. “During the trial, we have strongly encouraged giving factor in the morning. We have seen that several of the boys who were receiving treatment three times a week both before and during the trial have bled much less frequently since the study began. We believe this is because of our emphasis on morning infusions. With morning infusions, the trough when factor VIII levels fall below one per cent occurs at night, when the boy is less active and less at risk for bleeding.”

Dr. Carcao is well aware that the small number of boys enrolled in the trial means that the results are preliminary and not statistically definitive. “This trial has given us some preliminary answers and generated some questions. We are also gaining a lot of knowledge about the kinds of problems typically encountered in a study like this. We are now trying to use this information to design a large, multi-centre Canadian study on prophylaxis for older boys. Now that we have the preliminary results from this pilot study, we hope to apply for funding in 2003. This will be discussed at the Annual General Meeting of the Clinic Directors in May.”
FATHER & SON EVENT IN KITCHENER-WATERLOO

Helen Adams, Regional Service Coordinator, Central Western Region of Hemophilia Ontario

The Southwestern and Central Western Regions of Hemophilia Ontario held a Father and Son Event on September 20-22, 2002 - the first ever joint regional event. It was also the first time an event of this kind has ever taken place. Thirty-two fathers and sons affected with bleeding disorders between the ages of 5 and 18 years attended. The turnout was ideal as it promoted cohesiveness, bonding and participation.

This program grew from the results of needs assessments that were completed in the Southwestern and Central Western Regions during the winter and spring. While it was acknowledged that fathers play a significant role in their sons’ lives, it was also discovered that the mother was the primary caregiver. Furthermore, it was found that mothers generally spend more time with their sons than do their fathers. Mothers were also more involved in their health care.

“I don’t think I am too far off base when I say most of the care given to our boys is provided by their mothers. So, when an opportunity such as this presents itself, the fathers have to take advantage of it,” said Clark Feere of the Central Western Region.

The weekend was held at Camp Ki-Wa-Y, a YMCA Outdoor Centre, just north of Kitchener-Waterloo. “This camp is meant to provide fun and education, with its many environmentally friendly features, including solar energy and natural water filtration systems,” said Mike Gillespie of Central Western Region. As soon as the participants arrived, they took part in a “Get to Know You Exercise” by dividing into teams and building a boat with materials supplied.

“The first evening’s icebreaker was Y-chromosome heaven. We were working at a handicap since we didn’t get any duct tape,” commented Marco Travaglini of the Southwestern Region.

The fathers of the winning boat team received golf certificates as a prize. Later that night, we had a campfire and then the guys retreated for a good night’s sleep in their cabin, called “The Burrows” because it is built into a hill.

The next day, the fathers and sons practiced archery, canoeing, swimming, jumping on a water trampoline and fishing with their hand-made fishing poles. The boys received their treatments (as needed) from their fathers and the nurses. Both Lori Laudenbach, the Southwestern Hemophilia Nurse Coordinator, and Julia Sek, the Central Western Hemophilia Nurse Coordinator, attended this event. And mealtimes were made more interesting by “the cool Superman grace with hand motions and all.”

Dr. Mohan Pai of the Hemophilia Program of the Central Western Region and the Nurse Coordinators also made educational presentations at this retreat. Dr. Pai spoke of the advancements in hemophilia treatments and the nurses talked of the transition from port infusions to peripheral infusions. A special thank you to Mohan Pai, Lori Laudenbach and Julia Sek for giving their time so generously.

After the campfire on Saturday night, the fathers took their sons back to their cabin for a good night’s sleep. The Burrows offered a large common area with floor-to-ceiling windows, a fireplace, couches and chairs. This allowed the fathers the opportunity to stay up and talk.

On Sunday morning after breakfast, the guys tried their hand with kayaking.

“I got to try some kayaking. Let me tell you, it isn’t as easy getting in and out of those things as the kids made it seem. And other fathers would agree,” said Marco Travaglini.

The rest of the morning was spent doing other water activities. After lunch, the guys departed for home.

From all of the evaluation forms we have received, the feedback has been positive. The fathers have also asked for this event to continue. One father perhaps said it best when he wrote that it was the best event he’d ever been to. He spent some time with his son and got to know other fathers. He also talked about some of his feelings with these dads.

This event was made possible through the generous support of Bayer (lead sponsor), Aventis Behring and Novo Nordisk.

Families Empowering Families

MARITIME FAMILY WEEKEND

Tradina Meadows, CHS Regional Coordinator, Maritimes

“Families Empowering Families” was the theme for the first annual Maritime Family Weekend which took place on September 27-29. Over 130 people from Nova Scotia, Prince Edward Island and New Brunswick attended the family weekend held at Circle Square Ranch, near Sussex, New Brunswick. The programme was comprised of informative workshops, panel discussions and social activities.

