BloodNet has really grown these last few years. We now have 113 members, from 58 sites, in 8 countries. We are the largest network on transfusion research!

These last few months, we have published 15 peer-reviewed articles. Our Scientific Committee has reviewed 14 manuscripts, including the majority of the TAXI manuscripts, as well as 4 protocols or grants.

Allan Doctor has received two new grants totaling $5 million for his work on ErythoMer, a nano-scale synthetic red blood cells that can deliver oxygen throughout the body. Stacey Valentine, Scot Bateman, and Phil Spinella secured grants for TAXI, from NICHD, NHLBI R13, SABM-Haemonetics Research Starter Grant, and Washington University Children's Discovery Institute Grant. Marianne Nellis and Oliver Karam have submitted two proposals for NHLBI grants.

BloodNet members have also been presenting two sessions at the AABB meeting in San Diego, and will be presenting at the PAS meeting in Toronto and a whole-day workshop at the World Congress in Singapore.

BloodNet has also started a research collaboration with the pediatric group of ISBT, the International Society of Blood Transfusion. This should allow us to collaborate on new projects and enroll patients in new centers.

As from the fall, BloodNet meetings will last a whole day, to allow for more discussion time.

BloodNet has decided not to ask for annual fees, but to ask for a $100 fee to attend the meetings, in order to cover for the costs. This will also help us invite speakers to talk about new methods, designs, or perspectives, to stimulate our own research projects. We will also allow industry to present blood-related research projects, for a certain fee.

Finally, BloodNet has a new logo, a new website (BloodNetResearch.org), and a new Twitter account (@BloodNet_PALISI)!

We are looking forward to seeing you all at our next meeting, in Boston, on September 5, 2018!!!

Dr. Oliver Karam, MD, PhD
Chair
Sheila Hanson presented a summary of a recently completed study by members of the Hemostasis and Thrombosis subgroup. Although it is routine to administer pharmacologic prophylaxis for venous thromboembolism to adults after trauma, the paucity of pediatric-specific evidence on the risk-benefit ratio of prophylaxis limits the adoption of adult-driven practice. The objective was to determine whether venous thromboembolism prophylaxis in post-pubertal children after trauma is not inferior to its effect in similar adults.

We conducted a propensity score-matched cohort study using data from the Trauma Quality Improvement Program from 2015-2016, in patients ≤21 years old with severe trauma, traumatic brain injury, central venous catheterization or mechanical ventilation. In this propensity score-matched cohort study using data from the Trauma Quality Improvement Program, the effect of low molecular weight heparin for venous thromboembolism prophylaxis was not inferior to that of adults in post-pubertal children but inferior in pre-pubertal children.

In conclusion, low molecular weight heparin, when received within 72 hours after admission, may prevent venous thromboembolism in post-pubertal children at high risk of venous thromboembolism after trauma.

Oliver Karam presented the findings from his recently completed International Survey on Clinically Relevant Bleeding in Critically Ill Children. Bleeding, a feared complication of critical illness, is frequent in critically ill children. However, the concept of clinically relevant bleeding is ill-defined. Although there have been many definitions of bleeding, only one has been developed to evaluate critically ill adults, and none for critically ill children. Our objective was to identify the factors that influence pediatric intensivists’ perception of clinically relevant bleeding. We designed a web-based survey sent to 526 pediatric critical care physicians and nurse practitioners who are members of the Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) group, as well as pediatric critical care physicians who participated in two transfusion-related studies. We asked respondents to qualify the clinical significance of 106 bleeding characteristics, using a 9-point Likert scale. The response rate was 40%, with respondents from 16 countries.

Bleeding characteristics most frequently identified as definitively clinically relevant were those in critical locations (especially when the bleeding leads to organ failure), requiring interventions, physiological repercussions, and duration of bleeding. Quantifiable bleeding > 5 ml/kg/hr for more than one hour was also frequently considered as clinically relevant. Respondents also identified the following characteristics as clinically irrelevant: dressings required to be changed no less than every 6 hours, streaks of blood in oro- or nasogastric tubes, streaks of blood in endotracheal tubes or blood in endotracheal tubes only during suctioning, lightly blood-tinged urine, quantifiable bleeding < 1 ml/kg/h, and non-coalescing petechia. Perception of bleeding was not influenced by...
geographical location or the experience of the respondent. In conclusion, this international survey provides a better understanding of the factors that influence pediatric intensivists’ perception of clinically relevant bleeding. The respondents’ perception of bleeding is not captured by currently available bleeding scores. It is therefore important to develop a validated definition of clinically relevant bleeding in critically ill children.