A committee of volunteers from the three Maritime Provinces began planning this exciting event in early March. The main objectives were to provide Maritime families with informative

The conclusion to the successful Maritime Family Weekend, September 27-29, 2002
Some of the main topics of the educational seminars were hemophilia and careers, life choices and hemophilia, bleeds and preventing joint damage, kid power, a blood safety update and a presentation on von Willebrand Disease. Members were also very impressed with the panel of people with hemophilia that was set up on Sunday morning to help answer parents’ questions. It is also important to note that the children, seventeen years of age and under, were able to participate in workshops and also enjoy planned supervised activities.

Some of the social highlights of the weekend included the Saturday night talent show where our famous Maritime talent was demonstrated through the various skits, tap dances and magic shows. Another highlight on Saturday night was the karaoke show. It was very inspiring to see children, youth and adults perform their favorite songs. Duets were performed by Betty Anne Hines and her daughter Katie, Jane Peters and Keely MacInnes, Patricia Stewart and Tom Alloway, Dan Doran and his nephew Jordan Doran, and Thomas and Frank Peters, who received a standing ovation for their rendition of Queen’s Bohemian Rhapsody. Other memorable moments were Brenda Craig-Brooks, Dorine Belliveau, Heather McKellar, Tracy Doran, Charity Barlow, Patricia Stewart and Tradina Meadows singing Girls Just Want To Have Fun and John Plater, David Page, Dan Doran, Normand Landry and Serge Messerlian singing All the Girls I’ve Loved, a definite crowd pleaser.

We were very pleased to have the CHS President, Dr. Tom Alloway, attend the family weekend along with special guest speakers, Patricia Stewart, John Plater, David Page, Dr. Arlene Santhouse, Dominique Lussier, Serge Messerlian and Graeme Marney. We were also delighted to have special presentations from the following clinic staff: Dorine Belliveau, Brenda Craig-Brooks, Sue Ann Hawes, Fran Gosse, Maureen Brownlow and Tammy Berteit.

A special thank you to Bayer, Baxter Biosciences, Wyeth and Aventis Behring for helping make the weekend possible through their generous donations. The weekend would not have been such a success without the time, care and commitment that the Planning Committee devoted to this event. A big thank you to Betty Anne Hines, Pauline Peters, Dan Doran, Normand Landry, Lawry Macleod and Dean Hines for all their help. The success of the weekend was most evident at the closing on Sunday when families, who had arrived on Friday night not knowing anybody, hugged and made plans for the next time they meet.

As one person stated, “I think the weekend was a great success. It was great to meet new people from NB, NS and PEI and to renew old acquaintances from before. It is so nice to know that there are so many families around here just like us. We are not alone!”
PAIN -
THE FIFTH VITAL SIGN

Maureen Brownlow, Social worker, IWK
Grace Health Centre, Halifax

This is the first in a series of articles on pain and pain management that will appear in Hemophilia Today over the coming months.

“It is difficult to convey how chronic pain totally invades and affects all aspects of your life. It is a constant inescapable entity. And it is difficult to make others understand. Everyone has endured pain, but not the kind of pain that you must live with 24 hours a day, 7 days a week, day and night.”

This eloquent statement was expressed by a clinic patient who was interviewed during an informal survey on the impact of pain experienced by people with hemophilia.

Members of the hemophilia community have been aware for some time that their pain, both acute and chronic, hasn’t been appropriately managed. The subject was discussed at several Program Committee meetings, and at a panel presentation held during the CHS Medical Symposium at Mt. Tremblant, in May 1999. Three adults shared their experiences with pain, its impact on their lives and their difficulty finding effective care. A pain specialist spoke about the range of options available to deal with severe pain, the barriers to getting effective pain treatment as well as two very important issues—the education of health care professionals about the various aspects of pain assessment and treatment, and the need for pain assessment being a part of the Hemophilia Treatment Centre’s routine process.

In the early fall of 2001, a small committee of CHS volunteers, staff and clinic personnel from across Canada took up the challenge of exploring how pain was having an impact on the people in our community, and how children and adults with bleeding disorders would like help in dealing with their pain. To determine whether the experiences described by members of the Program Committee and the Mt. Tremblant panel were representative of other people with bleeding disorders, we developed a survey which was sent to all the clinics in Canada. It was administered through an interview with an adult, teen or parent of a younger child. The interviewers asked about the person’s experience with acute and chronic pain, his personal supports, his opinion of his quality of life, and, if pain was an issue, what strategies he used to deal with it. Eighteen interviews were conducted in all. Although the numbers were small, the opinions expressed were consistent across all clinics.

In summary, the results reinforced the message that pain experienced by people with hemophilia is not well understood, assessed or treated. Forty percent of the people interviewed reported having pain all the time. Children also have pain and often have difficulty describing the level of their pain. The most common reasons given for not taking medication are that the pain isn’t considered bad enough, the side-effects are a problem or that access to a pain specialist is difficult.

Our next step was to broaden our committee membership. The current CHS Pain Management committee includes: Pam Wilton, parent/nurse, and Maureen Brownlow, social worker, as co-chairs; Anne Harrington, hemophilia clinic nurse; Sophia Gocan, volunteer nurse; Dr. Peter Leung, pain specialist; Heather Jarman, pharmacist; Jenny Aikenhead, clinic physiotherapist, as well as several consumers.

When asked what the CHS could do to help, one consumer said, “Encourage open discussion of pain and any and all subjects related to it. Suffering along in silence is certainly not the way to cope.” To this end, we plan a regular column in Hemophilia Today which will feature articles related to pain management written by knowledgeable people. We are also considering an educational resource based on the format used for All About Hemophilia: A Guide for Families. The chapters in the document will be a more in-depth discussion of the topics addressed in the newsmagazine articles. Finally, a consumer session on pain management is being planned for the CHS 50th Anniversary Weekend, May 8-11, in Montreal. This session will provide an opportunity for people with hemophilia and their families to share experiences and ideas, hear a presentation on treatment options, experience advocacy training and discuss options with health care providers. Members of the multidisciplinary health care teams will have an opportunity to learn about their roles in assessing and managing patient pain.

If you have an experience with pain management that you’d like to share with the committee, please write, e-mail or call us through CHS. Improved pain management for persons with bleeding disorders is our goal.
I feel the need... for vaccine!

Michael King, MD, Member of the CHS Hepatitis C Task Force and Blood Safety Committee

This first in a series of two articles on vaccination deals with special considerations for people who are frequent users of blood products, or who are HIV- or HCV-positive. The second article, to appear in the spring issue of Hemophilia Today will touch on general recommendations for vaccination and look at some recent advances in vaccines, including their role in treating diseases already present.

For those of you too young to recognize this reference to the ’80s movie classic Top Gun, what Tom Cruise actually says is, “I feel the need for speed.” Cruise’s character in the movie is referring to his ability to fly an F14 fighter jet so fast and with such accuracy that he can outmaneuver the enemy. As I watched this movie rerun on TV the other night, feeling a bit sorry for myself with my dull headache and mild fever that one can get the first 24 to 48 hours after a flu shot, it occurred to me that this is what a vaccine does. Like a speedy fighter jet, a vaccine gives the immune system a superior ability to attack the enemy and defeat it. Although it didn’t take away my headache that evening, I was slightly comforted by the thought that my influenza vaccination would ensure that my immune system would now be ready and waiting, faster than the potential flu virus enemy that I might run into this winter, and that it would prevent me from becoming truly sick.

Okay, that’s the flu vaccine. We all know that it’s recommended on a yearly basis for anyone 6 years or older since the strains of virus that cause influenza change from year to year. But a reasonable person might wonder why his doctor has recommended that he be immunized a second time against other organisms against which he’s already received a vaccine. “Didn’t I receive all of the standard vaccinations recommended by Health Canada to protect me against measles, mumps, polio, etc. as a child? I know that I’ve received multiple blood products over the years to treat my bleeding disorder, but what difference does that make? I’ve already received the Hepatitis-B vaccine. Why do I need it again?” These are the questions, especially the latter, that require special consideration by our community.

The hemophilia community has been hit hard over the past two decades by the risk of infectious disease transmission through the blood supply. Although the blood supply is now as safe as it can be, starting with the testing of every individual blood donation for the presence of disease causing organisms, there are still special considerations that blood or blood product recipients should be aware of. One of these is vaccination against Hepatitis-A and B viruses, most importantly, as well as Influenza, Varicella and Pneumococcus.

Hepatitis Vaccination

Periodic concerns publicized in the media over the past 20 years about the possibility of Hepatitis-B vaccine being responsible for giving people the disease multiple sclerosis (MS) or other types of chronic illness have been dismissed by the scientific evidence. Morbidity & Mortality Weekly Report, the watchdog publication for adverse outcomes from medical therapy, points out that Hepatitis-B vaccine continues to be considered safe by the U.S. Food and Drug Administration (FDA), the American Pharmaceutical Institute, the Institutes of Medicine and other international professional vaccination advisory groups.