**Transfusion of Hemostatic Blood Products in Critically Ill Children**

Oliver Karam also presented a new protocol:

A fifth of all critically ill children will have at least one episode of clinically relevant bleeding during their admission in a pediatric critical care unit. As these bleeding events may have dramatic adverse consequences, clinicians may opt to transfuse hemostatic blood products, such as plasma, platelets, whole blood, and/or cryoprecipitate. Surprisingly, there are currently no data on the proportion of critically ill children who suffer bleeding events and who are transfused with hemostatic blood products. We do know that more than a third of plasma and platelet transfusions are administered to bleeding critically ill children, but not all bleeding patients are transfused. A physician’s decision to transfuse is based on many different factors, such as the anatomic location and amount of bleeding, the physiological effects of bleeding, the coagulation and platelet tests, and the severity of the underlying disease. Yet, there are no data regarding those factors that are predictive of the transfusion of hemostatic blood products. The lack of data regarding when and why transfusion is employed is a major obstacle to the design of clinical trials targeting specific interventions to stop or prevent bleeding. A better understanding of these factors could aid the development of clearer guidelines, better therapies, and decrease unnecessary transfusions. Therefore, we propose a study that will determine the epidemiology of hemostatic blood product transfusion in bleeding critically ill children.

We will conduct a multicenter, prospective, cohort observational study at eight pediatric critical care units, enrolling 385 consecutive critically ill patients who are bleeding. For aim 1, we will evaluate the proportion of bleeding critically ill children who are transfused with hemostatic blood products. For aim 2, we will identify predictive factors for the transfusion of these blood products in bleeding critically ill children. For aim 3, we will compare the physician’s perceived severity of bleeding with an objective assessment of the severity of the bleeding. An understanding of the epidemiology of hemostatic blood transfusions to treat bleeding in critically ill children will facilitate the design of trials targeting interventions to stop or prevent bleeding. Furthermore, identifying the predictive factors and the perceived severity of bleeding will enable the development of interventions to decrease unnecessary transfusions.

**Update from the Thrombosis and Hemostasis Subgroup meeting**

Sheila Hanson provided an update from the group she leads. The group has been active, with a wide range of areas of interest. Recently completed studies include: Massive Transfusion (Spinella), Role of Platelet Function and Microparticles in CPB (Meyer), VTE Prophylaxis in Pediatric Trauma (Hanson, Faustino), Survey of Bleeding and Thrombosis in CHD (Nelson, Hanson, Spinella), and Platelet function in Chromosome 18 anomalies (Meyer).

There are several funded and unfunded ongoing studies in CVC-associated thrombosis (Faustino), platelet aggregation in CHD (Nelson), Platelet microparticles in CPB (Meyer), prothrombotic state in childhood disease (Meyer) and multiple studies in thrombin generation (Spinella, Nelson). In addition, there are 8 studies ongoing, using the first harvest data from the pediatric ECMO data registry.
PEDECOR, established in collaboration with BloodNet. Proposed studies with plans to seek funding in the near future include: Prophylaxis in trauma or surgical patients (Faustino, Hanson), Prophylaxis in Intubated Adolescents (Faustino), Cold vs warm platelet transfusion trial (Spinella, Steiner, Zantec), Mechanisms of traumatic coagulopathy (Nair, Russell, Spinella), tPA dwell to prevent CVC thrombosis (Hanson). Please contact one of the study investigators if interested in collaboration.

Marianne Nellis presented a protocol focusing on Pediatric Plasma and Platelet Transfusions in the Recipient Epidemiology and Donor Evaluation Study-III (REDS-III) database. Over 230,000 units of plasma and platelets are prescribed to children in the US annually. However, little is known about their efficacy and safety, as divergent views exist regarding their benefits and harms. This lack of knowledge is reflected in the published guidelines for pediatric plasma and platelet transfusions which are based primarily on expert opinion and, at times, considered controversial. Initial studies of plasma and platelet transfusion practices have demonstrated marked variability in utilization. The use of plasma and platelet transfusions in children is driven by the experience of the providers, not data. To prescribe these products in the safest, most efficacious manner, it is important to understand the epidemiology of pediatric plasma and platelet transfusions.

The Recipient Epidemiology and Donor Evaluation Study-III (REDS-III), supported by the NHLBI as of 2011, is an initiative collecting information from donors and recipients, and offers a unique opportunity to study plasma and platelet transfusions in children. Though designed to focus on adults, the database contains information on approximately 1700 plasma transfusions and 2800 platelet transfusions in children admitted to the hospital. These numbers are nearly four times larger than any pediatric study on the transfusion of either product published to date, and have yet to be analyzed.

The proposed research project will describe the epidemiology, product safety profiles, and efficacy of plasma and platelet transfusions in children, using the REDS-III database. We will (1) examine the thresholds at which plasma and platelets are prescribed to children, according to different clinical settings; (2) determine if characteristics of the plasma and platelet products influence their efficacy and safety in children; and (3) describe the effects of plasma and platelet transfusions on hemostatic tests in children.
You can rely on BloodNet to support your research and enhance your success. The success of BloodNet is built on the success of each of its members.