Another well-publicized concern about vaccination has been that a vaccine of any kind might increase the destructive activity of HIV on the immune system in people with HIV infection. This concern stems from the theoretical consideration that because vaccination is designed to stimulate the immune system, including stimulation of the T-helper cells where HIV is known to live, a vaccine might also stimulate the number of viruses within these cells to divide and increase in quantity. Multiple studies of viral load in HIV-infected people following various types of immunizations have shown that this is not a significant consideration, particularly when it is weighed against the risk of actually acquiring the disease that the vaccines are designed to protect against. The only relative advice against vaccination in people with HIV disease is that vaccines containing live organisms should be avoided. This, however, is not really a significant concern since none of the standard modern vaccines contain any live components that could result in infection or disease even if given to those with seriously impaired immune systems.

In fact, for anyone with a tendency to decreased immune function including not just those with HIV disease but also anyone with kidney failure receiving dialysis, those with a history of repeated blood product exposure and those aged greater than 65 years, there are specific recommendations for increased vaccination, beyond the standards set out for the rest of the population. These “extra” recommended vaccinations include: Pneumococcal vaccine (booster every 6 years), Influenza vaccine (yearly in October or November), Varicella vaccine (if not known to be immune to this virus that causes chicken pox), Hepatitis-A and Hepatitis-B vaccines (see next section for details; not necessarily a recommendation for the elderly.)

How well does vaccinating those with HIV and other forms of decreased immune function work?

The short answer is, as you might expect, not as well as it does in the rest of the population. Studies of the effectiveness of influenza vaccine in the elderly, for example, have shown that although it protects against the flu, it does so for less time, on average, than it would in younger people. Although this reduced duration of flu vaccine effectiveness varies widely, the effect is also observed in those with HIV and, one might expect, in the other groups mentioned as well.

Of particular note to members of the transfused and hemophilic communities is the possibility of decreased protection from hepatitis vaccination. Hepatitis-A vaccine prompts an antibody response in only about 75% of HIV-positive people, compared with about 95% of the general population; nevertheless, 75% is a rate of response that justifies vaccination. Hepatitis-A antibody should be assayed before vaccination; if the result is positive, the person has already acquired immunity...
Hepatitis A and B vaccines are free of charge to BC residents who are
Hepatitis A and B vaccines are available free of charge to people who are
Hepatitis A and B vaccines are available free of charge for people with bleeding
Hepatitis A and B vaccines are both included on the HCV
Hepatitis A and B vaccines for people who are hepatitis C
Hepatitis A and B vaccines are available free of charge for people
On the written recommendation of the hemophilia clinic
Hepatitis A vaccine is not yet available free of charge to people who are
Hepatitis-A and will not benefit from vaccination.
Three doses of Hepatitis-B vaccine, on
the other hand, prompt an antibody
response in only about 50% of HIV-
positive patients on average. This low
number is in contrast to the rate of age-
related seroconversion (production of anti-
hepatitis virus antibody) in the general
population after Hepatitis-B vaccination
which varies from 100% (ages 1 to10),
through 95 to 98% (ages 20 to 39), to 91%
(ages > 40 years). Half of HIV-positive
nonresponders who receive 3 additional
doses, however, will mount an antibody
response. Again, since blood product
recipients are at naturally high risk for
prior Hepatitis-B virus exposure (at least
those who received blood products before
1982 before the availability of a vaccine),
Hepatitis-B antibody status should be
determined before vaccination to identify
any pre-existing degree of protection.
Unfortunately, determining the degree of
protection from either natural exposure or
Hepatitis-B vaccine induced immunity
may be difficult. It has been observed that
vaccine-induced antibody levels are lower
in patients with chronic renal failure on
dialysis, those with HIV infection, the
elderly, regular recipients of blood
products or those with any other type of
immune decline. In these cases, the
recommendation is that a higher-than-
usual dose of vaccine given at each of the
three immunization dates may increase the
likelihood of seroconversion and
meaningful protection. It goes without
saying that it’s important to test for a post-
vaccination antibody response in these
groups to determine whether a repeat
series of vaccinations is necessary.
Unfortunately, after repeating the series of
Hepatitis-B vaccinations a second time, yet
still failing a protective antibody response,
there’s been no unified medical
recommendation published on the
maximum number of times a series of
anti-hepatitis vaccinations might be re-
tried again before the attempt is
abandoned. It’s worthwhile to note that
interpreting antibody response testing after
Hepatitis-B vaccine may be a confusing
business, given the variety of antibody tests
used, and repeat blood testing may be
needed as a result.
Hepatitis vaccination against both
Hepatitis-A and Hepatitis-B, depending on
prior immunity, is a universal medical
recommendation for blood product
recipients.
Specialists at Health Canada, the United
States FDA and other international bodies
representing the standards of care for
pediatric and adult medicine particularly
stress this recommendation for those
people who are infected with Hepatitis-C
or have any other cause for liver
impairment since active infection with
either of the Hepatitis-A or B viruses
would likely accelerate the worsening of
their liver disease. Because of the ease with
which these viruses are transmitted,
immunity against Hepatitis-A and B
should be a paramount concern within our
community. Not only is it recommended
for directly effected individuals to have
their hepatitis virus immunity determined
and be vaccinated if needed, but this is also
a recommendation for family members or
other close physical contacts.
There’s more information about
vaccination in general and hepatitis
vaccination in particular than you can
shake your liver at. Pending the second
part of the article in this series, here are
some places to look for further details:
–Canadian Immunization Guide
–Canada Communicable Disease Report
–Morbidity and Mortality Weekly Report
(U.S.)
–Center for Disease Control and Prevention
(U.S.)

**PROVINCE ACCESSIBILITY TO VACCINE**

- **British Columbia** Hepatitis A and B vaccines are free of charge to BC residents who are hepatitis C – positive. The best place to obtain the vaccinations is at a Public Health Unit.
- **Alberta** Hepatitis A and B vaccines are available free of charge for people with bleeding disorders who receive blood products on a regular basis. The vaccinations are given at local Public Health Units in consultation with the Nurse Coordinators at the hemophilia treatment centres.
- **Saskatchewan** Hepatitis A and B vaccinations have been available at no charge to people who are hepatitis C – positive since April 2002. Eligible individuals can be referred by their physicians to Public Health Services.
- **Manitoba** Hepatitis A and B vaccines are available at no charge to people who are hepatitis C – positive. The vaccinations can be given by the family doctor but he/she requires a letter from the liver specialist.
- **Ontario** Hepatitis A vaccine is not yet available free of charge to people who are hepatitis C – positive. A physician can make a special access request to the Trillium Fund; however, payment is not guaranteed. A recommendation is currently before the Minister of Health to use the Care not Cash money to provide the hepatitis A vaccine free of charge.

However, some hemophilia treatment centres arrange for their hepatitis C – positive patients to be vaccinated against hepatitis A.
Hepatitis B vaccine is fully funded through the Public health branch program for carriers of the hepatitis C Virus. However, only the second and third doses are covered for frequent recipients of blood products (unless they are hepatitis C infected, in which case it is fully funded).
- **Quebec** Hepatitis A and B vaccines are available free of charge to people who are hepatitis C – positive through local CLSCs. Proof of hepatitis C serology is required.
- **New Brunswick** Hepatitis A and B vaccines are publicly funded through the province’s Medicare Program for people who are hepatitis C – positive. They must get it through their family physicians.
- **Prince Edward Island** Hepatitis A and B vaccines are available free of charge for people who are hepatitis C – positive. The family physician must recommend vaccination in writing to Public Health (Dr Sweet).
- **Nova Scotia** Hepatitis A and B vaccines for people who are hepatitis C – positive are publicly funded through the province’s Medicare Program. Individuals may obtain vaccinations through their family physician or Public Health Clinics. They may also contact the Public Health Nurse if a clinic is not available in the community.
- **Newfoundland and Labrador** On the written recommendation of the hemophilia clinic director, hepatitis A and B vaccines are available free of charge to all people with bleeding disorders. They are available through Community Health Services; however, the vaccinations can be performed by family doctors.
- **The 86-90 Settlement** Hepatitis A and B vaccines are both included on the HCV Medication List as drugs fully funded for those eligible under the plan. Receipts must be submitted to obtain reimbursement.
A "TOP EIGHT" LIST OF VACCINATION POINTS FOR YOU TO CONSIDER