What BloodNet will do for you:
1. When you present a research project at BloodNet, BloodNet members will provide feedback which will help you better define your specific goals and research strategy.
2. When you are ready to apply for funding, BloodNet’s Scientific Committee will review your proposal and provide feedback, and will provide a letter of support in order to maximize the likelihood of getting funding.
3. When you start enrolling patients in your study, BloodNet will help you identify participating centers and will provide counselling to help overcome the difficulties that may arise.
4. When you present your preliminary results, BloodNet will provide input for data interpretation, will help with any aspect requiring their assistance and will identify specific discussion points.
5. When you draft a manuscript, BloodNet’s Scientific Committee will provide a review of the manuscript.

What you must do for BloodNet:
1. Present projects that are fit with BloodNet aims at BloodNet meetings, not just PALISI. The Scientific Committee will select projects that will be presented at PALISI meetings for BloodNet.
2. Respect ownership and confidentiality for any research project endorsed by BloodNet. It is all about trust.
3. BloodNet expects recognition for its input and support and requests authorship on manuscript submissions for projects endorsed and presented at BloodNet meetings.

Therefore, here are some ground rules:
1. All projects that are presented at a BloodNet meeting will undergo a vote by the members attending the meeting before being formally endorsed by BloodNet. The three voting options will be “not endorsed, because not relevant to BloodNet’s research strategy”, “not endorsed, because project not yet sufficiently defined”, or “yes, project is endorsed”. The vote will be electronic, at the end of each presentation, based on a simple majority.
2. If a project is voted “not endorsed, because project not yet sufficiently defined”, a member of the Scientific Committee will be designated to work with the primary investigator, with a goal to present again at the next BloodNet meeting.
3. All BloodNet projects must be presented at BloodNet meetings, not only at the wider PALISI meeting. The Scientific Committee will select projects that will be presented at PALISI meetings for BloodNet.
4. All research projects endorsed by BloodNet are listed in a log that will keep track of research topic ownership.
5. The grant proposal of any endorsed project is expected to be reviewed by BloodNet’s Scientific Committee prior to grant application.
6. An update on all endorsed projects is expected at least once a year, either during a meeting and/or in the newsletter. A project must be presented at a BloodNet meeting at least once every two years.
7. The manuscript of any endorsed project is expected to be reviewed by BloodNet’s Scientific Committee prior to submission.
8. The manuscript of any endorsed project is expected to recognize BloodNet as a co-author, indicating “XX, YY, and ZZ; on behalf of BloodNet”.
9. Members who attend any BloodNet meeting are expected to pay for meeting expenses on a per meeting basis.

Transgressions of these ground rules will be reviewed by the Executive Committee, who will be responsible for determining the appropriate response.
BloodNet Publications 2017-2018

2018


2017
Schmidt AE, Henrichs KA, Krick C, Refaai MA, Blumberg N. Prophylactic Preprocedure Platelet Transfusion Is Associated With...


BloodNet Leadership

113 members
58 sites
8 countries

Executive Committee
- Oliver Karam, MD, PhD, Chair, Children’s Hospital of Richmond at VCU, Richmond, VA
- Marisa Tucci, MD, Vice-Chair, Ste-Justine Hospital, Montreal, Quebec
- Philip C. Spinella, MD, FCCM, Washington University School of Medicine, St. Louis, Missouri
- Allan Doctor, MD, Washington University School of Medicine, St. Louis, Missouri
- Jacques Lacroix, MD, St. Justine Hospital, Montreal, Quebec

Subgroup leadership
- Jennifer Muszynski, MD, Nationwide Children’s Hospital, OH
- Sheila Hanson, MD, Children’s Hospital of Wisconsin, WI

Scientific Steering Committee
- Marisa Tucci, MD, Chair, Ste-Justine Hospital, Montreal, Quebec
- Neil Blumberg, MD, University of Rochester Medical Center, Rochester, NY
- Robert Parker, MD, Stony Brook University Hospital, Stony Brook, NY
- Marie Steiner, MD, MS, University of Minnesota Children’s Hospital, Minneapolis, Minnesota
- Allan Doctor, MD, Washington University School of Medicine, St. Louis, Missouri
- Cassandra Josephson, MD, Emory University School of Medicine, Atlanta, GA
- Jacques Lacroix, MD, St. Justine Hospital, Montreal, Quebec
- Naomi Luban, MD, Children’s National Medical Center, Washington D.C.
- Phillip Norris, MD, Blood Systems Research Institute, San Francisco, CA
- Robert Parker, MD, Stony Brook University Hospital, Stony Brook, NY
- Chris Silliman, MD, PhD, University of Colorado Denver School of Medicine, Denver, CO
- Philip C. Spinella, MD, FCCM, Washington University School of Medicine, St. Louis, Missouri
- Marie Steiner, MD, MS, University of Minnesota Children’s Hospital, Minneapolis, Minnesota

Connect with BloodNet
Find us on the web: http://www.bloodnetresearch.org/
Connect on Twitter: @BloodNet_PALISI
Or email Grace Henderson: grace.henderson@vcuhealth.org.