1. Vaccination is designed to enhance a person’s immune system to defend against disease. Therefore, it is a medical treatment that is generally safe and effective.
2. Standard vaccinations recommended by doctors in the Canadian Immunization Guide will protect healthy people against most significant infectious diseases in Canada.
3. Although not well publicized as a universal recommendation, everyone 6 years or older can benefit from a yearly influenza vaccination (flu-shot).
4. There are special vaccine recommendations for people who have received blood products, people with HIV infection and people with Hepatitis-C infection and/or liver disease.
5. People who have received blood products, particularly prior to the mid 1980’s, should receive Hepatitis-A and B vaccination if not already immune (and possibly a Pneumococcus vaccine booster depending on doctor’s advice).
6. HIV infected individuals, as well, are definitively recommended to receive vaccination against Pneumococcus (booster needed every 6 years) as well as Varicella if immunity cannot be proven by blood testing (since both bacterial pneumonia and chickenpox can be especially serious, potentially life-threatening illnesses for those with severe immune compromise).
7. Hepatitis-C infected individuals and their close physical contacts should all have their immunity to Hepatitis-A and B determined by blood test and be vaccinated as necessary to achieve a protective antibody response.
8. Try to remember your vaccination history and history of known immunity to various infections. Have you had chicken pox? Have you had whooping cough? When was your last tetanus or diphtheria vaccination? Does a blood test show you have protective antibodies against Hepatitis-A and B?

THE BLOOD FACTOR

David Page,
CHS Blood Safety Coordinator

Experts Agree

WEST NILE VIRUS CAN BE TRANSMITTED BY FRESH BLOOD COMPONENTS, NOT BY FACTOR CONCENTRATES

The U.S. Food and Drug Administration (FDA) and the Centers for Disease Control, have now confirmed that West Nile Virus (WNV) can be transmitted from person to person through organ transplants and transfusions of fresh blood components—red cells, platelets, plasma and cryoprecipitate. Ten cases of WNV have been caused by blood transfusions. Twenty-three other cases are currently under investigation in the U.S. Four cases are known to have been transmitted through organ transplantation from a single donor.

However, experts agree that WNV is not transmitted through blood products such as factor concentrates, immune globulins and albumin, made from human plasma.

WNV is not a new phenomenon. First identified in Uganda, Africa in 1937, it has been known to affect people in other countries of Africa, Europe, the Middle East, west and central Asia and Oceania. It was first observed in North America in 1999, and became a major health concern over the past summer.

Most people infected do not even realize they have the virus. Some people develop minor symptoms like fever and headache. Less than 1 percent develop more serious symptoms such as encephalitis. Infection is not chronic.

In 2002, over 3000 cases were identified in the U.S., almost all of them caused by mosquito bites. More than two hundred people, most of them elderly, died as a result of their infections.

In Canada, as of November 1, 51 confirmed cases and 17 probable cases had been found. One person had died. One case of transfusion-transmitted WNV is under investigation.

The epidemic is expected to die down in all but the most southerly regions of North America as winter takes hold.

Authorities thus have a period of grace in which to develop measures to protect the blood supply. A major conference on donor screening was organized by the FDA in Washington on November 4-5. According to a statement prepared by the National Hemophilia Foundation:

“The Workshop was not designed to be a decisional or consensus meeting, but rather to seek input on a number of key issues which will guide the FDA in its regulatory response to WNV. Questions such as: Is seasonal or regional screening an option for WNV or future viruses? What is the threshold for risk in testing for WNV or future agents? Can blood screening tests rule out tissue infection? Does testing give a false sense of security? How will blood systems deal with the cost of testing for WNV or future agents? Is there a way for the blood system to get ahead of potential future threats and anticipate pre-infection testing for a range of agents? What future technologies should be developed today to prepare for the future? What is the risk for false positive tests? What is the impact on supply? If needed, what is the impact on plasma products of additional viral inactivation measures?”

All indications are that the virus cannot be transmitted through blood products, such as plasma-derived factor concentrates, which undergo viral inactivation steps. WNV is in the flavivirus family, as is Hepatitis C. Both WNV and Hepatitis C are lipid-coated viruses. It is known that the Hepatitis C virus is killed by the solvent-detergent treatment processes to which these blood products are subjected. There is every reason to believe the same of WNV.

Manufacturers of plasma-derived blood products are currently performing the necessary experiments to establish this beyond all doubt.

In a communiqué issued November 5, 2002, Baxter Healthcare Corporation, manufacturer of many plasma-derived products, stated that their studies show that WNV is readily inactivated by current processes.

“WNV is a member of the Flaviviridae family of viruses and its structure is similar to previously identified viruses such as Hepatitis C. This family of enveloped viruses can be readily inactivated through proven inactivation processes such as pasteurization, vapor heating and solvent detergent treatment.

“Based on available results from structurally-related viruses, we were sure that WNV would be inactivated during the processing of our plasma-derived therapeutics,” said Thomas R. Kreil, Ph.D., director, global pathogen safety. “However, we at Baxter acknowledge that the hemophilia community is especially concerned about this specific virus, and we decided to conduct these tests to reassure people…”

“The study … confirmed that WNV was readily inactivated through pasteurization, vapor heating and solvent detergent treatment methods that Baxter employs in the processing of its commercially available plasma derivatives.”

HEMOPHILIA TODAY FALL 2002 25
PREGNANCY AND CHILDBIRTH

for Women with Bleeding Disorders

Ideally, before getting pregnant, a woman should meet with her medical team, including her hematologist, obstetrician, anesthetist and pediatrician to discuss possible complications and treatment. This information should be recorded in the woman’s file and she should also have a copy of the recommendations she can bring to the hospital at the time of delivery in case her doctors are unavailable. A woman who is at risk of having a baby with severe hemophilia should deliver in a hospital which has a hemophilia centre in order to make sure that testing for the coagulation factor deficiency be done on cord blood, immediately after birth. If diagnosis of hemophilia is confirmed, the baby should immediately have a brain sonography, looking for bleeding. If there is evidence of bleeding, replacement therapy should be given immediately.

PREGNANCY

Factor VIII and Von Willebrand antigen and activity usually increase significantly in patients with Type 1 VWD and hemophilia A carriers. In Type 2 VWD, while the factor quantity may increase, it is no more effective than before. Factor increase is minimal in Type 3 VWD. Women with Type 2B VWD may develop worsening thrombocytopenia (low levels of platelets) during pregnancy, further increasing the risk of bleeding. Factor IX and XI levels usually do not change significantly. Factor levels should be tested when they reach their maximum level - between 29 and 35 weeks. If levels are low, this should be borne in mind during delivery(1).

If treatment is required during pregnancy, recombinant factor is the treatment of choice. All plasma-derived products may transmit parvovirus, which has been associated with miscarriage when transmitted during pregnancy. It’s advisable to be cautious about the use of desmopressin during pregnancy because it can cause uterine contractions with premature labor and hyponatremia (an abnormally low concentration of sodium in the blood) (1). Once the cord is clamped, desmopressin can be used if necessary. It is probably reasonable to use desmopressin immediately before a Caesarean.

LABOR & DELIVERY

It is generally accepted that there is no contraindication for an epidural if coagulation is normal (usually defined as factor levels above 0.5 U/ml, or 50% of normal)(2). However, there is no consensus and the decision should be made individually after discussion with the physician.

There is no reason to resort to Caesarean section just because of the possibility that the child might have hemophilia. The sex of the foetus may be determined fairly reliably by ultrasound examination beforehand. A normal vaginal delivery is perfectly acceptable in the absence of other contraindications. In a study of 120 births of children with hemophilia, only 4 cranial hemorrhages occurred i.e. 3%. In the normal population, 1-4% of all neonates suffer intra-cranial hemorrhage(3). However, it is sensible to avoid the use of scalp electrodes during delivery if the status of the foetus is not known. Suction (Ventouse) extraction is also best avoided. In addition, circumcision is not recommended unless the baby is known not to have a bleeding disorder.

Many of the bleeding problems in babies at childbirth are caused by poking for blood samples. After delivery, a cord blood sample should be taken for assay of the factor level. It’s also preferable to withhold intramuscular injection of vitamin K as this may cause an intramuscular hematoma if the baby turns out to have hemophilia. As an alternative, vitamin K may be given by the oral route. If a cord blood sample confirms the diagnosis of hemophilia, correction should be given to a dose of coagulation factor concentrate. This is always given if forceps have been used, but is not given after a normal vaginal delivery unless there is an obvious clinical indication.

Babies with Hemophilia A and B, von Willebrand Disease and other factor deficiencies rarely bleed at birth. Exceptions are babies with factor VII Deficiency. As many as 1 baby out of 6 can have an intracranial hemorrhage. Babies with deficiencies in factors I, II, IX, X, and, especially, XIII can bleed from the umbilical cord stump(4).

Recombinant factor, available for factor VIII and IX deficiencies, is the treatment of choice for any new-born child with hemophilia. The hematologist supervising the case should make arrangements to have it in stock before delivery.

POST-PARTUM

Factor VIII and Type 1 VWD levels fall off fairly rapidly after delivery. In the event of a post-partum hemorrhage, the use of DDAVP can certainly be considered.

In the general population, the risk of primary post-partum hemorrhage (during the first 24 hours after delivery) is 4-5%. This risk is clearly increased to 16 to 22% in patients with VWD, Factor XI deficiency and hemophilia carriers. The risk of secondary post-partum hemorrhage is also increased to 11-25% in women with coagulation disorders compared to less than 1% in the general population(1).

Delayed bleeding, usually beginning 4-5 days post-partum, is possible for up to 35 days afterwards(1). A telephone follow-up with women should be done to monitor post-partum bleeding for approximately one to two months.

There is one post-partum bonus: breastfeeding increases factor VIII and VWF levels. DDAVP does not pass through breast milk(5).

The most important thing for a woman to remember is to develop a close working relationship with the medical team who will be treating her and, as always, to be aware of her condition and its treatment. You are always your own best advocate.

References
1. Suggestions for Treating Women with Bleeding Disorders, Dr. Christine Demers et al, AHCDC–VWD sub-committee 2001
2. Pregnancy in carriers of Haemophilia, Dr. P.L.F. Giangrande
3. Dr. P.L.F. Giangrande, WFH Congress 2000 presentation
5. Dr. P. Kouides, Haemophilia, Volume 4, No. 4, July 1998
6. Dr. P.M. Mannucci, Haemophilia, Volume 4 No. 4, July 1998
8. WFH website. www.wfh.org
DECEMBER 1, 2002

Dear Friend,

We cordially invite you to join us in our year-long celebrations, when we publish our 50th Anniversary Souvenir Book on May 1, 2003. This comprehensive look at the history of the Canadian Hemophilia Society, and the progress made over five decades, will serve as a milestone for the next 50 years. Your participation will highlight your involvement as an integral part of the bleeding disorder community.

Advertising messages will be read by a significant cross-section of the hemophilia and bleeding disorder community, as we celebrate the many improvements in the care of our constituents, and pay tribute to the volunteers and innovative researchers who have contributed to those achievements.

Rates start at $125 for a business card, and space is limited, so please send in your order form as soon as possible, along with the text required or camera-ready black and white artwork. Payment may be made by cheque, MasterCard or Visa.

On behalf of the Board of Directors of the Canadian Hemophilia Society, thank you for supporting our 50th Anniversary Souvenir Book.

Yours sincerely,

Tom Alloway, Ph.D.,
President

Canadian Hemophilia Society 1953-2003

Celebrating 50 Years of Progress

50th Anniversary Souvenir Book

ADVERTISING CONTRACT

Become part of our history, as the Canadian Hemophilia Society publishes its 50th Anniversary Souvenir Book, detailing the progress made since 1953, and the contributions of everyone connected to the bleeding disorder community.

Name (Contact Person): __________________________________________________________

Bill To: __________________________________________________________

Billing Address: __________________________________________________________

Cty: __________________________ Province: __________________________ Postal Code: __________________________

Business Tel.: __________________________ Home Tel.: __________________________ Fax: __________________________

METHOD OF PAYMENT

☐ Cheque made payable to: Canadian Hemophilia Society

☐ VISA _______ / _______ / _______ / _______ ☐ MASTERCARD _______ / _______ / _______ / _______

Exp. Date: _______ / _______ Cardholder Name: __________________________

Signature: __________________________ Date: __________

☐ Camera ready black & white artwork enclosed. ☐ Advertisement text to read as enclosed. (PLEASE PRINT)

<table>
<thead>
<tr>
<th>AMOUNT</th>
<th>TYPE OF ADVERTISEMENT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>$125</td>
<td>BUSINESS CARD AD</td>
<td></td>
</tr>
<tr>
<td>$300</td>
<td>QUARTER PAGE AD</td>
<td></td>
</tr>
<tr>
<td>$500</td>
<td>HALF PAGE AD</td>
<td></td>
</tr>
<tr>
<td>$800</td>
<td>FULL PAGE AD</td>
<td></td>
</tr>
</tbody>
</table>

Please return this form with your payment.

Canadian Hemophilia Society
625 President Kennedy Ave., Suite 1210
Montreal, Que. H3A 1K2
Tel: (514) 848-0503, ext. 230
Fax: (514) 848-9661
e-mail: irudy@hemophilia.ca
When drafting or changing your will, please remember the Canadian Hemophilia Society.

Bequests from our supporters will ensure that 300,000 Canadians who suffer from bleeding disorders will benefit from our research, education and support services for many years to come.

With your permission, your pledge of a future gift will be acknowledged right now with an eternal membership in the Society’s Heritage Club and listed each year in our Annual Report.

Your commitment to our second 50 years will ensure that Matthew, and everyone else living with bleeding disorders, will receive the services needed to overcome many of the obstacles caused by their disease.

You will also be providing hope for the future as we continue to search for a cure.

For further information on planned giving opportunities and tax benefits, please contact Irving Rudy

514-848-0503 ext.230 • toll-free: 1-800-668-2686 • e-mail: irudy@hemophilia.ca